

# PIERS 2019 Rome

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Photonics & Electromagnetics Research Symposium  
also known as Progress In Electromagnetics Research Symposium

Program

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June 17–20, 2019  
Rome, ITALY

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## CONTENTS

TECHNICAL PROGRAM SUMMARY . . . . .	4
THE ELECTROMAGNETICS ACADEMY . . . . .	12
JOURNAL: PROGRESS IN ELECTROMAGNETICS RESEARCH . . . . .	12
PIERS 2019 ROME ORGANIZATION . . . . .	13
PIERS 2019 ROME SESSION ORGANIZERS . . . . .	19
SYMPOSIUM VENUE . . . . .	21
REGISTRATION . . . . .	21
SPECIAL EVENTS . . . . .	21
PIERS ONLINE . . . . .	21
GUIDELINE FOR PRESENTERS . . . . .	22
GENERAL INFORMATION . . . . .	23
PIERS 2019 ROME ORGANIZERS AND SPONSORS . . . . .	24
MAP OF CONFERENCE SITE . . . . .	26
PIERS 2019 ROME TECHNICAL PROGRAM . . . . .	32
PIERS 2019 ROME SESSION OVERVIEW . . . . .	219

## TECHNICAL PROGRAM SUMMARY

### Monday AM, June 17, 2019

1A1	FocusSession.SC5: Modeling in Remote Sensing 1 .....	32
1A2	SC3: Characterization Techniques: Novelty and Short-term Requirements 1 .....	33
1A3	SC4: Microwave Electronics for Space and Ground Segment Applications 1.....	34
1A4a	Oral Presentations for Best Student Paper Awards — SC1: CEM, EMC, Scattering & EM Theory ....	35
1A4b	Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications 1 .....	35
1A5	Inverse Problems in Antennas, Scattering and Optics: Theory & Applications 1 .....	35
1A6	SC1&SC4: Progress in Broadband and UWB Printed and Dielectric Antennas for Wireless Applications 1 .....	36
1A7	Optical Sensors, Fundamentals and Applications .....	37
1A8	Photonics Packaging & Integration 1.....	38
1A9	Integrated Nanophotonics, Plasmonics and Graphene-based Devices 1.....	39
1A10	SC3: Applications of Luminescence in Resonant Photonic Structures.....	40
1A11	SC2: Modeling of Metamaterials and Metasurfaces 1.....	41
1A12	FocusSession.SC2: Hybrid and Plasmonic Metastructures 1 .....	42
1A13	SC3&SC4: Advances in Optical Sources: Materials, Devices, Applications 1.....	43
1A14	FocusSession.SC3: Nanophotonics 1.....	44
1A15	FocusSession.SC3: Photosensitive Materials and Devices for Opto-mechanical Applications 1.....	45
1A16	3_PIER_ Special_ Issue_ Session: Organic and Perovskite Optoelectronics 1 .....	46
1A17	SC1&SC4: Localized Waves: Science and Applications 1.....	46
1A18	SC3: Satellite Quantum and Optical Communication .....	47
1A19	Electromagnetic Theory .....	48
1A20	Topological Acoustics 1.....	49

**Monday PM, June 17, 2019**

1P1a	FocusSession.SC5: Modeling in Remote Sensing 2 .....	49
1P1b	Oral Presentations for Best Student Paper Awards — SC5: Remote Sensing, Inverse Problems, Imaging, Radar and Sensing .....	50
1P2a	SC3: Characterization Techniques: Novelty and Short-term Requirements 2 .....	50
1P2b	SC1: Real Life Scene Modeling and Big Data Applications for Radar and Microwave Technology .....	51
1P3a	SC4: Microwave Electronics for Space and Ground Segment Applications 2 .....	51
1P3b	RF MEMS for Antenna and Radar Application .....	52
1P4	Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications 2 .....	52
1P5	Inverse Problems in Antennas, Scattering and Optics: Theory & Applications 2 .....	53
1P6	SC1&SC4: Progress in Broadband and UWB Printed and Dielectric Antennas for Wireless Applications 2 .....	54
1P7	SC3: Light Robotics: Harnessing the Forces of Light for Micro-robotic Actuation and Control .....	55
1P8a	Photonics Packaging & Integration 2 .....	56
1P8b	SC3: Mid-infrared Integrated Photonics and Applications .....	56
1P9a	Integrated Nanophotonics, Plasmonics and Graphene-based Devices 2 .....	57
1P9b	Nanophotonic Materials for Biomedical Imaging and Sensing .....	58
1P10a	SC3: Photonic Quantum Metrology .....	58
1P10b	SC3: Wide Bandgap Semiconductors Photonics .....	59
1P11a	SC2: Modeling of Metamaterials and Metasurfaces 2 .....	59
1P11b	SC3: Optical Metamaterials: Applications, Materials and Fabrication Methods .....	60
1P12	SC2&SC3: Linear and Nonlinear Optics of Chiral Metasurfaces .....	60
1P13a	SC3&SC4: Advances in Optical Sources: Materials, Devices, Applications 2 .....	61
1P13b	Fiber Gratings and Optical Sensors .....	62
1P14	FocusSession.SC3: Nanophotonics 2 .....	62
1P15	FocusSession.SC3: Photosensitive Materials and Devices for Opto-mechanical Applications 2 .....	63
1P16	FocusSession.SC2: Thermoplasmonics and Photo-thermal Applications 1 .....	64
1P17a	Electromagnetic Radiation Applications for Materials Diagnostics and Modification .....	65
1P17b	SC1&SC4: Localized Waves: Science and Applications 2 .....	65
1P18	Integrated and Fiber-based Photonic Circuits and Devices .....	66
1P19a	Oral Presentations for Best Student Paper Awards — SC2: Metamaterials, Plasmonics and Complex Media .....	67
1P19b	Oral Presentations for Best Student Paper Awards — SC4: Antennas and Microwave Technologies .....	67
1P20a	SC2: Novel Symmetry of Electromagnetic and Acoustic Metamaterials .....	68
1P20b	Topological Acoustics 2 .....	68

**Tuesday AM, June 18, 2019**

2A1	FocusSession.SC5: Applications of Microwave Remote Sensing in Terrestrial Hydrology .....	69
2A2a	SC5: Radar Sounding Investigations of Terrestrial and Planetary Ices .....	70
2A2b	Microwave Remote Sensing, Polarimetry SAR, and Radar Imaging 1 .....	70
2A3	SC4: RF Energy Harvesting and Rectennas .....	71
2A4	Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications 3 .....	71
2A5	Microwave Inverse Scattering Problems and Applications 1 .....	72
2A6	FocusSession.SC1&SC2&SC4: Leaky Waves in Electromagnetics 1.....	73
2A7	SC3: Optical Management in Solar Cells .....	73
2A8	SC3: Infrared Detectors .....	74
2A9	SC3: Resonant Optics: Fundamentals and Applications 1.....	75
2A10	FocusSession.SC3: Nonlinear Optics at the Nanoscale 1.....	76
2A11	SC2: Recent Advances of Metamaterials for Novel Electromagnetic and Photonic Devices 1 .....	77
2A12a	FocusSession.SC2: Hybrid and Plasmonic Metastructures 2 .....	77
2A12b	Trends in Metasurfaces: New Materials and Applications .....	78
2A13	FocusSession.SC3: Advanced Optofluidics: Where Photonics Meets Microfluidics and Life Science 1 ...	78
2A14	FocusSession.SC3: Advanced Photonic Technologies for Spectroscopic Applications 1.....	79
2A15	Disordered Photonics 1 .....	81
2A16	3. PIER. Special. Issue. Session: Organic and Perovskite Optoelectronics 2 .....	81
2A17	Electromagnetic Wave Propagation in Ionized and Complex Media 1.....	82
2A18	Antenna and RCS Measurements 1.....	83
2A19	Education in Electromagnetics.....	84
2A20	Biological Effects of EM Fields .....	85
2A0	Poster Session 1 .....	85

**Tuesday PM, June 18, 2019**

2P1	FocusSession.SC5: Microwave Remote Sensing of Ocean .....	92
2P2	Light Scattering, Radiative Transfer, and Remote Sensing .....	93
2P3a	Oral Presentations for Best Student Paper Awards — SC3: Optics and Photonics .....	94
2P3b	SC4: UWB Components for Defence Applications .....	95
2P4	Novel Mathematical Methods in Electromagnetics: Part 1 .....	95
2P5	Microwave Inverse Scattering Problems and Applications 2 .....	96
2P6	FocusSession.SC1&SC2&SC4: Leaky Waves in Electromagnetics 2.....	97
2P7	SC3: Liquid Crystal Devices and Applications 1 .....	98
2P8	SC3: Soft Matter Photonics: Photo-responsive Materials and Devices .....	99
2P9	SC3: Resonant Optics: Fundamentals and Applications 2.....	99
2P10	FocusSession.SC3: Nonlinear Optics at the Nanoscale 2.....	100
2P11a	SC3: Quantum Sensing and Information Processing.....	101
2P11b	SC2: Recent Advances of Metamaterials for Novel Electromagnetic and Photonic Devices 2.....	102
2P12	FocusSession.SC2: Thermoplasmonics and Photo-thermal Applications 2 .....	102
2P13	FocusSession.SC3: Optical Fibers for High Power Applications.....	103
2P14	FocusSession.SC3: Nanophotonics 3.....	104
2P15a	Photonics for Microwave Systems .....	105
2P15b	Disordered Photonics 2.....	106
2P16	FocusSession.SC3: Organic Photonics for Optical Interconnections and Switching.....	107
2P17	Electromagnetic Wave Propagation in Ionized and Complex Media 2.....	108
2P18	Antenna and RCS Measurements 2.....	109
2P19	SC1: Stochastic Methods in Electromagnetic Compatibility .....	110
2P20	SC4: Recent Diagnostic and Therapeutic Applications of Microwaves .....	111
2P0	Poster Session 2 .....	112

**Wednesday AM, June 19, 2019**

3A1	Remote Sensing of the Earth, Ocean, and Atmosphere 1 .....	118
3A2	SC1&SC5: Direct and Inverse Scattering Methods in Complex Environments 1 .....	119
3A3	SC4: Millimetre-wave Components for Next-generation Communications .....	120
3A4	SC1: Computational Techniques in Electromagnetics and Applications 1 .....	120
3A5	SC1&SC5: Machine Learning Techniques for Remote Sensing and Electromagnetic Applications 1 .....	121
3A6a	Special Antennas for Direction of Arrival Estimation/Positioning .....	122
3A6b	Massive MIMO .....	122
3A7	SC3: Ultrafast Nonlinear Optics: Ultrafast Fiber Lasers and Nonlinear Applications 1 .....	123
3A8	2D Materials and Optoelectronic Devices .....	124
3A9	FocusSession.SC3: Multimode Nonlinear Optical Fibers 1 .....	125
3A10	SC3: Luminescence and Lasing of Nanomaterials .....	126
3A11	SC2: Analytical Methods for Metamaterials, Metasurfaces, and 2D Materials from Microwaves to Optics 1 .....	126
3A12	FocusSession.SC2: Advanced Metasurface Designs and Devices 1 .....	127
3A13	SC3: Resonant Optics: Fundamentals and Applications 3 .....	128
3A14	FocusSession.SC3: Advanced Photonic Technologies for Spectroscopic Applications 2 .....	129
3A15	Optical Coatings for Extreme Metrology .....	130
3A16	SC3: Visible, Near-infrared and Beyond: Materials and Devices 1 .....	131
3A17	FocusSession.SC1: Casimir Effect and Forces at the Nanoscale 1 .....	132
3A18	Terahertz Radiation: From Generation to Applications in Condensed Matter, Biomedicine and Particle Physics 1 .....	133
3A19a	Computational Fractional Dynamic Systems and Its Applications .....	134
3A19b	SC2: Nonreciprocal and Topological Electromagnetics 1 .....	135
3A20	Applications of EM Field in Medical Diagnostics and Therapy .....	135
3A0	Poster Session 3 .....	136

**Wednesday PM, June 19, 2019**

3P1	Remote Sensing of the Earth, Ocean, and Atmosphere 2 .....	142
3P2a	SC1&SC5: Direct and Inverse Scattering Methods in Complex Environments 2 .....	142
3P2b	SC3: Holographic Technologies in Sensing and Light Redirection and Shaping .....	143
3P3	SC1&SC2: Computational Bioelectromagnetics: from Single Molecule to Human Body .....	143
3P4	Novel Mathematical Methods in Electromagnetics: Part 2 .....	144
3P5	SC1&SC5: Machine Learning Techniques for Remote Sensing and Electromagnetic Applications 2 .....	145
3P6	SC1&SC4: Recent Advances in 2-D Leaky-wave Antennas .....	146
3P7a	SC3: Ultrafast Nonlinear Optics: Ultrafast Fiber Lasers and Nonlinear Applications 2 .....	147
3P7b	SC3: Liquid Crystal Devices and Applications 2 .....	147
3P8	SC1&SC3: Quantum Information Processing and Devices 1 .....	148
3P9a	FocusSession.SC3: Multimode Nonlinear Optical Fibers 2 .....	149
3P9b	Optical Fibers and Sensors for Biochemistry, Medical Diagnostics and Imaging .....	149
3P10	SC3: Label-free Optical Nanobiosensors for Bio-diagnostics, Environmental Monitoring and Food Safety	150
3P11a	SC2: Analytical Methods for Metamaterials, Metasurfaces, and 2D Materials from Microwaves to Optics 2 .....	151
3P11b	SC1: Short and Ultrashort Pulsed Electric Fields for Biomedical and Industrial Applications .....	151
3P12	FocusSession.SC2: Advanced Metasurface Designs and Devices 2 .....	152
3P13	FocusSession.SC3: Advanced Optofluidics: Where Photonics Meets Microfluidics and Life Science 2 ...	153
3P14a	FocusSession.SC3: Advanced Photonic Technologies for Spectroscopic Applications 3 .....	154
3P14b	Radio Astronomy Instrumentation .....	155
3P15	SC3: Laser, Spectroscopy and Imaging for Functionalised Photonic Devices .....	155
3P16	SC3: Visible, Near-infrared and Beyond: Materials and Devices 2 .....	157
3P17	FocusSession.SC1: Casimir Effect and Forces at the Nanoscale 2 .....	159
3P18a	Terahertz Radiation: From Generation to Applications in Condensed Matter, Biomedicine and Particle Physics 2 .....	160
3P18b	Millimeter Wave and Terahertz Source Devices .....	160
3P19a	Health Monitoring of Structures and Electrical Wire Interconnect Systems .....	161
3P19b	Wireless Power Transfer for Biomedicine and IoTs .....	161
3P20	EMC Problems with Antennas & Wave Propagation .....	162
3P0	Poster Session 4 .....	163

**Thursday AM, June 20, 2019**

4A1	FocusSession.SC5: Atmospheric Remote Sensing and Propagation 1 .....	168
4A2	Remote Sensing of the Earth and Atmosphere 1 .....	169
4A3a	SC4&SC5: Mobile and Satellite Parameters Estimations with Electromagnetic/Optical Technologies ..	170
4A3b	Microwave and Millimeter Wave Circuits and Devices 1 .....	170
4A4	SC1: Computational Techniques in Electromagnetics and Applications 2 .....	171
4A5	SC5: Medical Applications of Radars .....	171
4A6	Microstrip Antennas, Array Antennas, Theory and Radiation 1 .....	172
4A7	Optical Sensor, Photonics, Nano Optics, Biophotonics .....	173
4A8	SC1&SC3: Quantum Information Processing and Devices 2 .....	174
4A9	SC3: Label-based and Label-free Optical Biosensors 1 .....	174
4A10	SC3: Glass Photonics: Novel Systems and Ongoing Applications 1 .....	176
4A11	SC2: THz Metamaterials, Devices and Systems 1 .....	177
4A12	SC3: Nonlinear, Active, and Quantum Metaphotonics .....	178
4A13	SC3: Group IV Photonics for Sensing and Signal Processing .....	178
4A14	FocusSession.SC2&SC3: Graphene 2D Materials for Photonics, Plasmonics and Metamaterials 1.....	180
4A15	SC3: Silicon Photonics 1 .....	180
4A16	Optomechanics, Microfluidics, and Spectroscopy in Microcavities 1 .....	181
4A17	FocusSession.SC1: Fluctuational Electrodynamics and Heat Transfer 1 .....	183
4A18	Wireless Communication .....	184
4A19	SC2: Nonreciprocal and Topological Electromagnetics 2 .....	184
4A20	Extended/Unconventional Electromagnetic Theory, EHD(Electro-hydrodynamics)/EMHD(Electro-magneto-hydrodynamics), and Electro-biology .....	185
4A0	Poster Session 5 .....	186

**Thursday PM, June 20, 2019**

4P1	FocusSession.SC5: Atmospheric Remote Sensing and Propagation 2 .....	192
4P2	Electromagnetic Methods and Electronic Devices for Security .....	193
4P3a	Transmission Line, Waveguide & Filter .....	193
4P3b	Microwave and Millimeter Wave Circuits and Devices 2.....	194
4P4	Computational Electromagnetics, Hybrid Methods .....	195
4P5a	SC5: SAR for Agriculture .....	195
4P5b	Microwave Remote Sensing, Polarimetry SAR, and Radar Imaging 2.....	196
4P6	Microstrip Antennas, Array Antennas, Theory and Radiation 2.....	196
4P7a	SC3: Photonics for Lab-on-Chip .....	197
4P7b	Remote Sensing of the Earth and Atmosphere 2 .....	198
4P8a	Quantum Electrodynamics, Computing and Information .....	199
4P8b	SC1&SC3: Quantum Information Processing and Devices 3 .....	200
4P9a	SC3: Label-based and Label-free Optical Biosensors 2.....	200
4P9b	SC4: Reconfigurable and Programmable Photonic Integrated Circuits.....	201
4P10a	SC3: Glass Photonics: Novel Systems and Ongoing Applications 2 .....	201
4P10b	Optics and Fiber Laser .....	202
4P11a	SC2: THz Metamaterials, Devices and Systems 2.....	203
4P11b	Metamaterials and Plasmonics .....	203
4P12	SC2: Topological Features of Metamaterials and Non-Hermitian Systems: From Microwave to NIR ....	204
4P13	SC3: Photonic Sensing in Health Science and Environmental Monitoring .....	205
4P14	FocusSession.SC2&SC3: Graphene 2D Materials for Photonics, Plasmonics and Metamaterials 2.....	206
4P15	SC3: Silicon Photonics 2 .....	207
4P16	Optomechanics, Microfluidics, and Spectroscopy in Microcavities 2 .....	208
4P17	FocusSession.SC1: Fluctuational Electrodynamics and Heat Transfer 2.....	209
4P18	SC3&4: Microwave Photonic Signal Processing .....	209
4P19a	Photovoltaics, Optoelectronic Devices and Integration .....	210
4P19b	Advanced Photonic Materials and Nanophotonics .....	211
4P20	Systems and Components, Electromagnetic Compatibility .....	211
4P0	Poster Session 6 .....	212

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W. S. Cai	J. Canet-Ferrer	L. Capineri	A. Capozzoli
D. Caputo	R. Caputo	M. Cavagnaro	M. Celebrano
M. Centini	S. K. Chan	W. D. Chen	W. J. Chen
Z. Z. Cheng	W. C. H. Choy	J. Christensen	R. Cicchetti
D. Cimini	G. Cipparrone	S. Colangeli	P. Colantonio
D. Comite	L. Criante	L. Crocco	A. Cucinotta
A. Cusano	M. M. da Silva	F. D'Agostino	A. d'Alessandro
N. Danz	C. De Angelis	G. De Cesare	A. De Luca
F. G. Della Corte	G. W. Deng	A. Di Carlo	J.-W. Dong
A. D'Orazio	M. Ettorre	Y. S. Fainman	A. Faraone
P. D. G. Fernandez	V. Ferrara	M. Ferrari	G. Ferri
F. Floris	R. Francini	N. C. Frateschi	W. Fuscaldo
G. Gagliardi	A. Galli	G. N. Georgiev	M. N. Georgieva-Grosse
E. Gescheidtova	P. Ghelfi	A. Giannetti	F. Giannini
J. Gluckstad	M. Goano	J. S. Gomez-Diaz	G. Gradoni
M. Grande	F. A. Gubarev	L. Guerriero	B. Guizal
Y. X. Guo	X. Y. Han	Y. D. Han	S. L. He
W. Hu	J. T. Johnson	M. Kafal	A. Khalid
U. K. Khankhoje	O. Kilic	K. Kobayashi	I. Kriegel
A. Kristensen	A. A. Kudryavtsev	E. Kymakis	J. Lægsgaard
Y. Lai	P. Lalanne	P. Lampariello	S. E. Lauro
T.-W. Lee	G. Leone	U. Levy	J. Li
M. C. Li	T. Li	X. F. Li	E. Limiti
Y.-H. Lin	F. W. Liu	L. Liu	Z. W. Liu
Z. W. Liu	P. E. Longhi	X. Y. Lu	M. Lucido
A. Lukowiak	S. Lupi	Y. G. Ma	S. Maddio
A. Marcelli	V. M. Primiani	S. Martin	G. Z. Mashanovich
L. Mei	C. Merla	F. Michelotti	R. M. Montekali
T. A. N. Morgado	I. Naydenova	X. J. Ni	Y. Okuno
S. K. Ozdemir	P. Pagliusi	M. Panella	V. M. N. Passaro
M. Pastorino	L. Petti	E. Pettinelli	N. Pierdicca
R. Pierri	S. M. Pietralunga	I. M. Pinto	S. Pisa
S. Pissadakias	E. PiuZZi	S. K. Podilchak	M. Principe
F. PrudenZano	R. Przesmycki	D. Psaltis	J. Ptasinski
C. Y. Qiu	N. Razavi-Ghods	S. Romeo	C. Ronda
C.-J. Ruan	P. Russo	M. Y. Sander	M. G. Saphiannikova
G. Schettini	F. Scotognella	S. Selleri	G. C. Shan
Y. V. Shestopalov	A. Shishido	C. Sibilial	M. G. Silveirinha
F. S. Marzano	F. Simoni	R. Solimene	H.-Z. Song
I. T. Sorokina	V. Spagnolo	E. L. Tan	S. Tomljenovic-Hanic
G. Vallone	J. Vrba	S. Wabnitz	J. Wang

U. Willer  
A. B. Yakovlev  
C.-P. Yu  
L. Zeni  
D. C. Zografopoulos

Y. Wu  
T. Yamasaki  
C. X. Yuan  
O. Zeni

M. Xiao  
L. Yang  
S. H. Yueh  
M. L. Zheng

C. X. Xu  
P. Yang  
R. P. Zaccaria  
D. Zhu

## **SYMPOSIUM VENUE**

The 2019 Photonics & Electromagnetics Research Symposium, will be held in Rome from 17 to 20 June 2019, at the Faculty of Engineering of the University of Rome “La Sapienza” in Italy (Address: Via Eudossiana 18, 00184 Rome, Italy).

## **REGISTRATION**

The PIERS technical sessions will begin at 09:00 on Monday, June 17, 2019. You may come to register during 15:00–19:00 on Sunday, June 16, 2019, at the registration desks at the Faculty of Engineering, in Via Eudossiana 18, Rome. Registration is also available from 08:00 to 18:00 on Monday, June 17, 2019 and from 08:30 to 18:00 on June 18–20, 2019.

The on-site registration fee is USD 760, and the reduced registration fee for a student is USD 470 (a valid student ID is required). Please be reminded that the on-site payments will be collected in Euro. If you have pre-registered and paid, your name badge and symposium program will be ready for you to pick up at the registration counter during the symposium. Please wear your name badge throughout the meeting. Access to the coffee break, interactive areas, and technical sessions will be prohibited if a name badge is not visible.

## **SPECIAL EVENTS**

### **Symposium Reception**

On Monday evening, June 17, 2019, all conference participants are invited to a welcome reception at the Cloister of the Faculty of Engineering of the University of Rome “La Sapienza”. The tickets are free and handed out on a first-come-first-served basis. Please make reservation in advance for the reception within May 27.

### **Symposium Banquet**

On Wednesday evening, June 19, symposium banquet is planned for PIERS participants and their guests at Palazzo Brancaccio. A limited number of banquet tickets will be available. For all participants, the price is USD 110 per person. Please make reservation and pay in advance for the banquet within May 27.

## **PIERS ONLINE**

Information on PIERS 2019 Rome and future PIERS is posted at [www.piers.org](http://www.piers.org).

## GUIDELINE FOR PRESENTERS

### Oral Presentations

- **Load and TEST presentation files in advance:**  
All Oral Presenters must load and test presentation files in their own session room computers no later than 12 hours before the scheduled talk. Presenters are not allowed to detach the session computer and attach their own notebook/laptop to the LCD projector in session room.
- **Presentation files format:**  
PDF, Power Point are recommended. Movies or animations in MPEG, Windows Media, and etc, should be tested in PIERS computer in PIERS OFFICE no later than half-day before the session. Presentation files in USB disk are acceptable by PIERS Computer.
- **Report to Session Chair:**  
Presenters are required to report to their session chairs at least 10 minutes prior to the start of their session.
- **Length of your talk:**  
In a regular session, the time length for each talk is 20 minutes. In a focus session, the presentation time limit is 30 minutes for a keynote talk, 20 minutes for an invited talk, and 15 minutes for a contributed talk.
- **DO NOT change presentation sequence:**  
Session Chairs, please be present in the session room at least 15 minutes before the start of the session and must strictly observe the starting time and time limit of each paper and refrain from changing paper presentation sequence.
- **NO picture request:**  
When such a request is made by the presenter, the session chair and session helpers will do their best to ensure that no pictures will be taken at the presentation.

### Poster Presentations

Presenters should post time slots of their presence on the panel and be present for interactive questions at the given time. Each poster can be posted at 09:30–12:30 and 15:00–18:00, and all presenters are suggested to be present at least during 11:00–11:30 and 16:30–17:00.

One panel will be available for each poster. The poster panels for PIERS 2019 Rome will be 80 cm (31,5 in) Width x 180 cm (78,9 in) Height.

All presenters are required to mount their papers 30 minutes before the session and remove them at the end of their sessions.

## GENERAL INFORMATION

### LANGUAGE

The official language for the Symposium is English.

### CURRENCY AND CREDIT CARDS

The local currency is EURO and the exchange rate is 1 USD for about 0.8959 EUR (as of May 21, 2019). Credit cards and cash are acceptable for payments. International credit cards are acceptable in most shops, restaurants etc.

### TAX AND TIP

In Italy tips are not necessary but it is possible to tip a waiter/waitress or a taxi driver and other persons who provides regular service. All advertised merchandise prices normally include tax.

### TAXI

Usually, a taxi is available along the roadsides (while you wave for it) or right in front of a hotel. You may also call to book a taxi: (+39) 060609, (+39) 063570. Taxis licensed by Rome City Council are white and have a sign bearing the word "TAXI" on their roofs.

### BUSINESS OPENING HOURS

- **Post Office**  
Opening hours: usually 08:30 – 13:30 (main ones up to 18:30) from Monday to Friday; 08:30 – 12:30 (Saturday).
- **Bank**  
Opening hours: usually 09:00 – 13:30 and 14:30 – 15:45 from Monday to Friday.
- **Store**  
Opening hours: usually 09:30 – 19:30 from Monday to Saturday, some of them also on Sunday. There are 24 h service shops also.
- **Public Transportation**  
Operating hours: generally 05:30 – 23:30

### ELECTRICITY

In Rome area in Italy, the standard outlets provide AC of 220 V/50 Hz.

## **PIERS 2019 ROME ORGANIZERS AND SPONSORS**

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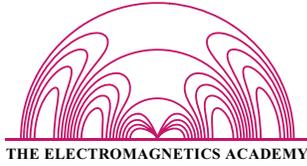
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- The Electromagnetics Academy

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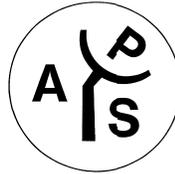
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- IEEE Antennas and Propagation Society (IEEE AP-S)
- IEEE Photonics Society
- IEEE Photonics Society — Italy Chapter
- Italian Society of Electronics (SIE)
- Italian Society of Electromagnetics (SIEm)
- Italian Society of Optics and Photonics (SIOF)
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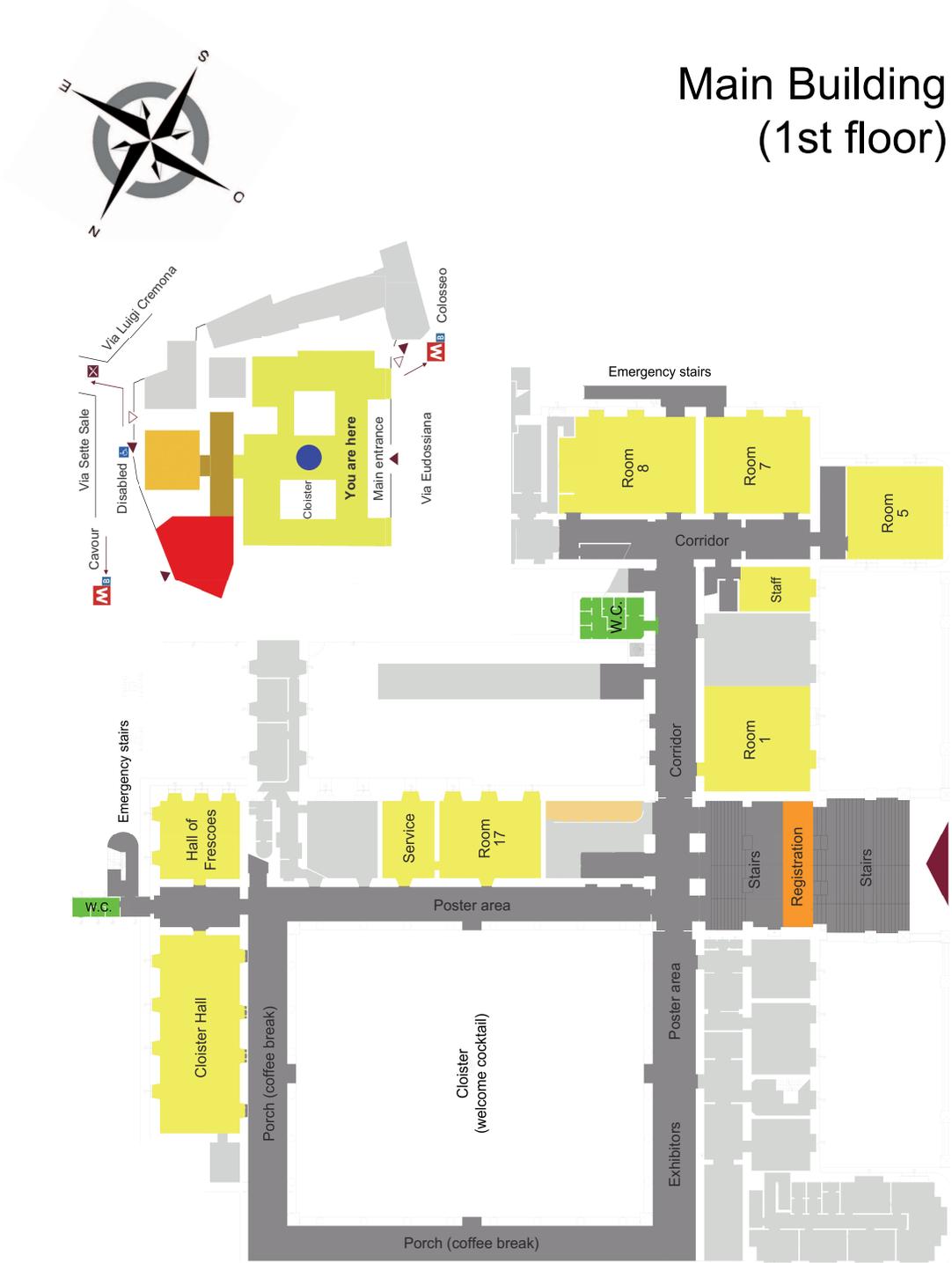
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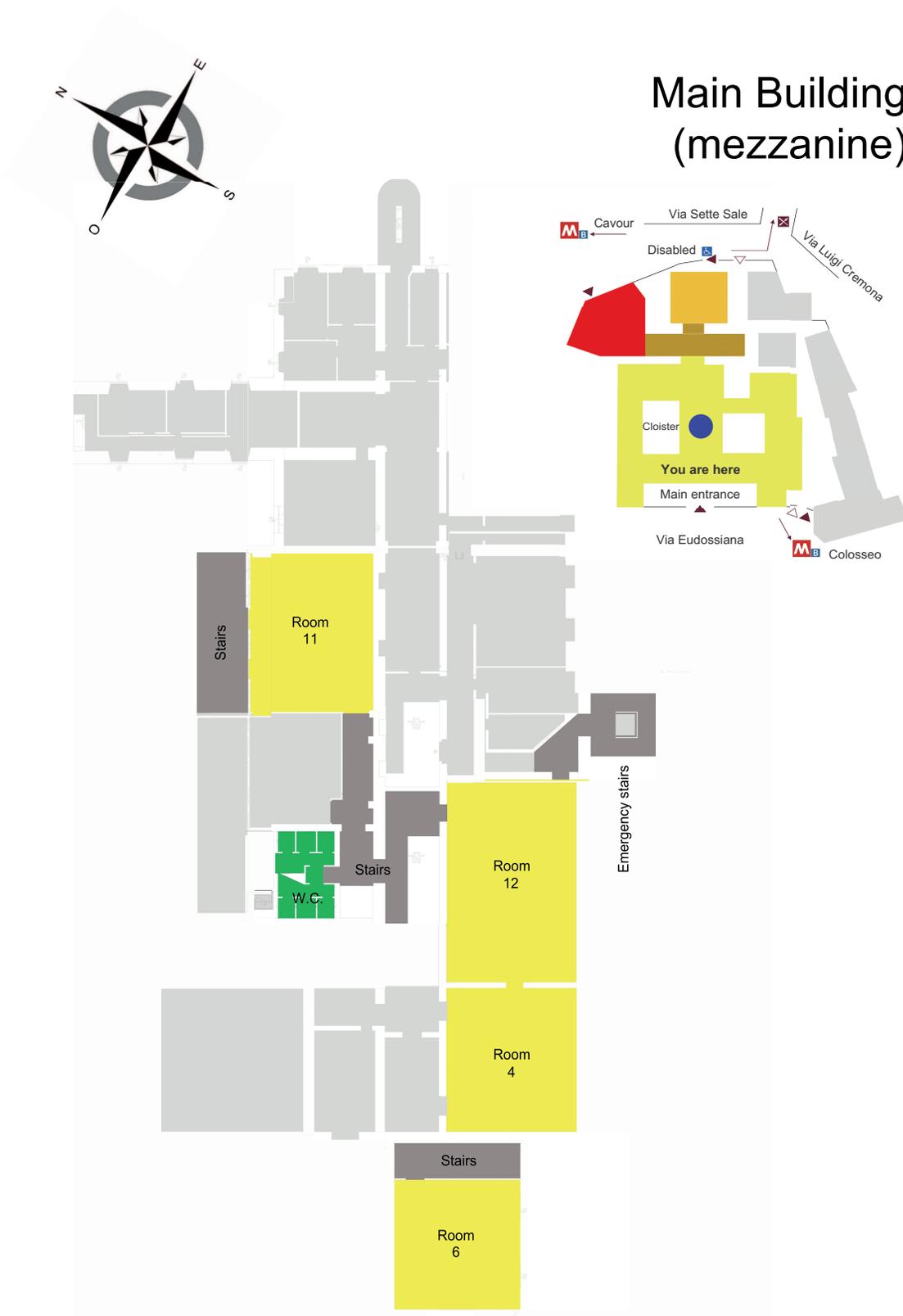


# MAP OF CONFERENCE SITE



## Main Building (1st floor)

- (\*) Room is "Aula" (Italian name)
- Cloister Hall is "Sala del Chiostro" (Italian name)
- Hall of Frescoes is "Sala degli Affreschi" (Italian name)

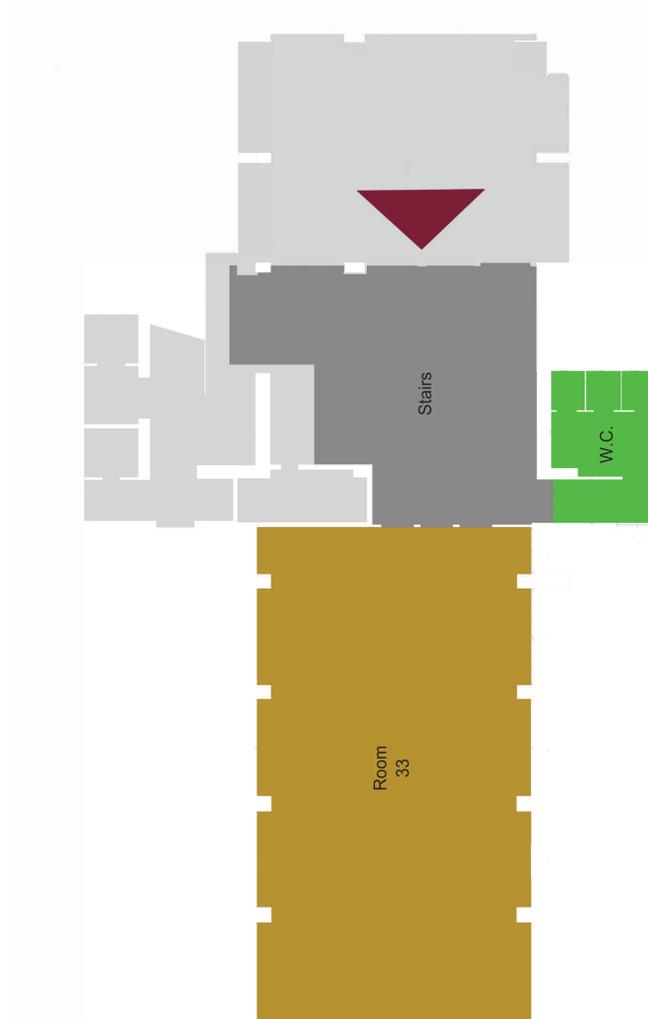
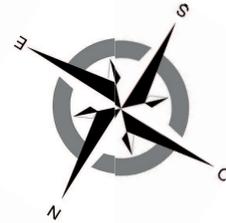
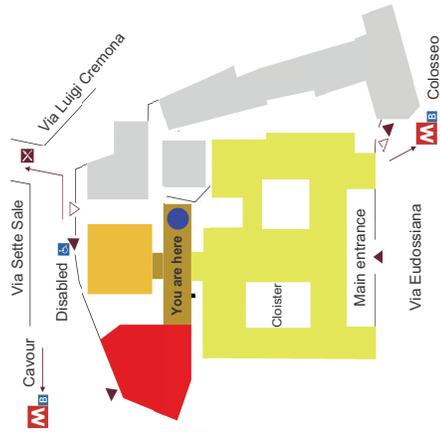


# Main Building (mezzanine)



(\*) Council Hall is "Sala del Consiglio" (Italian name)

# Bank Building (low floor)



# Chemistry Building (ground floor)



# Electrical Building (ground floor)



## PIERS 2019 ROME TECHNICAL PROGRAM

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### Session 1A1

#### FocusSession.SC5: Modeling in Remote Sensing 1

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Monday AM, June 17, 2019

#### Room 1 - 1st Floor

Organized by Joel T. Johnson, Nazzareno Pierdicca

Chaired by Davide Comite, Shanka N. Wijesundara

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09:00 Microwave Remote Sensing of Soil, Vegetation and Ocean Using Numerical Solutions of Maxwell Equations  
Keynote

*Leung Tsang (University of Michigan); Jiyue Zhu (University of Michigan); Yanlei Du (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Huanting Huang (University of Michigan);*

09:30 Electromagnetic Interactions with Vegetated Soils: An Integrative Modeling Approach  
Invited

*Ismail Baris (Microwaves and Radar Institute); Thomas Jagdhuber (Microwaves and Radar Institute); Francois Jonard (Institute of Bio- and Geosciences: Agrosphere (IBG-3)); Jasmeet Judge (University of Florida); Harald Anglberger (Microwaves and Radar Institute);*

09:50 Modeling Covariability of Active-passive Observations of Vegetated Surfaces at L- and C-band  
Invited

*Moritz Link (Earth and Mission Science Division, European Space Agency); Thomas Jagdhuber (Microwaves and Radar Institute); Paolo Ferrazzoli (University of Rome Tor Vergata); Leila Guerriero (University of Rome Tor Vergata); Ralf Ludwig (Ludwig-Maximilians University Munich); Dara Entekhabi (Massachusetts Institute of Technology);*

10:10 EM Simulations Supporting the Analysis of Temporal Effects Observed with Tower-Scat Experiments on Tropical Dense Forests  
Invited

*Ludovic Villard (CESBIO); Salma El Idrissi Essebtey (Université de Toulouse); Thierry Koleck (Centre National d'Etudes Spatiales (CNES)); Pierre Borderies (Office National d'Etudes et de Recherches Aerospatiales (ONEAR)); Thuy Le Toan (CNES-CNRS-Université Paul Sabatier);*

10:45 Retrieval of Tropical Peatland Forest Biomass from Polarimetric Features in Central Kalimantan, Indonesia

*Mirza Muhammad Waqar (Chiba University); Rahmi Sukmawati (Padang State University); Ya Qi Ji (Chiba University); Josephat Tetuko Sri Sumantyo (Chiba University); Hendrik Segah (Universitas Palangka Raya); Lilik Budi Prasetyo (Bogor Agricultural University);*

11:00 **Coffee Break**

11:30 Analytical Evaluation of Sea Surface Backscattering via the Anisotropic Polarimetric Two-scale Model  
Invited

*Gerardo Di Martino (Università di Napoli "Federico II"); Antonio Iodice (University of Naples "Federico II"); Daniele Riccio (University of Naples "Federico II");*

11:50 Swell Effects on Near-coastal SMAP L-band High-resolution NRCS Data  
Invited

*Shanka N. Wijesundara (The Ohio State University); Joel T. Johnson (The Ohio State University);*

12:10 Electromagnetic Modeling of Scattering of Signals of Opportunity  
Invited

*Davide Comite ("Sapienza" University of Rome); Leila Guerriero (Tor Vergata University of Rome); L. Dente (Tor Vergata University); F. Ticconi (Remote Sensing and Product Unit); N. Pierdicca ("Sapienza" University of Rome);*

12:30 Electromagnetic Modeling of Canonical-target forward Scattering for Radar Applications

*Marta Tecla Falconi (Sapienza University of Rome); Davide Comite ("Sapienza" University of Rome); Pierfrancesco Lombardo (Sapienza University of Rome); Frank Silvio Marzano (Sapienza University of Rome); D. Pastina (Sapienza University of Rome); Alessandro Galli (Sapienza University of Rome);*

12:50 Optical Wave Scattering from Large Rough Objects

Invited

*Gerard Berginc (Thales Optronique);*

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### Session 1A2

#### SC3: Characterization Techniques: Novelty and Short-term Requirements 1

Monday AM, June 17, 2019

Room 5 - 1st Floor

Organized by Ilka Kriegel, Francesco Scotognella

Chaired by Ilka Kriegel, Francesco Scotognella

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09:00 UHV Ultrafast Scanning Electron Microscopy

Invited

*Silvia Maria Pietralunga (Italy Chapter Chair IEEE Photonics Society); Vittorio Sala (Istituto Italiano di Tecnologia); Maurizio Zani (Politecnico di Milano); Gabriele Irde (Istituto Italiano di Tecnologia); Giulio Cerullo (Politecnico di Milano); Guglielmo Lanzani (Politecnico di Milano); Alberto Tagliaferri (Istituto Italiano di Tecnologia);*

09:20 New Tools for Plasmonic Particles: Localized Plasmon-voltammetry and Nanoscopic Light Bulbs to Determine a Plasmonic Horizon

Invited

*Thomas A. Klar (Johannes Kepler University Linz);*

09:40 Unconventional Use of X-ray Photoelectron Spectroscopy: From Characterization to a Patterning Tool

Invited

*Mirko Prato (Istituto Italiano di Tecnologia); Francisco Palazon (Istituto Italiano di Tecnologia); Liberato Manna (Istituto Italiano di Tecnologia);*

10:00 XPS Characterization of Materials for Photonic Applications

Invited

*Luca Minati (CMM-FBK); Victor Micheli (IFN — CNR CSMFO Lab. & FBK CMM); Lam Thi Ngoc Tran (IFN — CNR CSMFO Lab. & FBK CMM); Lidia Zur (IFN-CNR CSMFO Lab. & FBK CMM); Anna Lukowiak (Institute of Low Temperature and Structure Research, PAS); Alessandro Chiasera (IFN-CNR CSMFO Lab. and FBK CMM); Maurizio Ferrari (IFN-CNR CSMFO Lab.); Giorgio Speranza (FBK CMM FMPS Unit);*

10:20 Unconventional Plasmonic Architectures for Exploring Low-energy Excitations in Nanomaterials

Invited

*Andrea Toma (Istituto Italiano di Tecnologia);*

10:40 Interband Decay and Absorption Mechanisms in Amorphous Silica Probed by Synchrotron Light

Invited

*Roberto Lorenzi (University of Milano-Bicocca); Francesco Meinardi (University of Milano-Bicocca); Sergio Brovelli (University of Milano-Bicocca); Alberto Paleari (University of Milano-Bicocca);*

11:00 **Coffee Break**

11:30 Frontiers of UV Resonant Raman Spectroscopy by Using Synchrotron Radiation

Invited

*Barbara Rossi (Elettra-Sincrotrone Trieste); Cettina Bottari (Elettra-Sincrotrone Trieste); Francesco D'Amico (Elettra-Sincrotrone Trieste); Alessandro Gessini (Elettra-Sincrotrone Trieste); Claudio Masciovecchio (Elettra-Sincrotrone Trieste);*

11:50 Integrated Laser Sensor (ILS) for Characterization and Extended Mapping of Remote Targets

*Violeta Lazic (ENEA, Dep. FSN-TECFIS-DIM); Antonio Palucci (ENEA, Dep. FSN-TECFIS-DIM); Marcello Nuvoli (ENEA, Dep. FSN-TECFIS-DIM); Marco Pistilli (ENEA, Dep. FSN-TECFIS-DIM); Ivano Menicucci (ENEA, Dep. FSN-TECFIS-DIM); Francesco Colao (ENEA, Dep. FSN-TECFIS-DIM); Luigi De Dominicis (ENEA, Dep. FSN-TECFIS-DIM); Salvatore Almagia (ENEA, Dep. FSN-TECFIS-DIM);*

12:10 Time Resolved Optical Studies of Exciton and Spin/Valley Dynamics in 2D Materials

*Stefano Dal Conte (Politecnico di Milano);*

12:30 Light Point-scanning Microscopy with Single-photon-avalanche-diode Array

Invited

*Marco Castello (Istituto Italiano di Tecnologia); Giorgio Tortarolo (Istituto Italiano di Tecnologia); Sami Koho (Istituto Italiano di Tecnologia); Eli Slenders (Istituto Italiano di Tecnologia); Alessandro Rossetta (Istituto Italiano di Tecnologia); Mauro Buttafavae (Politecnico di Milano); Federica Villa (Politecnico di Milano); Takahiro Deguchi (Istituto Italiano di Tecnologia); Paolo Bianchini (Istituto Italiano di Tecnologia); Colin J. R. Sheppard (Istituto Italiano di Tecnologia); Alberto Diaspro (Istituto Italiano di Tecnologia); Alberto Tosi (University of Genoa); Giuseppe Vicidomini (Istituto Italiano di Tecnologia);*

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**Session 1A3**
**SC4: Microwave Electronics for Space and  
Ground Segment Applications 1**


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**Monday AM, June 17, 2019**
**Room 7 - 1st Floor**

Organized by Paolo Colantonio, Franco Giannini

 Chaired by Paolo Colantonio, Franco Giannini
 

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- 09:00 Design and Implementation of Microwave Circuits in 0.35  $\mu\text{m}$  SiGe BiCMOS Technology for UWB Applications  
*Miroslav Sokol (Technical University of Kosice); Pavol Galajda (Technical University of Kosice); Stanislav Slovak (Technical University of Kosice); Martin Pecovsky (Technical University of Kosice); Milos Drutarovsky (Technical University of Kosice);*
- 09:20 Single-ended Power Amplifier at 185 GHz with Output Power More than 12 dBm  
*Abdul Ali (University of Rome Tor Vergata); Jongwon Yun (IHP-Leibniz-Institut fur innovative Mikroelektronik); H. J. Ng (IHP Leibniz — Institut fur Innovative Mikroelektronik); Dietmar Kissinger (Ulm University); Franco Giannini (University of Rome Tor Vergata); Paolo Colantonio (University of Rome Tor Vergata);*
- 09:40 Integrated Circuits and Modules Based on Advanced HEMT Technologies up to 600 GHz for Sensing and Communication  
*Michael Schlechtweg (Fraunhofer Institute for Applied Solid State Physics (IAF)); A. Tessmann (Fraunhofer Institute for Applied Solid State Physics (IAF)); Arnulf Leuther (Fraunhofer Institute for Applied Solid State Physics (IAF)); Hermann Massler (Fraunhofer Institute for Applied Solid State Physics (IAF)); Markus Rosch (Fraunhofer Institute for Applied Solid State Physics (IAF)); Rainer Weber (Fraunhofer Institute for Applied Solid State Physics (IAF)); Michael Kuri (Fraunhofer Institute for Applied Solid State Physics (IAF)); Jutta Kuehn (Fraunhofer Institute for Applied Solid State Physics (IAF)); Martin Zink (Fraunhofer Institute for Applied Solid State Physics (IAF)); Markus Riessle (Fraunhofer Institute for Applied Solid State Physics (IAF));*
- 10:00 High-order Mode Monopulse Tracking Architectures for Earth Station Antennas: An Overview  
*Angel Mediavilla Sanchez (University of Cantabria); Juan Luis Cano (Universidad de Cantabria); Antonio Tazon (University of Cantabria); Tomas Fernandez (Universidad de Cantabria);*
- 10:20 Future Trends of GaN MMIC T/R Module Front-Ends for X-band Pulsed Radar  
*Francesco Scappaviva (MEC S.r.l.); Davide Resca (MEC s.r.l.); Andrea Biondi (MEC S.r.l.); Sara D'Angelo (MEC S.r.l.);*
- 10:40 Modelling Asymmetric Two-port Reciprocal Microwave Structures by Means of Compact Equivalent Circuits  
*Elena Abdo-Sanchez (Universidad de Malaga); Teresa M. Martin-Guerrero (Universidad de Malaga); Jaime Esteban (Universidad Politécnica de Madrid); Carlos Camacho-Penalosa (Universidad de Malaga);*
- 11:00 **Coffee Break**
- 11:30 Advances in Microwave Equipment Technologies for Next Generation Satellite Services  
*Marziale Feudale (Thales Alenia Space); Suriani Andrea (Thales Alenia Space Italia); Francesco Vitulli (Thales Alenia Space Italia); Antonio Leuzzi (University of L'aquila); Leonardo Pantoli (University of L'aquila); Ernesto Limiti (University of Rome Tor Vergata); Sergio Colangeli (University of Roma Tor Vergata);*
- 11:50 K/Ka-band Receiver Front-Ends Based on Commercial Components for Future Moon Exploration Missions  
*Federico Alimenti (University of Perugia); Valentina Palazzi (University of Perugia); Paolo Mezzanotte (Università degli Studi di Perugia); Luca Roselli (University of Perugia); Federico Pergolesi (PICOSATS); Mario Fragiaco (PicoSaTs s.r.l.); Alessandro Cuttin (University of Trieste); Erica De Fazio (PICOSATS); Federico Dogo (PICOSATS); Anna Gregorio (University of Trieste);*
- 12:10 Ultra-low Phase Noise RF Oscillator Using High-Q Quad Spiral Resonator  
*Mahmoud Samy Saad Mahmoud Abouyoussef (Misr International University); Ayman M. El-Tager (MTC); Hassan El-Ghitani (Misr International University);*
- 12:30 Assessment of Wireless Ranging Sensor Network System Performance in Indoor and Outdoor Environments  
*Divya Unnikrishnan (National Physical Laboratory); Tian Hong Loh (National Physical Laboratory); David Cheadle (National Physical Laboratory); Adam Jones (National Physical Laboratory);*
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**Session 1A4a**
**Oral Presentations for Best Student Paper Awards — SC1: CEM, EMC, Scattering & EM Theory**


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**Monday AM, June 17, 2019**
**Room 8 - 1st Floor**

 Chaired by Qing Huo Liu, Yury V. Shestopalov, Eng Leong Tan
 

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- 09:00 2D Through-the-wall Radar Imaging Using a Level Set Approach  
*G. Incorvaia (The University of Manchester); Oliver Dorn (University of Manchester);*
- 09:20 Hybridization of the Method of Auxiliary Sources (MAS) with the Fast Multipole Method (FMM) for Scattering from Large Arrays of Cylinders  
*Eleftherios J. Mastorakis (Hellenic Air Force Academy); Panagiotis J. Papakanellos (Hellenic Air Force Academy); Hristos T. Anastassiou (Technological Education Institute of Central Macedonia); Nikolaos L. Tsitsas (Aristotle University of Thessaloniki);*
- 09:40 Initial Potential-based Time Domain Surface Integral Equations for Dielectric Regions  
*Thomas Edgar Roth (University of Illinois at Urbana-Champaign); Weng Cho Chew (Purdue University);*
- 10:00 Computational Design and Analysis of Efficient Couplers for Nano-optical Links  
*Askin Altinoklu (Middle East Technical University); Ozgur Ergul (Middle East Technical University);*
- 10:20 High Frequency Diffraction by Rectangular Hole in a Thick Conducting Screen —  $\mathbf{H}$  Polarization Case  
*Khanh Nam Nguyen (Chuo University); Hiroshi Shirai (Chuo University);*
- 10:40 Learning Based Holographic Reconstruction through a Diffuser  
*Lina Zhou (The Hong Kong Polytechnic University); Yin Xiao (The Hong Kong Polytechnic University); Wen Chen (The Hong Kong Polytechnic University);*
- 11:00 **Coffee Break**

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**Session 1A4b**
**Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications 1**


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**Monday AM, June 17, 2019**
**Room 8 - 1st Floor**

Organized by Mariana Nikolova Georgieva-Grosse, Georgi Nikolov Georgiev

 Chaired by Mariana Nikolova Georgieva-Grosse
 

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- 11:30 Fundamental Leapfrog ADI-FDTD Method  
 Invited  
*Eng Leong Tan (Nanyang Technological University); Ding Yu Heh (Nanyang Technological University);*
- 11:50 Interaction of Transverse-magnetic Waves with Space-time Multiperiodic Filling of the Waveguide  
 Invited  
*Eduard A. Gevorkyan (Plekhanov Russian Economic University);*
- 12:10 New Infinitely Differentiable Spline-like Basis Functions  
*Yaroslav Yu. Konovalov (Bauman Moscow State Technical University);*
- 12:30 Continuity Condition of the Normal Derivative of the  $\mathbf{E}$ -field across an Arbitrary Interface and Its Application to Scattering  
*Alex J. Yuffa (National Institute of Standards and Technology); Johannes Markkanen (Max Planck Institute for Solar System);*
- 12:50 Numerical Modeling of the Parabolic Wave Equation in Lossless and Lossy Media  
 Invited  
*Andrew J. Knisely (Institute of Electrical and Electronics Engineers (IEEE)); Andrew J. Terzuoli (Institute of Electrical and Electronics Engineers (IEEE));*

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**Session 1A5**
**Inverse Problems in Antennas, Scattering and Optics: Theory & Applications 1**


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**Monday AM, June 17, 2019**
**Room Hall of Frescoes - 1st Floor**

Organized by Rocco Pierri, Giovanni Leone

 Chaired by Rocco Pierri, Xudong Chen
 

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- 09:00 Applying Compressed Sensing with Predictable Accuracy to Spherical Antenna Near-field Measurements  
*Bernd Hofmann (Technical University of Munich); Ole Neitz (Lehrstuhl für Hochfrequenztechnik, TU München); Thomas F. Eibert (Technical University of Munich);*

- 09:20 High-order Functional Derivatives of the Scattered Field according to the Permittivity-contrast. A Powerful Tool for Nonlinear Inversion  
*Slimane Arhab (Université d'Avignon et des Pays de Vaucluse); Dimitrios Anagnostou (Université d'Avignon et des Pays de Vaucluse);*
- 09:40 Spatial Prediction of Undersampled Electromagnetic Fields  
*D. V. S. S. N. Karteekeya Sastry (Indian Institute of Technology Madras); Chandan Bhat (Indian Institute of Technology Madras); Uday K. Khankhoje (Indian Institute of Technology Madras);*
- 10:00 An Efficient Method for Imaging of Inhomogeneous Objects in Arbitrary Shaped Multilayer Cylindrical Structures  
*Tolga Ulas Gurbuz (Gaziantep University); Birol Aslanyurek (Yildiz Technical University);*
- 10:20 On the Achievable Resolution in Inverse Source beyond the Fresnel Approximation: Numerical Results  
*Maria Antonia Maisto (Universita degli studi della Campania Luigi Vanvitelli); Raffaele Solimene (Universita degli studi della Campania Luigi Vanvitelli); Rocco Pierri (Universita degli studi della Campania Luigi Vanvitelli);*
- 10:40 Experimental Assessment of a Tomographic Measurement System for Quantitative Microwave Imaging  
*Alessandro Fedeli (University of Genoa); M. Mafongelli (University of Applied Sciences of Southern Switzerland); Matteo Pastorino (University of Genoa); S. Poretti (University of Applied Sciences of Southern Switzerland); Andrea Randazzo (University of Genoa); A. Salvade (University of Applied Sciences of Southern Switzerland);*
- 11:00 **Coffee Break**
- 11:30 Solving Full-wave Inverse Scattering Problem by Deep Learning  
*Zhun Wei (National University of Singapore); Xudong Chen (National University of Singapore);*
- 11:50 Circular Trace Scanning SAR Imaging Based on Compressive Sensing  
*Lingjuan Yu (Jiangxi University of Science and Technology); Yadong Wang (Jiangxi University of Science and Technology); Xiao-Chun Xie (Gannan Normal University);*
- 12:10 The Design of Online FPGA-based Electromagnetic Tomography System for Rail Crack Inspection  
*Jiwei Huo (Beijing Jiaotong University); Ze Liu (Beijing Jiaotong University); Chengfei Wang (Beijing Jiaotong University); Zheliang Liu (Beijing Jiaotong University);*
- 12:30 Updated Comparison between Quantitative and Qualitative Approaches to Microwave-based Medical Diagnosis Imaging  
*Jean-Charles Bolomey (University Paris-Sud);*
- 12:50 A New Field Expansion Enabling the Compressive-Sensing-based Diagnosis of Realistic Planar Arrays through Phaseless Measurements  
*Andrea Francesco Morabito (University 'Mediterranea' of Reggio Calabria); Roberta Palmeri (Mediterranea University of Reggio Calabria); Tommaso Isernia (Mediterranea University of Reggio Calabria);*
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- Session 1A6**  
**SC1&SC4: Progress in Broadband and UWB Printed and Dielectric Antennas for Wireless Applications 1**
- 
- Monday AM, June 17, 2019**  
**Room Cloister Hall - 1st Floor**  
Organized by Renato Cicchetti, Antonio Faraone  
Chaired by Renato Cicchetti, Antonio Faraone
- 
- 09:00 A Dielectric-horn Integrated Resonator Antenna for Point-to-point Wireless Communications  
*Edoardo Baldazzi (Sapienza University of Rome); A. Al-Rawi (Eindhoven University of Technology); Renato Cicchetti (Sapienza University of Rome); Adrianus Bernardus Smolders (Technical University of Eindhoven); Diego Caratelli (The Antenna Company Nederland B.V.);*
- 09:20 Design of Irregularly Shaped Lens Antennas including Supershaped Feed  
*Luciano Mescia (Politecnico di Bari); C. M. Lamacchia (Politecnico di Bari); M. A. Chiapperino (Politecnico University of Bari); Pietro Bia (Elettronica S.p.A.); J. Gielis (University of Antwerp); Diego Caratelli (The Antenna Company Nederland B.V.);*

- 09:40 Dielectric Resonant Antennas via Additive Manufacturing for 5G Communications  
Invited  
*Valeria Marrocco (STIIMA-CNR Institute of Intelligent Industrial Technologies and Systems for Advanced Manufacturing, National Research Council); Vito Basile (STIIMA-CNR Institute of Intelligent Industrial Technologies and Systems for Advanced Manufacturing, National Research Council); Irene Fassi (STIIMA-CNR Institute of Intelligent Industrial Technologies and Systems for Advanced Manufacturing, National Research Council); Marco Grande (Politecnico di Bari); Dario Laneve (Polytechnic University of Bari); Francesco Pruden-*  
*zani (Politecnico di Bari); Antonella D'Orazio (Politecnico di Bari);*
- 10:00 High-gain V-band Dielectric Lens Antenna for Communication and Direction Finding Systems  
Keynote  
*Omid Manoochehri (University of Illinois at Chicago); Alan Salari (University of Cologne); Amin Darvazehban (University of Queensland); Danilo Erricolo (University of Illinois at Chicago);*
- 10:30 A Two-arm Slot Sinuous Antenna with Improved Polarization Stability  
Invited  
*L. Bartalucci (Universita di Firenze); S. Maddio (Universita di Firenze); Giuseppe Pelosi (University of Florence); M. Righini (Universita di Firenze); Luca Scorrano (Elettronica SpA); Stefano Selleri (University of Florence);*
- 11:00 **Coffee Break**
- 11:30 A Novel Class of Super-elliptical Vivaldi Antennas for UWB Applications  
*Simay Kazici (The Antenna Company); Abraham Loutridis (The Antenna Company); Diego Caratelli (The Antenna Company Nederland B.V.);*
- 11:50 Deterministic Synthesis of Conformal Aperiodic Antenna Arrays with Pencil-beam Radiation Pattern Characteristics  
Invited  
*Diego Caratelli (The Antenna Company);*
- 12:10 A Dual Polarized Stacked Antenna for 5G Mobile Devices  
Invited  
*Marco Simone (Consorzio Nazionale Interuniversitario delle Telecomunicazioni); Alessandro Fanti (University of Cagliari); Luigi Boccia (University of Calabria); Giandomenico Amendola (University of Calabria); Giuseppe Mazzarella (University of Cagliari);*
- 12:30 An Optimized Broadband Waveguide Magic-T for X-band Applications  
*Mahdi Khorsandy (Tarbiat Modares University); Alan Salari (University of Cologne); Alireza Pilevar (Shahid Beheshti University); Danilo Erricolo (University of Illinois at Chicago);*
- 12:50 A Numerical Study on the Robustness of Ultrawide Band Wearable Antennas with Respect to the Human Body Proximity  
*Giovanni Andrea Casula (University di Cagliari); Giuseppe Mazzarella (University of Cagliari);*
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- Session 1A7**  
**Optical Sensors, Fundamentals and Applications**
- 
- Monday AM, June 17, 2019**  
**Room 17 - 1st Floor**  
Organized by Cees Ronda  
Chaired by Cees Ronda
- 
- 09:00 Sensitivity Comparison under Flow-through and Flow-over Conditions of a Porous Silicon Film Detached by Lift-off  
*David Martin-Sanchez (Universitat Politècnica de València); Salvador Ponce-Alcantara (Universitat Politècnica de València); Jaime Garcia Ruperez (Universitat Politècnica de València);*
- 09:20 Thermo-optic Coefficient of Porous Silicon in the Infrared Region and Modelling of the Oxidation Process  
*David Martin-Sanchez (Universitat Politècnica de València); Miroslavna Kovylina (Universitat Politècnica de València); Salvador Ponce-Alcantara (Universitat Politècnica de València); Jaime Garcia Ruperez (Universitat Politècnica de València);*
- 09:40 Commercial Polycarbonate Filtration Membranes as Optical Sensors  
*Paula Martinez-Perez (Universitat Politècnica de València); Jaime Garcia Ruperez (Universitat Politècnica de València);*
- 10:00 Design and Performance Analysis of Ultra-compact Nano-plasmonic Refractive Index Sensor  
*Md. Farhad Hassan (Islamic University of Technology (IUT)); Md. Moudud Hasan (Islamic University of Technology (IUT)); Ishmam Ahmed Chowdhury (Islamic University of Technology (IUT)); Rakibul Hasan Sagor (Islamic University of Technology);*

- 10:20 Non-invasive Optical Sensing Method Based on Random Lasing  
*Federico Tommasi (Università di Firenze); Lorenzo Fini (Università di Firenze); Emilio Ignesti (Università di Firenze); Fabrizio Martelli (Università di Firenze); Stefano Cavaliere (Università di Firenze);*
- 10:40 A Universally Programmable Terahertz Chip-scale Sensor in Silicon with Direct Digital Reconfiguration of Scattering Interface  
*Kaushik Sengupta (Princeton University);*
- 11:00 **Coffee Break**
- 11:30 Polymer Resonators for Thermodynamics Fatty Acids Phase Transition Detection  
*L. Garnier (Université de Rennes 1); R. Castro-Beltran (Université de Rennes 1); A. St-Jalmes (Université de Rennes 1); H. Lhermite (Université de Rennes 1); E. Gicquel (Université de Rennes 1); H. Cormerais (Université de Rennes 1); A.-L. Fameau (Biopolymères Interactions Assemblages); A. Ghoufi (Université de Rennes 1); Bruno Beche (Université de Rennes 1);*
- 11:50 Multi-beam Processing Technology for High Resolution LiDAR Sensor  
*Jungwoo Kim (Samsung Advanced Institute of Technology); Tatsuhiko Otsuka (Samsung Advanced Institute of Technology); Yongchul Cho (Samsung Advanced Institute of Technology); Kyoung-Ho Ha (Samsung Advanced Institute of Technology);*
- 12:10 Deployable Sensor for Trace Identification of Hazardous Chemicals in Dirty Environment, Based on FAST Gas-chromatography and Quartz Enhanced Photoacoustic Spectroscopy  
*R. Viola (Consorzio CREO); Sandro Mengali (Consorzio CREO); N. Liberatore (Consorzio CREO); S. Zampolli (CNR-IMM Bologna); I. Elmi (CNR-IMM Bologna); F. Mancarella (CNR-IMM Bologna);*
- 12:30 Relationship between Human Glucose Level and Optical De/Polarization Information in 600 nm–800 nm Wavelength Region  
*Ercan Menguc (Akdeniz University); Selcuk Helhel (Akdeniz University);*
- 12:50 Investigation of Tunnel Field Effect Transistor for Biosensing Applications  
*Manjula Vijh (Amity University Uttar Pradesh); R. S. Gupta (Maharaja Agrasen Institute of Technology); Sujata Pandey (Amity University);*

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**Session 1A8**
**Photonics Packaging & Integration 1**


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**Monday AM, June 17, 2019**
**Room 6 - Mezzanine**

Organized by Francesco Floris

 Chaired by Francesco Floris
 

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- 09:00 PIXAPP and European Open Access Pilot Lines for Integrated Photonics  
*Padraic E. Morrissey (Tyndall National Institute);*
- 09:20 Wafer-level Packaging of Photonics and Electronics for Terabit-scale Optical Interconnects  
*Paraskevas Bakopoulos (Mellanox Technologies Ltd.); Peter Ossieur (IMEC and Ghent University); Antonio Jose Trindade (X-Celeprint, Ltd.); Patrick Steglich (IHP — Leibniz-Institut für Innovative Mikroelektronik); Igor Krestnikov (Innolume GmbH); Francesco Floris (University College Cork); Gunther Roelkens (Ghent University, IMEC); Mesut Inac (IHP — Leibniz-Institut Für Innovative Mikroelektronik); Dimitrios Kalavrouziotis (Mellanox Technologies Ltd.); David Gomez (X-Celeprint, Inc.); Lars Zimmermann (IHP); Joris Van Campenhout (IMEC); Elad Mentovich (Mellanox Technologies Ltd.);*
- 09:40 Pluggable Freespace Connectors Enabling Consumable Photonics  
*Kamil Gradkowski (Tyndall National Institute); Carmelo Scarcella (CERN); Luca Zagaglia (Tyndall National Institute); Francesco Floris (University College Cork); Peter O'Brien (Tyndall National Institute);*
- 10:00 Packaging Challenges in Field-programmable Photonic Arrays (FPPAs)  
*Prometheus Dasmahapatra (Universität Politècnica de València); Daniel Perez Lopez (Universität Politècnica de València); Jose Capmany (Universität Politècnica de València);*

- 10:20 **CORNERSTONE: Silicon Photonics MPW Capability**  
*H. Du (University of Southampton); C. Littlejohns (University of Southampton); D. T. Tran (University of Southampton); Xingzhao Yan (University of Southampton); M. Banakar (University of Southampton); Milos Nedeljkovic (University of Southampton); Graham Sharp (University of Glasgow); Marc Sorel (University of Glasgow); Roger Webb (University of Surrey); J. England (University of Surrey); Harold M. H. Chong (University of Southampton); Frederic Y. Gardes (University of Southampton); David J. Thomson (University of Southampton); Goran Z. Mashanovich (University of Southampton); Graham T. Reed (University of Southampton);*
- 10:40 **Optimized Design Procedure for Low-cost Grating-couplers in Photonics-packaging**  
*Luca Zagaglia (Tyndall National Institute); Francesco Floris (University College Cork); Peter O'Brien (Tyndall National Institute);*
- 11:00 **Coffee Break**
- 11:30 **Much More than Just Telecom/Datacom: Differentiation in Photonics Automated Assembly and Test**  
*Ignazio Piacentini (ficonTEC Service GmbH);*
- 11:50 **The Integrated Photonics Education Kit**  
*Abdelkrim El Amili (University of California at San Diego); Jordan Davis (University of California at San Diego); Francesco Floris (University College Cork); Lee Carroll (Tyndall National Institute); Peter O'Brien (Tyndall National Institute); Yesahiah Shaya Fainman (University of California at San Diego);*
- 12:10 **Micro-transfer-printing of InP Photonic Devices to Silicon Photonics**  
*Ruggero Loi (X-Celeprint Ltd.); James O'Callaghan (Tyndall National Institute); Brendan Roycroft (Tyndall National Institute); Antonio Jose Trindade (X-Celeprint, Ltd.); Alin Fecioru (X-Celeprint, Ltd.); Alex Farrell (X-Celeprint Ltd.); Steven Kelleher (X-Celeprint Ltd.); Raja Fazan Gul (X-Celeprint Ltd.); Simone Iadanza (Cork Institute of Technology); Liam O'Faolain (Cork Institute of Technology); Emanuele Pelucchi (Tyndall National Institute); Brian Corbett (Tyndall National Institute); David Gomez (X-Celeprint, Inc.);*
- 12:30 **Packaging Design Challenges of High Density High Speed Silicon Photonic Receiver**  
*How Yuan Hwang (Tyndall National Institute); Padraic Morrissey (Tyndall National Institute); Alexander Gazman (Columbia University); Yanir London (Columbia University); Keren Bergmen (Columbia University); Peter O'Brien (Tyndall National Institute);*
- 12:50 **Electronic-photonic Wafer-level Technologies for Fast Prototyping and Application Specific Solutions**  
*Andreas Mai (IHP — Leibniz-Institut für Innovative Mikroelektronik); Patrick Steglich (IHP — Leibniz-Institut für Innovative Mikroelektronik); Christian Mai (IHP — Leibniz-Institut für Innovative Mikroelektronik); Stefan Simon (IHP — Leibniz-Institut für Innovative Mikroelektronik); Rene Scholz (IHP — Leibniz-Institut für Innovative Mikroelektronik);*
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- Session 1A9**  
**Integrated Nanophotonics, Plasmonics and Graphene-based Devices 1**
- 
- Monday AM, June 17, 2019**  
**Room 4 - Mezzanine**  
 Organized by Marco Grande, Antonella D'Orazio  
 Chaired by Marco Grande, Antonella D'Orazio
- 
- 09:00 **How does Chemistry Enable Graphene Functionalities Invited for Microwave Applications?**  
*Giuseppe Valerio Bianco (Istituto di Nanotecnologia, CNR-NANOTEC); Marco Grande (Politecnico di Bari); A. D'Orazio (Politecnico di Bari); G. Bruno (Istituto di Nanotecnologia, CNR-NANOTEC);*
- 09:20 **A Woodpile Directional Coupler for Particle Acceleration**  
*Andrea Locatelli (Università degli Studi di Brescia); Giorgio Sebastiano Mauro (INFN-LNS (C.F. 84001850589)); Giuseppe Torrioni (Istituto Nazionale di Fisica Nucleare (INFN)); Luigi Celona (Istituto Nazionale di Fisica Nucleare (INFN)); Gino Sorbello (Istituto Nazionale di Fisica Nucleare); Costantino De Angelis (Università degli Studi di Brescia);*

- 09:40 RF and DC Electrical Characterization of a Woodpile EBG Waveguide for Microwave Ion Sources  
*Giorgio Sebastiano Mauro (INFN-LNS (C.F. 84001850589)); Andrea Locatelli (Università degli Studi di Brescia); Giuseppe Torrisi (Istituto Nazionale di Fisica Nucleare); O. Leonardi (Istituto Nazionale di Fisica Nucleare); F. Chines (Istituto Nazionale di Fisica Nucleare); Luigi Celona (Istituto Nazionale di Fisica Nucleare (INFN)); Costantino De Angelis (Università degli Studi di Brescia); Gino Sorbello (Istituto Nazionale di Fisica Nucleare); S. Gammino (Istituto Nazionale di Fisica Nucleare);*
- 10:00 Graphene Based Tunnel Field Effect Transistor for RF Applications  
*Manjula Vijh (Amity University Uttar Pradesh); R. S. Gupta (Maharaja Agrasen Institute of Technology); Sujata Pandey (Amity University);*
- 10:20 Guided Mode Resonances in Periodic Nanostructures  
*Marco Grande (Politecnico di Bari); Muhammad Fayyaz Kashif (Politecnico di Bari); Giuseppe Valerio Bianco (Istituto di Nanotecnologia, CNR-NANOTEC); Tiziana Stomeo (Istituto Italiano di Tecnologia (IIT)); Massimo De Vittorio (Center for Biomolecular Nanotechnologies, Istituto Italiano di Tecnologia); Michael Scalora (Charles M. Bowden Research Center, AMRDEC, RDECOM); Giovanni Bruno (Istituto di Nanotecnologia, CNR-NANOTEC); Antonella D'Orazio (Politecnico di Bari);*
- 10:40 Aluminum Based Engineered Plasmonic Nanostructures for Enhanced Refractive Index and Thickness Sensing in Ultraviolet-visible-near Infrared Spectral Range  
*Pankaj Arora (Birla Institute of Technology and Science Pilani); H. V. Awasthi (Birla Institute of Technology and Science Pilani);*
- 11:00 **Coffee Break**
- 11:30 Electrodynamics of Conductive Oxides: The New Invited Metals  
*Michael Scalora (Charles M. Bowden Research Center, AMRDEC, RDECOM); J. Trull (Università Politecnica de Catalunya); C. Cojocar (Università Politecnica de Catalunya); M. A. Vincenti (University of Brescia); D. De Ceglia (University of Padova); N. Akozbek (AEGIS Technologies Inc.); Joseph W. Haus (University of Dayton);*
- 11:50 Surface and Bulk Harmonic Generation in the Opaque Invited Region of GaAs  
*Crina Cojocar (Università Politecnica de Catalunya); L. R. Sune (Università Politecnica de Catalunya); Michael Scalora (Charles M. Bowden Research Center, AMRDEC, RDECOM); R. Vilaseca (Università Politècnica de Catalunya); J. Trull (Università Politecnica de Catalunya);*
- 12:10 Second-harmonic Generation from Hybrid Dielectric-Invited semiconductor Metasurfaces  
*Domenico De Ceglia (University of Padova); R. Sarma (Sandia National Laboratories); N. Nookala (University of Texas at Austin); M. A. Vincenti (University of Brescia); S. Campione (Sandia National Laboratories); O. Wolf (Sandia National Laboratories); Michael Scalora (Charles M. Bowden Research Center, AMRDEC, RDECOM); Michael B. Sinclair (Sandia National Laboratories); M. Belkin (University of Texas at Austin); Igal Brener (Sandia National Laboratories);*
- 12:30 Plasmon-emitter Interactions of a Three-level System beyond the Weak-coupling Regime  
*Alvaro Cuartero-Gonzalez (Universidad Autónoma de Madrid); Antonio I. Fernandez-Dominguez (Universidad Autónoma de Madrid);*
- 12:50 Single- and Multi-channel Nonlinear Effects in Graphene-enhanced Resonators  
*Thomas Christopoulos (Aristotle University of Thessaloniki); Odysseas Tsilipakos (Institute of Electronic Structure and Laser, FORTH); Georgios Sinatkas (Aristotle University of Thessaloniki); Emmanouil E. Kriezis (Aristotle University of Thessaloniki);*
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- Session 1A10**  
**SC3: Applications of Luminescence in Resonant Photonic Structures**
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- Monday AM, June 17, 2019**  
**Room 12 - Mezzanine**  
 Organized by Francesco Michelotti, Norbert Danz  
 Chaired by Francesco Michelotti, Norbert Danz
- 
- 09:00 Plasmonic Light Management for Fluorescence-based Invited Biosensors  
*Jakub Dostalek (AIT Austrian Institute of Technology GmbH);*

- 09:20 Simultaneous Detection of 3D Orientation and 3D Spatial Localization of Single Fluorescent Emitters  
*Valentina Curcio (Aix Marseille Univ., CNRS, Centrale Marseille, Institut Fresnel); Thomas G. Brown (University of Rochester); Miguel A. Alonso (Aix Marseille Univ., CNRS, Centrale Marseille, Institut Fresnel); Sophie Brasselet (Aix Marseille Univ., CNRS, Centrale Marseille, Institut Fresnel);*
- 09:40 Surface Concentration Quenching in Highly Resonant Photonic Crystal Fluorescence Biosensors  
*Alberto Sinibaldi (Sapienza University of Rome); A. Fieramosca (CNR NANOTEC Institute of Nanotechnology); Norbert Danz (Fraunhofer Institute for Applied Optics and Precision Engineering); Peter Munzert (Fraunhofer Institute for Applied Optics and Precision Engineering IOF); A. Occhicone (Sapienza University of Rome); C. Barolo (University of Turin); Francesco Michelotti (Sapienza University of Rome);*
- 10:00 Zeemann-splitting and Valley Polarization in Exciton-polaritons of Monolayer MoSe<sub>2</sub> embedded in a Monolithic Optical Cavity  
*Nils Lundt (Universität Würzburg); Evgeny S. Sedov (University of Southampton); Max Waldherr (Universität Würzburg); Martin Klaas (Universität Würzburg); Heiko Knopf (Fraunhofer Institute of Applied Optics and Precision Engineering IOF); Seafaating Tongay (Arizona State University); Sebastian Klembt (Universität Würzburg); Ulrike Schulz (Fraunhofer Institute of Applied Optics and Precision Engineering IOF); Alexey V. Kavokin (University of Southampton (GB)); Sven Hofling (Universität Würzburg); Falk Eilenberger (Friedrich Schiller University); Christian Schneider (Universität Würzburg);*
- 10:20 Anisotropic Light Absorption and Emission in Structured Nanoparticles  
Invited  
*Kristiaan Neyts (Ghent University); Yerzhan Ussembayev (Ghent University); Zeger Hens (Ghent University);*
- 11:00 **Coffee Break**
- 11:30 Tailoring of Photoluminescence Properties of Self-organized InAs Quantum Dots by Coupling with Plasmonic Nanoparticles  
*Vladimir V. Chaldyshev (The Ioffe Institute); Alexander Nikolaevich Kosarev (Ioffe Institute); Alexey Kondikov (Peter the Great St. Petersburg Polytechnic University); Ilya A. Akimov (University of Dortmund); Manfred Bayer (Technische Universität Dortmund); Nikita Toropov (ITMO University); Igor Gladskikh (ITMO University); Polina Gladskikh (ITMO University); Tigran A. Vartanyan (ITMO University); Valeriy V. Preobrazhenskiy (Rzhanov Institute of Semiconductor Physics); Michael A. Putyato (Rzhanov Institute of Semiconductor Physics); Boris Semyagin (Rzhanov Institute of Semiconductor Physics);*
- 11:50 Optimisation of Photonic Multilayer Structures to Enhance the Efficiency of Upconversion Processes  
*Fabian Spallek (Albert-Ludwigs-Universität); A. Buchleitner (Albert-Ludwigs-Universität); Thomas Wellens (Albert-Ludwigs-Universität);*
- 12:10 Analysis of Emitter Orientation Utilizing Resonant Emission on 1D Photonic Crystals  
*Norbert Danz (Fraunhofer Institute for Applied Optics and Precision Engineering); Dirk Michaelis (Fraunhofer Institute for Applied Optics and Precision Engineering); Peter Munzert (Fraunhofer Institute for Applied Optics and Precision Engineering IOF); Christof Pflumm (Merck KGaA); Antonia Horn (Merck KGaA); Francesco Michelotti (Sapienza Università di Roma);*
- 12:30 Non-isotropic Light-emission from Organic and Perovskite Nanostructures  
Invited  
*Thomas Morgenstern (University of Augsburg); Wolfgang Bruetting (University of Augsburg);*

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**Session 1A11**
**SC2: Modeling of Metamaterials and Metasurfaces 1**


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**Monday AM, June 17, 2019**
**Room 11 - Mezzanine**

Organized by Ying Wu

 Chaired by Ying Wu
 

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- 09:00 Theory for Plasmonic Open Systems Derived from First Principles  
*Jing Lin (Fudan University); Meng Qiu (Fudan University); Xiyue Zhang (Fudan University); Huijie Guo (Fudan University); Qiong He (Fudan University); Shiyi Xiao (Fudan University); Lei Zhou (Fudan University);*

- 09:20 Metasurface-enabled Airborne Fractional Acoustic Vortex Emitter  
*Yu-Rou Jia (Nanjing Normal University); Qi Wei (Nanjing Normal University); Da-Jian Wu (Nanjing Normal University); Xue-Wei Wu (Nanjing University); De-Sheng Ding (Southeast University);*
- 09:40 Metamaterial-based Subwavelength Acoustic Antenna with Tunable Directivity  
*Jin Zhang (Nanjing University); Ying Cheng (Nanjing University); Xiaojun Liu (Nanjing University);*
- 10:00 Extremely Anisotropic Media by Waveguide Metamaterials with Low Loss  
*Wenjie Ji (Soochow University); Jie Luo (Soochow University); Yun Lai (Nanjing University);*
- 10:20 Duality of Spoof Surface Plasmon Polaritons on the Complementary Structures of Ultrathin Metal Films  
*Hong Xiang (Chongqing University); Dezhuan Han (Chongqing University);*
- 10:40 2D All-dielectric Metasurfaces Based on Electric and Magnetic Mie Resonances  
*Jun Mei (South China University of Technology); Yanzhi Chen (South China University of Technology);*
- 11:00 **Coffee Break**
- 11:30 Type-II Dirac Phonons in a Monolayer Phononic Crystal  
*Chang Qing Xu (Soochow University); Guancong Ma (Hong Kong Baptist University); Ying Wu (King Abdullah University of Science and Technology (KAUST));*
- 11:50 Modeling and Experimental Characterization of Rapidly-produced Microwave Metasurfaces  
*Dragoslav Grbovic (Naval Postgraduate School); Fabio Alves (Naval Postgraduate School);*
- 12:30 Photonic Band Gaps in Self-assembled Colloidal Structures  
*Duanduan Wan (University of Michigan); Sharon C. Glotzer (University of Michigan);*
- 09:00 Hot-electron Effects in Plasmonic Heterostructures  
Invited  
*Pan Wang (King's College London); J. Salmon (King's College London); A. Bykov (King's College London); Giovanni Sartorello (King's College London); D. Roth (King's College London); A. V. Krasavin (King's College London); Anatoly V. Zayats (King's College London);*
- 09:20 Ultrafast Transient Optical Response of Gold, Silver and Gold-silver Nanoparticles  
Invited  
*T. O. Otomalo (Université Paris Saclay); L. Di Mario (Istituto di Struttura della Materia (ISM), CNR, Division of Ultrafast Processes in Materials (FLASHit)); F. Martelli (Istituto di Struttura della Materia (ISM), CNR, Division of Ultrafast Processes in Materials (FLASHit)); Patrick O'Keeffe (CNR-ISM); D. Catone (CNR-ISM); C. Hamon (Université Paris Saclay); K.-V. Do (Université Paris Saclay); T. Lin (Istituto per la Microelettronica e i Microsistemi (IMM), CNR); S. Turchini (CNR-ISM); Bruno Palpant (Université Paris Saclay);*
- 09:40 Enhanced Nonlinear Nanophotonics with Dielectric and Hybrid Antennas  
Invited  
*Michele Celebrano (Politecnico di Milano); Lavinia Ghirardini (Politecnico di Milano); Giovanni Pellegrini (Politecnico di Milano); Lamberto Duo (Politecnico di Milano); Marco Finazzi (Politecnico di Milano); Carlo Gigli (Laboratoire Matériaux et Phénomènes Quantiques, CNRS UMR 7162, Université Paris Diderot); Valerio F. Gili (Université Paris Diderot-CNRS); Giuseppe Marino (Université Paris Diderot & CNRS); Ivan Favero (Université Paris Diderot, UMR7162, CNRS); Giuseppe Leo (Université Paris Diderot); Davide Rocco (Università degli Studi di Brescia & INO-CNR); Luca Carletti (University of Brescia); Andrea Locatelli (Università degli Studi di Brescia); Costantino De Angelis (Università degli Studi di Brescia); Aristide Lemaitre (LPN/CNRS); Dragomir N. Neshev (Australian National University);*

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**Session 1A12**

**FocusSession.SC2: Hybrid and Plasmonic Metastructures 1**

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**Monday AM, June 17, 2019**

**Room 21 - 2nd Floor**

Organized by Roberto Caputo, Antonio De Luca

Chaired by Roberto Caputo

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10:00 Hot-spots in Plasmonic Photocatalysis

Invited

*Miguel A. Correa-Duarte (Universidade de Vigo);*

10:20 Recent Advances in the Bottom-up Approach to Artificial Optical Magnetism  
Invited

*Philippe Barois (CNRS, Université de Bordeaux); A. Baron (CNRS, Université de Bordeaux); R. Dezert (CNRS, Université de Bordeaux); E. Duguet (CNRS, Université de Bordeaux); R. Elancheliyan (CNRS, Université de Bordeaux); V. Many (CNRS, Université de Bordeaux); O. Mondain-Monval (CNRS, Université de Bordeaux); V. Ponsinet (CNRS, Université de Bordeaux); S. Ravaine (CNRS, Université de Bordeaux); P. Richetti (CNRS, Université de Bordeaux); M. Treguer-Delapierre (CNRS, Université de Bordeaux);*

11:40 Label-free Sensitive Detection of Enteric Viruses Based on Octupolar Nanostructures  
Invited

*Massimo Rippa (Institute of Applied Sciences and Intelligent Systems “E. Caianiello”, CNR); Riccardo Castagna (Institute of Applied Sciences and Intelligent Systems “E. Caianiello”, CNR); G. Fusco (Istituto Zooprofilattico Sperimentale del Mezzogiorno); Joseph Zyss (LPQM-Ecole Normale Supérieure de Cachan); Lucia Petti (Institute of Applied Sciences and Intelligent Systems — ISASI, CNR);*

11:00 **Coffee Break**

11:30 Photonics of Hybrid Nanostructures and Bio-assemblies: Coherent Transfer of Plasmons, Hot Electrons and Chirality  
Keynote

*Alexander O. Govorov (Ohio University); Lucas V. Besteiro (Ohio University);*

12:00 CMOS-based Nano-plasmonic Systems on Chip  
*Kaushik Sengupta (Princeton University);*

12:15 Low-loss Spoof Surface Plasmon-polariton Transmission Lines for Microwave and Integrated Circuits Applications

*Vladimir Litun (Bauman Moscow State Technical University); Konstantin Lyulyukin (Bauman Moscow State Technical University);*

12:30 Optical Cages as Highly Absorbing Screens

*J. P. Walker (NJIT); V. Kumar (NJIT); Haim Grebel (NJIT: New Jersey’s Science & Technology University);*

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### Session 1A13

#### SC3&SC4: Advances in Optical Sources: Materials, Devices, Applications 1

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Monday AM, June 17, 2019

Room 22 - 2nd Floor

Organized by Francesco Prudenzano, Irina T. Sorokina

Chaired by Francesco Prudenzano

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09:00 Nonlinear Laser Frequency Conversion in Microstructured Periodically Poled Photonic Crystals: Experiments and Computational Modeling

*Oleg A. Louchev (Center for Advanced Photonics, RIKEN); Satoshi Wada (Center for Advanced Photonics, RIKEN);*

09:20 RF-sputtering Technique for Fabrication of Glass Based 1D Photonic Crystals  
Invited

*C. Meroni (Università di Trento); Francesco Scognella (Politecnico di Milano); Yann G. Boucher (ENIB); Anna Lukowiak (Institute of Low Temperature and Structure Research, PAS); D. Ristic (Institut Ruder Boskovic); G. Speranza (FBK CMM FMPS Unit); S. Varas (IFN-CNR CSMFO Lab. and FBK CMM); L. Zur (IFN-CNR CSMFO Lab. and FBK CMM); Mile Ivanda (Ruder Boskovic Institute); Stefano Taccheo (Swansea University); O. Sayginer (University of Trento); L. T. N. Tran (IFN-CNR CSMFO Lab. and FBK CMM); C. Armellini (IFN-CNR CSMFO Lab. and FBK CMM); D. Zonta (IFN-CNR CSMFO Lab. and FBK CMM); O. S. Bursi (University of Trento); Roberta Ramponi (Institute of Photonics and Nanotechnology (IFN) — CNR); G. C. Righini (IFAC CNR); Maurizio Ferrari (CNR-IFN, Istituto di Fotonica e Nanotecnologie); Alessandro Chiasera (IFN-CNR CSMFO Lab. and FBK CMM);*

09:40 Modeling and Design of Brillouin Integrated Optical Sources  
Invited

*Vittorio M. N. Passaro (Politecnico di Bari); Francesco De Leonardis (Politecnico di Bari); Richard A. Soref (University of Massachusetts Boston);*

10:00 Hybrid Plasmonic-ferroelectric Architectures for Integrated Nonlinear Optics  
Invited

*Alejandro Gomez Tornero (Universidad Autonoma de Madrid); Pablo Palacios Alonso (Universidad Autonoma de Madrid); Pablo Molina (Universidad Autonoma de Madrid); Luisa E. Bausa (Universidad Autonoma de Madrid); Mariola O. Ramirez (Universidad Autonoma de Madrid);*

- 10:20 Design and Optimization of Wideband Spectrum Lasing  
*Mario Christian Falconi (Polytechnic University of Bari); Dario Laneve (Polytechnic University of Bari); Stefano Taccheo (Swansea University); Francesco Prudeniano (Politecnico di Bari);*
- 10:40 Ultrafast Dy:fluoride Fiber Laser beyond 3  $\mu\text{m}$   
 Invited  
*Y. Wang (Istituto di Fotonica e Nanotecnologie — CNR); Simon Duval (Université Laval); L. R. Robichaud (Université Laval); M. Olivier (Université Laval); F. Jobin (Université Laval); P. Paradis (Université Laval); Vincent Fortin (Université Laval); Martin Bernier (Université Laval); M. Piche (Université Laval); P. Laporta (Université Laval); Gianluca Galzerano (Istituto di Fotonica e Nanotecnologie — CNR); R. Vallee (Université Laval);*
- 11:00 **Coffee Break**
- 11:30 Mid-IR Supercontinuum Generation in Rare Earth-doped Optical Fibers  
*Mario Christian Falconi (Polytechnic University of Bari); Dario Laneve (Polytechnic University of Bari); Caterina Clemente (Polytechnic University of Bari); Giovanna Ricchiuti (Polytechnic University of Bari); Antonio Crudele (Polytechnic University of Bari); Michele Bozzetti (Politecnico di Bari); Virginie Nazabal (University of Rennes 1); Irina T. Sorokina (Norwegian University of Science and Technology); Francesco Prudeniano (Politecnico di Bari);*
- 12:10 All-fiber, Ultrafast Seed Sources Operating in 2  $\mu\text{m}$  Spectral Range  
*Jaroslav Sotor (Wroclaw University of Technology); Maria Pawliszewska (Wroclaw University of Science and Technology); Olga Drozdowska (Wroclaw University of Science and Technology); Dorota Tomaszewska (Wroclaw University of Science and Technology); Grzegorz Sobon (Wroclaw University of Technology);*
- 12:30  $\text{Pr}^{3+}/\text{Dy}^{3+}$  Codoped Selenide-chalcogenide Multimode Fiber Based MIR Spontaneous Emission Sources with Broad Emission Spectra for Sensor Applications  
 Invited  
*L. Sojka (Wroclaw University of Science and Technology); D. Jayasuriya (The University of Nottingham); M. Shen (University of Nottingham); Z. Q. Tang (University of Nottingham); David Furniss (The University of Nottingham); E. Barney (University of Nottingham); Trevor Mark Benson (The University of Nottingham); A. B. Seddon (University of Nottingham); Slawomir Sujecki (Wroclaw University of Science and Technology);*
- 12:50 Simulation of Aperiodic Amplitude Diffraction Gratings Based on Prouhet-Thue-Morse Sequence  
*Dobrosław P. Egorov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); Dmitry Victorovich Churikov (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences); Oleg V. Kravchenko (Bauman Moscow State Technical University); Mikhail A. Basarab (Bauman Moscow State Technical University);*
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- Session 1A14**  
**FocusSession.SC3: Nanophotonics 1**
- 
- Monday AM, June 17, 2019**  
**Room 24 - 2nd Floor**  
 Organized by Yeshaiahu Shaya Fainman, Newton C. Frateschi  
 Chaired by Yeshaiahu Shaya Fainman, Newton C. Frateschi
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- 09:00 Waves, Modes, and Nanophotonics  
 Keynote  
*David A. B. Miller (Stanford University);*
- 09:30 Large-scale Silicon Photonic Switches  
 Invited  
*Kyungmok Kwon (University of California); Tae Joon Seok (Gwangju Institute of Science and Technology); Johannes Henriksson (University of California); Jianheng Luo (University of California); Ming C. Wu (University of California, Berkeley);*
- 09:50 Large-scale Silicon Photonics Switch for High Throughput and Energy Efficient Datacenter Network  
 Invited  
*Kazuhiro Ikeda (National Institute of Advanced Industrial Science and Technology (AIST)); Keiji Suzuki (National Institute of Advanced Industrial Science and Technology (AIST)); Ryotaro Konoike (National Institute of Advanced Industrial Science and Technology (AIST)); Shu Namiki (National Institute of Advanced Industrial Science and Technology (AIST)); Hitoshi Kawashima (National Institute of Advanced Industrial Science and Technology (AIST));*
- 10:10 Nanomaterial-enhanced Integrated Photonics  
 Invited  
*Andrea M. Armani (University of Southern California); Hyungwoo Choi (University of Southern California); Xiaoqin Shen (University of Southern California); Andre Kovach (University of Southern California); Jinghan He (University of Southern California);*

10:30 Kerr Nonlinear Optical Signal Processing in Ultra-silicon-rich Nitride-based Devices  
Invited

*Dawn T. H. Tan (Singapore University of Technology and Design); K. J. A. Ooi (Singapore University of Technology and Design); D. K. T. Ng (Technology and Research (A\*STAR)); E. Sahin (Singapore University of Technology and Design); J. W. Choi (Singapore University of Technology and Design); P. Xing (Singapore University of Technology and Design); G. F. R. Chen (Singapore University of Technology and Design); B. U. Sohn (Singapore University of Technology and Design); H. Gao (Singapore University of Technology and Design);*

11:00 **Coffee Break**

11:30 Enabling Novel Features of Heterogeneous III-V on Si Lasers with Resonant Si Embedded Photonic Molecules Mirrors  
Invited

*G. F. M. De Rezende (University of Campinas); Gunther Roelkens (Ghent University-IMEC); Newton C. Frateschi (Universidade Estadual de Campinas);*

11:50 Mechanism of Ultra-broad Wavelength Tuning Range from InP/InGaAs Nano-lasers Grown on SOI

*Wai Kit Ng (Hong Kong University of Science and Technology); Yu Han (Hong Kong University of Science and Technology); Kei-May Lau (Hong Kong University of Science and Technology); Kam Sing Wong (Hong Kong University of Science and Technology);*

12:05 Progress on Neuromorphic Silicon Photonics

Keynote

*Paul R. Prucnal (Princeton University); Alexander N. Tait (NIST); Mitchell A. Nahmias (Princeton University); Thomas Ferreira De Lima (Princeton University); Hsuan-Tung Peng (Princeton University); Bhavin J. Shastri (Queen's University);*

12:35 Slow Plasmonic and Photonic Waveguides: A Parallel  
Invited

*Philippe Lalanne (Institut d'Optique-LP2N/CNRS);*

12:55 Reflective Color Filters with Enlarged Color Gamut Enabled by Stacking Silicon Nanowires on Thin-film Coatings

*Young Min Song (Gwangju Institute of Science and Technology); Gil Ju Lee (Gwangju Institute of Science and Technology); Yeong Jae Kim (Gwangju Institute of Science and Technology); Young Jin Yoo (Gwangju Institute of Science and Technology);*

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### Session 1A15

#### FocusSession.SC3: Photosensitive Materials and Devices for Opto-mechanical Applications 1

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Monday AM, June 17, 2019

Room 25 - 2nd Floor

Organized by Atsushi Shishido, Marina Grenzer Saphiannikova

Chaired by Marina Grenzer Saphiannikova, Takahiro Seki

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09:00 Creation of Functional Photostimuli Responsive Supramolecular Materials Based on Host-guest Interactions  
Invited

*Yoshinori Takashima (Osaka University);*

09:20 Beyond Azobenzenes: Diversifying the Toolbox of Light-responsive Molecules for Soft Actuators  
Invited

*Alexander Ryabchun (University of Twente); Federico Lancia (University of Twente); Nathalie Katsolis (University of Twente);*

09:40 Mechanical Motions by Photo-induced Reversible Crystal-to-liquid Phase Transition of Azobenzene  
Invited

*Yasuo Norikane (National Institute of Advanced Industrial Science and Technology (AIST));*

10:00 Photoinduced Mass Transfer Directed by Inkjet Printing Patterns on Photoresponsive Liquid Crystalline Polymer Films

*Issei Kitamura (Nagoya University); Mitsuo Hara (Nagoya University); Shusaku Nagano (Nagoya University Venture Business Laboratory); Takahiro Seki (Nagoya University);*

10:15 Design and Implementation of Complex Periodic Patterns on Thin Azopolymer Films

*Marcella Salvatore (University of Naples "Federico II"); Stefano Luigi Oscurato (University of Naples "Federico II"); Fabio Borbone (University of Naples "Federico II"); Pasqualino Maddalena (University of Naples "Federico II"); Antonio Ambrosio (Harvard University);*

10:30 Towards Autonomous, Adaptive, and Programmable Photomechanical Actuators  
Keynote(Re)

*Arri Priimagi (Tampere University of Technology);*

11:00 **Coffee Break**

11:30 Photoinduced Healing and Pressure-sensitive Adhesion Properties of Amorphous Polymers Containing Azobenzene-doped Liquid Crystals  
Invited

*Takahiro Yamamoto (National Institute of Advanced Industrial Science and Technology);*

- 11:50 Reversible Phase Transition of Three-arm Azobenzene Stars under the Influence of UV-Vis Light  
Invited *Olga Guskova (Leibniz-Institut für Polymerforschung Dresden); Markus Koch (Leibniz-Institut für Polymerforschung Dresden);*
- 12:10 Two-dimensional Alignment Control of Liquid Crystals by Scanning Wave Photopolymerization  
Invited *Atsushi Shishido (Tokyo Institute of Technology);*
- 12:30 Reversible Surface Structuring of Photosensitive Polymer Films: In-situ Atomic Force Microscopy and Diffraction Efficiency Measurements  
Invited *Joachim Jelken (University of Potsdam); Svetlana Santer (University of Potsdam);*
- 12:50 Mechano-optical Behavior of Chiral Liquid-crystalline Elastomers  
Invited *Osamu Tsutsumi (Ritsumeikan University); Ku Kyosun (Ritsumeikan University); Seiya Kimura (Ritsumeikan University); Kyoko Yuasa (Ritsumeikan University); Kyohei Hisano (Ritsumeikan University);*
- 10:40 Vertical Re-crystallization Control for Efficient and Stabled Formamidinium Perovskite Solar Cells  
Invited *Fengxian Xie (Fudan University);*
- 11:00 **Coffee Break**
- 11:30 Nanoparticle-enhanced Silver Nanowire Plasmonic Electrodes for High-performance Polymer Solar Cells  
Invited *Jin Young Kim (Ulsan National Institute of Science and Technology (UNIST));*
- 11:50 Molecularly Engineered Interfaces in Perovskite Materials and Devices  
Invited *Hin-Lap Yip (South China University of Technology);*
- 12:10 Interface Engineering in Solution processed Organic and Hybrid Perovskite Solar Cells  
Invited *Gang Li (Hong Kong Polytechnic University); Ping-Li Qin (Hong Kong Polytechnic University); Guang Yang (Hong Kong Polytechnic University); Mriganka Singh (Hong Kong Polytechnic University); Chih-Wei Chu (Research Center for Applied Sciences, Academia Sinica);*

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**Session 1A16**

**3\_ PIER\_ Special\_ Issue\_ Session: Organic and Perovskite Optoelectronics 1**

**Monday AM, June 17, 2019**

**Room 15 - 2nd Floor**

Organized by Wallace C. H. Choy, Tae-Woo Lee

Chaired by Wallace C. H. Choy, Tae-Woo Lee

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- 09:00 A New Method to Enable Stable and High-brightness EL in Perovskite LEDs through Self-passivation by Subsequently Growing Large and Small Grains with Configuration of Attaching Small Grains on Surfaces of Large Grains through One-step Solution Processing  
Invited *Bin Hu (University of Tennessee);*
- 09:20 Grazing-incidence X-ray Scattering Characterization of Organic and Perovskite Solar Cells  
Invited *Xinhui Lu (The Chinese University of Hong Kong);*
- 09:40 Perovskite Optoelectronics: From Photoconversion to Light Emission  
Invited *Dong Ha Kim (Ewha Womans University);*
- 10:00 High-performance Polymer: PCBM Organic Photovoltaics Enabled by Conjugated Random Copolymer  
Invited *Taeshik Earmme (Hongik University);*
- 10:20 The Application of 2-D Materials in Organic and Perovskite Solar Cells  
Invited *Feng Yan (The Hong Kong Polytechnic University);*
- 12:30 Solution-processed Electrodes for Flexible Organic and Perovskite Solar Cells  
Invited *Zijian Zheng (Hong Kong Polytechnic University); Yaokang Zhang (Hong Kong Polytechnic University);*
- 12:50 Realizing Monolithic Tandem Solar Cells with Solution-processed Perovskites through a New Class of Interconnection Structure System  
Invited *Wallace C. H. Choy (The University of Hong Kong); Can Li (The University of Hong Kong); Zi Shuai Wang (The University of Hong Kong);*

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**Session 1A17**

**SC1&SC4: Localized Waves: Science and Applications 1**

**Monday AM, June 17, 2019**

**Room 33 - Bank Building**

Organized by Mauro Ettore, Walter Fuscaldo

Chaired by Mauro Ettore, Walter Fuscaldo

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- 09:00 Localized Waves for Wireless Near-field Links: Perspectives and Challenges  
*Walter Fuscaldo (Sapienza University of Rome); M. Ettore (Université de Rennes 1);*
- 09:20 Time-diffracting Wave Packets and Localized Waves  
*Miguel A. Porrás (Universidad Politécnica de Madrid);*

- 09:40 Quantum and Classical X-waves with Angular Momentum  
Keynotementum  
*Marco Ornigotti (Tampere University); Alexander Szameit (Universität Rostock); Claudio Conti (University Sapienza);*
- 10:10 Problems of Generation and Propagation of Spatiotemporally Localized Wavepackets  
*Peeter Saari (University of Tartu);*
- 10:30 Extended Spatiotemporally Localized Waves in the Presence of Inhomogeneity and Temporal Dispersion  
*Ioannis M. Besieris (Virginia Polytechnic Institute and State University); Amr M. Shaarawi (The American University in Cairo);*
- 11:00 **Coffee Break**
- 11:30 Constructing Millimeter-structured Surface Beams from Nondiffracting Zeroth-order Bessel Beams in Lossless Media  
*Jhonas Olivati de Sarro (University of Sao Paulo); Leonardo Andre Ambrosio (University of Sao Paulo);*
- 11:50 Design of a Wireless Link at Microwaves in the Radiative Near-field by Using RLSA Bessel Beam Launchers  
*Santi Concetto Pavone (University of Siena); Matteo Albani (University of Siena);*
- 12:10 Two-dimensional Quasi-Bessel Beam Synthesis and Frequency-scanning Leaky-wave Launchers  
*Miguel Poveda-Garcia (Technical University of Cartagena); Jose Luis Gomez Tornero (Technical University of Cartagena);*
- 12:30 Generating and Steering of Quasi-nondiffraction Beam by Substrate Integrated Waveguide Slot Array Antenna  
*Ya Fei Wu (University of Electronic Science and Technology of China); Yujian Cheng (University of Electronic Science and Technology of China);*
- 12:50 A Simple Method for the Design of Millimeter-structured Inclined Beams: Inclined Superpositions of Zeroth-order Bessel Beams  
*Vinicius Soares De Angelis (University of São Paulo); Leonardo Andre Ambrosio (University of Sao Paulo);*
- 09:00 Quantum Research CubeSat (QUARC)  
Invited  
*Luca Mazzarella (University of Strathclyde); Christopher Lowe (University of Strathclyde); David Lowndes (University of Bristol); Steve Greenland (Craft Prospect LTD); Steve R. Owens (University of Strathclyde); Siddarth Joshi (University of Bristol); Doug McNeil (Craft Prospect Ltd); Malcolm Macdonald (University of Strathclyde); John G. Rarity (University of Bristol); Daniel K. L. Oi (University of Strathclyde);*
- 09:20 Continuous-variable Quantum Key Distribution on Ground and in Space  
Invited  
*Eleni Diamanti (Sorbonne University);*
- 09:40 Modulation Schemes for Long Distance Optical Communication  
*Andrea Farkasvolgyi (Budapest University of Technology and Economics); Istvan Frigyes (Budapest University of Technology and Economics);*
- 10:00 Accurate BER Estimation Scheme in Coherent Optical Communication  
*Yanfu Yang (Harbin Institute of Technology); Qun Zhang (Harbin Institute of Technology); Yong Yao (Harbin Institute of Technology);*
- 10:20 Towards High-dimensional Quantum Communication in Space  
Invited  
*Fabian Steinlechner (Fraunhofer Institute for Applied Optics and Precision Engineering); Oliver De Vries (Fraunhofer Institute for Applied Optics and Precision Engineering); Markus Grafe (Fraunhofer Institute for Applied Optics and Precision Engineering); Erik Beckert (Fraunhofer Institute for Applied Optics and Precision Engineering);*
- 11:00 **Coffee Break**
- 11:30 Space Laser Communication Systems for High Rate Data Transmission and Quantum Key Distribution  
Invited  
*Florian Moll (Institute of Communications and Navigation); Benjamin Roediger (Institute of Communications and Navigation); Christopher Schmidt (Institute of Communications and Navigation); Christian Fuchs (Institute of Communications and Navigation);*

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**Session 1A18**

**SC3: Satellite Quantum and Optical Communication**

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**Monday AM, June 17, 2019**

**Room 38 - Chemistry Building**

Organized by Giuseppe Vallone

Chaired by Florian Moll, Eleni Diamanti

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- 11:50 Quantum Communications and Fundamental Physics in Space  
*Giuseppe Vallone (University of Padova); C. Agnesi (University of Padova); G. Bianco (Matera Laser Ranging Observatory, Agenzia Spaziale Italiana); L. Calderaro (University of Padova); D. Dequal (Matera Laser Ranging Observatory, Agenzia Spaziale Italiana); D. G. Marangon (University of Padova); V. Luceri (E-GEOS spa); M. Schiavon (University of Padova); A. Santamato (University of Padova); A. Stanco (University of Padova); M. Tomasin (University of Padova); F. Vedovato (University of Padova); P. Villoresi (University of Padova);*
- 12:10 Estimation of Optical Wireless Communication Link Availability Using Meteorological Visibility Data for Major Locations in South Africa  
*Olabamidele O. Kolawole (University of KwaZulu-Natal); Thomas Joachim Odhiambo Afullo (University of KwaZulu-Natal (UKZN)); Modisa Mosalaosi (University of KwaZulu-Natal);*
- 10:00 Backward Energy Flux in Sharp Focus of Beams with Linear and Circular Polarization  
*Victor V. Kotlyar (Image Processing Systems Institute of the Russian Academy of Sciences); Anton G. Nalimov (Image Processing Systems Institute — Branch of the Federal Scientific Research Centre “Crystallography and Photonics” of RAS); Sergey S. Stafeev (Image Processing Systems Institute — Branch of the Federal Scientific Research Centre “Crystallography and Photonics” of RAS);*
- 10:20 Tiered Structure of Maxwell’s Equations  
*Manuel Fernandez-Guasti (Universidad Autonoma Metropolitana Iztapalapa);*
- 10:40 New Theory of Matter  
*Patricio E. Munhoz-Rojas (LACTEC — Instituto de Tecnologia para o Desenvolvimento);*
- 11:00 **Coffee Break**
- 11:30 Numerical Simulation of Magnetohydrodynamic Blood Flow through Stenosed Arteries Using the R-functions Method  
*Mikhail A. Basarab (Bauman Moscow State Technical University); Natalia S. Konnova (Bauman Moscow State Technical University); Dmitrii A. Basarab (St. Ioasaf’s Belgorod Regional Hospital); Oleg V. Kravchenko (Bauman Moscow State Technical University);*

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**Session 1A19**

**Electromagnetic Theory**

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**Monday AM, June 17, 2019**

**Room 39 - Electrical Building**

Chaired by Leung Tsang, Piergiorgio L. E. Uslenghi

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- 09:00 Scattering by Wide-angle Cones: Exact and Asymptotic Solutions  
*Michael Katsav (Tel Aviv University); Ehud Heyman (Tel-Aviv University);*
- 09:20 Exact Geometrical Optics Scattering by a Truncated Metallic Cylinder of Rectangular Cross Section under Multiple Plane Waves Illumination  
*Piergiorgio L. E. Uslenghi (University of Illinois at Chicago);*
- 09:40  $\mathcal{PT}$ -symmetric Tight-binding Model with Asymmetric Couplings  
*Lilian Aurora Moreno Rodriguez (Universidad Autonoma de Puebla); Felix M. Izrailev (Universidad Autonoma de Puebla); Jose Antonio Mendez Bermudez (Universidad Autonoma de Puebla);*
- 11:50 Remote Assembly of Magnetic and Nonmagnetic Microspheres into Discrete Symmetric Geometries Using External Magnetic Field, and Their Permanent Fixation  
*Kanna Aoki (National Institute of Information and Communications Technology); Shoya Takidani (Kobe University); Takuma Yamamoto (Kobe University); Minoru Fujii (Kobe University);*
- 12:10 Artificial Intelligence Techniques Applied to the Characterization of Magnetic Materials  
*Simone Quondam Antonio (University of Perugia);*
- 12:30 Characteristics of Rain Attenuation for Microwave-to-terahertz Waveband from Raindrop Size Distribution Observation in Indonesia  
*Marzuki (Andalas University); Meri Yoseva (Andalas University); Hiroyuki Hashiguchi (Kyoto University); Mutya Vonnisa (Andalas University); Harmadi (Andalas University); Lorenzo Luini (DEIB — Dipartimento di Elettronica, Informazione e Bioingegneria); Sugeng Nugroho (Indonesian Agency for Meteorological, Climatological and Geophysics); Muzirwan (National Institute of Aeronautics and Space); Mohamad Ali Shafii (Andalas University);*

- 12:50 The Effect of Feeding Point on Electromagnetic Emission Due to Heat Sink  
*Alparslan Bozkurt Karaman (Akdeniz University); Atalay Kocakusak (Akdeniz University); Abdullah Genc (Suleyman Demirel University); Selcuk Helhel (Akdeniz University);*

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**Session 1A20**

**Topological Acoustics 1**

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**Monday AM, June 17, 2019**

**Room 40 - Electrical Building**

Organized by Meng Xiao, Chunyin Qiu

Chaired by Meng Xiao, Chunyin Qiu

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- 09:00 Sonic Valley-Hall Topological Antennas and Non-Hermitian Second-order Topological Insulator  
*Zhiwang Zhang (Nanjing University); Maria Rosendo Lopez (Universidad Carlos III de Madrid); Ying Cheng (Nanjing University); Xiaojun Liu (Nanjing University); Johan Christensen (Universidad Carlos III de Madrid);*
- 09:20 Spin-redirected Geometric Phase of Acoustic Vortices  
*Shubo Wang (City University of Hong Kong); Guancong Ma (Hong Kong Baptist University); Che Ting Chan (The Hong Kong University of Science and Technology);*
- 09:40 Observation of Second-order Topology and Multi-dimensional Topological Transitions in Sonic Crystals  
*Xiujuan Zhang (Nanjing University); Hai-Xiao Wang (National Taiwan University); Zhi-Kang Lin (Soochow University); Yuan Tian (Nanjing University); Biye Xie (Nanjing University); Ming-Hui Lu (Nanjing University); Yan-Feng Chen (Nanjing University); Jian-Hua Jiang (Soochow University);*
- 10:00 Reconfigurable Topological Acoustic Devices  
*Zhiwang Zhang (Nanjing University); Ying Cheng (Nanjing University); Xiaojun Liu (Nanjing University); Johan Christensen (Nanjing University);*
- 10:20 Efficient Characterizations of Topological Acoustics Using the Broadband Green's Function  
*Shurun Tan (University of Michigan); Leung Tsang (University of Michigan);*
- 10:40 Acoustic Topological Fano Resonances  
*Farzad Zangeneh-Nejad (Ecole Polytechnique Federale de Lausanne (EPFL)); Romain Fleury (Ecole Polytechnique Federale de Lausanne (EPFL));*
- 11:00 **Coffee Break**

- 11:30 Scattering and Topological Effects in Acoustic Networks  
*Chenkai Liu (Soochow University); Jie Luo (Soochow University); Yun Lai (Nanjing University);*
- 11:50 Layer Polarization for Valley States in Bilayer Phononic Crystals  
*Jiuyang Lu (South China University of Technology); Chunyin Qiu (Wuhan University); Weiyin Deng (South China University of Technology); Xueqin Huang (South China University of Technology); Feng Li (South China University of Technology); Zhengyou Liu (Wuhan University);*
- 12:10 Bandwidth-tunable Extraordinary Acoustic Transmission Assisted by Multiple Surface Acoustic Resonance  
*Mengjia He (Zhejiang University); Yu Luo (Nanyang Technological University); Baile Zhang (Nanyang Technological University); Hongsheng Chen (Zhejiang University); Fei Gao (Zhejiang University);*
- 12:30 Robustness of Conventional and Topologically Protected Edge States in Phononic Crystal Plates  
*Yabin Jin (Tongji University); Daniel Torrent (Université Jaume I); Bahram Djafari-Rouhani (Université de Lille);*

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**Session 1P1a**

**FocusSession.SC5: Modeling in Remote Sensing 2**

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**Monday PM, June 17, 2019**

**Room 1 - 1st Floor**

Organized by Joel T. Johnson, Nazzareno Pierdicca

Chaired by Shanka N. Wijesundara, Davide Comite

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- 14:30 Scattering Modeling and Imaging Simulation Based on Mini-SAR  
*J. X. Wan (Fudan University); Lan Chen (Shanghai Institute of Technology);*
- 14:50 Inverse Synthetic Aperture Radar Imaging of Space Debris Objects  
*A. I. Baskakov (National Research University "Moscow Power Engineering Institute"); V. G. Grachyov (National Research University "Moscow Power Engineering Institute"); Aleksey Aleksandrovich Komarov (National Research University "Moscow Power Engineering Institute"); A. V. Ruban (National Research University "Moscow Power Engineering Institute");*
- 15:10 Laser Images and 3D Reconstruction  
*Gerard Berginc (Thales Optronique);*

15:30 Assessment of the Urban Three-dimensional Structural Influence on the Satellite Thermal Infrared Measurement  
*Xiaopo Zheng (ICube, UdS, CNRS); Zhao-Liang Li (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Kun-Shan Chen (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Xia Zhang (Hebei GEO University); Guofei Shang (Hebei GEO University);*

16:30 Coffee Break

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**Session 1P1b**

**Oral Presentations for Best Student Paper Awards — SC5: Remote Sensing, Inverse Problems, Imaging, Radar and Sensing**

**Monday PM, June 17, 2019**

**Room 1 - 1st Floor**

Chaired by Steven K. Chan, Xiaofeng Li, Simonetta Paloscia

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17:00 A Mimo Radar for Vital Signs Recording  
*Giulia Sacco (Sapienza University of Rome); Stefano Pisa (Sapienza University of Rome);*

17:20 Vortex Electromagnetic Waves Based Synthetic Aperture Radar Interferometry Technique  
*Xiangxi Bu (Institute of Electronics, Chinese Academy of Sciences); Xingdong Liang (Institute of Electronics, Chinese Academy of Sciences); Long-Yong Chen (Institute of Electronics, Chinese Academy of Sciences); Zhuo Zhang (Institute of Electronics, Chinese Academy of Sciences); Ruichang Cheng (Institute of Electronics, Chinese Academy of Science); Jie Niu (Institute of Electronics, Chinese Academy of Sciences); Xiangwei Dang (Institute of Electronics, Chinese Academy of Sciences); Qi-Chang Guo (Institute of Electronics, Chinese Academy of Sciences);*

17:40 Iterative Data Clustering Algorithm of Doppler-associated RPM Imaging for UWB Human Body Imaging Radar  
*Takumi Hayashi (The University of Electro-Communications); Shouhei Kidera (The University of Electro-Communications);*

18:00 RF and Network Signature-based Machine Learning on Detection of Wireless Controlled Drone  
*Yan Jun John Teoh (University of Glasgow); Chee Kiat Seow (University of Glasgow);*

18:20 A CNN-based Super-resolution Technique for Active Fire Detection on Sentinel-2 Data  
*Massimiliano Gargiulo (University Federico II); Domenico Antonio Giuseppe Dell'Aglio (University Federico II); Antonio Iodice (University of Naples "Federico II"); Daniele Riccio (University of Naples "Federico II"); Giuseppe Ruello (Universita di Napoli "Federico II");*

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**Session 1P2a**

**SC3: Characterization Techniques: Novelty and Short-term Requirements 2**

**Monday PM, June 17, 2019**

**Room 5 - 1st Floor**

Organized by Ilka Kriegel, Francesco Scotognella

Chaired by Ilka Kriegel, Francesco Scotognella

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14:30 New Generation Solar Cells Stability Measurement: An Overview on Lights and Shadows  
*Invited Francesca Brunetti (University of Rome Tor Vergata);*

14:50 Blind Ghost Imaging  
*Jacopo Bertolotti (University of Exeter); A. M. Paniagua-Diaz (University of Exeter); I. Starshinov (University of Exeter); N. Fayard (ESPCI Paris, PSL Research University); A. Goetschy (ESPCI Paris, PSL Research University); R. Pierrat (ESPCI ParisTech); Remi Carminati (ESPCI);*

15:10 Hybrid Plasmonic/Photonic Crystals for Optical Detection of Bacterial Contaminants  
*Invited Giuseppe Maria Paterno (Istituto Italiano di Tecnologia); Liliana Moscardi (Istituto Italiano di Tecnologia); Stefano Donini (Istituto Italiano di Tecnologia); Davide Ariodanti (Politecnico di Milano); Emilio Parisini (Istituto Italiano di Tecnologia); Guglielmo Lanzani (Politecnico di Milano); Francesco Scotognella (Politecnico di Milano);*

15:30 Ultrafast Characterization of Indium Tin Oxide Grating  
*Michele Guizzardi (Politecnico di Milano); Silvio Bonfadini (Istituto Italiano di Tecnologia); Liliana Moscardi (Istituto Italiano di Tecnologia); Ilka Kriegel (IIT Central Research Lab Genova); Francesco Scotognella (Politecnico di Milano); Luigino Criante (Istituto Italiano di Tecnologia);*

- 15:50 Metal Oxide Based Photonic Crystals with Tunable Optical Properties  
*Liliana Moscardi (Istituto Italiano di Tecnologia); Giuseppe Maria Paterno (Istituto Italiano di Tecnologia); Roberto Sorrentino (Politecnico di Milano); Ilka Kriegel (IIT Central Research Lab Genova); Francesco Scotognella (Politecnico di Milano); Guglielmo Lanzani (Politecnico di Milano);*

- 16:10 Whispering Gallery Mode Sensors Implemented in Microstructured Optical Fibers  
*Stavros Pissadakis (Institute of Electronic Structure and Laser (IESL));*

16:30 **Coffee Break**

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**Session 1P2b**

**SC1: Real Life Scene Modeling and Big Data Applications for Radar and Microwave Technology**

**Monday PM, June 17, 2019**

**Room 5 - 1st Floor**

Organized by Paola Russo, Ozlem Kilic

Chaired by Paola Russo

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- 17:00 Intelligent Three-dimensional Gait Analysis Using IR-UWB Sensing  
*Soumya Prakash Rana (London South Bank University); Maitreyee Dey (London South Bank University); Mohammad Ghavami (London South Bank University); Sandra Dudley-McEvoy (University of Essex);*
- 17:20 Ray Tracing for Simulation of Automotive Scenarios  
*Stefan O. Wald (Fraunhofer Institute for High Frequency Physics and Radar Techniques FHR); Frank Weinmann (Research Institute for High Frequency Physics and Radar Techniques);*
- 17:40 Simulation Tool to Characterize the Radar Cross Section of Human Subjects  
*Giovanni Manfredi (Università Politecnica delle Marche); Paola Russo (Università Politecnica delle Marche); Alfredo De Leo (Università Politecnica delle Marche); Graziano Cerri (Università Politecnica delle Marche);*
- 18:00 Smartphones Reference Signal Received Power MDT Radio Measurement Statistical Analysis Reveals People Feelings during Music Events  
*Davide Micheli (TIM S.p.A.); Giuliano Muratore (TIM S.p.A.);*

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**Session 1P3a**

**SC4: Microwave Electronics for Space and Ground Segment Applications 2**

**Monday PM, June 17, 2019**

**Room 7 - 1st Floor**

Organized by Paolo Colantonio, Franco Giannini

Chaired by Paolo Colantonio, Franco Giannini

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- 14:30 System Level Analysis of Millimetre-wave GaN-based MIMO Radar for Detection of Micro Unmanned Aerial Vehicles  
*Alessandro Cidronali (University of Florence); Marco Passafiume (University of Florence); Paolo Colantonio (University of Rome Tor Vergata); Giovanni Collodi (University of Florence); C. Florian (University of Bologna); G. Leuzzi (University of L'Aquila); Marco Pirola (Politecnico di Torino); C. Ramella (Polytechnic of Turin); A. Santarelli (University of Bologna); P. Traverso (University of Bologna);*
- 14:50 Improving Parameters of Cherry-Hooper Amplifier Using Parasitic Elements on the Layout  
*Miroslav Sokol (Technical University of Kosice); Pavol Galajda (Technical University of Kosice); Stanislav Slovak (Technical University of Kosice); Martin Pecovsky (Technical University of Kosice);*
- 15:10 S Band Wideband LNA for Future GNSS Receiver with L Band Legacy  
*Muhammad Arsalan (Beihang University); Falin Wu (Beihang University);*
- 15:30 Analysis of Dispersion Characteristics of Helix Slow-wave Structures for Broadband Traveling Wave Tubes with Exact Floquet Approach  
*Agah Oktay Ertay (Istanbul Technical University); Serkan Şimşek (Istanbul Technical University);*
- 15:50 Two-stage Class F-C Power Amplifier with an Optimum 2nd Harmonic Control at the Power Stage Input  
*Xiaoxiao Li (University of Rome Tor Vergata); Paolo Colantonio (University of Rome Tor Vergata); Franco Giannini (University of Rome Tor Vergata); Hongxi Yu (China Academy of Space Technology (CAST));*
- 16:30 **Coffee Break**

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**Session 1P3b**  
**RF MEMS for Antenna and Radar**  
**Application**

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**Monday PM, June 17, 2019**

**Room 7 - 1st Floor**

Organized by Zewen Liu

Chaired by Zewen Liu

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- 17:00 Ka-band Tunable Filter with Closed-loop MEMS Control for 5G Wireless Communications  
*Mohammad Javad Asadi (Lehigh University); Renfeng Jin (Lehigh University); Zhibo Cao (Lehigh University); Guanghai Ding (Lehigh University); Vahid Gholizadeh (Lehigh University); Herman F. Nied (Lehigh University); James C. M. Hwang (Lehigh University); Derek Scarbrough (MEMtronics Corp); C. L. Goldsmith (MEMtron Corp);*
- 17:20 Modeling and Analysis of DC-contact RF MEMS Switch Considering Crosstalk between DC and RF Signals  
*Yulong Zhang (Tsinghua University); Zhuohao Gong (Tsinghua University); Zewen Liu (Tsinghua University);*
- 17:40 A Tunable Omnidirectional Circularly Polarized Antenna Realized by the Gravity Field Tailored  
*Guo-Biao Liu (Nanjing University of Posts and Telecommunications); Li Zeng (Nanjing University of Posts and Telecommunications); Hai Feng Zhang (Nanjing University of Posts and Telecommunications); Tong Huang (Nanjing University of Posts and Telecommunications);*
- 18:00 A Novel Tailored Coplanar Waveguide Circularly Polarized Antenna Realized by the Gravity Field Control  
*Tong Huang (Nanjing University of Posts and Telecommunications); Li Zeng (Nanjing University of Posts and Telecommunications); Guo-Biao Liu (Nanjing University of Posts and Telecommunications); Hai Feng Zhang (Nanjing University of Posts and Telecommunications);*
- 18:20 Design of a Printed Yagi Array Antenna with Additional Director Element for Broadband Radar Applications  
*Berkay Atabay (ASELSAN Inc.); G. Dural (Middle East Technical University);*

- 18:40 An X-band Portable 3D-printed Lens Antenna with Integrated Waveguide Feed for Microwave Imaging  
*Nonchanutt Chudpooti (King Mongkut's University of Technology North Bangkok); Sukanya Praesomboon (King Mongkut's University of Technology North Bangkok); Nattapong Duangrit (King Mongkut's University of Technology North Bangkok); Nutapong Somjit (University of Leeds); Prayoot Akkaraekthalin (King Mongkut's University of Technology North Bangkok);*

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**Session 1P4**

**Advanced Mathematical and Computational**  
**Methods in Electromagnetic Theory and**  
**Their Applications 2**

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**Monday PM, June 17, 2019**

**Room 8 - 1st Floor**

Organized by Mariana Nikolova Georgieva-Grosse,  
Georgi Nikolov Georgiev

Chaired by Mariana Nikolova Georgieva-Grosse

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- 14:30 Solution of the Plane Wave Diffraction by the Meta-Invited material Strip with the Complex Fractional Derivative Method  
*Vasil Tabatadze (Informatics Institute of Istanbul Technical University); Eldar I. Veliyev (Informatics Institute of Istanbul Technical University); Kamil Karacuha (Informatics Institute of Istanbul Technical University); Ertugrul Karacuha (Informatics Institute of Istanbul Technical University);*
- 14:50 Application of the Family of Kravchenko-Rvachev Invited Atomic Weight Functions (Windows) in Welch Method EEG Power Spectral Density Estimation  
*Kristina Andreevna Budunova (Bauman Moscow State Technical University); Victor Filipovich Kravchenko (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences); Dmitry Victorovich Churikov (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences);*
- 15:10 Quantum Electromagnetic Principles and Quantum Invited Maxwell's Equations  
*Weng Cho Chew (Purdue University); Peter Bermel (Purdue University);*
- 15:30 Electromagnetic Resonance Scattering by a Field-Invited aligned Cylindrical Density Depletion in a Magneto-plasma  
*Alexander V. Kudrin (University of Nizhny Novgorod); Alexander V. Ivoninsky (University of Nizhny Novgorod);*

- 15:50 Contributions to the Qualitative Theory of Scattering  
Invited  
*Giovanni Franco Crosta (University of Milan Bicocca);*
- 16:10 Generalized Theorem for the  $G_1(\mathbf{c}, \mathbf{n})$  Numbers  
Invited  
*Mariana Nikolova Georgieva-Grosse (Consulting and Researcher in Physics and Computer Sciences); Georgi Nikolov Georgiev (University of Veliko Tirnovo "St. St. Cyril and Methodius");*
- 16:30 **Coffee Break**
- 17:00 Utilization of Symmetries for MIMO Systems  
*Michal Masek (Czech Technical University in Prague); Miloslav Capek (Czech Technical University in Prague); L. Jelinek (Czech Technical University in Prague);*
- 17:20 Analysis of Mathematical Techniques for the Calculation of the Electrostatic Field in a Dielectric-loaded Waveguide  
Invited  
*Andres Berenguer Alonso (Universidad Miguel Hernandez de Elche); Angela Coves Soler (Universidad Miguel Hernandez de Elche); Enrique Bronchalo (Universidad Miguel Hernandez de Elche); Francisco L. Mesa (Universidad de Sevilla);*
- 17:40 The Boundary Integral Equation Method for the EM Scattering from Randomly Rough Multilayers  
*Gabriel Soriano (Aix-Marseille Université); Myriam Zerrad (Université Paul Cezanne); Claude Amra (Université Paul Cezanne);*
- 18:00 Geometrical Interpretation of Transition Radiation in a Waveguide  
*Mikayel I. Ivanyan (Center for the Advancement of Natural Discoveries Using Light Emission (CAN-DLE)); Lusine Aslyan (Center for the Advancement of Natural Discoveries Using Light Emission (CAN-DLE));*
- 18:20 Transmission Line Model Based on PCB Units and Modified  $\pi$  Circuits  
*Thaina Guimaraes Pereira (Sao Paulo State University (UNESP), Campus of Sao Joao da Boa Vista); Afonso Jose Do Prado (UNESP — Universidade Estadual Paulista); Leonardo Da Silva Lessa (Universidade Estadual Paulista); Paula Ghedini Der Agopian (Sao Paulo State University (UNESP), Campus of Sao Joao da Boa Vista); Rafael Abrantes Penchel (Sao Paulo State University (UNESP), Campus of Sao Joao da Boa Vista); Andre Alves Ferreira (Sao Paulo State University (UNESP), Campus of Sao Joao da Boa Vista); Jose Pissolato Filho (UNICAMP — State University of Campinas);*
- 18:40 Asymptotic Analysis of the Potential of Superluminally Moving Source  
*Valery V. Achkasov (Scientific Department of Fryazino Experimental Factory Ltd.); Mikhail Ye. Zhuravlev (Saint Petersburg State University);*
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- Session 1P5**  
**Inverse Problems in Antennas, Scattering and Optics: Theory & Applications 2**
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- Monday PM, June 17, 2019**  
**Room Hall of Frescoes - 1st Floor**  
Organized by Rocco Pierri, Giovanni Leone  
Chaired by Rocco Pierri, Qing Huo Liu
- 
- 14:30 Feasibility Study of Applying Deep Learning Techniques to Computational Electromagnetics  
*Maokun Li (Tsinghua University); Tao Shan (Tsinghua University); Rui Guo (Tsinghua University); Fan Yang (Tsinghua University); Shenheng Xu (Tsinghua University);*
- 14:50 Phase Retrieval of Scalar Fields Radiated by Finite-dimensional Sources through Single-surface Measurements and a Crosswords-like Processing  
*Andrea Francesco Morabito (University 'Mediterranea' of Reggio Calabria); Roberta Palmeri (Mediterranea University of Reggio Calabria); Tommaso Isernia (University "Mediterranea" of Reggio Calabria);*
- 15:10 Deep Learning for Applications to Ground Penetrating Radar and Electromagnetic Diagnostic  
*Francesca Ponti ("La Sapienza" University of Rome); Francesco Barbuto ("La Sapienza" University of Rome); Pietro Paolo Di Gregorio ("La Sapienza" University of Rome); Fabio Mangini ("La Sapienza" University of Rome); Patrizio Simeoni ("La Sapienza" University of Rome); Maurizio Troiano ("La Sapienza" University of Rome); Fabrizio Frezza ("La Sapienza" University of Rome);*
- 15:30 The "Traps" Issue in a Non Linear Inverse Problem: The Phase Retrieval in Circular Case  
*Raffaele Moretta (Università degli Studi della Campania "Luigi Vanvitelli"); Rocco Pierri (Università degli Studi della Campania "Luigi Vanvitelli");*
- 15:50 Orbital Angular Momentum and Virtual Experiments for Microwave Imaging  
*Loreto Di Donato (University Mediterranea of Reggio Calabria); M. T. Bevacqua (University "Mediterranea" of Reggio Calabria); A. F. Morabito (University "Mediterranea" of Reggio Calabria); T. Isernia (University "Mediterranea" of Reggio Calabria);*

- 16:10 Fluorescence Nanoscopy Using Multiple Signal Classification Algorithm (MUSICAL): From Electromagnetics Inverse Scattering Problem to Optics Inverse Source Problem

*Sebastian Andres Acuna Maldonado (UiT — The Arctic University of Norway); Ida Sundvor Opstad (UiT — The Arctic University of Norway); Luis Enrique Villegas Hernandez (UiT — The Arctic University of Norway); Mona Nystad (University Hospital of North Norway); Milton Aguilera (Instituto de Histologia y Embriologia de Mendoza (IHEM)); Merete Storflor (UiT — The Arctic University of Norway); Cristina Ionica Oie (UiT — The Arctic University of Norway); Soren Abel (UiT — The Arctic University of Norway); Asa Birna Birgisdottir (University Hospital of North Norway); Trine Karstad (University Hospital of North Norway); Deanna L. Wolfson (UiT — The Arctic University of Norway); Jean-Claude Tinguely (UiT — The Arctic University of Norway); Truls Myrnel (University Hospital of North Norway); Peter McCourt (UiT — The Arctic University of Norway); Terje Johansen (UiT — The Arctic University of Norway); Balpreet Singh Ahluwalia (UiT — The Arctic University of Norway); Krishna Agarwal (UiT — The Arctic University of Norway);*

- 16:30 **Coffee Break**

- 17:00 Defining Reference Scenarios for Inverse Methods by Using the Cylindrical-wave Approach

*Cristina Ponti (“Roma Tre” University); Giuseppe Schettini (“Roma Tre” University);*

- 17:20 Solving Inverse Problems of Nonimaging Optics Using Optimal Mass Transport and Linear Assignment Problems

*Leonid L. Doskolovich (“Crystallography and Photonics” of Russian Academy of Sciences); Dmitry Alexandrovich Bykov (Image Processing Systems Institute of the Russian Academy of Sciences); Evgeni A. Bezu (Image Processing Systems Institute of the Russian Academy of Sciences); N. L. Kazansky (Image Processing Systems Institute of the Russian Academy of Sciences);*

- 17:40 Particle Size Distribution Analysis in Concentrated Suspensions by Frequency Domain Photon Density Wave Spectroscopy

*Lena Bressel (University of Potsdam); Oliver Reich (University of Potsdam);*

- 18:00 3D Inverse Scattering Problem for Anisotropic Objects in an Anisotropic Background

*Jianliang Zhuo (Xiamen University); Feng Han (Xiamen University); Qing Huo Liu (Duke University);*

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### Session 1P6

#### SC1&SC4: Progress in Broadband and UWB Printed and Dielectric Antennas for Wireless Applications 2

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Monday PM, June 17, 2019

Room Cloister Hall - 1st Floor

Organized by Renato Cicchetti, Antonio Faraone

Chaired by Renato Cicchetti, Antonio Faraone

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- 14:30 UWB Reversible Structure All-textile Antenna for Wireless Body Area Networks Applications  
*Antonio Di Natale (Universita degli Studi dell’Aquila); Emidio Di Giampaolo (Universita degli Studi dell’Aquila);*

- 14:50 Assessment of Actual Maximum RF EMF Exposure from Radio Base Stations with Massive MIMO Antennas

*Invited Davide Colombi (Ericsson AB); Paramananda Joshi (Ericsson AB); Ricardo Pereira (Ericsson Portugal); Dimple Thomas (Ericsson Canada); Denish Shleifman (Ericsson Canada); Babak Tootoonchi (Ericsson Canada); Bo Xu (Ericsson AB); Christer Tornevik (Ericsson AB);*

- 15:10 MM-wave Patch Antenna with Embedded Photoconductive Elements for 1-bit Phase Shifting

*Elena Shepeleva (Bauman Moscow State Technical University); Mikhail N. Makurin (Samsung Moscow Research Center); Artem Vilenskiy (Samsung Research Institute Russia); Sergey Chernyshev (Bauman Moscow State Technical University);*

- 15:30 Reconfigurable MIMO Filtenna for Spectrum Underlay Cognitive Radio

*Raghvendra Kumar Chaudhary (Indian Institute of Technology (Indian School of Mines)); Sreenath Reddy Thummaluru (Indian Institute of Technology (Indian School of Mines) Dhanbad);*

- 15:50 ACS-fed Electrically Small Metamaterial Inspired Dual Polarized Antenna Enabled with Staircase Radiating Strips for UMTS/WiMAX/WLAN Applications

*Mohammad Ameen (Indian Institute Of Technology (ISM)); Rakesh Chowdhury (Indian Institute of Technology (Indian School of Mines)); Raghvendra Kumar Chaudhary (Indian Institute of Technology (Indian School of Mines));*

- 16:10 Dual Circularly Polarized Slot Antenna with Novel Isolator  
*Sumantra Chaudhuri (Indian Institute of Technology Guwahati); Rakesh Singh Kshetrimayum (Indian Institute of Technology); Ramesh Kumar Sonkar (Indian Institute of Technology Guwahati); Darpan Mishra (Indian Institute of Technology Guwahati);*
- 16:30 **Coffee Break**
- 17:00 A Novel X-band Circularly Polarized Vivaldi Antenna Array  
*Ziqiang Yi (University of Electronic Science and Technology of China); Hong-Yan Tang (University of Electronic Science and Technology of China (UESTC)); Sibao Xiao (University of Electronic Science and Technology of China); Shuai Tian (University of Electronic Science and Technology of China); Yafei Liu (University of Electronic Science and Technology of China); Kai Kang (University of Electronic Science and Technology of China); Yunqiu Wu (University of Electronic Science and Technology of China);*
- 17:20 An Ultrawide-band Dual Polarization SAR Antenna for Space Applications  
*Alessandro Di Carlofelice (University of L'Aquila); Piero Tognolatti (University of L'Aquila); Emidio Di Giampaolo (Universita degli Studi dell'Aquila); Andrea Suriani (Thales Alenia Space Italia);*
- 17:40 Dielectric Resonator Based MIMO Antenna with Circular Polarization Diversity for WiMAX Applications  
*Nikesh Kumar Sahu (Indian Institute of Technology (Indian School of Mines)); Gourab Das (Indian School of Mines); Ravi Kumar Gangwar (Indian School of Mines);*
- 18:00 Dual-band Four Port MIMO Dielectric Resonator Antenna for WLAN/WiMAX Applications  
*Gourab Das (Indian School of Mines); Nikesh Kumar Sahu (Indian Institute of Technology (Indian School of Mines)); Anand Sharma (Indian School of Mines); Ravi Kumar Gangwar (Indian School of Mines);*
- 18:20 Design of Shark Fin Integrated Antenna Systems for Automotive Applications  
*C. Demien (Antonine University); Remi M. Sarkis (TICKET Laboratory);*
- 18:40 Design of Frame Integrated Antennas for Mobile Handset  
*M. El Bacha (Antonine University); Remi M. Sarkis (TICKET Laboratory);*
- 19:00 60 GHz Rectangular Patch Antenna with Cavity Resonator for 5G Applications  
*Sara Yehia Abdelfatah Ahmed (Egyptian Chinese University); Ehab K. I. Hamad (Aswan University); Wael Swelam (Arab Academy for Science and Technology Maritime Transport (AASTMT)); Mohamed Hassan Abd El-Azeem (Arab Academy for Science and Technology Maritime Transport (AASTMT));*
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- Session 1P7**
- SC3: Light Robotics: Harnessing the Forces of Light for Micro-robotic Actuation and Control**
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- Monday PM, June 17, 2019**
- Room 17 - 1st Floor**
- Organized by Ada-Ioana Bunea, Jesper Gluckstad  
Chaired by Ada-Ioana Bunea, Kirstine Berg-Sorensen
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- 14:30 All-optical Manipulation of Flexible Metasurfaces  
Invited  
*Andrea Di Falco (University of St Andrews);*
- 14:50 Optical Trapping Techniques for the Control and Actuation of Microstructures  
*Alexandre Wetzel (Technical University of Denmark); Einstom Engay (Technical University of Denmark); Ada-Ioana Bunea (Technical University of Denmark); Jesper Gluckstad (Technical University of Denmark);*
- 15:10 Patterned Actuators for Micro-robotic Applications  
Invited  
*Michael O'Donnell (University of Bristol); Simon Hanna (University of Bristol);*
- 15:30 Manipulation and Cell Injection of Fluorescence Microsensor with Multiple Wavelength Lights  
Invited  
*Hisataka Maruyama (Nagoya University); Ryota Yanagawa (Nagoya University); Fumihito Arai (Nagoya University);*
- 15:50 Indirect Optical Manipulation of Live Cells and Its Application in Multiview Microscopy  
Invited  
*Pal Ormos (Institute of Biophysics, Biological Research Centre); Andras Buzas (Institute of Biophysics, Biological Research Centre); Tamas Fekete (Institute of Biophysics, Biological Research Centre); Istvan Grexa (Institute of Biophysics, Biological Research Centre); Gaszton Vizsnyiczai (Institute of Biophysics, Biological Research Centre); Lorand Kelemen (Institute of Biophysics, Biological Research Centre);*

16:10 Disk-tip Microtools for Light Robotics  
*Einstom Engay (Technical University of Denmark); Alexandre Wetzel (Technical University of Denmark); Ada-Ioana Bunea (Technical University of Denmark); Jesper Gluckstad (Technical University of Denmark);*

16:30 **Coffee Break**

17:00 Light Robots Based on Shape-changing Materials  
*Arri Primagi (Tampere University of Technology);*

17:20 Soft Microrobots Controlled by Structured Light

Invited

*Stefano Palagi (Istituto Italiano di Tecnologia);*

17:40 3D Printing for Light-fueled Polymeric Microrobots

Invited

*Sara Nocentini (European Laboratory for Non-linear Spectroscopy); Daniele Martella (European Laboratory for Non-linear Spectroscopy); Camilla Parmeggiani (European Laboratory for Non-linear Spectroscopy); Diederik S. Wiersma (European Laboratory for Non-linear Spectroscopy);*

18:00 Biomimetic 3D Micro-structures for Soft Micro-robotics

Invited

*Larisa Florea (Trinity College Dublin); Alexa Ennis (Trinity College Dublin); Colm Delaney (University College Dublin);*

18:20 Circumgyration of Nonlinear Nanoparticles by Focusing Gaussian Ultrashort Pulses

*Yaqiang Qin (Institute of Genetics and Developmental Biology, Chinese Academy of Sciences); Lu Huang (Institute of Genetics and Developmental Biology, Chinese Academy of Sciences); Yuqiang Jiang (Institute of Genetics and Developmental Biology, Chinese Academy of Sciences);*

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**Session 1P8a**

**Photonics Packaging & Integration 2**

**Monday PM, June 17, 2019**

**Room 6 - Mezzanine**

Organized by Francesco Floris

Chaired by Francesco Floris

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14:30 ACTPHAST — Accelerating Photonics Innovation for SME's and Researchers

*Marc Rensing (Tyndall National Institute);*

14:50 Actilabel: A Smart Active Label for Monitoring Real Shelf Life of Goods

*Carlo Maria Carbonaro (University of Cagliari); Daniele Chiriu (University of Cagliari); Pier Carlo Ricci (University of Cagliari);*

15:10 From Laboratory Measurements to a Commercial Prototype: The Case of Plasmore

*Franco Marabelli (University of Pavia); Lucia Fornasari (Plasmore s.r.l.); L. Lopez-Sanchez (Plasmore s.r.l.); P. Pellacani (Plasmore s.r.l.);*

15:30 A High-speed Vertical Transition for Multi-layer AlN Carrier Boards Designed by Time-domain Reflectometry

*Moises A. Jezzini (Tyndall National Institute); P. J. Marraccini (Tyndall National Institute); F. H. Peters (Tyndall National Institute);*

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**Session 1P8b**

**SC3: Mid-infrared Integrated Photonics and Applications**

**Monday PM, June 17, 2019**

**Room 6 - Mezzanine**

Organized by Zhenzhou Cheng, Yingdong Han

Chaired by Zhenzhou Cheng

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15:50 Miniaturization of Mid-IR Sensors on Si: Challenges and Perspectives

Invited

*Jean-Guillaume Coutard (Université Grenoble Alpes); S. Nicoletti (CEA-Leti MINATEC Campus); J.-M. Fedeli (CEA LETI); M. Fournier (Université Grenoble Alpes); P. Labeye (CEA-Leti MINATEC Campus); Pierre Barritault (Université Grenoble Alpes); A. Marchant (Université Grenoble Alpes); Alain Gliere (Université Grenoble Alpes); A. Teulle (Université Grenoble Alpes); L. Duraffourg (Université Grenoble Alpes);*

16:10 The Chalcogenide Waveguides for Mid-infrared Optical Applications

Invited

*Xin Gai (City University of Hong Kong);*

16:30 **Coffee Break**

17:00 Mid-IR Devices and Sub-systems Based on SOI Technology

Invited

*Fabio Pavanello (Ghent University); Anton Vasiliev (Ghent University); Ruijun Wang (Ghent University); Muhammad Muneeb (Ghent University); A. Malik (Ghent University); Guy Lepage (Imec); Peter De-Heyn (Imec); Joris Van Campenhout (IMEC); Ieva Simonyte (Brolis Semiconductors); Augustinas Vizbaras (Brolis Semiconductors); Kristijonas Vizbaras (Brolis Semiconductors); Roe Baets (Ghent University); Gunther Roelkens (Ghent University, IMEC);*

- 17:20 Mid-infrared Integrated Photonic Devices for On-chip  
Invited Chemical Sensing  
*Yi Zou (ShanghaiTech University);*
- 17:40 Silicon and Germanium Active Devices for the Mid-  
Invited infrared  
*Goran Z. Mashanovich (University of Southampton); W. Cao (University of Southampton); Z. Qu (University of Southampton); A. Osman (University of Southampton); Y. Wu (University of Southampton); D. Hagan (McMaster University); A. P. Knights (McMaster University); T. Li (University of Southampton); Z. Zhou (Peking University); J. Soler Penades (University of Southampton); F. Y. Gardes (University of Southampton); K. Li (University of Southampton); D. J. Thomson (University of Southampton); M. Nedeljkovic (University of Southampton);*
- 18:00 Mid-infrared Non-linear Optical Properties of Ge-rich  
Invited SiGe Waveguides  
*Jacopo Frigerio (Politecnico di Milano and L-NESS); Joan Manel Ramirez (III-V Lab); Samuel Serna (Université Paris-Sud); Andrea Ballabio (Politecnico di Milano and L-NESS); Vladyslav Vakarin (Université Paris-Sud, Université Paris Saclay); Qiankun Liu (Université Paris-Sud, Université Paris Saclay); Miguel Montesinos (Université Paris-Sud, Université Paris Saclay); Xavier Le Roux (Université Paris-Sud); Giovanni Isella (Politecnico di Milano); Laurent Vivien (Université Paris-Sud); Delphine Marris-Morini (Université Paris 11);*
- 18:20 Design of Integrated Silicon Optical Phased Array at  
2  $\mu\text{m}$  Waveband  
*Zhiyu Li (Harbin Institute of Technology); Yingjie Liu (Harbin Institute of Technology); Hucheng Xie (Harbin Institute of Technology); Lulu Sun (Harbin Institute of Technology); Yong Yao (Harbin Institute of Technology); Jiajun Tian (Harbin Institute of Technology); Jun Jun Xiao (Harbin Institute of Technology); Ke Xu (Harbin Institute of Technology);*
- 18:40 Mid-infrared Suspended Membrane Photonic Integrated Circuits  
*Zhenzhou Cheng (Tianjin University);*

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**Session 1P9a**
**Integrated Nanophotonics, Plasmonics and Graphene-based Devices 2**


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**Monday PM, June 17, 2019**
**Room 4 - Mezzanine**

Organized by Marco Grande, Antonella D'Orazio

 Chaired by Marco Grande, Antonella D'Orazio
 

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- 14:30 Implantable Probes for Optogenetics and Neuropho-  
Invited tonics  
*Massimo De Vittorio (Center for Biomolecular Nanotechnologies, Istituto Italiano di Tecnologia); Ferruccio Pisanello (Center for Biomolecular Nanotechnologies, Istituto Italiano di Tecnologia);*
- 14:50 Silicon Optical Modulators and Their Integration with  
Invited CMOS Electronics  
*Abdul Shakoor (University of Southampton); Ke Li (University of Southampton); Shenghao Liu (University of Southampton); Fanfan Meng (University of Southampton); Ali Z. Khokhar (University of Southampton); Wei Cao (University of Southampton); Weiwei Zhang (University of Southampton); Peter Wilson (University of Bath); Kapil Debnath (University of Southampton); Callum Littlejohns (University of Southampton); James Byers (University of Southampton); Lorenzo Mastronardi (University of Southampton); Muhammad K. Hussain (University of Southampton); Frederic Y. Gardes (University of Southampton); Shinichi Saito (University of Southampton); Graham T. Reed (University of Southampton); David J. Thomson (University of Southampton);*
- 15:10 Micro and Nanostructuring of Tapered Optical Fibers with Focused Ion Beam and Two-photon Lithography  
*F. Pisano (Center for Biomolecular Nanotechnologies); Antonio Balena (Center for Biomolecular Nanotechnologies); Marco Grande (Politecnico di Bari); T. Stomeo (); M. Pisanello (Center for Biomolecular Nanotechnologies); A. Quattieri (Univ Salento); Muhammad Fayyaz Kashif (Politecnico di Bari); A. D'Orazio (Politecnico di Bari); Massimo De Vittorio (Center for Biomolecular Nanotechnologies, Istituto Italiano di Tecnologia); Ferruccio Pisanello (Center for Biomolecular Nanotechnologies, Istituto Italiano di Tecnologia);*
- 15:30 High Resolution Imaging and Sub 10nm Nanostructuring with He and Ne Ions  
*Peter Gnauck (Carl Zeiss Microscopy GmbH);*

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**Session 1P9b**  
**Nanophotonic Materials for Biomedical**  
**Imaging and Sensing**

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**Monday PM, June 17, 2019**

**Room 4 - Mezzanine**

Organized by Asma Khalid, Snjezana  
Tomljenovic-Hanic

Chaired by Asma Khalid

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- 15:50 New Approaches for Biomedical Imaging at Depth  
*Kishan Dholakia (University of St Andrews);*
- 16:10 Fluorescent Nanodiamonds for Intracellular Measurements  
*Ryuji Igarashi (QST); Kiichi Kaminaga (QST); Daiki Terada (Kyoto University); Takahiro Fujisaku (Kyoto University); Takuya Genjo (Kyoto University); Takuya F. Segawa (Eidgenossische Technische Hochschule (ETH)); Akinari Yokoya (National Institutes for Quantum and Radiological Science and Technology); Masahiro Shirakawa (Kyoto University);*
- 16:30 **Coffee Break**
- 17:00 Quantum Tools to Explore Radiobiological Effects on Living Systems  
*Akinari Yokoya (National Institutes for Quantum and Radiological Science and Technology);*
- 17:20 Utilising Glycobiology for Fluorescent Nanodiamond Uptake and Imaging in the Central Nervous System  
*Lindsay M. Parker (Macquarie University); Philipp Reineck (RMIT University); Mina Ghanimi-Fard (Macquarie University); Emma R. Wilson (RMIT University); Sameera Iqbal (Macquarie University); Michael Baratta (University of Colorado Boulder); Nicole M. Cordina (Macquarie University); Anna Guller (Macquarie University); Annemarie Nadort (Macquarie University); Brant Gibson (RMIT University); Nicolle H. Packer (Macquarie University);*
- 17:40 Bio-inspired Optical Silk Coatings for Fibre Sensing Applications  
*Asma Khalid (RMIT University); Lu Peng (The University of Adelaide); Azim Arman (The University of Adelaide); Stephen C. Warren-Smith (Univ Adelaide); Erik Schartner (The University of Adelaide); Mark Hutchinson (The University of Adelaide); Heike Ebendorff-Heidepriem (The University of Adelaide); Robert McLaughlin (The University of Adelaide); Brant Gibson (RMIT University); Jiawen Li (The University of Adelaide);*

- 18:00 Wavefront Shaping Techniques for Deep Tissue Raman Spectroscopy  
*Jacopo Bertolotti (University of Exeter); A. M. Paniagua-Diaz (University of Exeter); A. Ghita (University of Exeter); T. Vettengburg (University of Exeter); N. Stone (University of Exeter);*
- 18:20 Measurement of Axonal Transport in the Brain of Zebrafish Larvae, by Single Nanocrystal Tracking with Fast Non-linear Microscopy  
*F. Terras (Univ. Paris-Sud); M. Freteau (Virologie et Immunologie Moleculaires); Q.-L. Chou (Univ. Paris-Sud); G. Allard (Univ. Paris-Sud); A. Houel (Virologie et Immunologie Moleculaires); M. Simonneau (Univ. Paris-Sud); F. Del Bene (PSL Research University); C. Langevin (Virologie et Immunologie Moleculaires); F. Marquier (Univ. Paris-Sud); Francois Treussart (Univ. Paris-Sud);*

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**Session 1P10a**

**SC3: Photonic Quantum Metrology**

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**Monday PM, June 17, 2019**

**Room 12 - Mezzanine**

Organized by Marco Barbieri

Chaired by Animesh Datta, Magdalena Stobinska

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- 14:30 Next Generation Quantum Sensing — Multiple Parameters and Fault Tolerance  
Invited  
*Animesh Datta (University of Warwick);*
- 14:50 Optical Phase Measurements with Entangled Photon States  
Invited  
*Sergei Slussarenko (Griffith University);*
- 15:10 Measuring Quantum and Thermal Noise in Optomechanical Systems  
*Thomas Purdy (University of Pittsburgh); R. Singh (JQI — NIST & University of Maryland);*
- 15:50 Optically-pumped Atomic Spin Magnetometer  
*Guangcun Shan (Beihang University, City University of Hong Kong);*
- 16:10 Continuous Measurements for Advanced Quantum Metrology  
Invited  
*F. Albarelli (University of Warwick); M. A. C. Rossi (University of Turku); D. Tamascelli (Università degli Studi di Milano); Matteo G. A. Paris (University of Milan); Marco G. Genoni (Università degli Studi di Milano);*
- 16:30 **Coffee Break**

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**Session 1P10b**
**SC3: Wide Bandgap Semiconductors  
Photonics**


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**Monday PM, June 17, 2019**
**Room 12 - Mezzanine**

 Organized by Francesco Giuseppe Della Corte,  
Xiyuan Lu

 Chaired by Francesco Giuseppe Della Corte
 

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- 17:00 Multimode Scanning Near-field Optical Microscopy of InGaN/GaN Quantum Wells  
*Saulius Marcinkevicius (KTH Royal Institute of Technology);*
- 17:20 Study of Piezoelectric-mechanical Properties of III-V Nitride Based Tunnel FET  
*Manjula Vijh (Amity University Uttar Pradesh); R. S. Gupta (Maharaja Agrasen Institute of Technology); Sujata Pandey (Amity University);*
- 17:40 Brillouin Lasing in Wide Bandgap AlGaIn Platform for the Visible Range  
*Vittorio M. N. Passaro (Politecnico di Bari); Francesco De Leonardis (Politecnico di Bari); Richard A. Soref (University of Massachusetts Boston);*
- 18:00 Thermo-optic Effect of 4H-silicon Carbide at Fiber-optic Communication Wavelengths  
*Giuliana Faggio (University "Mediterranea" of Reggio Calabria); Giacomo Messina (University "Mediterranea" of Reggio Calabria); Andrea Gnisci (University "Mediterranea" of Reggio Calabria); Angela Malara (University "Mediterranea" of Reggio Calabria); Sandro Rao (Università Mediterranea, DIIES);*
- 18:20 Electro-optical Modulation in a Silicon Carbide Waveguiding Schottky Structure  
*Sandro Rao (Università Mediterranea, DIIES); F. G. Della Corte (Università Mediterranea, DIIES);*
- 18:40 Silicon Carbide Photonic Crystal for Optical Beam Steering  
*Valentina Di Meo (Institute for Microelectronics and Microsystems, National Research Council); Alessio Crescitelli (Institute for Microelectronics and Microsystems, National Research Council); Emanuela Esposito (Institute for Microelectronics and Microsystems, National Research Council); Vito Moccia (Institute for Microelectronics and Microsystems, National Research Council); Ivo Rendina (CNR-IMM — Unità di Napoli); Caterina Summonte (National Research Council); Giuseppe Cocorullo (University of Calabria);*

- 19:00 Photodiode Detectors Based on Synthetic Single Crystal Diamond for Extreme-UV Measurements  
*Claudio Verona (Università di Roma "Tor Vergata"); Silvia Cesaroni (Università di Roma "Tor Vergata"); M. Marinelli (Università di Roma "Tor Vergata"); G. Verona-Rinati (Università di Roma "Tor Vergata");*

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**Session 1P11a**
**SC2: Modeling of Metamaterials and Metasurfaces 2**


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**Monday PM, June 17, 2019**
**Room 11 - Mezzanine**

Organized by Ying Wu

 Chaired by Ying Wu
 

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- 14:30 Optimal Design of All-dielectric 3D Gradient Metasurfaces  
*Mahmoud M. R. Elsayy (INRIA); Regis Duvigneau (INRIA); Stephane Lanteri (Université Cote d'Azur, Inria, CNRS, LJAD); Peinan Ni (CNRS, CRHEA, Université Cote d'Azur); Gauthier Briere (CNRS, CRHEA, Université Cote d'Azur); Patrice Genevet (CNRS, CRHEA, Université Cote d'Azur);*
- 14:50 Advancements in Multiscale Computation with the Discontinuous Galerkin Time Domain Method and Geometrical Optics  
*Sawyer D. Campbell (The Pennsylvania State University); Huaguang Bao (The Pennsylvania State University); Pingjuan L. Werner (The Pennsylvania State University); Douglas H. Werner (The Pennsylvania State University);*
- 15:10 Photonic Helical Edge States in Dispersive Metamaterials  
*Ruey-Lin Chern (National Taiwan University); You-Zhong Yu (National Taiwan University);*
- 15:30 Chiral Metamaterials with Parity-Time Symmetry  
*Maria Kafesaki (Institute of Electronic Structure and Laser (IESL)); I. Katsantonis (Institute of Electronic Structure and Laser (IESL)); S. Droulias (Institute of Electronic Structure and Laser (IESL)); Eleftherios N. Economou (Institute of Electronic Structure and Laser (IESL)); Costas M. Soukoulis (Iowa State University);*

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**Session 1P11b**
**SC3: Optical Metamaterials: Applications,  
Materials and Fabrication Methods**


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**Monday PM, June 17, 2019**
**Room 11 - Mezzanine**

Organized by Anders Kristensen, Uriel Levy

 Chaired by Anders Kristensen
 

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 15:50 Hot Nanophotonics: Let's Do Something Useful with  
Invited Metal Losses

*Romain Quidant (ICFO);*

16:10 Generating Colors from Colorless Materials

Invited

*Joel K. W. Yang (Singapore University of Technology  
and Design);*

 16:30 **Coffee Break**

 17:00 Nano Hole Arrays: Structural Colour Metasurface to  
Invited Perfect Absorption

*Mehdi Keshavarz Hedayati (Durham University); An-  
ders Kristensen (Technical University of Denmark);*

 17:20 Silicon Nanostructures for Directional Emission and  
Invited Active Tuning of Light

*Soren Raza (Technical University of Denmark);*

 17:40 High-density Information Storage in Metasurfaces:  
Invited Laser Post-processing of Morphology-dependent Res-  
onances

*N. Asger Mortensen (University of Southern Den-  
mark);*

 18:00 Multi-level Security Devices for Viewing in Bright  
Field, Dark Field and Infrared Light

*Ray Jia Hong Ng (Singapore University of Technol-  
ogy and Design); Ravikumar Venkat Krishnan (Insti-  
tute of Materials Research and Engineering, A\*STAR  
(Agency for Science, Technology and Research)); Hai-  
long Liu (Singapore University of Technology and De-  
sign); Qifeng Ruan (Singapore University of Technol-  
ogy and Design); Zhaogang Dong (Institute of Materi-  
als Research and Engineering, A\*STAR (Agency for  
Science, Technology and Research)); Jin Fa Ho (Insti-  
tute of Materials Research and Engineering, A\*STAR  
(Agency for Science, Technology and Research)); Kin-  
Leong Pey (Singapore University of Technology and  
Design); Joel K. W. Yang (Singapore University of  
Technology and Design);*

18:20 Sensing Spatial Coherence of Light with Metasurfaces

Invited

*Tom Frank (University of Southampton); Olek-  
sandr Buchnev (University of Southampton); Tam-  
sin Cookson (University of Southampton); Malgo-  
sia Kaczmarek (University of Southampton); Pav-  
los G. Lagoudakis (University of Southampton);  
Vasily A. Fedotov (University of Southampton);*


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**Session 1P12**
**SC2&SC3: Linear and Nonlinear Optics of  
Chiral Metasurfaces**


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**Monday PM, June 17, 2019**
**Room 21 - 2nd Floor**

Organized by Concita Sibilìa, Alessandro Belardini

 Chaired by Constantinos Valagiannopoulos, Tiziana  
Cesca
 

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 14:30 Nonlinear Optical Response of 2D Ordered Plasmonic  
Invited Nanoprism Arrays

*Tiziana Cesca (University of Padova); Raul Rangel-  
Rojo (Centro de Investigacion Cientifica y de  
Educacion Superior de Ensenada (CICESE));  
Jorge A. Reyes-Esqueda (Universidad National  
Autonoma de Mexico (UNAM)); Giovanni Mattei  
(University of Padova);*

14:50 Nonlinear Stage of Modulational Instability

Invited

*Stefano Trillo (University of Ferrara); C. Naveau  
(Université de Lille); P. Sznitgiser (Université Lille  
1); Matteo Conforti (Université Lille 1); F. Copie  
(Université de Lille); Alexandre Kudlinski (Univ.  
Lille); S. Li (State University of New York at Buf-  
falo); G. Biondini (State University of New York at  
Buffalo); Arnaud Mussot (Université des Sciences et  
Technologies de Lille 1);*

 15:10 Extrinsic Optical Chirality in Self-assembled  
Invited Semiconductor-metal Hybrid Nanowires

*Teemu Hakkarainen (Tampere University); Grig-  
ore Leahu (Università di Roma, La Sapienza);  
Emilija Petronijevic (Sapienza Università di Roma);  
Alessandro Belardini (Sapienza Università  
di Roma); Marco Centini (SAPIENZA Università  
di Roma); Eero Koivusalo (Tampere Univer-  
sity); Marcelo Rizzo Piton (Tampere University);  
Roberto Li Voti (Sapienza University of Rome);  
Concita Sibilìa (Sapienza University of Rome);  
Mircea Guina (Tampere University);*

- 15:30 Chiral Bio-plasmonics with Colloidal Nanocrystals and Metamaterials: Optical, Thermal and Hot-electron Effects  
Invited  
*Alexander O. Govorov (Ohio University); Lucas V. Besteiro (Ohio University); Xiang-Tian Kong (Ohio University);*
- 15:50 Plasmon-enhanced Vibrational Circular Dichroism with Gold Slit Arrays  
Invited  
*Paolo Biagioni (Politecnico di Milano); Giovanni Pellegrini (Politecnico di Milano); Marco Finazzi (Politecnico di Milano); Michele Celebrano (Politecnico di Milano); Lamberto Duo (Politecnico di Milano); Marialilia Pea (Istituto di Fotonica e Nanotecnologie (IFN), CNR); Sara Cibella (Istituto di Fotonica e Nanotecnologie (IFN), CNR); Francesco Mattioli (Istituto di Fotonica e Nanotecnologie (IFN)); Chiara Zanchi (Politecnico di Milano); Matteo Tommasini (Politecnico di Milano); Giuseppe Mazzeo (Università degli Studi di Brescia); Giovanna Longhi (Università degli Studi di Brescia); Sergio Abbate (Università degli Studi di Brescia); Leonetta Baldassarre (Sapienza Università di Roma); Valeria Giliberti (Istituto Italiano di Tecnologia); Alessandro Nucara (Sapienza Università di Roma); Michele Ortolani (Sapienza Università di Roma);*
- 16:10 Surface Optimally Chiral Fields to Empower Chirality Characterization at Nanoscale  
Invited  
*Mina Hanifeh (University of California Irvine); Mohammad Albooyeh (Iran University of Science and Technology); Filippo Capolino (University of California-Irvine);*
- 16:30 **Coffee Break**
- 17:00 Optimal Design of Simplistic Photonic Systems in the Presence of Actual Losses  
Invited  
*Constantinos Valagiannopoulos (Nazarbayev University);*
- 17:20 Design of a Fractal Metasurface Based Terahertz Broadband Absorber  
*Amna Zubair (Information Technology University (ITU) of the Punjab); Muhammad Qasim Mehmood (Information Technology University (ITU)); Muhammad Zubair (Information Technology University (ITU));*
- 17:40 Multi-frequency and Cascaded Nonlinear Effects in Meta-optics  
Invited  
*Luca Carletti (University of Padova); Sergey S. Kruk (Australian National University); Yuri S. Kivshar (Australian National University); Costantino De Angelis (Università degli Studi di Brescia);*
- 18:00 Novel Composite Materials by Crystal Growth  
Invited  
*Dorota A. Pawlak (Institute of Electronic Materials Technology (ITME)); P. Paszke (University of Warsaw); R. Nowaczynski (University of Warsaw); K. Szlachetko (University of Warsaw); P. Piotrowski (University of Warsaw); M. Tomczyk (University of Warsaw); K. Sadecka (Institute of Electronic Materials Technology (ITME)); A. Materna (Institute of Electronic Materials Technology (ITME)); B. Surma (Institute of Electronic Materials Technology (ITME)); Alessandro Belardini (Sapienza University of Rome); J. Toudert (Istituto de Óptica); Concita Sibilìa (Sapienza University of Rome);*
- 18:20 First Experimental Observation of the Hyper-Rayleigh Scattering Optical Activity Effect  
Invited  
*Ventsislav K. Valev (University of Bath);*
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- Session 1P13a**  
**SC3&SC4: Advances in Optical Sources: Materials, Devices, Applications 2**
- 
- Monday PM, June 17, 2019**  
**Room 22 - 2nd Floor**  
Organized by Francesco Prudenzano, Irina T. Sorokina  
Chaired by Francesco Prudenzano
- 
- 14:30 A Single TE<sub>01</sub> Mode Fiber Laser  
*Yimin Zhang (University of Science and Technology of China); Hongxun Li (University of Science and Technology of China); Chuansheng Dai (University of Science and Technology of China); Runxia Tao (University of Science and Technology of China); Lixin Xu (University of Science and Technology of China); Chun Gu (University of Science and Technology of China); Peijun Yao (University of Science and Technology of China);*
- 14:50 Superradiance Achievable via SiV Color Centers in Broken-symmetry and Symmetrical Arrays in Ellipsoidal Core-shell Plasmonic Nanoresonators  
*David Vass (University of Szeged); Andras Szenes (University of Szeged); Balazs Banhelyi (University of Szeged); Tibor Csendes (University of Szeged); Maria Csete (University of Szeged);*
- 15:10 Topological Decompositions of Single Point Spaces and Null Spaces as Photon Source: Creation Phases of Light at Early Universes  
*Taner Sengor (Yildiz Technical University (Retired));*

15:30 Blue and Orange Dual-light Implementation in Periodically Poled MgO:LiNbO<sub>3</sub>

*Dismas K. Choge (Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences); Huaixi Chen (Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences); Lei Guo (Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences); Guang-Wei Li (Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences); Wanguo Liang (Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences);*

15:50 Optical Properties of Two-dimensional InSe, GaSe and Their Heterostructures, from Visible to the THz Range

*Vladimir Fal'ko (University of Manchester);*

16:10 MWIR and LWIR Emissions of Rare Earth Doped Chalcogenide Glasses and Waveguides Devoted to Optical Sensors

*G. Louvet (Université de Rennes 1); N. Abdellaoui (Université de Rennes 1); J. Ari (Université de Rennes 1); E. Baudet (University of Pardubice); Florent Starecki (Université de Rennes 1); C. Boussard-Pledel (Université de Rennes 1); Joel Charrier (Université de Rennes 1); Loic Bodiou (Université de Rennes 1); Alain Braud (UMR 6252 CEA-CNRS-ENSICAEN, Université de Caen); J. L. Doualan (Université de Caen); P. Camy (UMR 6252 CEA-CNRS-ENSICAEN, Université de Caen); Petr Nemeč (University of Pardubice); K. Michel (BRGM); L. Quétel (IDIL Fibers Optics); Bruno Bureau (Université de Rennes 1); Jean-Luc Adam (Université de Rennes 1); Virginie Nazabal (Université de Rennes 1);*

16:30 **Coffee Break**

17:00 Resonantly Enhanced Moiré Superlattice Coupling for Excitons in Transition-metal Dichalcogenide Heterostructures

*Vladimir Fal'ko (University of Manchester);*

17:20 Fiber-based Laser Sources for the Mid-infrared Wavelength Interval

*Stefano Taccheo (Swansea University);*

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**Session 1P13b**  
**Fiber Gratings and Optical Sensors**

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**Monday PM, June 17, 2019**

**Room 22 - 2nd Floor**

Organized by Chin-Ping Yu

Chaired by Chin-Ping Yu

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17:40 Single-longitudinal-mode Bragg Grating Based Brillouin Fiber Laser with a Saturable Absorber Ring Resonator

*Yi Liu (Taiyuan University of Technology); Yao Shang (Taiyuan University of Technology); Rongrong Guo (Taiyuan University of Technology);*

18:00 Study on a Multi-channel Switchable and Environment Self-adaptive Ultrasonic Sensor in an Erbium-doped Fiber Ring Laser

*Yuan Li (Harbin Institute of Technology); Jiajun Tian (Harbin Institute of Technology); Yong Yao (Harbin Institute of Technology); Ke Xu (Harbin Institute of Technology); Jun Jun Xiao (Harbin Institute of Technology);*

18:20 Elastomeric Substrate-integrated Pd Film/Nanostructures for High-contrast Visual Optical Hydrogen Sensor

*Yang Shen (Sun Yat-Sen University); Xiaoyi She (Sun Yat-Sen University); Chongjun Jin (Sun Yat-sen University);*

18:40 Optical Bi-parameter Sensor Formed by Integrating a Fiber Bragg Grating and a Mach-Zehnder Interferometer

*Cheng-Yen Yu (National Sun Yat-sen University); Chin-Ping Yu (National Sun Yat-Sen University);*

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**Session 1P14**

**FocusSession.SC3: Nanophotonics 2**

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**Monday PM, June 17, 2019**

**Room 24 - 2nd Floor**

Organized by Yeshaiahu Shaya Fainman, Newton C. Frateschi

Chaired by Yeshaiahu Shaya Fainman, Newton C. Frateschi

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14:30 Parity-time and Other Symmetries in Optics and Photonics

*Demetrios N. Christodoulides (University of Central Florida);*

15:00 Topological Light Sources

Invited

*Boubacar Kante (University of California San Diego);*

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- 15:20 Ultrafast Characterization of Photonic Topological Edge Modes  
Invited  
*Liang Feng (University of Pennsylvania); Zhifeng Zhang (University of Pennsylvania); Mingsen Pan (University of Pennsylvania); Han Zhao (University of Pennsylvania); Pei Miao (University of Pennsylvania);*
- 15:40 Collective Mechanisms for the Self-organization of Dynamic Photonic and Phononic Crystals out of Thermodynamic Equilibrium  
Invited  
*Nicolas Bachelard (University of California); Chad Ropp (University of California); Xiang Zhang (University of Hong Kong);*
- 16:00 Quantum Behavior in Mesoscale Lasers  
Invited  
*A. F. J. Levi (University of Southern California);*
- 16:30 **Coffee Break**
- 17:00 Nanoscale Light in Resonant Nanostructures  
Invited  
*C. P. T. McPolin (King's College London); Pan Wang (King's College London); A. V. Krasavin (King's College London); Anatoly V. Zayats (King's College London);*
- 17:20 Bound States in the Continuum Supported by Simple Nanophotonic Elements Integrated into a Slab Waveguide  
*Evgeni A. Bezus (Image Processing Systems Institute of the Russian Academy of Sciences); Dmitry Alexandrovich Bykov (Image Processing Systems Institute of the Russian Academy of Sciences); Leonid L. Doskolovich ("Crystallography and Photonics" of Russian Academy of Sciences); V. A. Soifer (Image Processing Systems Institute of the Russian Academy of Sciences);*
- 17:35 High-temperature Lasing Mode Regulation in 3D Perovskite Micro-cubic Cavity  
*Beier Zhou (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Science); Hongxing Dong (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Science); Mingming Jiang (Nanjing University of Aeronautics and Astronautics); Long Zhang (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Science);*
- 17:50 Polariton Meta-optics with Phase-change Materials  
Keynote  
*Federico Capasso (Harvard University); Michele Tamagnone (Harvard University); Kundan Chaudhary (Harvard University); Xinghui Yin (Harvard University); Christina Spagele (Harvard University); Jiahao Li (Kansas State University); Stefano Oscuro (Harvard University); Noah A. Rubin (Kansas State University); Luis Jauregui (Harvard University); Philip Kim (Harvard University); James H. Edgar (Kansas State University); Antonio Ambrosio (Harvard University);*
- 18:20 Optical Gain at Extremely Low Level of Carriers in 2D Materials  
Invited  
*Zhen Wang (Tsinghua University); Hao Sun (Tsinghua University); Qiyao Zhang (Tsinghua University); Jiabin Feng (Tsinghua University); Jianxing Zhang (Tsinghua University); Yongzuo Li (Tsinghua University); Cun-Zheng Ning (Arizona State University);*
- 18:40 Passive and Active Integrated Devices in Hybrid Plasmonics  
Invited  
*Amr S. Helmy (University of Toronto);*
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- Session 1P15**  
**FocusSession.SC3: Photosensitive Materials and Devices for Opto-mechanical Applications**  
**2**
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- Monday PM, June 17, 2019**  
**Room 25 - 2nd Floor**  
Organized by Atsushi Shishido, Marina Grenzer Saphiannikova  
Chaired by Atsushi Shishido, Seungwoo Lee
- 
- 14:30 Soft Mass Migration for Micro/Nanophotonics  
Invited  
*Seungwoo Lee (Korea University);*
- 14:50 Modeling Photomechanical Response of Azobenzene Polymers  
Invited  
*Marina Grenzer Saphiannikova (Leibniz-Institut für Polymerforschung Dresden);*
- 15:10 Azobenzene-assisted Formation of Non-spherical Light Responsive Polymeric Nanoparticles with Tunable Morphologies  
Invited  
*Aihua Chen (Beihang University);*
- 15:30 Photoalignment and Surface Morphing Attained from the Free Surface  
Keynote  
*Takahiro Seki (Nagoya University);*

- 16:00 Soft Mechanism and Actuation  
Invited  
*Shingo Maeda (Shibaura Institute of Technology);*
- 16:30 **Coffee Break**
- 17:00 Biological, Optical and Acoustic Applications of Azopolymeric Structures  
Invited  
*Emiliano Descrovi (Politecn Torino); Alberto Puliafito (University of Turin); Carlo Liberale (King Abdullah University of Science and Technology); Antonio S. Gliozzi (Polytechnic University of Turin);*
- 17:20 Complex Light-induced Surface Structuring of Azopolymer Films  
Invited  
*Stefano Luigi Oscurato (University of Naples "Federico II");*
- 17:40 Stimuli-responsive Luminescent Chromism of Flexible Complexes Containing Group 13 Elements  
Invited  
*Kazuo Tanaka (Kyoto University);*
- 18:00 Turn-on Mode Photoswitchable Fluorescent Molecules Based on Photochromic Diarylethenes  
Invited  
*Masakazu Morimoto (Rikkyo University);*

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**Session 1P16**

**FocusSession.SC2: Thermoplasmonics and Photo-thermal Applications 1**

**Monday PM, June 17, 2019**

**Room 15 - 2nd Floor**

Organized by Alessandro Alabastri, Remo Proietti Zaccaria

Chaired by Remo Proietti Zaccaria, Alessandro Alabastri

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- 14:30 Laser-induced Thermoelectric Effects in Electrically Biased Nanoscale Constrictions  
*M. M. Mennemanteuil (Université de Bourgogne Franche-Comte); A. Cuadrado (University Complutense of Madrid); J. Alda (University Complutense of Madrid); Alexandre Bouhelier (Université Bourgogne Franche-Comte);*
- 14:45 Towards Plasmonic Photon-to-phonon Energy Transfer and Control  
*Joao Cunha (Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences); Tian-Long Guo (Cixi Institute of Biomedical Engineering, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Science); Alessandro Alabastri (Rice University); Remo Proietti Zaccaria (Cixi Institute of Biomedical Engineering, Ningbo Institute of Materials and Technology Engineering, Chinese Academy of Sciences);*
- 15:00 Thermal Phonon Transport and Coherent Interference in Nanomaterials and Metamaterials  
Keynote  
*Martin Maldovan (Georgia Institute of Technology);*
- 15:30 Photothermal Energy Flow in Nanocrystal Assemblies: Experiments and Modeling  
Invited  
*Andrea Mazzanti (Politecnico di Milano); Zhijie Yang (Université Paris Diderot); Marie-Paule Pileni (CEA/IRAMIS); Giulio Cerullo (Politecnico di Milano); Giuseppe Della Valle (Politecnico di Milano);*
- 15:50 Radiative Heat Transport at the Nanoscale  
Invited  
*Bai Song (Peking University);*
- 16:10 Thermo-optic Single-plasmon Nonlinearity in Graphene Nanoislands  
Invited  
*Joel Douglas Cox (ICFO-Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); F. Javier Garcia De Abajo (ICFO-Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology);*
- 16:30 **Coffee Break**
- 17:00 Quantitative Phase Imaging for Thermoplasmonics  
Keynote  
*Guillaume Baffou (Aix Marseille University);*
- 17:30 Plasmonics of Noble Metal Nanoparticles in a Hot Thermodynamic Bath  
*Michele Magnozzi (Università di Genova); Marzia Ferrera (Università di Genova); Lorenzo Mattera (Istituto Nazionale per la Fisica della Materia); Maurizio Canepa (Istituto Nazionale per la Fisica della Materia); Francesco Bisio (CNR-SPIN);*
- 17:45 Thermoplasmonics with Ultrashort Laser Pulses  
Invited  
*Xue Hou (Univ. Paris Saclay, CNRS UMR 8537); N. Djellali (Univ. Paris Saclay, CNRS UMR 8537); Bruno Palpant (Univ. Paris Saclay);*
- 18:05 Plasmonic Hot Holes: Fundamentals and Devices  
Invited  
*Giulia Tagliabue (California Institute of Technology); Joseph S. DuChene (California Institute of Technology); Harry A. Atwater (California Institute of Technology);*
- 18:25 Quantifying Photothermal and Hot Charge Carrier Effects in Plasmon-driven Nanoparticle Syntheses  
Invited  
*Rifat Kamarudheen (DIFFER); Gabriel W. Castellanos (Eindhoven University of Technology); Leon P. J. Kamp (Eindhoven University of Technology); Herman J. H. Clercx (Eindhoven University of Technology); Andrea Baldi (DIFFER);*

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**Session 1P17a**  
**Electromagnetic Radiation Applications for**  
**Materials Diagnostics and Modification**

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**Monday PM, June 17, 2019**

**Room 33 - Bank Building**

Organized by Fedor Alexandrovich Gubarev

Chaired by Dong Feng He

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- 14:30 Corrosion Evaluation of Steel Reinforcing Bar Using Invited Electromagnetic Method  
*Dong Feng He (National Institute for Materials Science); S. Takaya (Kyoto University); N. Tsutsumi (National Institute for Materials Science); Koichi Tsuchiya (National Institute for Materials Science);*
- 14:50 Magnetic Anomaly Detection of Defects in Underground Ferromagnetic Pipeline Using Variational Mode Decomposition and Scale-space Segmentation  
*Haiyang Ju (Beijing University of Technology); Xinhua Wang (Beijing University of Technology); Tao Zhang (Beijing University of Technology); Yizhen Zhao (Beijing University of Technology); Zia Ullah (Beijing University of Technology);*
- 15:10 Defect Detection of Metal Pipeline Based on Harmonic Eddy Current  
*Yizhen Zhao (Beijing University of Technology); Xinhua Wang (Beijing University of Technology); Yingchun Chen (Beijing University of Technology); Haiyang Ju (Beijing University of Technology); Tao Zhang (Beijing University of Technology); Zia Ullah (Beijing University of Technology);*
- 15:30 Optical Imaging of Blood Vessels  
*Denis Olegovich Zyatkov (National Research Tomsk State University); Glushkov Gleb Sergeevich (Research Institute of Semiconductor Devices); Bakin Nikolay Nikolaevich (Research Institute of Semiconductor Devices); Lukinyh Igor Vitalievich (Research Institute of Semiconductor Devices); Dambaev George Tsirenovich (Siberian State Medical University);*

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**Session 1P17b**  
**SC1&SC4: Localized Waves: Science and**  
**Applications 2**

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**Monday PM, June 17, 2019**

**Room 33 - Bank Building**

Organized by Mauro Ettore, Walter Fuscaldo

Chaired by Mauro Ettore, Walter Fuscaldo

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- 15:50 Helicity of EM Pulses with Gaussian Envelope  
*Manuel Fernandez-Guasti (Universidad Autonoma Metropolitana Iztapalapa);*
- 16:10 Axially Localized Waves Carrying Orbital Angular Momentum: Physics, Emitters and Radio-links Limitations  
*Olivier Pascal (LAPLACE); Jerome Sokoloff (Université de Toulouse — UPS);*
- 16:30 **Coffee Break**
- 17:00 Investigation of Fractional Cylindrical Bessel Beams  
Keynote  
*Oscar V. Cespedes (Ecole Polytechnique de Montreal); Christophe Caloz (Ecole Polytechnique de Montreal);*
- 17:30 Localized Bessel Beams for Through-the-wall Communications  
*Sandra Costanzo (University of Calabria); Giuseppe Di Massa (Universita della Calabria);*
- 17:50 First Demonstration of Localized Rogue Wave Event in Cavity-free Structured Random Fiber Laser  
*Jiangming Xu (National University of Defense Technology); Pu Zhou (National University of Defense Technology); Jun Ye (National University of Defense Technology); Jiaxin Song (National University of Defense Technology); Jian Wu (National University of Defense Technology); Hanwei Zhang (National University of Defense Technology);*
- 18:10 Experimental Observation of Robust Boundary Modes in Photonic Kagome Lattices  
*Jina Ma (Nankai University); Haiping Wang (Nankai University); Xiuyan Zheng (Nankai University); Liqin Tang (Nankai University); Daohong Song (Nankai University); Zhigang Chen (Nankai University);*

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**Session 1P18**
**Integrated and Fiber-based Photonic Circuits  
and Devices**


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**Monday PM, June 17, 2019**
**Room 38 - Chemistry Building**

Organized by M. E. Belkin

 Chaired by A. S. Sigov, M. E. Belkin
 

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- 14:30 An Influence of the Coupling Region Geometry on the Transmission Characteristics of the Optical Micro-ring Resonators  
*Galina Zaretskaya (Saint Petersburg Electrotechnical University "LETI"); Andrey Drozdovskii (Saint Petersburg Electrotechnical University "LETI"); Boris A. Kalinikos (Saint Petersburg Electrotechnical University "LETI");*
- 14:50 Numerical Optimization of Grating Coupler Parameters for InP-based Photonic Circuits  
*Konstantin S. Grishakov (National Research Nuclear University MEPhI); Nikolay I. Kargin (National Research Nuclear University MEPhI);*
- 15:10 Fields and Modes in Thin Film Coated Optical Waveguides  
*E. I. Golant (Kotel'nikov Institute of Radioengineering and Electronics of the Russian Academy of Sciences); K. M. Golant (Kotel'nikov Institute of Radioengineering and Electronics of the Russian Academy of Sciences);*
- 15:30 Control of the Bistability in Spin-wave Optoelectronic Ring Resonators  
*Vitaliy V. Vitko (Saint Petersburg Electrotechnical University "LETI"); Andrey A. Nikitin (Saint Petersburg Electrotechnical University "LETI"); Alexey B. Ustinov (Saint Petersburg Electrotechnical University "LETI"); Boris Kalinikos (Saint Petersburg Electrotechnical University "LETI");*
- 15:50 Modelling of Quantum-confined Stark Effect in III-V Heterostructures for Electro-optic Modulator Applications  
*Yuri D. Sibirmovsky (National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)); Nikolay I. Kargin (National Research Nuclear University MEPhI); I. S. Vasil'evskii (National Research Nuclear University MEPhI (Moscow Engineering Physics Institute));*
- 16:10 Design of a Silicon Photonics Beam-steering Network Based on Fast Selective Phase Shift of a Multi-carrier Optical Source Using Doped Microring Resonators  
*C. Porzi (TeCIP Institute); F. Falconi (CNIT); A. Bogoni (TeCIP Institute, CNIT); P. Ghelfi (TeCIP Institute);*
- 16:30 **Coffee Break**
- 17:00 Integrated Optical Circuits Enhanced by Single Photon Detectors  
*G. Goltsman (National Research University Higher School of Economics); O. Kahl (University of Munster, Karlsruhe Institute of Technology); S. Ferrari (University of Munster, Karlsruhe Institute of Technology); V. Kovalyuk (Moscow State Pedagogical University); A. Vetter (Karlsruhe Institute of Technology); G. Lewes-Malandrakis (Fraunhofer Institute for Applied Solid State Physics); C. Nebel (Fraunhofer Institute for Applied Solid State Physics); A. Korneev (Moscow State Pedagogical University, Moscow Institute of Physics and Technology (State University)); W. Pernice (University of Munster);*
- 17:20 Temperature and Pump Dependent Operation of Short-cavity Erbium-doped Fiber Laser  
*A. M. Smirnov (Kotelnikov Institute of Radioengineering and Electronics of RAS; Lomonosov Moscow State University); A. P. Bazakutsa (Kotelnikov Institute of Radioengineering and Electronics of RAS); O. V. Butov (Kotelnikov Institute of Radioengineering and Electronics of RAS);*
- 17:40 Porous Ferroelectric Ceramics Films for Electronics and Photonics Applications  
*K. A. Vorotilov (Russian Technological University (MIREA-RTU)); A. S. Sigov (Russian Technological University (MIREA-RTU));*
- 18:00 Studying Key Principles for Design and Fabrication of Silicon Photonic-based Beamforming Networks  
*T. Bakhvalova (MIREA — Russian Technological University); M. E. Belkin (MIREA — Russian Technological University); V. V. Kovalyuk (MSPU — Moscow State Pedagogical University); A. I. Prokhodtsov (MSPU — Moscow State Pedagogical University); HSE — National Research University Higher School of Economics); G. N. Goltsman (MSPU — Moscow State Pedagogical University); HSE — National Research University Higher School of Economics); A. S. Sigov (MIREA — Russian Technological University);*
- 18:20 Optoelectronic Microwave Signal Time-retarding Device  
*M. E. Belkin (MIREA — Russian Technological University); T. Bakhvalova (MIREA — Russian Technological University); D. A. Fofanov (MIREA — Russian Technological University); M. G. Vasil'ev (Kurnakov Institute of General and Inorganic Chemistry, Russian Academy of Sciences); A. S. Sigov (MIREA — Russian Technological University);*
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- 18:40 Influence of Molecular Hydrogen Loading on Luminescent Properties of Heavily Er<sup>3+</sup>-doped Silica Optical Fibers  
*A. P. Bazakutsa (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); Alexander M. Smirnov (Kotel'nikov Institute of Radioengineering and Electronics of RAS); Oleg V. Butov (Kotel'nikov Institute of Radio-Engineering and Electronics of RAS);*

- 15:50 Comparison of Complementary Metamaterials in Microstrip Transmission Line and Applications  
*Tanveer Ul Haq (Beihang University); Cun-Jun Ruan (Beihang University); Xing-Yun Zhang (Beihang University); Shahid Ullah (Beihang University); Aysha Kosar Fahad (Beihang University); Jun Dai (Beihang University);*

16:30 **Coffee Break**

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**Session 1P19a**

**Oral Presentations for Best Student Paper Awards — SC2: Metamaterials, Plasmonics and Complex Media**

**Monday PM, June 17, 2019**

**Room 39 - Electrical Building**

Chaired by Francesca Apollonio, Guido Valerio, Alexander B. Yakovlev

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- 14:30 Tunable Wave Isolators Based on Space-time Modulated Graphene Sheets  
 Invited  
*Xu-Chen Wang (Aalto University); Ana Diaz-Rubio (Aalto University); Huanan Li (City University of New York); Andrea Alu (City University of New York);*
- 14:50 RF Coils for Preclinical Multinuclear Imaging Based on Coupled-wire Structures Working in Resonant and Non-resonant Regime  
*Tania S. Vergara Gomez (Aix-Marseille Université); Marc Dubois (Aix-Marseille Université); Stanislav B. Glybovski (ITMO University); Benoit Larrat (ITMO University); Julien De Rosny (PSL Research University); Carsten Rockstuhl (Karlsruhe Institute of Technology); Monique Bernard (Aix-Marseille Université); Redha Abdeddaim (ES-PCI Paris Tech.); Stefan Enoch (Institut Fresnel); Frank Kober (Aix-Marseille Université);*
- 15:10 Multiband Microwave Metamaterials Based on Optimized Arrangements of Split-Ring Resonators  
*Hande Ibili (Middle East Technical University); Selen Keles (Middle East Technical University); Ozgur Ergul (Middle East Technical University);*
- 15:30 A 3D Linear-to-circular Polarization Converter Regulated by the Gravity Field  
*Li Zeng (Nanjing University of Posts and Telecommunications); Hai Feng Zhang (Nanjing University of Posts and Telecommunications); Guo-Biao Liu (Nanjing University of Posts and Telecommunications); Tong Huang (Nanjing University of Posts and Telecommunications);*

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**Session 1P19b**

**Oral Presentations for Best Student Paper Awards — SC4: Antennas and Microwave Technologies**

**Monday PM, June 17, 2019**

**Room 39 - Electrical Building**

Chaired by Vincenzo Ferrara, Giuseppe Schettini, Jan Vrba

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- 17:00 Full-space Coverage Leaky-wave Antenna Based on Successive Space Harmonics  
*Amar Al-Bassam (RWTH Aachen University); Dirk Heberling (RWTH Aachen University); Christophe Caloz (Ecole Polytechnique de Montreal);*
- 17:20 A Times-4 Frequency Multiplier from K- to W-band  
*Lorenzo Pace (University of Rome "Tor Vergata"); A. Salvucci (University of Rome "Tor Vergata"); Silvio Fenu (University of Rome "Tor Vergata"); Walter Ciccognani (University of Roma Tor Vergata); Patrick Ettore Longhi (University of Rome Tor Vergata); Sergio Colangeli (University of Roma Tor Vergata); Ernesto Limiti (University of Rome Tor Vergata); P. Frijlink (OMMIC SAS); M. Renvoise (OMMIC SAS);*
- 17:40 A Reduced Sampling Scheme for Planar Near-field Measurements Using Pointwise Probe Correction in the Spherical Harmonics Basis  
*Cosme Culotta-Lopez (RWTH Aachen University); Dirk Heberling (RWTH Aachen University);*
- 18:00 Daisy Chain MIMO Antenna: A Big Challenge to Full-azimuth 100 Gbps Capacity  
*Nana Narukawa (Toyama University); Taiki Fukushima (Toyama University); Kazuhiro Honda (Toyama University); Koichi Ogawa (Toyama University);*

- 18:20 Over-the-air Testing of a  $32 \times 32$  Daisy Chain MIMO Antenna  
*Taiki Fukushima (Toyama University); Nana Narukawa (Toyama University); Kazuhiro Honda (Toyama University); Koichi Ogawa (Toyama University);*
- 18:40 Frequency Content of Carrier Oscillations along B-DNA Aperiodic and Periodic Polymers  
*M. Mantela (National and Kapodistrian University of Athens); K. Lambropoulos (National and Kapodistrian University of Athens); C. Vantaraki (Uppsala University); P. Bilal (National and Kapodistrian University of Athens); A. Morphis (National and Kapodistrian University of Athens); Constantinos Simserides (National and Kapodistrian University of Athens);*
- 19:00 A Miniaturized Design of Shared-aperture Antenna with High Aperture Reuse Ratio for 5G Applications  
*Chunxu Bai (UESTC); Yu Jian Cheng (University of Electronic Science and Technology of China);*

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**Session 1P20a**

**SC2: Novel Symmetry of Electromagnetic and Acoustic Metamaterials**

**Monday PM, June 17, 2019**

**Room 40 - Electrical Building**

Organized by Jensen Li, Johan Christensen

Chaired by Jensen Li

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- 14:30 Asymmetric Coupling Induced by Photonic Spin-orbit Interactions  
 Invited *Shubo Wang (City University of Hong Kong); Bo Hou (Soochow University); Che Ting Chan (The Hong Kong University of Science and Technology);*
- 14:50 Realizing Higher-order Topological Protection via Mechanical Structure  
 Invited *D. Zeb Rocklin (Georgia Institute of Technology); Adrien Saremi (Georgia Institute of Technology);*
- 15:10 Unidirectional Invisibility Realized by PT-symmetry  
 Invited *Jie Luo (Soochow University); Hongchen Chu (Soochow University); Jensen Li (Hong Kong University of Science and Technology); Yun Lai (Nanjing University);*

- 15:30 A Theoretical Investigation of Three-dimensional All-dielectric Dual-band Polarization Based on Multi-folds Arrow Structure  
*Yong-Diao Wen (Nanjing University of Aeronautics and Astronautics); Shaobin Liu (Nanjing University of Aeronautics and Astronautics); Zheng-Yu Huang (Nanjing University of Aeronautics and Astronautics); Hai Feng Zhang (Nanjing University of Posts and Telecommunications); Xiang-Kun Kong (Nanjing University of Aeronautics and Astronautics); Ling-Ling Wang (Nanjing University of Aeronautics and Astronautics); Qiming Yu (Nanjing University of Aeronautics and Astronautics);*
- 15:50 Hemispherical Acoustic Luneburg Lens Using an Orifice Type Metamaterial  
*Choon Mahn Park (Dong-A University); Sang Hun Lee (Sogang University);*
- 16:10 Bound States in the Continuum in the One- and Two-dimensional Electromagnetic Systems  
 Invited *Hong Xiang (Chongqing University); Dezhuan Han (Chongqing University);*

16:30 **Coffee Break**

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**Session 1P20b**

**Topological Acoustics 2**

**Monday PM, June 17, 2019**

**Room 40 - Electrical Building**

Organized by Meng Xiao, Chunyin Qiu

Chaired by Meng Xiao, Chunyin Qiu

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- 17:00 Topological Phenomena in Acoustics  
*Andrea Alu (City University of New York);*
- 17:20 On-chip Elastic Wave Manipulation by Valley Topological Materials  
*Feng Li (South China University of Technology); Mou Yan (South China University of Technology); Jiuyang Lu (South China University of Technology); Weiyin Deng (South China University of Technology); Xueqin Huang (South China University of Technology); Jiahong Ma (South China University of Technology); Zhengyou Liu (Wuhan University);*
- 17:40 Topologically Charged Nodal Surface and Nodal Line  
*Meng Xiao (Wuhan University); Liping Ye (Wuhan University); Chunyin Qiu (Wuhan University); Zhengyou Liu (Wuhan University); Shanhui Fan (Stanford University);*

18:40 Observation of Acoustic Landau Quantization and Quantum-Hall-like Edge States  
*Chunyin Qiu (Wuhan University); Xinhua Wen (Wuhan University); Zhengyou Liu (Wuhan University);*

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**Session 2A1**

**FocusSession.SC5: Applications of Microwave Remote Sensing in Terrestrial Hydrology**

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**Tuesday AM, June 18, 2019**

**Room 1 - 1st Floor**

Organized by Steven K. Chan, Rajat Bindlish

Chaired by Steven K. Chan, Rajat Bindlish

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- 09:00 A Radiative Transfer Algorithm for Global Retrieval of Vegetation Water Content  
*Steven K. Chan (NASA Jet Propulsion Laboratory, California Institute of Technology);*
- 09:20 A Genetic Algorithm for the Retrieval of Soil Multi-scale Roughness and Moisture Parameters  
*Ibtissem Hosni (Université El Manar); Lilia Benaceur Farah (Université El Manar); Imed Riadh Farah (Manouba University); Raouf Bennaceur (Université El Manar); M. S. Naceur (Université El Manar);*
- 09:40 Integrated SMAP and SMOS L-band Observations  
*Rajat Bindlish (NASA Goddard Space Flight Center); Steven K. Chan (NASA Jet Propulsion Laboratory, California Institute of Technology); Andreas Colliander (NASA Jet Propulsion Laboratory, California Institute of Technology); Yann H. Kerr (Centre d'Etudes Spatiales de la Biosphère (CES-BIO (CNRS/IRD/CNES/UPS))); Thomas J. Jackson (USDA (retired));*
- 10:00 Using the ASCAT Dynamic Vegetation Parameters for Terrestrial Hydrology  
*Susan C. Steele-Dunne (Delft University of Technology); Sebastian Hahn (Vienna University of Technology); Wolfgang Wagner (Vienna University of Technology); Mariette Vreugdenhil (Vienna University of Technology);*
- 10:20 Retrieval of Soil Moisture Using Sliced Regression Inversion Technique  
*Siddhant Gautam (Indian Institute of Technology Madras); Sakees V. Chidambaram (SFO Technologies); Niharika Gunturu (Indian Institute of Technology Madras); Uday K. Khankhoje (Indian Institute of Technology Madras);*
- 10:40 Hybrid Method of Numerical Solutions of 3D Maxwell Equations of the Effects of Vegetation and Forests in Microwave Remote Sensing of Soil Moisture at L band  
*Leung Tsang (University of Michigan); Huanqing Huang (University of Michigan); Andreas Colliander (California Institute of Technology); Simon H. Yueh (California Institute of Technology);*
- 11:00 **Coffee Break**
- 11:30 Polarized Bistatic Scattering from a Spatially Anisotropic Rough Surface with Inhomogeneous Dielectric Profile  
*Ying Yang (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Kun-Shan Chen (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences);*
- 11:50 Sensitivity of CYGNSS Reflectivity to Vegetation Water Content and Surface Roughness  
*Simon H. Yueh (California Institute of Technology); Rashmi Shah (California Institute of Technology); Xiaolan Xu (California Institute of Technology); Andreas Colliander (California Institute of Technology); Akiko Hayashi (California Institute of Technology);*
- 12:10 Global Scale Estimate of Forest Biomass by Using GNSS Reflectometry Techniques  
*Emanuele Santi (Consiglio Nazionale delle Ricerche); Simonetta Paloscia (CNR-IFAC); Simone Pettinato (Consiglio Nazionale delle Ricerche); G. Fontanelli (Institute of Applied Physics — National Research Council (IFAC-CNR)); Leila Guerriero (Università di Roma Tor Vergata); Nazzareno Pierdicca (University of Rome La Sapienza); M. P. Clarizia (Deimos Space UK Ltd.);*
- 12:30 Improving the Spatial Resolution of SMAP Soil Moisture Using Vegetation and Surface Temperature for CONUS  
*Bin Fang (University of Virginia); Venkataraman Lakshmi (University of Virginia); Rajat Bindlish (NASA Goddard Space Flight Center); Thomas J. Jackson (USDA (retired));*
- 12:50 Ultrawideband Microwave Radiometry: Model Estimations and Results from the First Antarctic Campaign  
*Marco Brogioni (Consiglio Nazionale delle Ricerche); M. Andreus (The Ohio State University); Joel T. Johnson (The Ohio State University); K. Jezek (The Ohio State University); Giovanni Macelloni (Consiglio Nazionale delle Ricerche); L. Kaleschke (AWI); M. Leduc (IFAC-CNR); Leung Tsang (University of Michigan);*

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**Session 2A2a**
**SC5: Radar Sounding Investigations of  
Terrestrial and Planetary Ices**


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**Tuesday AM, June 18, 2019**
**Room 5 - 1st Floor**

 Organized by Elena Pettinelli, Sebastian Emanuel  
Lauro
 

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- 09:00 Beyond Imaging the Ice/Ocean Interface: Deeper Information from European Radar Sounding  
*Dustin M. Schroeder (Stanford University);*
- 09:20 Jovian Icy Moons: Prospects for Deep Radar Probing of Thick Ice  
*Yaroslav A. Ilyushin (Moscow State University); P. Hartogh (Max-Planck-Institut für Sonnensystemforschung);*
- 09:40 Characterization of Polar and Potential Icy Mid-latitude Deposits on Mars with SHARAD  
*Bruce A. Campbell (Smithsonian Institution); Jennifer L. Whitten (Department of Earth and Environmental Sciences); Gareth A. Morgan (Planetary Science Institute);*
- 10:00 Global Mapping of Volatile Ices on Mars with SHARAD  
*Nathaniel E. Putzig (Planetary Science Institute);*
- 10:20 Structure and Composition of Cometary Nucleus from Consert Experiment on Rosetta Mission  
*Wlodek Kofman (Univ. Grenoble Alpes, CNRS, CNES, IPAG); Alain Herique (Univ. Grenoble Alpes, CNRS, CNES, IPAG);*
- 10:40 Radar Direct Observations of Asteroid Interior  
*Alain Herique (Université Grenoble Alpes, CNRS, CNES, IPAG); Wlodek Kofman (Université Grenoble Alpes, CNRS, CNES, IPAG);*
- 11:00 **Coffee Break**

- 11:30 Radar Evidence of Subglacial Liquid Water on Mars  
*Roberto Orosei (Istituto Nazionale di Astrofisica); S. E. Lauro (Università degli Studi Roma Tre); E. Pettinelli (Università degli Studi Roma Tre); A. Cicchetti (Istituto Nazionale di Astrofisica); M. Coradini (Agenzia Spaziale Italiana); B. Cosciotti (Università degli Studi Roma Tre); F. Di Paolo (Istituto Nazionale di Astrofisica); E. Flamini (Università degli Studi "Gabriele d'Annunzio"); E. Mattei (Università degli Studi Roma Tre); M. Pajola (Istituto Nazionale di Astrofisica); F. Soldovieri (Istituto per il Rilevamento Elettromagnetico dell'Ambiente); M. Cartacci (Istituto Nazionale di Astrofisica); F. Cassenti (Università degli Studi di Roma "La Sapienza"); A. Frigeri (Istituto Nazionale di Astrofisica); S. Giuppi (Istituto Nazionale di Astrofisica); R. Martufi (Università degli Studi di Roma "La Sapienza"); A. Masdea (E.P. Elettronica Progetti s.r.l.); G. Mitri (Università degli Studi "Gabriele d'Annunzio"); C. Nenna (Danfoss Italia); R. Noschese (Istituto Nazionale di Astrofisica); M. Restano (C/o ESA Centre for Earth Observation); R. Seu (Università degli Studi di Roma "La Sapienza");*

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**Session 2A2b**
**Microwave Remote Sensing, Polarimetry  
SAR, and Radar Imaging 1**


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**Tuesday AM, June 18, 2019**
**Room 5 - 1st Floor**

 Chaired by Isahar Gabay
 

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- 11:50 MIMO Radar with Dense or Random Pattern: Analysis of Phase and Positioning Error Sensitivity  
*Massimiliano Pieraccini (University of Florence); Neda Rojhani (University of Florence); Lapo Miccinesi (University of Florence);*
- 12:10 Application of Polarimetric Decomposition and Interferometric SAR Using ALOS-2 PALSAR-2 Data to Detect Potential of Combustible Peatland Areas  
*Joko Widodo (Chiba University); Ayaka Takahashi (Chiba University); Yuta Izumi (Chiba University); Peberlin Parulian Sitompul (Chiba University); Husnul Kausarian (Universitas Islam Riau); A. Suryadi (Universitas Islam Riau (UIR)); Pakhrur Razi (Universitas Negeri Padang); A. Munir (Institut Teknologi Bandung); Daniele Perissin (Chinese University of Hong Kong); Josaphat Tetuko Sri Sumantyo (Chiba University);*

- 12:30 Impact of a Spatial Decorrelation of the Noise on the Performance of Despeckling Filters for Polarimetric SAR Data  
*Alberto Arienzo (University of Florence); Fabrizio Argenti (Universita di Firenze); Luciano Alparone (University of Florence);*
- 12:50 Usage of Cellular Device for Mapping of Moving and Obscured Targets  
*Isahar Gabay (Bar-Ilan University); Meir Danino (Bar-Ilan University); Zeev Zalevsky (Bar-Ilan University);*

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**Session 2A3**

**SC4: RF Energy Harvesting and Rectennas**

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**Tuesday AM, June 18, 2019**

**Room 7 - 1st Floor**

Organized by Francesco Giuseppe Della Corte,  
Giuseppe Ferri

Chaired by Francesco Giuseppe Della Corte,  
Giuseppe Ferri

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- 09:00 Inductive Double-layer Harvester with Changeable Geometry  
*Gorana Mijatovic (University of Novi Sad); Nikola Djuric (University of Novi Sad); Kristian Haska (University of Novi Sad);*
- 09:20 Antennas Design for the Characterization of an UHF Remotely Powered UWB Pulse Generator  
*Mathieu Egels (Aix-Marseille University); R. Vauche (Aix-Marseille University); Emmanuel Bergeret (AMU (Aix-Marseille University));*
- 09:40 Design of Practical Rectennas for RF Energy Harvesting  
*Tolulope Christiana Erinoshio (D.S. Adegbenro ICT Polytechnic); Sulaiman Adeniyi Adekola (University of Lagos); K. Akinwale Amusa (Federal University of Agriculture);*
- 10:00 On Impedance Matching for RF Energy Harvesting Resonant Half-wave Dipole Antennas  
*Tolulope Christiana Erinoshio (Federal University of Agriculture); Sulaiman Adeniyi Adekola (University of Lagos); K. Akinwale Amusa (Federal University of Agriculture);*
- 10:20 Self-adapting Impedance Matching Circuit for UHF RF Energy Harvester  
*Massimo Merenda ("Mediterranea" University of Reggio Calabria);*

- 10:40 Effects of the Temperature on the Efficiency Degradation in Multi-stage RF Energy Harvesters  
*Massimo Merenda ("Mediterranea" University of Reggio Calabria); R. Carotenuto ("Mediterranea" University of Reggio Calabria); D. Iero ("Mediterranea" University of Reggio Calabria); Francesco Giuseppe Della Corte ("Mediterranea" University of Reggio Calabria);*

11:00 **Coffee Break**

- 11:30 A Multiband 150 nm CMOS Energy Harvester Architecture  
*I. Ulisse (University of L'aquila); Leonardo Pantoli (University of L'aquila); Giuseppe Ferri (University of L'aquila);*
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**Session 2A4**

**Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications 3**

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**Tuesday AM, June 18, 2019**

**Room 8 - 1st Floor**

Organized by Mariana Nikolova Georgieva-Grosse,  
Georgi Nikolov Georgiev

Chaired by Mariana Nikolova Georgieva-Grosse

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- 09:00 Approximate  $T$ -matrix and Optical Properties of Spheroidal Particles to Third Order in Size Parameter  
*Matt R. A. Majic (Victoria University of Wellington); Luke Pratley (Victoria University of Wellington); Dmitri Schebarchov (Victoria University of Wellington); Walter R. C. Somerville (Victoria University of Wellington); Baptiste Auguie (Victoria University of Wellington); Eric C. Le Ru (Victoria Univ Wellington);*
- 09:20 Modeling Molecular Orientation Effects in Dye-coated Nanostructures Using a Thin-shell Approximation of Mie Theory for Radially Anisotropic Media  
*Chhayly Tang (Victoria University of Wellington); Baptiste Auguie (Victoria University of Wellington); Eric C. Le Ru (Victoria Univ Wellington);*

- 09:40 Currents and Voltages Induced by Electric Field in Two Converging Single-wire Overhead Transmission Lines  
*K. A. Zimin (Joint-Stock Company "Research and Development Center of the Federal Grid Company of Unified Energy System"); Nina B. Rubtsova (FS-BSI "Research Institute of Occupational Health"); V. N. Ryabchenko (Joint-Stock Company "Research and Development Center of the Federal Grid Company of Unified Energy System"); A. Yu. Tokarskij (JSC Federal Network Company Branch "Main Power Networks of the Center");*
- 10:00 Electromagnetic Waves Guided by a Myelinated Axon  
Invited in the Optical and Infrared Ranges  
*Oleg M. Ostafiychuk (University of Nizhny Novgorod); Vasily Alekseevich Es'kin (University of Nizhny Novgorod); Alexander V. Kudrin (University of Nizhny Novgorod); A. A. Popova (University of Nizhny Novgorod);*
- 10:20 Computation of Electropulse-driven Regeneration of Magnetic Heterogeneous Materials  
*Rongshan Qin (The Open University);*
- 10:40 Resonant Properties of Impedance of a Two-layer Cylindrical Metal-dielectric Waveguide  
*Mikayel I. Ivanyan (Center for the Advancement of Natural Discoveries Using Light Emission (CAN-DLE)); Lusine Aslyan (Center for the Advancement of Natural Discoveries Using Light Emission (CAN-DLE));*
- 11:00 **Coffee Break**
- 11:30 Magnetic Current Distributions in slot Antennas within UHF/K/Ka Bands  
*Sulaiman Adeniyi Adekola (University of Lagos); K. Akinwale Amusa (Federal University of Agriculture);*
- 11:50 Dual Circular Polarization Textile Antenna for L1 and L2 GPS Applications  
*Walaa Mohamed Sobhy Hassen (Electronics Research Institute); Ahmed Mohamed Attiya (Electronics Research Institute);*
- 12:10 Calculation of Optimal Noise Levels for the Detection of Conductive Lenses in Permafrost with Low Frequency Pulsed Radar Scans  
*Kees Van den Doel (Adrok Ltd); G. Stove (Adrok Ltd);*
- 12:30 Statistical Design Centering of Microwave Circuits Using Modified Trust Region Optimization and Space Mapping Surrogates  
*Abdel-Karim S. O. Hassan (Cairo University); Ahmed Sayed Abdelsamea Mohamed (Cairo University); Ahmed E. El-Qenawy (Cairo University);*
- 12:50 Electromagnetic Field Computations Using Axial Green Function Methods  
*Junhong Jo (Inha University); Do Wan Kim (Inha University);*
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- Session 2A5**  
**Microwave Inverse Scattering Problems and Applications 1**
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- Tuesday AM, June 18, 2019**  
**Room Hall of Frescoes - 1st Floor**  
Organized by Uday K. Khankhoje, Raffaele Solimene  
Chaired by Uday K. Khankhoje, Raffaele Solimene
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- 09:00 A SVD-based Approach to the Study Local Minima in Inverse Scattering Problems  
*Adriana Brancaccio (Seconda Università di Napoli);*
- 09:20 Single-step Phaseless Inverse Scattering Approach  
*Sandra Costanzo (University of Calabria); Giuseppe Lopez (University of Calabria);*
- 09:40 A Study on the Effect of Diagonal Elements of Scattering Matrix in Microwave Imaging  
*Won-Kwang Park (Kookmin University); Kwang-Jae Lee (Electronics and Telecommunications Research Institute); Seong-Ho Son (Soonchunhyang University);*
- 10:00 Applications of Deep Learning in Inverse Scattering  
*Yash Sanghvi (Indian Institute of Technology Madras); Yaswanth Kalepu (Indian Institute of Technology Madras); Uday K. Khankhoje (Indian Institute of Technology Madras);*
- 10:20 Inverse Scattering Analysis Using Incident Field Extracted from Measured Total Field Data  
*Tomonori Tsuburaya (Fukuoka University); Zhi Qi Meng (Fukuoka University); Takashi Takenaka (Nagasaki University);*
- 10:40 Electromagnetic Detection of Buried Targets by Means of an Adaptive Inversion Approach  
*C. Estatico (University of Genoa); Alessandro Fedeli (University of Genoa); Matteo Pastorino (University of Genoa); Andrea Randazzo (University of Genoa);*
- 11:00 **Coffee Break**
- 11:30 Fourier Analysis for the Reconstruction of Radiating Sources on Conic Curves  
*Giovanni Leone (Università della Campania Luigi Vanvitelli); Fortuna Munno (Università della Campania Luigi Vanvitelli); Rocco Pierri (Università degli studi della Campania Luigi Vanvitelli);*

- 11:50 Plane-wave Field Synthesis for Monostatic RCS Prediction from Multistatic Near-field Samples on Irregular Grids  
*Ole Neitz (Lehrstuhl für Hochfrequenztechnik, TU München); Bernd Hofmann (Technical University of Munich); Thomas F. Eibert (Technical University of Munich);*
- 12:10 Radar Image Analysis for Detection of Wind Turbine Blade Damage  
*Young-Jae Choi (Hannam University); Yu-Jin Kim (Hannam University); In-Sik Choi (Hannam University);*
- 12:30 Numerical Analysis of Electromagnetic Multiphase Fraction Sensor  
*Yu Ke Lim (National University of Singapore); Cheng-Gang Xie (Schlumberger Oilfield (S) Pte Ltd.); Xudong Chen (National University of Singapore);*

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**Session 2A6**

**FocusSession.SC1&SC2&SC4: Leaky Waves in Electromagnetics 1**

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**Tuesday AM, June 18, 2019**

**Room Cloister Hall - 1st Floor**

Organized by Paolo Baccarelli, Paolo Burghignoli,  
Alessandro Galli, Paolo Lampariello

Chaired by Paolo Lampariello, Alessandro Galli

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- 09:00 The Role of Leaky Waves in the Beamforming of 2-D Leaky-wave Antennas  
Keynote  
*David Richard Jackson (University of Houston); Filippo Capolino (University of California-Irvine); Sohini Sengupta (Energous Corporation); Ahmad T. Almutawa (University of California); Hamidreza Kazemi (University of California); Paolo Burghignoli (Sapienza University of Rome); Giampiero Lovat (University of Roma "La Sapienza");*
- 09:30 The Physics of the Zenneck Wave and Its Numerical Computation  
Invited  
*Francisco L. Mesa (Universidad de Sevilla); David Richard Jackson (University of Houston);*
- 09:50 Leaky Modes in 1-D Periodic Layered Structures: Dyadic Green's Function Computation  
Invited  
*Guido Valerio (Sorbonne Université); Donald R. Wilton (University of Houston); David Richard Jackson (University of Houston); Paolo Baccarelli (Roma Tre University); Alessandro Galli (Sapienza University of Rome);*

- 10:10 A Full-wave Numerical Approach for Leaky Modes in EBG Structures  
Invited  
*Vakhtang Jandieri (University of Duisburg-Essen); Paolo Baccarelli ("Roma Tre" University); Guido Valerio (Sorbonne Université); Giuseppe Schettini ("Roma Tre" University);*
- 10:30 Surface Impedance Boundary Conditions under Transmit and Receive Conditions  
Invited  
*Bakhtiar Ali Khan (Concordia University Montreal); Robert Paknys (Concordia University);*
- 11:00 **Coffee Break**
- 11:30 Analytical Formulas for Frequency-unbalanced Periodic Leaky-wave Antennas  
Invited  
*Amar Al-Bassam (RWTH Aachen University); Simon Otto (IMST GmbH); Dirk Heberling (RWTH Aachen University); Christophe Caloz (Ecole Polytechnique de Montreal);*
- 11:50 Novel Prototypes of Single and Dual Elements of CRLH SIW LWA for Continuous Beam-scanning  
Invited  
*Rihem Noumi (University of Tunis El Manar); Jan Machac (Czech Technical University); Ali Gharsallah (University of Tunis El Manar);*
- 12:10 Proximity-coupled Half-width Microstrip Leaky-wave Guided Structure  
Invited  
*Ching-Kuang Tzuang (Tianjin University); Laurence D. Tzuang (DR Technology Consulting Co., Ltd.);*
- 12:30 New Beamwidth Formulas for 1-D Leaky-wave Antennas: A Review  
Invited  
*Walter Fuscaldo (Sapienza University of Rome); D. R. Jackson (University of Houston); A. Galli (Sapienza University of Rome);*

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**Session 2A7**

**SC3: Optical Management in Solar Cells**

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**Tuesday AM, June 18, 2019**

**Room 17 - 1st Floor**

Organized by Meicheng Li

Chaired by Meicheng Li

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- 09:00 Optical Properties of Thin-walled Nanotube TiO<sub>2</sub> Arrays  
*Christin David (Madrid Institute for Advanced Studies in Nanoscience (IMDEA Nanoscience));*
- 09:20 Monolayer-like Halide Perovskite Films for High Performance Solar Cells  
Invited  
*Jianjun Tian (University of Science and Technology Beijing);*

09:40 Photoexcitation Dynamics in Perovskite Solar Cells  
Invited

*Run Long (Beijing Normal University);*

10:00 Light Harvesting and Absorption of Novel Hybrid Solar Cells  
Invited

*Jun Ji (North China Electric Power University); Zhongliang Gao (North China Electric Power University); Hao Huang (North China Electric Power University); Yupeng Zheng (North China Electric Power University); Yingfeng Li (North China Electric Power University); Meicheng Li (North China Electric Power University);*

10:20 Optical Design for Advanced Tandem and Semitransparent Polymer Solar Cells  
Invited

*Hin-Lap Yip (South China University of Technology);*

10:40 Optical Management by Silicon Nanowire  
*Yingfeng Li (North China Electric Power University); Hejin Yan (North China Electric Power University); Zhongliang Gao (North China Electric Power University); Meicheng Li (North China Electric Power University);*

11:00 **Coffee Break**

11:30 Performance Enhancement of Thin-film Amorphous Silicon Solar Cells: Geometry Engineering and Coupled Optical/Electrical Modeling  
Invited

*Dongdong Li (Shanghai Advanced Research Institute, Chinese Academy of Sciences);*

11:50 Light and Charge Management in Solar Cell  
*Kong Liu (Institute of Semiconductors, Chinese Academy of Sciences); Shengchun Qu (Institute of Semiconductors, Chinese Academy of Sciences); Zhijie Wang (Institute of Semiconductors, Chinese Academy of Sciences);*

12:10 Lysine Assisted Self-assembly of Silica Microspheres on Textured Polycrystalline Silicon Solar Cells for Light Trapping

*Dan Su (Southeast University); Ning Zhao (Southeast University); Shan-Jiang Wang (Southeast University); Huan-Li Zhou (Southeast University); Yi Yang (Southeast University); Meng Xiong (Southeast University); Tong Zhang (Southeast University);*

12:50 Flexible Thin-film Solar Cells with High Weight-specific Power

*Min Yin (Shanghai Advanced Research Institute, Chinese Academy of Sciences); Linfeng Lu (Shanghai Advanced Research Institute, Chinese Academy of Sciences); Dongdong Li (Shanghai Advanced Research Institute, Chinese Academy of Sciences);*

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## Session 2A8

### SC3: Infrared Detectors

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**Tuesday AM, June 18, 2019**

**Room 6 - Mezzanine**

Organized by Michele Goano, Enrico Bellotti

Chaired by Michele Goano, Enrico Bellotti

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- 09:00 Interband Cascade Infrared Photodetectors — Current Status and Future Trends  
*Piotr Martyniuk (Military University of Technology);*
- 09:20 Polarization Insensitive High Detection Efficiency via Single-photon Detectors Based on Two-dimensional Plasmonic Grating Integrated into a Crossed Absorbing Nanowire Pattern  
*Bendeguz Toth (University of Szeged); Andras Szenes (University of Szeged); Maraczi David (University of Szeged); Balazs Banhelyi (University of Szeged); Tibor Csendes (University of Szeged); Maria Csete (University of Szeged);*
- 09:40 CMOS Pixel Sensors on Thick Fully-depleted Silicon Substrates for NIR Imaging  
*Lucio Pancheri (Università di Trento and TIFPA-INFN); J. Olave (INFN Torino and Politecnico di Torino); S. Panati (INFN Torino and Politecnico di Torino); A. Rivetti (INFN Torino); F. Cossio (INFN Torino and Politecnico di Torino); M. D. Da Rocha Rolo (INFN Torino); N. Demaria (INFN Torino); P. Giubilato (Università di Padova and INFN Padova); D. Pantano (Università di Padova and INFN Padova); S. Mattiazzo (Università di Padova and INFN Padova);*
- 10:00 Development and Production of IR Detectors at Sofradir with a Vertical Industrial Model  
*Laurent Rubaldo (SOFRADIR); Alexandre Brunner (SOFRADIR); Nicolas Pere-Laperne (SOFRADIR); Jocelyn Berthoz (SOFRADIR); Pierre Guinedor (SOFRADIR); Alexandre Kerlain (SOFRADIR); Alexandru Nedelcu (SOFRADIR); Vincent Deste-fanis (SOFRADIR); Rachid Taalat (SOFRADIR); Olivier Gravrand (CEA-LETI, MINATEC Campus); Johan Rothman (CEA-LETI, MINATEC Campus); David Billon-Lanfrey (SOFRADIR);*
- 10:20 Assessment of the Modulation Transfer Function in Infrared Focal Plane Arrays  
*Jonathan Schuster (U.S. Army Research Laboratory (ARL));*

- 10:40 Infrared Detectors for Imaging, Spectroscopy, and Scientific Instrumentation  
*Lorenzo Faraone (University of Western Australia); Jarek Antoszewski (University of Western Australia); Gilberto A. Umana-Membreno (University of Western Australia); Wen Lei (University of Western Australia); Nima Dehdashtikhavan (University of Western Australia); Renjie Gu (University of Western Australia);*
- 11:00 **Coffee Break**
- 11:30 NEGF Modeling of Carrier Transport in Antimonide-based Type-II Superlattice Absorbers  
*Francesco Bertazzi (Politecnico di Torino); Alberto Tibaldi (Politecnico di Torino); J. A. Gonzalez Montoya (Politecnico di Torino); Michele Goano (Politecnico di Torino); Enrico Bellotti (Boston University);*
- 11:50 Numerical Modeling of the C-V Characteristics of InAsSb-based nBn Infrared Detectors  
*Ilya Prigozhin (Boston University); Andreu Glasmann (Boston University); Enrico Bellotti (Boston University);*
- 12:10 Efficient Electrical Detection of Mid-infrared Graphene Plasmons at Room Temperature  
*Qiushi Guo (Yale University); Renwen Yu (The Barcelona Institute of Science and Technology); Cheng Li (Yale University); Shaofan Yuan (Yale University); Bingchen Deng (Yale University); F. Javier Garcia De Abajo (ICFO Institut de Ciències Fotoniques, Mediterranean Technology Park); Fengnian Xia (Yale University);*
- 12:30 Inter-pixel Crosstalk in Auger-Suppressed Dense Infrared Detectors  
*Marco Vallone (Politecnico di Torino); M. Goano (Politecnico di Torino); F. Bertazzi (Politecnico di Torino); G. Ghione (Politecnico di Torino); S. Hanna (AIM Infrarot-Module GmbH); D. Eich (AIM Infrarot-Module GmbH); H. Figgemeier (AIM Infrarot-Module GmbH);*
- 09:00 Exact Dispersive Quasi-normal Mode (DQNM) Expansion of Unbounded and Dispersive Nanophotonic Structures  
*Andre Nicolet (Aix-Marseille Université); M. D. Truong (Aix-Marseille Université); Guillaume Demesy (Aix-Marseille Université); Frederic Zolla (Aix-Marseille Université);*
- 09:20 Optical Microdisk Cavities with Weak Boundary Deformation  
*Jan Wiersig (Otto-von-Guericke-Universität Magdeburg);*
- 09:40 The Complex-valued Nature of the Mode Volume of Photonic and Plasmonic Nanocavities  
*Philippe Lalanne (Institut d'Optique/LCFIO);*
- 10:00 Ultra Sensitive Biological Detection with Optical Resonances  
*Frank Vollmer (University of Exeter);*
- 10:20 Polymeric Whispering Gallery Resonators  
*Invited Heinz Kalt (Karlsruhe Institute of Technology (KIT));*
- 10:40 Finite Element Simulations of Optical Resonances in Dispersive Nanoresonators  
*Sven Burger (Zuse Institute Berlin); Felix Binkowski (Zuse Institute Berlin); Lin Zschiedrich (JCMwave GmbH);*
- 11:00 **Coffee Break**
- 11:30 Intuitive Semi-analytical Model of Quasinormal Modes in Plasmonic Nanoresonators  
*Invited Haitao Liu (Nankai University); Jianing Wan (Nankai University); Junda Zhu (Nankai University); Ying Zhong (Tianjin University);*
- 11:50 Numerical Dipoles Method for Light Scattering by Complex Resonant Nanostructures  
*Invited Maxime Bertrand (Univ. Bordeaux); Alexis Devilez (Univ. Bordeaux); Jean-Paul Hugonin (Institut d'Optique/LCFIO); Philippe Lalanne (Institut d'Optique-LP2N/CNRS); Kevin Vynck (CNRS-IOGS-University Bordeaux);*
- 12:10 Quasinormal Mode Modeling of Leaky Optical Cavities and Plasmonic Nanoresonators  
*Invited Philip Trost Kristensen (Humboldt Universität zu Berlin);*
- 12:30 Modal Expansion of the  $T$ -matrix for Resonant Light Scatterers  
*Invited A. Oucharenko (Université Paris-Saclay); Jean-Paul Hugonin (Institut d'Optique/LCFIO); Christophe Sauvan (Université Paris-Sud 11);*

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**Session 2A9**

**SC3: Resonant Optics: Fundamentals and Applications 1**

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**Tuesday AM, June 18, 2019**

**Room 4 - Mezzanine**

Organized by Philippe Lalanne, Sven Burger

Chaired by Philippe Lalanne, Sven Burger

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12:50 Line Broadening Mechanisms in Hybrid Plasmonic  
Invited Systems for Strong Coupling  
*Gunter Keues (Humboldt-University Berlin); F. Binkowski (Zuse Institute Berlin); S. Burger (Zuse Institute Berlin); L. Zschiedrich (JCMwave GmbH Berlin); F. Stepe (University of Potsdam); W. Koopman (University of Potsdam); M. Bargheer (University of Potsdam); O. Benson (Humboldt-University Berlin);*

10:10 Competition between Size and Shape Effects in  
Invited the Second Harmonic Generation from Plasmonic Nanoparticles

*Pierre-Francois Brevet (Université Claude Bernard Lyon 1);*

10:30 Nonlinear Near Field Coupling of Graphene Plasmons  
with Quantum Emitters

*Joel Douglas Cox (ICFO-Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); F. Javier Garcia De Abajo (ICFO Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology);*

11:00 **Coffee Break**

11:30 Single-cycle Autocorrelation in Attosecond Coherent  
Invited Nanotransport

*Daniele Brida (Université du Luxembourg);*

11:50 Spatial Distribution and Modulation of Hot Electron  
Invited Nonlinear Photoluminescence in Au Nanowires

*A. Agreda (Université de Bourgogne Franche-Comté); D. Sharma (Indian Institute of Science Education and Research (IISER)); S. Viarbitskaya (Université de Bourgogne Franche-Comté); R. Hernandez (Université de Bourgogne Franche-Comté); B. Cluzel (Laboratoire ICB — Université de Bourgogne Franche-Comté); Olivier Demichel (UMR 6303 CNRS/Université de Bourgogne); Gerard Colas des Francs (CNRS-Université de Bourgogne); G. V. Pavan Kumar (IISER); Alexandre Bouhelier (Université Bourgogne Franche-Comté);*

12:10 Bichromatic Lattices, Harmonic Photonic Potential  
Invited and Novel Sources for Integrated Photonics

*Gabriel Marty (Thales Research and Technology); Delphin Dodane (Thales Research and Technology); Ines Ghorbel (Thales Research and Technology); Sylvain Combrie (Thales Research and Technology); Fabrice Raineri (Université Paris Saclay); Alfredo De Rossi (Thales Research and Technology);*

12:30 Second Harmonic Generation in the Mid-infrared by  
Invited Hole-doped Germanium Quantum Wells on Silicon Wafers

*Jacopo Frigerio (Politecnico di Milano and L-NESS); Andrea Ballabio (Politecnico di Milano and L-NESS); Michele Virgilio (Università di Pisa); Jonas Allerbeck (University of Konstanz); Joel Kuttruff (University of Konstanz); Daniele Brida (Université du Luxembourg); Chiara Ciano (Università Roma Tre); Monica De Seta (Università Roma Tre); Andrea Mancini (Sapienza University of Rome); Leonetta Baldassarre (Sapienza University of Rome); Michele Ortolani (Sapienza University of Rome);*

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### Session 2A10

#### FocusSession.SC3: Nonlinear Optics at the Nanoscale 1

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**Tuesday AM, June 18, 2019**

**Room 12 - Mezzanine**

Organized by Costantino De Angelis, Michele  
Celebrano

Chaired by Costantino De Angelis, Michele Celebrano

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09:00 Taming Ultrafast Nonlinear Response of Plasmonic  
Keynote Nanostructures

*Luke H. Nicholls (King's College London); Francisco J. Rodriguez Fortuno (King's College London); A. V. Krasavin (King's College London); Gregory A. Wurtz (King's College London); Anatoly V. Zayats (King's College London);*

09:30 Reevaluation of Radiation Reaction and Con-  
Invited sequences for Light-matter Interactions at the Nanoscale

*Michael Scalora (Charles M. Bowden Research Center, AMRDEC, RDECOM); M. A. Vincenti (University of Brescia); D. De Ceglia (University of Padova); N. Akozbek (AEGIS Technologies Inc.); M. J. Bloemer (Charles M. Bowden Research Center, AMRDEC, RDECOM); L. Roso (Centro de Laseres Pulsados (CLPU)); J. Trull (Universität Politecnica de Catalunya); C. Cojocar (Universität Politecnica de Catalunya); Joseph W. Haus (University of Dayton);*

09:50 Competing Second and Third-order Nonlinear Effects  
Invited in Plasmonic Nanoantennas

*Andrea Locatelli (Università degli Studi di Brescia); Michele Celebrano (Politecnico di Milano); Lavinia Ghirardini (Politecnico di Milano); Giovanni Pellegrini (Politecnico di Milano); Paolo Biagioni (Politecnico di Milano); Xiaofei Wu (University of Wurzburg); Swen Grossmann (University of Wurzburg); Costantino De Angelis (Università degli Studi di Brescia); Lamberto Duo (Politecnico di Milano); Bert Hecht (University of Wurzburg); Marco Finazzi (Politecnico di Milano);*

12:50 Strong-field-driven Dynamics and High-harmonic Generation in Interacting 1D Systems  
*Sandra De Vega (ICFO — Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); Joel D. Cox (The Barcelona Institute of Science and Technology); Fernando Sols (Universidad Complutense de Madrid); F. Javier Garcia De Abajo (ICFO Institut de Ciències Fotoniques, Mediterranean Technology Park);*

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**Session 2A11**

**SC2: Recent Advances of Metamaterials for Novel Electromagnetic and Photonic Devices 1**

**Tuesday AM, June 18, 2019**

**Room 11 - Mezzanine**

Organized by Yungui Ma, Sailing He

Chaired by Sailing He

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09:00 Simplified Magnetic Cloaks

Invited

*Alvaro Sanchez (Universitat Autònoma de Barcelona);*

09:20 Metasurface Based Integrated Imaging Devices

Invited

*Tao Li (Nanjing University); B. B. Xu (Nanjing University); Ji Chen (Nanjing University); C. Chen (Nanjing University); W. G. Song (Nanjing University); Shi-Ning Zhu (Nanjing University);*

09:40 Excitation of Leaky Surface Plasmon Polaritons in the Attenuated Total Reflection Configuration: A Fully-analytical Model

Invited

*Haitao Liu (Nankai University); Hongwei Jia (Nankai University); Yunya Xie (Nankai University); Ying Zhong (Tianjin University);*

10:00 Coherent Diffractive Imaging under Partially Coherent Illumination

Invited

*Yangjian Cai (Soochow University); Xingyuan Lu (Soochow University); Chengliang Zhao (Soochow University); Jun Zeng (Soochow University); Xinlei Zhu (Soochow University); Leixin Liu (Soochow University);*

10:20 Large-scale Tunable Broadband Absorber Based on Phase-changing Material GST

Invited

*Nanli Mou (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Science); Tao Wei (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Science); Hongxing Dong (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Science); Long Zhang (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Science); Shulin Sun (Fudan University);*

10:40 Gap-surface Plasmon Metasurfaces for Structured Beams Generation

Invited

*Fei Ding (University of Southern Denmark); Yiting Chen (University of Southern Denmark); Yuanqing Yang (University of Southern Denmark); Sergey I. Bozhevolnyi (University of Southern Denmark);*

11:00 **Coffee Break**

11:30 Dielectric Metasurfaces for Local Enhancement and Coupling of Light

Invited

*Sailing He (Zhejiang University);*

11:50 Ultra-wideband Polarization Converter Using Anisotropic Metasurface

*Yinrui Zhao (Lanzhou University); Buxiong Qi (Lanzhou University); Zhong-Lei Mei (Lanzhou University);*

12:10 A Transparent Radar-infrared Bi-stealth Structure with a Microwave Transmission Window

Invited

*Shuomin Zhong (Ningbo University); Lijie Wu (Ningbo University); Wei Jiang (Zhejiang University); Taijun Liu (Ningbo University); Ji Fu Huang (Ningbo University); Yungui Ma (Zhejiang University);*

12:30 Fully All-optical Multi-input Logic Gates Based on Bandgap Solitons in Guiding Photonic Crystal Nanostructures

*Tornike Onoprishvili (Free University of Tbilisi); Vakhtang Jandieri (University of Duisburg-Essen); Ramaz Khomeriki (Tbilisi State University); Daniel Erni (University of Duisburg-Essen, Campus Duisburg);*

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**Session 2A12a**

**FocusSession.SC2: Hybrid and Plasmonic Metastructures 2**

**Tuesday AM, June 18, 2019**

**Room 21 - 2nd Floor**

Organized by Roberto Caputo, Antonio De Luca

Chaired by Roberto Caputo

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09:00 Photonic Metamaterials Mechanically Reconfigurable at Nanoscale via Liquid Crystals

Invited

*Oleksandr Buchnev (University of Southampton); Nina Podoliak (University of Southampton); Malgosia Kaczmarek (University of Southampton); Lidi Jiang (University of Southampton); Vasily A. Fedotov (University of Southampton);*

- 09:20 Cooperative Energy Transfer Controls the Spontaneous Emission Rate beyond Field Enhancement Limits  
Invited  
*Mohamed ElKabbash (Case Western Reserve University); Tigran V. Shahbazyan (Jackson State University); Jesse Berezovsky (Case Western Reserve University); Francesco De Angelis (Istituto Italiano di Tecnologia); Giuseppe Strangi (Case Western Reserve University);*
- 09:40 Multifunctional Flat Optics  
Keynote  
*Federico Capasso (Harvard University);*
- 10:10 Complex Plasmonic Systems: Interactions with Nanoscale Emitters  
Invited  
*Pierre-Michel Adam (Université de Technologie de Troyes);*
- 10:30 Negative Refractive Index and Optical Activity in Key Natural Compound Structures  
*Nantakan Wongkasem (University of Texas Rio Grande Valley);*
- 11:00 **Coffee Break**

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**Session 2A12b**  
**Trends in Metasurfaces: New Materials and Applications**

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**Tuesday AM, June 18, 2019**

**Room 21 - 2nd Floor**

Organized by Josep Canet-Ferrer

Chaired by Roberto Caputo

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- 11:30 Effect of Activating Agent on Electromagnetic Waves Absorption of Carbon-based Radar Absorber Material  
*Yohandri (Universitas Negeri Padang); Zulpadrianto (Universitas Negeri Padang); Debi Rianto (Universitas Negeri Padang); Nova Satria (Universitas Negeri Padang); Ananda Putra (Universitas Negeri Padang); Josaphat Tetuko Sri Sumantyo (Chiba University);*
- 11:50 Making an Active Carbon from Candlenut Shell for the Application of Electromagnetic Wave Absorbers  
*Hanifah Hutami (Universitas Negeri Padang); Gita Rabelsa (Universitas Negeri Padang); Ananda Putra (Universitas Negeri Padang); Yohandri Azwir (Universitas Negeri Padang);*

- 12:10 Pyramidal Radar Absorber Based on Coconut Shell Activated Carbon for Anechoic Chamber Application  
*Gita Rabelsa (Universitas Negeri Padang); Debi Rianto (Universitas Negeri Padang); Ananda Putra (Universitas Negeri Padang); Cahya Edi Santosa (Chiba University); Josaphat Tetuko Sri Sumantyo (Chiba University); Yohandri (Universitas Negeri Padang);*
- 12:30 An Ultra-broadband Tunable Metamaterial Absorber Based on the Vanadium Dioxide  
*Ri-Na Dao (Nanjing University of Posts and Telecommunications); Xin-Ru Kong (Nanjing University of Posts and Telecommunications); Hai Feng Zhang (Nanjing University of Posts and Telecommunications); Xing-Liang Tian (Nanjing University of Posts and Telecommunications);*

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**Session 2A13**

**FocusSession.SC3: Advanced Optofluidics: Where Photonics Meets Microfluidics and Life Science 1**

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**Tuesday AM, June 18, 2019**

**Room 22 - 2nd Floor**

Organized by Francesco Simoni, Luigino Criante

Chaired by Francesco Simoni, Luigino Criante

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- 09:00 Optical Tweezers Comes of Age: New Studies in Liquid, Air and Vacuum  
Keynote  
*Kishan Dholakia (University of St Andrews);*
- 09:30 Contactless Optorheology of Complex Fluids at Small Scale Using Optical Radiation Pressure  
Invited  
*Gopal Verma (Université de Bordeaux); Michelle Ash (Université de Bordeaux); Hugo Chesneau (Université de Bordeaux); Hamza Chraïbi (Université of Bordeaux); Ulysse Delabre (Université of Bordeaux); Regis Wunenburger (Sorbonne Université); Jean-Pierre Delville (Université of Bordeaux);*
- 09:50 Optofluidic Sensor for Point-of Care Hemolysis Detection  
Invited  
*Anders Kristensen (Technical University of Denmark); Chen Zhou (Technical University of Denmark); Mehdi Keshavarz Hedayati (Durham University); Xiaolong Zhu (Technical University of Denmark); Frank Nielsen (Radiometer Medical ApS); Uriel Levy (Hebrew University of Jerusalem);*

10:10 Spin-dependent Lateral Force Induced on a Mie Particle in an Evanescent Optical Field  
Invited  
*Lulu Liu (Harvard University); Andrea Di Donato (Harvard University); Vincent Ginis (Vrije Universiteit Brussel); Simon Kheifets (Harvard University); Arman Amirzhan (Harvard University); Federico Capasso (Harvard University);*

10:30 Battery-free Fully Integrated Microfluidic Light Source for Portable Lab-on-a-chip Applications  
Invited  
*Filippo Storti (Istituto Italiano di Tecnologia); Silvio Bonfadini (Istituto Italiano di Tecnologia); Luigino Criante (Istituto Italiano di Tecnologia);*

11:00 **Coffee Break**

11:30 Photo-controllable Active Liquid Crystalline Droplet  
Invited  
*Kenji Katayama (Chuo University);*

11:50 Nanometer-precision Linear Sorting with Synchronized Optofluidic Dual Barriers  
Invited  
*Ai Qun Liu (Nanyang Technological University);*

12:10 Raman Spectroscopy for Biomedical Applications: From Label-free Cancer Cell Sorting to Imaging  
Invited  
*Anna Chiara De Luca (Institute of Protein Biochemistry (IBP), National Research Council of Italy); Gianluigi Zito (Institute of Protein Biochemistry (IBP), National Research Council of Italy); Stefano Manago (Institute of Protein Biochemistry (IBP), National Research Council of Italy);*

12:30 Surface-enhanced Raman Spectroscopy in Microfluidic Chips for Directed Evolution of Enzymes and Environmental Monitoring  
Invited  
*Zdenek Pilat (Institute of Scientific Instruments of the CAS); Jan Jezek (Institute of Scientific Instruments of the CAS); Martin Kizovsky (Institute of Scientific Instruments of the CAS); Tereza Klementova (Institute of Scientific Instruments of the CAS); Stanislav Kratky (Institute of Scientific Instruments of the CAS); Jaroslav Sobota (Institute of Scientific Instruments of the CAS); Ota Samek (Institute of Scientific Instruments of the CAS); Pavel Zemanek (Institute of Scientific Instruments of the CAS); Tomas Buryska (Institute of Scientific Instruments of the CAS); Jiri Damborsky (Masaryk University); Zbynek Prokop (Masaryk University);*

12:50 Reusable Localized Surface Plasmon Sensors Based on Octupolar Nanostructures for dsDNA Detection  
Invited  
*Riccardo Castagna (Institute of Applied Sciences and Intelligent Systems “E. Caianiello”, CNR); R. K. Trojanowicz (Wroclaw University of Science and Technology); Massimo Rippa (Institute of Applied Sciences and Intelligent Systems “E. Caianiello”, CNR); Joseph Zyss (LPQM-Ecole Normale Supérieure de Cachan); K. Matczyszyn (Wroclaw University of Science and Technology); Lucia Petti (Institute of Applied Sciences and Intelligent Systems — ISASI, CNR);*

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### Session 2A14

#### FocusSession.SC3: Advanced Photonic Technologies for Spectroscopic Applications 1

Tuesday AM, June 18, 2019

Room 24 - 2nd Floor

Organized by Wei Dong Chen, Vincenzo Spagnolo, Ulrike Willer

Chaired by Wei Dong Chen, Vincenzo Spagnolo, Ulrike Willer

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09:00 Wavelength Stabilized and Tunable High-power Diode Lasers for Spectroscopic Applications  
Invited  
*Bernd Sumpf (Leibniz-Institut für Höchstfrequenztechnik);*

09:20 Long Wave Infrared ( $\lambda = 10\text{--}25\ \mu\text{m}$ ) Quantum Cascade Lasers for Molecular Spectroscopy Applications  
Invited  
*Roland Teissier (Université de Montpellier); Zeineb Loghmari (Université de Montpellier); Michael Bahriz (Université de Montpellier); Alexei N. Baranov (Université de Montpellier);*

09:40 Parametric Sources for Chemicals and Gas Sensing  
Invited  
*Jean-Baptiste Dherbecourt (ONERA — The French Aerospace Lab); Julie Armougom (ONERA, DPHY, Université Paris Saclay); Guillaume Walter (ONERA, DPHY, Université Paris Saclay); Thomas Hamoudi (ONERA, DPHY, Université Paris Saclay); Jean-Michel Melkonian (ONERA — The French Aerospace Lab); Antoine Godard (ONERA — The French Aerospace Lab); Myriam Raybaut (ONERA, DPHY, Université Paris Saclay);*

- 10:00 Interband Cascade Lasers Frequency Noise Characterization and Stabilization  
Invited  
*Simone Borri (CNR-INO, Istituto Nazionale di Ottica); Mario Siciliani De Cumis (ASI Agenzia Spaziale Italiana — Centro di Geodesia Spaziale); Silvia Viciani (CNR-INO, Istituto Nazionale di Ottica); Francesco D'Amato (CNR-INO, Istituto Nazionale di Ottica); Paolo De Natale (CNR-INO, Istituto Nazionale di Ottica);*
- 10:20 Strategies for Frequency Stabilization and Noise Reduction in Dual-QCL-comb Spectroscopy  
Invited  
*Stephane Schilt (Université de Neuchâtel); Pierre Brochard (Université de Neuchâtel); Atif Shehzad (Université de Neuchâtel); Renaud Matthey (Université de Neuchâtel); Andreas Hugi (IRsweep AG); Pierre Jouy (IRsweep AG); Filippos Kapsalidis (Institute for Quantum Electronics, ETH Zurich); Mehran Shahmohammadi (Institute for Quantum Electronics, ETH Zurich); Michele Gianella (Laboratory for Air Pollution/Environmental Technology); Jerome Faist (ETH Zurich); Lukas Emmenegger (Laboratory for Air Pollution/Environmental Technology); Thomas Sudmeyer (Université de Neuchâtel);*
- 10:40 Vernier Superstructure Grating Quantum Cascade Lasers with Gain Compensation and Non-uniform Channel Spacing  
*Nicolas Villa (Alpes Lasers SA); Gregory Strubi (Alpes Lasers SA); Stephane Blaser (Alpes Lasers SA); Tobias Gresch (Alpes Lasers SA); Jeremy Butet (Alpes Lasers SA); Antoine Muller (Alpes Lasers SA);*
- 11:00 **Coffee Break**
- 11:30 Quantum Cascade Lasers and Frequency Combs  
Keynote  
*Jerome Faist (ETH Zurich);*
- 12:00 Spectrally Tunable Germanium-on-silicon Photodetectors: Design and Simulations  
*Andrea De Iacovo (University Roma Tre); Andrea Ballabio (Politecnico di Milano and L-NESS); Jacopo Frigerio (Politecnico di Milano and L-NESS); Lorenzo Colace (University Roma Tre); Giovanni Isella (Politecnico di Milano);*
- 12:15 QCLs and QCDs: On-chip and Remote Sensing  
Invited  
*Gottfried Strasser (Vienna University of Technology (TU Wien)); B. Hinkov (Technische Universitaet Wien); Rolf Szedlak (Technische Universitaet Wien); H. Detz (Technische Universitaet Wien); A. M. Andrews (Technische Universitaet Wien); W. Schrenk (Technische Universitaet Wien); B. Schwarz (Technische Universitaet Wien);*
- 12:35 Germanium Quantum Wells for Far-infrared Lasers Assembled Using Silicon-based Heterostructures (FLASH)  
*Chiara Ciano (Università Roma Tre); Michele Virgilio (Università di Pisa); Michele Montanari (Università Roma Tre); Luca Persichetti (Università Roma Tre); Luciana Di Gaspare (Università Roma Tre); Michele Ortolani (Sapienza University of Rome); Leonetta Baldassarre (Sapienza University of Rome); Luigi Bagolini (Università Roma Tre); Marvin H. Zoellner (IHP — Leibniz-Institut für Innovative Mikroelektronik); Oliver Skibitzki (IHP — Leibniz-Institut für Innovative Mikroelektronik); David Stark (Institute for Quantum Electronics); Giacomo Scaliari (ETH Zurich); Jerome Faist (Eidgenössische Technische Hochschule); Douglas J. Paul (University of Glasgow); Kirsty Rew (University of Glasgow); Mario Scuderi (Istituto per la Microelettronica e Microsistemi (CNR-IMM)); Giuseppe Nicotra (Istituto per la Microelettronica e Microsistemi (CNR-IMM)); Thomas Grange (Nextnano GmbH); Stefan Birner (Nextnano GmbH); Giovanni Capellini (Università Roma Tre); Monica De Seta (Università Roma Tre);*
- 12:50 Long Path Optical Absorption Spectroscopy for Measurement of Greenhouse Gases and Dissolved Gases  
Invited  
*Jiajin Chen (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Yang Dong (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Jingjing Wang (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Kunyang Wang (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Mingsi Gu (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Xingyu Zhou (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Kun Liu (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Tu Tan (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Guishi Wang (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Xiaoming Gao (Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences);*

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**Session 2A15**  
**Disordered Photonics 1**

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**Tuesday AM, June 18, 2019**

**Room 25 - 2nd Floor**

Organized by Pedro David Garcia Fernandez, Jacopo Bertolotti

Chaired by Pedro David Garcia Fernandez, Jacopo Bertolotti

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09:00 Transverse Localization of Transmission Eigenchannels in Diffusive Slabs

Invited *Hui Cao (Yale University);*

09:20 Interference Effects in Raman Scattering Propagation in Complex Media

Invited *Barbara Fazio (Consiglio Nazionale delle Ricerche — Istituto per i Processi Chimico-Fisici (IPCF));*

09:40 Light Propagation in Complex Media, Meets Signal Processing: From Imaging, to Optical Computing

Invited *Sylvain Gigan (Université Pierre et Marie Curie);*

10:00 An Experimental Test for the Anderson Localization of Light

Invited *Marco Leonetti (CNR NANOTEC — Institute of Nanotechnology); Behnam Abaie (University of New Mexico); Arash Mafi (University of New Mexico); Giancarlo Ruocco (University “La Sapienza”); Walter Schirmacher (Institut für Physik, Universität Mainz);*

10:20 Anderson Light Localization in Natural and Biological Media

Invited *Young L. Kim (Purdue University);*

10:40 Nonlinear Frequency Mixing Imaging through Highly Scattering Biological Tissues

Invited *Matthias Hofer (Aix-Marseille Université); Sophie Brasselet (Aix-Marseille Université);*

11:00 **Coffee Break**

11:30 Real-time Mode Control for Compressive Imaging through Multimode Fibers

Invited *Sakshi Singh (University of Colorado Boulder); Simon Labouesse (University of Colorado Boulder); Omer Tzang (University of Colorado Boulder); Eyal Niv (University of Colorado Boulder); Rafael Piestun (University of Colorado Boulder);*

11:50 Imaging the Electromagnetic Fields

Invited *Massimo Gurioli (University of Florence);*

12:10 Super-resolved Single-molecule Mapping of the Local Density of States

Invited *G. Blanquer (PSL University); B. Van Dam (PSL University); D. Bouchet (PSL University); S. Marguet (Université Paris-Saclay); Yannick De Wilde (Institut Langevin); I. Izeddin (PSL University); Valentina Krachmalnicoff (Institut Langevin, ESPCI ParisTech, CNRS);*

12:30 Nanophotonic Lasers on a Graph

Invited *Riccardo Sapienza (Imperial College London);*

12:50 Speckle Statistics in Disordered Media under Partially Polarized Illumination Predicted with a Unique Correlation Parameter

Invited *Myriam Zerrad (Université Paul Cezanne); Gabriel Soriano (Aix-Marseille Université); Claude Amra (Université Paul Cezanne);*

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**Session 2A16**

**3\_ PIER\_ Special\_ Issue\_ Session: Organic and Perovskite Optoelectronics 2**

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**Tuesday AM, June 18, 2019**

**Room 15 - 2nd Floor**

Organized by Wallace C. H. Choy, Tae-Woo Lee

Chaired by Wallace C. H. Choy, Tae-Woo Lee

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09:00 Efficient Strategies for Polycrystalline Perovskite Light-emitting Diodes

Invited *Min-Ho Park (Seoul National University); Su-Hun Jeong (Seoul National University); Himchan Cho (Seoul National University); Tae-Woo Lee (Seoul National University);*

09:20 Nanopatterning of Thin Perovskite Films for High Performance Photo-electronic Applications

Invited *Beomjin Jeong (Yonsei University); Hyowon Han (Yonsei University); Cheolmin Park (Yonsei University);*

09:40 Improved Efficiency of Metal Halide Based Perovskite Light-emitting Diodes by Passivation Methods

Invited *Seungjin Lee (Ulsan National Institute of Science and Technology (UNIST)); Chung Hyeon Jang (Ulsan National Institute of Science and Technology (UNIST)); Jong Hyun Park (Ulsan National Institute of Science and Technology (UNIST)); Ah-young Lee (Ulsan National Institute of Science and Technology (UNIST)); Myoung Hoon Song (Ulsan National Institute of Science and Technology (UNIST));*

10:00 Thermally Stable, Planar Hybrid Perovskite Solar  
Invited Cells with High Efficiency  
*Taiho Park (Pohang University of Science and Technology (POSTECH));*

10:20 Sequentially Stamped Bilayer Polymer Solar Cells  
Invited from Water  
*Jung-Yong Lee (Korea Advanced Institute of Science and Technology (KAIST));*

10:40 Investigation on Inhomogeneous Schottky Barrier in  
Small Molecular Organic Photovoltaics and Its Appli-  
cation as Indoor Photovoltaics  
*Sajal Biring (Ming Chi University of Technology);  
Thanh Phuc Nguyen (Ming Chi University of Technol-  
ogy); Anhyuday Paliwal (Ming Chi University of Tech-  
nology); Ken-Tsong Wong (National Taiwan Univer-  
sity); Shun-Wei Liu (Ming Chi University of Technol-  
ogy);*

11:00 **Coffee Break**

11:30 Organic Upconversion Device: The Integrated Out-  
Invited come of Organic Photodetector, Exciplex Organic  
Light-emitting Diode, and Transparent Electrode  
*Shun-Wei Liu (Ming Chi University of Technology);  
Chih-Chien Lee (National Taiwan University of Sci-  
ence and Technology); Sajal Biring (Ming Chi Univer-  
sity of Technology);*

11:50 Bright and Efficient Light-emitting Diodes Based on  
Invited Perovskite Nanocrystals  
*Kai Wang (Southern University of Science and Tech-  
nology);*

12:10 The Photophysics of the Disruptive Perovskites  
Keynote  
*Tze Chien Sum (Nanyang Technological University);*

12:40 Dopant-free Organic Hole Transporting Materials for  
Invited Stable and Efficient Perovskite Solar Cells  
*Xue Lai (Southern University of Science and Tech-  
nology); Fei Meng (Southern University of Science  
and Technology); Wenhui Li (Southern University  
of Science and Technology); Gongqiang Li (Nanjing  
Tech University (NanjingTech)); Aung Ko Ko Kyaw  
(Southern University of Science and Technology);*

13:00 Enhance Efficiency of MAPbI<sub>3</sub> Perovskite Solar Cells  
Invited with FAPbX<sub>3</sub> Perovskite Quantum Dots  
*Lung-Chien Chen (National Taipei University of  
Technology); Zong-Liang Tseng (Ming Chi University  
of Technology);*

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### Session 2A17

#### Electromagnetic Wave Propagation in Ionized and Complex Media 1

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Tuesday AM, June 18, 2019

Room 33 - Bank Building

Organized by Anatoly A. Kudryavtsev, Chengxun  
Yuan

Chaired by Anatoly A. Kudryavtsev, Chengxun Yuan

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09:00 Statistical Characteristics of Scattered Electromag-  
netic Waves in the Conductive Magnetized Plasma  
*George Jandieri (VSB — Technical University of  
Ostrava); Akira Ishimaru (University of Washing-  
ton); Jaromir Pistora (VSB — Technical University  
of Ostrava); Banmali Rawat (University of Nevada);  
Zhuzhuna Diasamidze (Batumi Shota Rustaveli State  
University);*

09:20 Electron Multiplication Kinetics in a Stepped Wave-  
guide Impedance Transformer  
*Zach C. Shaw (Texas Tech University);  
Melvin C. Powell (Texas Tech University);  
James Claude Dickens (Texas Tech University);  
John J. Mankowski (Texas Tech University); An-  
dreas A. Neuber (Texas Tech University);*

09:40 The Propagation Characteristics of Terahertz Wave  
in a DBD Plasma  
*Chengxun Yuan (Harbin Institute of Technology);  
Jingfeng Yao (Harbin Institute of Technology);  
Jinyue Fan (Harbin Institute of Technology);  
Ying Wang (Harbin Institute of Technology);  
Xiaou Wang (Harbin Institute of Technology);  
Zhongxiang Zhou (Harbin Institute of Technology);  
A. A. Kudryavtsev (Harbin Institute of Technology);*

10:00 Nonlinear Propagating Characteristics of Gaussian  
Laser Beam in Weakly Ionized Dusty Plasma  
*Ying Wang (Harbin Institute of Technology);  
Chengxun Yuan (Harbin Institute of Technology);  
Zhongxiang Zhou (Harbin Institute of Technology);*

10:20 The Microwave Propagation in a Dust Plasma of a  
DC Glow Discharge  
*Shubo Li (Harbin Institute of Technology);  
Hengyang Xia (Harbin Institute of Technology);  
Chengxun Yuan (Harbin Institute of Technol-  
ogy); Zhe Ding (Harbin Institute of Technology);  
Xiaou Wang (Harbin Institute of Technology);  
Zhongxiang Zhou (Harbin Institute of Technology);  
A. A. Kudryavtsev (Harbin Institute of Technology);*

10:40 Analysis and Optimization of Microwave Transmission in a Magnetized Plasma-Metal Model  
*Jingfeng Yao (Harbin Institute of Technology); Zhi Yu (Harbin Institute of Technology); Chengxun Yuan (Harbin Institute of Technology); Ying Wang (Harbin Institute of Technology); Xiaou Wang (Harbin Institute of Technology); Zhongxiang Zhou (Harbin Institute of Technology); A. A. Kudryavtsev (Harbin Institute of Technology);*

11:00 **Coffee Break**

11:30 Diagnostics of Large Volume Coaxial Gridded Hollow Cathode DC Discharge for the Experiments of Electromagnetic Wave Propagation in Plasma  
*Anatoly A. Kudryavtsev (St. Petersburg State University); Almaz I. Saifutdinov (Harbin Institute of Technology); Sergey S. Sysoev (St. Petersburg State University); C. Yuan (Harbin Institute of Technology);*

11:50 Electromagnetic Wave Propagation in a DC Grid Anode Discharge Helium Plasma  
*Xingbao Lv (Harbin Institute of Technology); Xiaou Wang (Harbin Institute of Technology); Jingfeng Yao (Harbin Institute of Technology); Chengxun Yuan (Harbin Institute of Technology); Zhe Ding (Harbin Institute of Technology); Zhongxiang Zhou (Harbin Institute of Technology); Anatoly A. Kudryavtsev (Harbin Institute of Technology);*

12:10 Numerical Simulation of Electromagnetic-wave Absorption of a Plasma Layer of Plane Obstructed Glow Discharge with Gridded Anode  
*Stepan I. Eliseev (St. Petersburg State University); Anatoly A. Kudryavtsev (St. Petersburg State University); Chengxun Yuan (Harbin Institute of Technology);*

12:30 Effect of EDF Nonlocality on the Propagation Coefficients of Electromagnetic Waves in Plasma  
*A. A. Kudryavtsev (St. Petersburg State University); Kurban M. Rabadanov (St. Petersburg State University); C. Yuan (Harbin Institute of Technology);*

12:50 Electrical Conductivity and Dielectric Permittivity in Microwave Non-maxwellian Plasmas  
*Igor K. Getmanov (St. Petersburg State University); Anatoly A. Kudryavtsev (Harbin Institute of Technology); Chengxun Yuan (Harbin Institute of Technology);*

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### Session 2A18

#### Antenna and RCS Measurements 1

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Tuesday AM, June 18, 2019

Room 38 - Chemistry Building

Organized by Amedeo Capozzoli, Francesco D'Agostino

Chaired by Claudio Curcio, Francesco D'Agostino

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09:00 Bandwidth Enhancement of a Dual-loop Antenna for Circular Polarization  
*Kazuhide Hirose (Shibaura Institute of Technology); Kyosuke Okiyama (Shibaura Institute of Technology); Yuto Kikkawa (Shibaura Institute of Technology); Hisamatsu Nakano (Hosei University);*

09:20 A Circularly Polarized Dual-loop Antenna Array Fed by Unbalanced Parallel Lines  
*Kazuhide Hirose (Shibaura Institute of Technology); Daiki Kitaoka (Shibaura Institute of Technology); Hisamatsu Nakano (Hosei University);*

09:40 Method for Phased Antenna Array Autofocusing with Amplitude-only Measurements  
*Artem Vilenskiy (Samsung Research Institute Russia); Mikhail N. Makurin (Samsung Moscow Research Center); Elena Shepeleva (Bauman Moscow State Technical University); Chongmin Lee (Samsung Research);*

10:00 Experimental Analysis of Fully Polarimetric Radar Cross Section of Fixed-wing UAV  
*Yong Yang (National University of Defense Technology); Xuesong Wang (National University of Defense Technology); Shunping Xiao (National University of Defense Technology); Yongzhen Li (National University of Defense Technology); Longfei Shi (National University of Defense Technology);*

10:20 A Ku-band Filtering Duplex Antenna for Satellite Communications  
*Mostafa Gamal Aly (University of Greenwich); Chunxu Mao (Pennsylvania State University); Steven Gao (University of Kent); Yi Wang (University of Birmingham);*

10:40 Experimental Testing of a Nonredundant Spherical Spiral NFFF Transformation for Offset Mounted Quasi-planar AUTs  
*Francesco D'Agostino (Università degli Studi di Salerno); Flaminio Ferrara (Università degli Studi di Salerno); Claudio Gennarelli (University of Salerno); Rocco Guerriero (University of Salerno); Massimo Migliozzi (University of Salerno);*

11:00 **Coffee Break**

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- 11:30 Design and Implementation of External Calibration System for GF-3 Polarimetric Transponder  
*Yu Wang (Institute of Electronics, Chinese Academy of Sciences); Jun Hong (Institute of Electronics, Chinese Academy of Science); Shaoyan Du (Institute of Electronics, Chinese Academy of Sciences); Qiaona Zheng (Institute of Electronics, Chinese Academy of Sciences);*
- 11:50 Improved-accuracy Calderon Projector with Rao-Wilton-Glisson Discretization for Inverse Equivalent Current Methods  
*Jonas Kornprobst (Technical University of Munich); Raimund A. M. Mauermayer (Lehrstuhl für Hochfrequenztechnik, TU München); Emre Kilic (Technische Universität München); Bjoern Moehring (Technical University of Munich); Thomas F. Eibert (Technical University of Munich);*
- 12:10 Fabrication Challenges in Embedding of Components and Embroidered Conductors into 3D-printed Textile Electronics Structures  
*Zahangir Khan (Tampere University); Han He (Tampere University); Xiaochen Chen (Tampere University); Leena Ukkonen (Tampere University); Johanna Virkki (Tampere University);*
- 12:30 Experimental Study of a Low-profile Wideband Antenna Array Unit Cell with Integrated EBG Structure  
*Vladimir Litun (Bauman Moscow State Technical University); Konstantin Lyulyukin (Bauman Moscow State Technical University); Artem Vilenskiy (Samsung Research Institute Russia); Sergey Chernyshev (Bauman Moscow State Technical University);*
- 12:50 DC Grounded 45° Band Switchable Slant Polarized Antenna  
*Muhammad Shahzad Sadiq (NUAA); Cun-Jun Ruan (Beihang University);*
- 09:20 An Exploration of Curriculum Teaching Reform in the Electromagnetic Field Course Based on the Idea of Engineering Education Professional Certification  
*Peng An (Ningbo University of Technology); Zhuoyuan Wang (Ningbo University of Technology); You Zheng (Ningbo University of Technology); Jinxia Wang (Ningbo University of Technology);*
- 09:40 Smartphone Experiments in Optics at University  
*A. Girot (University of Bordeaux); N. Goy (University of Bordeaux, CNRS, LOMA); A. Vilquin (University of Bordeaux, CNRS, LOMA); Ulysse Delabre (University of Bordeaux);*
- 10:00 Demonstration of Electromagnetic Wave Propagation along Coupled Transmission Lines on iPad  
*Eng Leong Tan (Nanyang Technological University); Ding Yu Heh (Nanyang Technological University);*
- 10:20 The Educational Link between Technical Interpretation and 3-D Vector Field Visualization of Time-marching Electromagnetic Fields  
*Gary Junkin (Universitat Autònoma de Barcelona);*
- 10:40 Lasagna and Spaghetti in the Space-time Map: An Absolute Metric-less Picture of Electromagnetic Fields  
*Fabrice Pardo (Université Paris-Saclay); M. Yakovleva (Université Paris-Saclay); Jean-Luc Pelouard (Université Paris-Sud, Université Paris-Saclay);*
- 11:00 **Coffee Break**
- 11:30 Einstein at a Crossroads: The Lorentz Force and Time Dependence of a Charged Particle Mass  
*Dragan V. Redzic (University of Belgrade);*
- 11:50 The Misconception of Closed Magnetic Flux Lines — A Review  
*Luca Zilberti (Istituto Nazionale di Ricerca Metrologica);*
- 12:10 Portable Device Charger using Wireless Charging Coils Based on an Inductive Coupling Strategy  
*Fahad Aziz Khan (University of Engineering and Technology (UET)); Noor Ul Ain (UET Lahore); Syed Abdul Rahman Kashif (University of Engineering and Technology (UET)); Muhammad Zeeshan (University of Engineering and Technology (UET)); Asadullah Wallana (University of Engineering and Technology (UET)); Muhammad Ehsan (University of Engineering and Technology (UET));*
- 12:30 Resonant Half-wave Dipole and Its Odd Integral Multiples  
*Sulaiman Adeniyi Adekola (University of Lagos); Tolulope Christiana Erinoshon (D.S. Adegbenro ICT Polytechnic); K. Akinwale Amusa (Federal University of Agriculture);*

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**Session 2A19**
**Education in Electromagnetics**


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**Tuesday AM, June 18, 2019**
**Room 39 - Electrical Building**

Organized by Eng Leong Tan

 Chaired by Eng Leong Tan
 

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- 09:00 Developing a Pooling Infrastructure for Remote Laboratory Sharing  
*Timothy D. Drysdale (University of Edinburgh);*

12:50 Grating Lobes Suppression in Linear Arrays of Resonant Dipoles  
*Sulaiman Adeniyi Adekola (University of Lagos); Tolulope Christiana Erinoshoh (D.S. Adegbenro ICT Polytechnic); K. Akinwale Amusa (Federal University of Agriculture);*

11:30 Biological Effects of Power Frequency Electric Field Shielding  
*Nina B. Rubtsova (FSBSI "Research Institute of Occupational Health"); Sergey Yu. Perov (RAMS Institute of Occupational Health); Olga V. Belaya (Institute of Occupational Health); Tatyana A. Konshina (FSBSI "Research Institute of Occupational Health");*

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**Session 2A20**

**Biological Effects of EM Fields**

**Tuesday AM, June 18, 2019**

**Room 40 - Electrical Building**

Organized by Jan Vrba

Chaired by Jan Vrba

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09:00 The Model of Equivalent Radiofrequency Electromagnetic Field Exposure for Biological Effect Assessment  
*Nina B. Rubtsova (FSBSI "Research Institute of Occupational Health"); Sergey Yu. Perov (RAMS Institute of Occupational Health); Olga V. Belaya (Institute of Occupational Health);*

11:50 Research of Biological Effects of EM Field in Microwave Frequency Band  
*Jan Vrba (Czech Technical University in Prague); Jiri Kubes (Proton Therapy Center); Ferdinand Trebicky (Institute of Radiation Oncology); Frantisek Vozeh (Charles University); Jan Barcal (Charles University in Prague); Luca Vannucci (Institute of Microbiology, Czech Academy of Sciences); Jan Vrba, Jr. (Czech Technical University in Prague); David Vrba (Czech Technical University in Prague); Ondrej Fiser (Czech Technical University in Prague); Ilja Merunka (Czech Technical University in Prague); Jesus Cumana (Czech Technical University);*

09:20 Hydration as Classifier of Dielectric Measurement Data from 500 MHz to 50 GHz  
*Simona Di Meo (University of Pavia); Iman O. Farhat (University of Malta); Julian Bonello (University of Malta); Lourdes Farrugia (University of Malta); Marco Pasian (University of Pavia); Charles V. Sammut (University of Malta);*

12:10 The Proliferation of *Saccharomyces Cerevisiae* Exposed to Pulsed Magnetic Fields of Low Intensity Suggests the Presence of a Frequency Window between 20 Hz and 77.5 Hz  
*Erandeni Xuxumarat Rodriguez-Perez (University of Guanajuato); Veronica Alejandra Mondragon-Jaimes (Autonomous University of Nayarit); Benjamin Hernandez-Reyes (University of Guanajuato); Modesto Sosa Aquino (University of Guanajuato, Campus Leon);*

09:40 3D Printed Multi-layer Molds of Human Head Tissue Phantoms for Microwave Stroke Detection  
*Tomas Pokorny (Czech Technical University in Prague); Jan Tesarik (Czech Technical University in Prague);*

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**Session 2A0**  
**Poster Session 1**

**Tuesday AM, June 18, 2019**

**9:30 AM - 12:30 AM**

**Room Corridor**

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10:00 Evaluating of Spatial and Contrast Resolution Ability of 2D Microwave Imaging System  
*Jan Tesarik (Czech Technical University in Prague); Ondrej Fiser (Czech Technical University in Prague);*

10:20 Multi-physic Numerical Study of Microwave Hyperthermia Treatment  
*Giacomo Muntoni (Cagliari University); Alessandro Fanti (University of Cagliari); Giorgio Montisci (University di Cagliari);*

10:40 Increased Hippocampal Level of Kinases after Long-term Exposure to GSM-2100 Cell Phone Radiation  
*Cigdem Gokcek-Sarac (Akdeniz University); Sukru Ozen (Akdeniz University); Narin Derin (Akdeniz University);*

11:00 **Coffee Break**

1 Juxtapose Technique for Interconnected Events Video-streams Registered by Multiple Web-cameras  
*P. V. Arakcheev (Bauman Moscow State Technical University); Fedor Borisovich Baulin (Bauman Moscow State Technical University); Evgeny Vladlenovich Buryi (Bauman Moscow State Technical University); Dmitriy Alekseevich Semerenko (Bauman Moscow State Technical University);*

- 2 Resonance Energy Transfer Between Two Atoms in an External Environment  
*Michelangelo Domina (Università degli Studi di Palermo); Giuseppe Fiscelli (Università degli Studi di Palermo); Lucia Rizzuto (Università degli Studi di Palermo and CNISM); Roberto Passante (University of Palermo);*
- 3 GPU-based SSA for the Fast Prediction of EM Characteristics from the Ship-induced Kelvin Wake on the Rough Sea Surface  
*Xiao Meng (Xidian University); Li-Xin Guo (Xidian University); Chunlei Dong (Xidian University);*
- 4 An Accelerated SBR for EM Scattering from the Coated Objects  
*Chunlei Dong (Xidian University); Li-Xin Guo (Xidian University); Xiao Meng (Xidian University);*
- 5 Study on Electromagnetic Scattering Characteristics of Random Rough Surface Based on Monte Carlo Method  
*Jun Gu (Shanghai Radio Equipment Research Institute);*
- 6 A Computational Model for Electromagnetic Characteristics of Anisotropic Composites Based on Machine Learning  
*Yanan Chen (Shanghai Key Laboratory of Electromagnetic Environmental Effects for Aerospace Vehicle); Chunyong Han (Chinese Flight Test Establishment); Guochang Shi (Shanghai Key Laboratory of Electromagnetic Environmental Effects for Aerospace Vehicle); Liming Yuan (Shanghai Key Laboratory of Electromagnetic Environmental Effects for Aerospace Vehicle); Xiaojun Ying (Shanghai Key Laboratory of Electromagnetic Environmental Effects for Aerospace Vehicle); Yi Liao (Shanghai Key Laboratory of Electromagnetic Environmental Effects for Aerospace Vehicle);*
- 7 Broadband Electrodynamic Response of Thin Dielectric Films  
*Gennadii A. Komandin (Prokhorov General Physics of Russian Academy of Science); Arseniy A. Gavidush (Bauman Moscow Technical University (BMSTU)); Igor E. Spektor (A.M. Prokhorov General Physics Institute of the Russian Academy of Sciences); Kirill Igorevich Zaytsev (Bauman Moscow State Technical University); O. E. Porodinkov (Prokhorov General Physics of Russian Academy of Science);*
- 8 High-order Algorithms with High-order Curved Mesh for Physics-based Simulations of Large-scale Problems in Electromagnetics  
*Vijaya Shankar (HyPerComp, Inc.);*
- 9 Elastic Pseudospin Transport for Integratable Topological Phononic Circuits  
*Si-Yuan Yu (Nanjing University); Cheng He (Nanjing University); Xiao-Ping Liu (Nanjing University); Ming-Hui Lu (Nanjing University); Yan-Feng Chen (Nanjing University);*
- 10 Low Temperature Plasmonics of Silver Nanorod Metamaterials  
*Yuyi Feng (Beijing Institute of Technology); Yoshiaki Nishijima (Yokohama National University); Clayton A. Nemitz (University of North Carolina); Zhaoke Zheng (Shandong University); Ruizhe Zhao (Beijing Institute of Technology); Na Han (Beijing Institute of Technology); Dewen Cheng (Beijing Institute of Technology); Juan Liu (Beijing Institute of Technology); Lingling Huang (Beijing Institute of Technology); Yongtian Wang (Beijing Institute of Technology); Lukas Schmidt-Mende (University of Konstanz); Paul Leiderer (University of Konstanz);*
- 11 A Register Loaded Polarization Insensitive Ultra-thin Wide Band Metamaterial Microwave Absorber for C & X Band Applications  
*Prakash Ranjan (National Institute of Technology); Arvind Choubey (National Institute of Technology); Santosh Kumar Mahto (National Institute of Technology); Rashmi Sinha (National Institute of Technology); Chetan Barde (National Institute of Technology);*
- 12 Graphene-silver Hybrid Nanocomposites Infrared Absorbers  
*ChunYu Lu (Khalifa University); Mariam Ali Almahri (Khalifa University); Matteo Chiesa (Khalifa University);*
- 13 Design and Analysis of Improved Performance Amorphous-silicon Thin Film Solar Panel  
*Shashi K. Dargar (University of KwaZulu-Natal); Viranjay M. Srivastava (University of KwaZulu-Natal);*
- 14 Novel Quantum Photonics Devices Using Colloidal Nanocrystals  
*Yang Song (University of Science and Technology of China); Fengjia Fan (University of Science and Technology of China);*
- 15 Fundamental Limits in the Coupling Between Light and 2D Polaritons Using Point and Line Scatterers  
*Eduardo J. C. Dias (ICFO — Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); F. Javier Garcia de Abajo (ICFO — Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology);*

- 16 Interface Analysis in Ferroelectric Structures  
*Alexander S. Sigov (Moscow Technological University MIREA); Konstantin A. Vorotilov (Moscow State Technical University of Radioengineering, Electronics and Automation (MIREA));*
- 17 Optimization of Magnetics Component Performance of the Interleaved Converters  
*Jan Morgos (University of Zilina); Branislav Hanko (University of Zilina); Miroslav Pavelek (University of Zilina); Michal Frivaldsky (University of Zilina);*
- 18 Fabrication of Three Dimensional Liquid Crystal Alignment Layer by Scanning Wave Photopolymerization  
*Yoshiaki Kobayashi (Tokyo Institute of Technology); Miho Aizawa (Tokyo Institute of Technology); Norihisa Akamatsu (Tokyo Institute of Technology); Atsushi Shishido (Tokyo Institute of Technology);*
- 19 Nonlinear Optical Effect of Polymer-stabilized Dye-doped Liquid Crystals Triggered by Collimated Light  
*Kohsuke Matsumoto (Tokyo Institute of Technology); Koji Usui (Tokyo Institute of Technology); Norihisa Akamatsu (Tokyo Institute of Technology); Atsushi Shishido (Tokyo Institute of Technology);*
- 20 Single-step Creation of Q-plate Array Generated by Scanning Wave Photopolymerization  
*Megumi Ota (Tokyo Institute of Technology); Miho Aizawa (Tokyo Institute of Technology); Norihisa Akamatsu (Tokyo Institute of Technology); Atsushi Shishido (Tokyo Institute of Technology);*
- 21 Long-range Ordered Hetero Smectic Structure Constructed by Random Copolymers with Azobenzene and Alkyl Side Chain  
*Keisuke Takishima (Nagoya University); Mitsuo Hara (Nagoya University); Shusaku Nagano (Nagoya University Venture Business Laboratory); Takahiro Seki (Nagoya University);*
- 22 On-demand Phase Transition of Organic-inorganic Hybrid with Lyotropic Liquid Crystal and Polysiloxane  
*Yuta Iijima (Nagoya University); Mitsuo Hara (Nagoya University); Shusaku Nagano (Nagoya University Venture Business Laboratory); Takahiro Seki (Nagoya University);*
- 23 Photoalignment Control of Hetero Lamellar Structure of Random Copolymer with Liquid Crystalline Azobenzene and Oligo(Methyl Methacrylate) Side Chains  
*Ryota Higashi (Nagoya University); Mitsuo Hara (Nagoya University); Shusaku Nagano (Nagoya University Venture Business Laboratory); Takahiro Seki (Nagoya University);*
- 24 Study on the Enhancement of Diamond Fluorescence Characteristics by Multi-layer Anti-reflection Coating  
*Xuejiao Li (Xi'an Jiaotong University); Libo Zhao (Xi'an Jiaotong University); Zhikang Li (Xi'an Jiaotong University); Guoxi Luo (Xi'an Jiaotong University); Mingzhi Yu (Xi'an Jiaotong University); Yintao Ma (Xi'an Jiaotong University); Lei Li (Xi'an Jiaotong University); Xudong Fang (Xi'an Jiaotong University); Zhuangde Jiang (Xi'an Jiaotong University);*
- 25 A Novel MEMS Cantilever-based Photoacoustic Sensor for Trace-gas Detection  
*Inaki Lopez Garcia (CNR-INO, Istituto Nazionale di Ottica); Mario Siciliani De Cumis (ASI Agenzia Spaziale Italiana — Centro di Geodesia Spaziale); Simone Borri (CNR-INO, Istituto Nazionale di Ottica); Mariaconcetta Canino (INFN, Istituto Nazionale di Fisica Nucleare); Filippo Bonafe (INFN, Istituto Nazionale di Fisica Nucleare); Alberto Roncaglia (INFN, Istituto Nazionale di Fisica Nucleare); Paolo De Natale (CNR-INO, Istituto Nazionale di Ottica);*
- 26 Multiple Hydrocarbons Detection Exploiting Quartz-enhanced Photoacoustic Spectroscopy  
*Giansergio Menduni (Politecnico and University of Bari); A. Sampaolo (Politecnico and University of Bari); M. Giglio (Politecnico and University of Bari); P. Patimisco (Politecnico and University of Bari); F. Sgobba (Politecnico and University of Bari); A. Elefante (Politecnico and University of Bari); V. Passaro (Politecnico di Bari); F. K. Tittel (Rice University); V. Spagnolo (Politecnico and University of Bari);*
- 27 A Multiscale, Multiphysics Approach to Vertical-cavity Surface-emitting Laser Simulation  
*Alberto Tibaldi (Politecnico di Torino); Francesco Bertazzi (Politecnico di Torino); Michele Goano (Politecnico di Torino); M. Daubenschuz (Philips Photonics GmbH); R. Michalzik (Ulm University); P. Debernardi (Nazionale delle Ricerche (CNR));*
- 28 Measurement of the Dielectric Properties of Metal Oxides in the Sub-terahertz Frequency Range  
*Alexander V. Vodopyanov (Institute of Applied Physics of the Russian Academy of Sciences); A. Tsvetkov (Institute of Applied Physics RAS); D. Mansfeld (Institute of Applied Physics RAS); A. Fokin (Institute of Applied Physics RAS); M. Glyavin (Institute of Applied Physics RAS);*

- 29 Production of Nanopowders by the Evaporation-condensation Method Using Millimeter and Sub-Terahertz Radiation  
*Alexander V. Vodopyanov (Institute of Applied Physics of the Russian Academy of Sciences); Andrey V. Samokhin (Baykov Institute of Metallurgy and Materials Science); Nikolay V. Alexeev (Baykov Institute of Metallurgy and Materials Science); Mikhail A. Sinayskiy (Baykov Institute of Metallurgy and Materials Science); Aleksandr I. Tsvetkov (Institute of Applied Physics RAS, Russia; Research Center for Development of Far Infrared Region, University of Fukui, Japan); Dmitry A. Mansfeld (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"); Mikhail Yu. Glyavin (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences");*
- 30 Research of Magnetic Fluid in the THz Frequency Range  
*Denis Olegovich Zyatkov (National Research Tomsk State University); Zahar Kochnev (National Research Tomsk State University); Anastasia Knyazkova (National Research Tomsk State University); Vladimir Borisovich Balashov (Research Institute of Semiconductor Devices); Viktor Nikolayevich Cherepanov (National Research Tomsk State University); Vasily Ivanovich Yurchenko (Research Institute of Semiconductor Devices); Valery Svetlichnyi (National Research Tomsk State University); Alexey Vladimirovich Borisov (National Research Tomsk State University);*
- 31 Human Movement Classification Based on Polarization Micro-doppler Signatures Using Deep Convolutional Neural Network  
*Wenwu Kang (National Space Science Center, Chinese Academy of Sciences); Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences); Xiao Dong (Center for Space Science and Applied Research, Chinese Academy of Sciences);*
- 32 Chirped Pulse Splitting in Heavily Doped Thulium Fiber Amplifiers through Modal Instability: Numerical Modeling and Simulation  
*Mohd Mansoor Khan (Indian Institute of Technology Guwahati); Ramesh Kumar Sonkar (Indian Institute of Technology Guwahati);*
- 33 Investigation of Optical Signal Regeneration Impact on Power Efficiency of Single-line-rate and Mixed-line-rate Wavelength Division Multiplexing Systems  
*Deniss Pavlovs (Riga Technical University); Vjaceslavs Bobrovs (Riga Technical University); Klinta Vilcane (Riga Technical University); Girts Ivanovs (Riga Technical University);*
- 34 Population Mobility Data Retrieval from Wireless Cellular Networks  
*Miroslav Voznak (VSB — Technical University of Ostrava); Jiri Hylmar (VSB — Technical University of Ostrava); Jakub Hendrych (VSB — Technical University of Ostrava); Lukas Orcik (VSB — Technical University of Ostrava); Martin Hajek (VSB — Technical University of Ostrava); Radek Fajdiak (Brno University of Technology); Jiri Misurec (Brno University of Technology);*
- 35 Correlation Problems in Optical Multichannel Systems in Satellite Communication  
*Andrea Farkasvolgyi (Budapest University of Technology and Economics); Istvan Frigyes (Budapest University of Technology and Economics);*
- 36 Focal-plane Avalanche Photodiodes and the Application in Laser Detection and Ranging  
*Hai-Zhi Song (Southwest Institute of Technical Physics); Jian Chen (Southwest Institute of Technical Physics); Qiang Xu (Southwest Institute of Technical Physics); Xiumin Xie (Southwest Institute of Technical Physics); Guangwei Deng (University of Electronic Science and Technology of China); Qiang Zhou (University of Electronic Science and Technology of China);*
- 37 Graphene-on-Silicon Hybrid Photonic Integrated Circuits  
*Zhengkun Xing (Tianjin University); Yingdong Han (Tianjin University); Haofeng Hu (Tianjin University); Tiegeng Liu (Tianjin University); Zhenzhou Cheng (Tianjin University);*
- 38 The Possibilities of Using LED Photometry and Ellipsometry Technology for Monitoring the Aquatic Environment  
*Ferdenant A. Mkrtchyan (V. A. Kotelnikov's Institute of Radioengineering and Electronics, Russian Academy of Sciences); V. F. Krapivin (V. A. Kotelnikov's Institute of Radioengineering and Electronics, Russian Academy of Sciences); V. V. Klimov (V. A. Kotelnikov's Institute of Radioengineering and Electronics, Russian Academy of Sciences);*

- 39 Efficient Sampling of the Near Field Radiated by a Planar Source: Numerical Results  
*Maria Antonia Maisto (Universita degli Studi della Campania "Luigi Vanvitelli"); Raffaele Solimene (Universita degli Studi della Campania "Luigi Vanvitelli"); Rocco Pierri (Universita degli Studi della Campania "Luigi Vanvitelli");*
- 40 Numerical Experiments on the Impact of Constraints in Phaselift  
*Raffaele Moretta (Università degli Studi della Campania "Luigi Vanvitelli"); Maria Antonia Maisto (Università degli Studi della Campania "Luigi Vanvitelli"); Rocco Pierri (Università degli Studi della Campania "Luigi Vanvitelli");*
- 41 Meter Wave Radar Cross Section Analysis: What Does "Resonance" Really Mean?  
*Shih-Chung Tuan (Oriental Institute of Technology); Shen Shou Max Chung (National Penghu University of Science and Technology);*
- 42 A Novel Design and Simulation of a Ku Broadband Double Ridged Guide Horn Antenna for Satellite Communications  
*Adelaida Cristina Heiman (University POLITEHNICA of Bucharest); Alina-Mihaela Badescu (University Politehnica of Bucharest);*
- 43 Dual-polarized Wideband Horn Antenna with Lower Frequency Extension for Microwave Imaging Application  
*Folin Oktafiani (Institut Teknologi Bandung); Budi Syihabuddin (Institut Teknologi Bandung); Effrina Yanti Hamid (Institut Teknologi Bandung); Achmad Munir (Institut Teknologi Bandung);*
- 44 Circularly Symmetric Photonic-bandgap Antennas  
*J. Yamauchi (Hosei University); Seita Saito (Hosei University); R. Ando (Hosei University); H. Nakano (Hosei University);*
- 45 Multimode Horn Antennas with Square Aperture Loading Grooves  
*Ryo Wakabayashi (Doshisha University); Reiko Omi (Doshisha University); Hiroyuki Deguchi (Doshisha University); Mikio Tsuji (Doshisha University);*
- 46 Evaluation of Receiver Operating Characteristic Curves in a Microwave Apparatus for Breast Lesions Detection  
*Gianluigi Tiberi (London South Bank University); Lorenzo Sani (Spin off of University of Perugia); Alessandro Vispa (Spin off of University of Perugia); Martina Paoli (Spin off of University of Perugia); Alessandra Bigotti (UBT — Umbria Bioengineering Technologies, Spin off of University of Perugia); Giovanni Raspa (Spin off of University of Perugia); Navid Ghavami (University of Oxford); Andrea Saracini (Perugia Hospital); Michele Duranti (Perugia Hospital); Mohammad Ghavami (London South Bank University);*
- 47 Microwave Imaging for Stroke Detection: Validation on Head-mimicking Phantom  
*Behnaz Sohani (London South Bank University); Gianluigi Tiberi (London South Bank University); Navid Ghavami (Umbria Bioengineering Technologies, Spin off of University of Perugia); Mohammad Ghavami (London South Bank University); Sandra Dudley (London South Bank University); Amir Rahmani (Castlet Ltd.);*
- 48 Phase-weighted UWB Imaging through Huygens Principle  
*Gianluigi Tiberi (London South Bank University); Banafsheh Khalesi (University of Pisa); Behnaz Sohani (London South Bank University); Navid Ghavami (Umbria Bioengineering Technologies, Spin off of University of Perugia); Sandra Dudley (London South Bank University); Mohammad Ghavami (London South Bank University);*
- 49 Modeling of Magnetolectric Effect in Multiferroic Antenna  
*A. O. Nikitin (Novgorod State University); Roman Valer'evich Petrov (Novgorod State University); M. A. Khavanova (Novgorod State University); Alexander Sergeevich Tatarenko (Novgorod State University); Mirza Imamovich Bichurin (Novgorod State University);*
- 50 Multiband Microstrip Antenna Using Square-shaped SRR Based Artificial Magnetic Conductors  
*Eki Ahmad Zaki Hamidi (UIN Sunan Gunung Djati Bandung); Siti Sarah Hardianti (UIN Sunan Gunung Djati Bandung); Nanang Ismail (UIN Sunan Gunung Djati Bandung); Achmad Munir (Institut Teknologi Bandung);*
- 51 Gain Enhancement of Patch Antenna Using an Artificial Material  
*Yoshikazu Fujita (Ryukoku University); Yangjun Zhang (Ryukoku University);*

- 52 High Gain Dual Linearly Polarized Patch Antenna Array  
*Sumantra Chaudhuri (Indian Institute of Technology Guwahati); Rakesh Singh Kshetrimayum (Indian Institute of Technology); Ramesh Kumar Sonkar (Indian Institute of Technology Guwahati); Darpan Mishra (Indian Institute of Technology Guwahati);*
- 53 Electromagnetic Analysis and Performance Comparison of Fully 3D-printed Antennas  
*Riccardo Colella (University of Salento); Francesco Chietera (University of Salento); Giovanni Andrea Casula (University di Cagliari); Andrea Michel (University of Pisa); Giorgio Montisci (University di Cagliari); Gianluca Gatto (University of Cagliari); Paolo Nepa (University of Pisa); Hendrik Rogier (Ghent University); Luca Catarinucci (University of Salento);*
- 54 Studies on Metamaterial CRLH-TL Based Wideband/Multiband Dual Performance Circularly Polarized Conformal Antenna for Modern Wireless Applications  
*Mohammad Ameen (Indian Institute of Technology (ISM)); Sachin Kalraiya (Indian Institute of Technology (ISM)); Sreenath Reddy Thummaluru (Indian Institute of Technology (Indian School of Mines), Dhanbad); Raghvendra Kumar Chaudhary (Indian Institute of Technology (Indian School of Mines));*
- 55 Triple Band Uniplanar Antenna Loaded with Multiple Radiating Elements for Compact Wireless Systems  
*Praveen Vummadisetty Naidu (JNT University Kakinada — Velagapudi Ramakrishna Siddhartha Engineering College); Arvind Kumar (Kautilya Institute of Technology and Engineering); Rengasamy Rajkumar (VIT University); G. Harika (Velagapudi Ramakrishna Siddhartha Engineering College); Vege Priyanka (Velagapudi Ramakrishna Siddhartha Engineering College); Md. Arsha (Velagapudi Ramakrishna Siddhartha Engineering College);*
- 56 Technical Developments for Sidelobes Suppression of Millimeter Wave Array Antennas  
*Shih-Chung Tuan (Oriental Institute of Technology); Hsi-Tseng Chou (National Taiwan University); Hao-Ju Huang (National Chung-Shan Institute of Science and Technology);*
- 57 Multi-section Unequal Power Divider Using a Decomposition Method  
*Youngchul Yoon (Catholic Kwandong University); Young Kim (Kumoh National Institute of Technology);*
- 58 Design and Fabrication of a 670 GHz Sub-harmonic Mixer with Hybrid Integration  
*Guangyu Ji (University of Chinese Academy of Sciences); De Hai Zhang (Center for Space Science and Applied Research, Chinese Academy of Sciences); Jin Meng (Chinese Academy of Sciences);*
- 59 Frequency Selective Resonator with a Wideband Transmission and Two-sided Absorption Bands  
*Ling-Ling Wang (Nanjing University of Aeronautics and Astronautics); Shaobin Liu (Nanjing University of Aeronautics and Astronautics); Zheng-Yu Huang (Nanjing University of Aeronautics and Astronautics); Hai Feng Zhang (Nanjing University of Posts and Telecommunications); Xiang-Kun Kong (Nanjing University of Aeronautics and Astronautics); Qiming Yu (Nanjing University of Aeronautics and Astronautics); Yong-Diao Wen (Nanjing University of Aeronautics and Astronautics);*
- 61 Gate Recessed Normally-off AlGaIn/GaN MIS-HEMTs with TiO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> Gate Dielectric Stack  
*Jun Hyeok Jung (Kyungpook National University); Young Jun Yoon (Kyungpook National University); Min Su Cho (Kyungpook National University); Won Douk Jang (Kyungpook National University); In Man Kang (Kyungpook National University);*
- 62 Insulator Contamination Measurement Based on Infrared Thermal and Visible Image Information Fusion  
*Shu Jia Yan (Shanghai University of Engineering Science); Wen Shuang Duan (Shanghai University of Engineering Science); Hong Tao Shan (Shanghai University of Engineering Science); Mei Song Tong (Tongji University);*
- 63 Design Novel Structure of High-voltage MOSFET with Double-Trench Gates  
*Hongjin Yang (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University);*
- 63 Study on Equivalent Circuit of Wideband Microstrip Bandpass Filter Involving Defected Ground Structure  
*Achmad Munir (Institut Teknologi Bandung); Shita Fitria Nurjihan (Jakarta State Polytechnic); Hartuti Mistialustina (Institut Teknologi Bandung);*
- 64 Proposal of Design Procedure for Wideband Bandpass Filter Using Dual-mode Resonators  
*Yuta Ishikawa (National Institute of Technology, Kisarazu College); Kosei Tanii (National Institute of Technology, Kisarazu College); Takanobu Ohno (National Institute of Technology, Kisarazu College); Masahiro Uehara (National Institute of Technology, Kisarazu College);*

- 65 Analytical Study of Voltage-controlled Oscillator with Microstrip Line Resonator  
*Junya Nonaka (National Institute of Technology, Kisarazu College); Kosei Tanii (National Institute of Technology, Kisarazu College); Takano Ohno (National Institute of Technology, Kisarazu College); Masahiro Uehara (National Institute of Technology, Kisarazu College);*
- 66 Ku-band Bandpass Filter Design with Compact Size and Broad Stopband by pHEMT Process  
*Jyh Sheen (National Formosa University); Yang-Hung Cheng (National Formosa University); Weihsing Liu (National Formosa University);*
- 67 A Timing Synchronization Technique for DHT-based ACO-OFDM Visible Light Communication  
*Te-Chin Chang (National Central University); Chii-Shyang Kuo (National Central University); Chih-Feng Wu (National Central University); Muh-Tian Shiue (National Central University);*
- 68 Analysis of the Effects of Different Propagation Mechanisms on Ray-tracing-based Coverage Predictions in Urban Microcellular Environments  
*Zhong-Yu Liu (Xidian University); Yuwei Cao (Xidian University); Li-Xin Guo (Xidian University);*
- 69 A Study on the Development of High Efficiency Internal Antenna for Wireless Access Point  
*Ho-Jun Lee (Korea Electronics Technology Institute); Jong-Moon Choi (DAVOLINK Inc.); Jeong-Pyo Kim (ATcodi Co., Ltd.);*
- 70 Use of Periodic Common-mode Filtering Structures in Embedded Broadside-coupled Coplanar Waveguides  
*Zach Bergstedt (Rose-Hulman Institute of Technology); Yujie He (Rose-Hulman Institute of Technology); Alex Hobbie (Rose-Hulman Institute of Technology); Anita Hsu (Rose-Hulman Institute of Technology); Charles Lynch (Rose-Hulman Institute of Technology); Michael Rosier (Rose-Hulman Institute of Technology); Michael Cracraft (IBM Systems and Technology Group); Edward Wheeler (Rose-Hulman Institute of Technology);*
- 71 Design of 5W Dual-side Pocket type Qi-compatible Wireless Charger for Smart Phone  
*Seong-Min Kim (Electronics and Telecommunications Research Institute); Sang-Won Kim (Electronics and Telecommunications Research Institute (ETRI)); Jung-Ick Moon (Electronics and Telecommunications Research Institute); In-Kui Cho (Electronics and Telecommunications Research Institute);*
- 72 Design, Fabrication, and Wireless Evaluation of a Passive 3D-printed Moisture Sensor on a Textile Substrate  
*Xiaochen Chen (Tampere University); Han He (Tampere University); Zahangir Khan (Tampere University); Lauri Sydanheimo (Tampere University of Technology); Leena Ukkonen (Tampere University); Johanna Virkki (Tampere University);*
- 73 Feasibility Study on Target Detection and Localization Using Uncooperative PRI-agile Phased Array Radar  
*Panhe Hu (National University of Defense Technology); Zengping Chen (National University of Defense Technology); Jiameng Pan (National University of Defense Technology); Shiyou Xu (Sun Yat-sen University); Qinglong Bao (National University of Defense Technology);*
- 74 Coherent Integration Method of High-speed Target for Random PRI and Staggered PW Radar  
*Jiameng Pan (National University of Defense Technology); Zengping Chen (National University of Defense Technology); Panhe Hu (National University of Defense Technology); Qinglong Bao (National University of Defense Technology); Shiyou Xu (Sun Yat-sen University);*
- 75 The Use of Phase-shift Keyed Signals with a Zero Autocorrelation Zone in a Multi-position Radar System for Searching and Detecting of Space Debris Objects  
*A. I. Baskakov (National Research University "Moscow Power Engineering Institute"); R. N. Ipanov (National Research University "Moscow Power Engineering Institute"); Aleksey Aleksandrovich Komarov (National Research University "Moscow Power Engineering Institute");*
- 76 Gas Phase Nitrophenols Measurements by Integrated Absorption Spectroscopy  
*Meng Wang (University of Shanghai for Science and Technology); Jun Chen (University of Shanghai for Science and Technology); Dean S. Venables (University College Cork);*
- 77 Improved Fingerprint Segmentation Based on Gradient and Otsu's Method for Online Fingerprint Recognition  
*Guo Chun Wan (Tongji University); He Xu (Tongji University); Fozhi Zhou (Tongji University); Mei Song Tong (Tongji University);*
- 78 Spectro-spatial Graph-based Deep Restricted Boltzmann Networks for Hyperspectral Image Classification  
*Akrem Sellami (SIIVT); Imed Riadh Farah (Ecole Nationale des Sciences de l'Informatique);*

- 79 A Proposed Method for Visualizing RF Electromagnetic Waves  
*Fabian Vazquez (Universidad Nacional Autonoma de Mexico); L. Aguilar (Instituto Nacional de Rehabilitacion); R. Martin (Universidad Nacional Autonoma de Mexico); Sergio E. Solis-Najera (Universidad Nacional Autonoma de Mexico); L. Medina (Universidad Nacional Autonoma de Mexico); A. O. Rodriguez (UAM Iztapalapa, CDMEX);*
- 80 Defocused Ion Beam Etching of the Silicon Probes for High Resolution Atomic-force Microscopy  
*S. Yu. Krasnoborodko (Science Scientific and Technological Center of Unique Instrumentation of the RAS); Yu. E. Vysokikh (Science Scientific and Technological Center of Unique Instrumentation of the RAS); S. A. Smagulova (North-Eastern Federal University in Yakutsk); M. F. Bulatov (Science Scientific and Technological Center of Unique Instrumentation of the RAS); D. V. Churikov (Science Scientific and Technological Center of Unique Instrumentation of the RAS); V. I. Shevyakov (National Research University of Electronic Technology);*
- 81 Electro-thermal Model of Approximated Organic Tissue for Investigation of Harmful Electrosurgical Impacts  
*Michal Frivaldsky (University of Zilina); Dagmar Faktorova (University of Zilina); Miroslav Pavelek (University of Zilina);*
- 15:10 Synergistic Use of Satellite Active and Passive Microwave Observations to Estimate Typhoon Intensity  
*Xiao Feng Yang (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Kunsheng Xiang (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences);*
- 15:30 High Resolution SAR Wind Stress and Sea Surface Temperature Covariability over the Somali Current  
*Michael J. Caruso (University of Miami); Hans C. Graber (University of Miami);*
- 15:50 Application of SMAP Data for Ocean Surface Remote Sensing  
*Alexander G. Fore (California Institute of Technology); Simon H. Yueh (California Institute of Technology); Wenqing Tang (California Institute of Technology); Bryan W. Stiles (California Institute of Technology); Akiko Hayashi (California Institute of Technology);*
- 16:10 Variability of L-band Sea Surface Salinity in Response to the Freshwater Fluxes Anomaly in the Hudson Bay  
*Wenqing Tang (California Institute of Technology); Simon H. Yueh (California Institute of Technology); Alexander G. Fore (California Institute of Technology); Akiko Hayashi (California Institute of Technology); Estrella Olmedo (Institut de Ciencies del Mar); Justino Martinez (Institut de Ciencies del Mar); Carolina Gabarro (Institut de Ciencies del Mar); Daqing Yang (National Hydrology Research Center); Elliee Mcleod (National Hydrology Research Center);*

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**Session 2P1**

**FocusSession.SC5: Microwave Remote Sensing of Ocean**

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**Tuesday PM, June 18, 2019**

**Room 1 - 1st Floor**

Organized by Xiaofeng Li, Simon H. Yueh

Chaired by Xiaofeng Li, Simon H. Yueh

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- 14:30 AI-based Algorithm for Sentinel-1 SAR High Ocean Surface Wind Retrieval  
*Xiaofeng Li (National Oceanic and Atmospheric Administration (NOAA)); Dongliang Shen (Shanghai Ocean University); Bin Liu (Shanghai Ocean University);*
- 14:50 The JPL SCATSAT Near Real Time Data Product: Calibration, Validation, and Latency  
*Alexander G. Fore (California Institute of Technology); Bryan W. Stiles (California Institute of Technology); Sermsak Jaruwatanadilok (California Institute of Technology); Ernesto Rodriguez (California Institute of Technology);*
- 15:30 Coffee Break
- 16:30 Architectures for Future Spaceborne Salinity Missions  
*Shannon Brown (California Institute of Technology); Sidharth Misra (California Institute of Technology); Simon H. Yueh (California Institute of Technology); Tony Lee (California Institute of Technology);*
- 17:20 Next Generation Microwave Radiometer for Polar Sea State Measurements  
*Sidharth Misra (California Institute of Technology); Xavier Bosch-Lluis (California Institute of Technology); Carl Felten (California Institute of Technology); Mehmet Ogut (California Institute of Technology); Isaac Ramos-Perez (California Institute of Technology); Barron Latham (California Institute of Technology); Tong Lee (California Institute of Technology); Simon H. Yueh (California Institute of Technology); Shannon Brown (California Institute of Technology);*

- 17:40 Global Navigational Satellite System Phase Altimetry of the Sea Level: Systematic Bias Effect Caused by Sea Surface Waves  
*Yaroslav A. Ilyushin (Moscow State University); Artem M. Padokhin (M. V. Lomonosov Moscow State University); V. E. Smolov (Marine Hydrophysical Institute);*
- 18:00 Ocean Target Radar Image Reconstruction from GNSS-R Delay-Doppler Map  
*Wei Liu (Shanghai Maritime University); Yuan Hu (Shanghai Ocean University); Tsung-Hsuan Hsieh (Shanghai Maritime University); Jiansen Zhao (Shanghai Maritime University); Shengzheng Wang (Shanghai Maritime University);*
- 18:20 Impact of Emulsification of Crude Oil on the Normalized Radar Cross Section  
*Jie Guo (CAS Key Laboratory of Coastal Environmental Processes and Ecological Remediation, Yantai Institute of Coastal Zone Research (YIC), Chinese Academy of); Tianlong Zhang (CAS Key Laboratory of Coastal Environmental Processes and Ecological Remediation, Yantai Institute of Coastal Zone Research (YIC), Chinese Academy of); Xi Zhang (First Institute of Oceanography Ministry of Natural Resources); Genwang Liu (First Institute of Oceanography Ministry of Natural Resources); Sijing Su (First Institute of Oceanography Ministry of Natural Resources);*
- 18:40 Accuracy of Era-Interim Re-analysis Data on Some Atmospheric Parameters over Open Oceans, Estimated with the AMSR2 Data  
*Elizaveta V. Zabolotskikh (Russian State Hydrometeorological University); Bertrand Chapron (Institut Francais de Recherche pour l'Exploitation de la Mer);*
- 14:30 Cloud Identification and Classification from Far InfraRed High Resolution Spectra  
Invited  
*Tiziano Maestri (University of Bologna); William Cossich (University of Bologna); Davide Magurno (University of Bologna); Richard J. Bantges (Imperial College London); Jonathan E. Murray (Imperial College London); Stuart Fox (Met Office); Helen E. Brindley (Imperial College London); Luca Sgheri (IAC-CNR); Piera Raspolini (IFAC-CNR);*
- 14:50 Polarized Scattering in Release 3.0 of the Community Radiative Transfer Model  
Invited  
*Patrick Stegmann (NOAA Center for Weather and Climate Prediction); Benjamin Johnson (NOAA Center for Weather and Climate Prediction);*
- 15:10 Horizontally Oriented Crystals in Ice Clouds: Scattering Properties and Remote Sensing  
*Masanori Saito (Texas A&M University); Ping Yang (Texas A&M University);*
- 15:30 Accurate Computation of Backscattering Optical Properties of Atmospheric Aerosols  
*Lei Bi (Zhejiang University);*
- 15:50 Visualizing Healthy Clouds and Aerosol Plumes Using a Micropulse Lidar  
*Timothy Logan (Texas A&M University);*
- 16:10 Satellite Retrieval and Aircraft Validation of Above-cloud Biomass Burning Aerosols and Cloud Properties in the Southeast Atlantic  
*Ian Chang (University of Oklahoma); Hong Chen (University of Colorado); Connor Flynn (Pacific Northwest National Laboratory); Meloe Kacenenbogen (Bay Area Environmental Research Institute); Samuel Leblanc (Bay Area Environmental Research Institute); Kerry Meyer (NASA Goddard Space Flight Center); Kristina Pistone (Bay Area Environmental Research Institute); Sebastian Schmidt (University of Colorado); Michal Segal-Rosenhaimer (Bay Area Environmental Research Institute); Yohei Shinozuka (Bay Area Environmental Research Institute); Jens Redemann (University of Oklahoma); Sundar A. Christopher (University of Alabama in Huntsville);*
- 16:30 **Coffee Break**
- 17:00 The Impact of Short-wave Radiative Forcing on Estimates of Climate Sensitivity  
*Andrew E. Dessler (Texas A&M University);*

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**Session 2P2**

**Light Scattering, Radiative Transfer, and Remote Sensing**

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**Tuesday PM, June 18, 2019**

**Room 5 - 1st Floor**

Organized by Ping Yang, Bryan A. Baum

Chaired by Ping Yang, Bryan A. Baum

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- 17:20 Thomson Scattering of Short Laser Pulses in Maxwellian Plasma  
*Valeriy A. Astapenko (Moscow Institute of Physics and Technology); Egor Sergeevich Khramov (Moscow Institute of Physics and Technology); V. S. Lisitsa (National Research Center "Kurchatov Institute"); F. B. Rosmej (Sorbonne University);*
- 17:40 Long-range Dipole-dipole Interaction and Many-body Cooperative Effects in Atomic Ensemble Coupled to a Waveguide  
*Aleksei S. Kuraptsev (Peter the Great St. Petersburg Polytechnic University); Igor M. Sokolov (Peter the Great St. Petersburg Polytechnic University);*
- 18:00 Estimating Surface Solar Radiation with Voronoi Ice Scattering Model from Advanced Himawari Imager  
*Husi Letu (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences (CAS)); Hiroshi Ishimoto (Meteorological Research Institute); Takashi M. Nagao (Earth Observation Research Center (EORC)); Takashi Y. Nakajima (Tokai University);*
- 18:20 Impact of Sub-millimeter Scattering Properties on Retrievals of Ice Cloud Parameters  
*Adam Bell (Texas A&M University); Ping Yang (Texas A&M University); D. L. Wu (NASA Goddard Space Flight Center);*
- 18:40 Towards Continuity in IR Absorption Radiances from AVHRR, MODIS and VIIRS through Use of HIRS, CrIS, and IASI  
*Bryan A. Baum (Science and Technology Corp.); Elisabeth Weisz (University of Wisconsin-Madison); W. Paul Menzel (University of Wisconsin-Madison);*
- 19:00 Single- and Multiple-scattering Modeling Capabilities in Support of Remote Sensing Implementations  
*Ping Yang (Texas A&M University); Jiachen Ding (Texas A&M University); Masanori Saito (Texas A&M University); Patrick Stgemann (Joint Center for Satellite Data Assimilation/NOAA Center for Weather and Climate Prediction); Bryan A. Baum (Science and Technology Corp.); Xianglei Huang (The University of Michigan);*
- 14:30 Polarization-independent Tunable Optical Filter with Variable Bandwidth Based on Silicon-on-insulator Waveguides  
*Haoyan Wang (Institute of Semiconductors, Chinese Academy of Sciences); Jincheng Dai (Institute of Semiconductors, Chinese Academy of Sciences); Hao Jia (Institute of Semiconductors, Chinese Academy of Sciences); Sizhu Shao (Institute of Semiconductors, Chinese Academy of Sciences); Xin Fu (Institute of Semiconductors, Chinese Academy of Sciences); Lei Zhang (Institute of Semiconductors, Chinese Academy of Sciences); Lin Yang (Institute of Semiconductors, Chinese Academy of Sciences);*
- 14:50 Giant Broadband Refraction in the Visible in a Disordered Ferroelectric Perovskite  
*Ludovica Falsi (University of Rome "La Sapienza"); Fabrizio Di Mei (University of Rome "La Sapienza"); Mariano Flammini (University of Rome "La Sapienza"); Davide Pierangeli (University of Rome "La Sapienza"); Paolo Di Porto (University of Rome "La Sapienza"); A. J. Agranat (Hebrew University of Jerusalem); E. DelRe (University of Rome "La Sapienza");*
- 15:10 Photobleaching at the Surface of 1D-photonic Crystal Biochips  
*Elisabetta Sepe (SAPIENZA University of Rome); Alberto Sinibaldi (Sapienza University of Rome); M. Allegretti (IRCCS Regina Elena National Cancer Institute); Norbert Danz (Fraunhofer Institute for Applied Optics and Precision Engineering); Peter Munzert (Fraunhofer Institute for Applied Optics and Precision Engineering IOF); F. Mura (SAPIENZA University of Rome); P. Giacomini (IRCCS Regina Elena National Cancer Institute); Francesco Michelotti (Sapienza Università di Roma);*
- 15:30 Thin Film Photosensor Integrated on Planar Waveguide for Lab-on-Chip Applications  
*Alessio Buzzin (Sapienza University of Rome); Rita Asquini (Sapienza University of Rome); Domenico Caputo (Università degli Studi di Roma "La Sapienza"); Giampiero De Cesare (Università degli Studi di Roma "La Sapienza");*

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**Session 2P3a**

**Oral Presentations for Best Student Paper Awards — SC3: Optics and Photonics**

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**Tuesday PM, June 18, 2019**

**Room 7 - 1st Floor**

Chaired by Rita Asquini, Sailing He, Francesco Simoni

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- 15:50 Focusing 1D Silicon Photonic Grating Coupler in Photonic BiCMOS Technology for the Excitation of the Fundamental TM Mode  
*Galina Georgieva (Technische Universität Berlin); Karsten Voigt (Technical University of Berlin); Lars Zimmermann (IHP);*

- 16:10 Fiber-optic Temperature Sensing Scheme by Using Stimulated Brillouin Scattering Effect in a Recirculating Fiber Ring  
*Jin Yun (Xiamen University); Xinying Chen (Xiamen University); Hongyan Fu (Xiamen University);*

16:30 **Coffee Break**

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**Session 2P3b**

**SC4: UWB Components for Defence Applications**

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**Tuesday PM, June 18, 2019**

**Room 7 - 1st Floor**

Organized by Patrick Ettore Longhi, Ernesto Limiti

Chaired by Patrick Ettore Longhi, Ernesto Limiti

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- 17:00 A Novel Integrated RESM-CESM Antenna for Naval Platforms  
*Pietro Bia (Elettronica S.p.A.); Domenico Gaetano (Elettronica S.p.A.); Christian Canestri (Elettronica S.p.A.); Antonio Manna (Elettronica S.p.A.); Daniele Santoro (Elettronica S.p.A.); Marco Pietrantuono (Elettronica S.p.A.); Cosmo Mitrano (Elettronica S.p.A.);*
- 17:20 DDS Based Wideband and Fast Chirp FMCW Radar for Tracing Discontinuities on Transmission Lines  
*Bjorn Mohring (Technical University of Munich); Clemens Moroder (Technical University of Munich); Uwe Siart (Technical University of Munich); Thomas F. Eibert (Technical University of Munich);*
- 17:40 Wideband Reflectometer Design Using Complex Ratio Measuring Unit and Broadband Directional Coupler  
*Nadera Najib Al-Areqi (Universiti Teknologi Malaysia); Kok Yeow You (Universiti Teknologi Malaysia); Nor Hisham Haji Bin Khamis (Universiti Teknologi Malaysia); Man Seng Sim (Universiti Teknologi Malaysia);*
- 18:00 Robust GaN Limiting LNA for C-Ku Band T/R Modules  
*Jim Mayock (Viper-RF Ltd.); Pratik Deshpande (Viper-RF Ltd.); Qing Sun (Viper-RF Ltd.); Diego Palombini (Elettronica S.p.A.); Marco Papi (Elettronica S.p.A.);*

- 18:20 Spurious-free Ultra-wideband Downconverter in 3U Size for EW System  
*Giuliano Gabrielli (Elettronica S.p.A.); Roberto Antonio Gualano (Elettronica S.p.A.); Elvio Barbato Aureliano Imparato (Elettronica S.p.A.); Marco Pietrobono (Elettronica S.p.A.); Vittorio Cirella (Elettronica S.p.A.); Cosmo Mitrano (Elettronica S.p.A.);*

- 18:40 40 nm-CMOS W-band Phase Shifter for Millimeter-wave Phased Array  
*Ching-Ying Huang (National Chiao-Tung University); Kuan-Han Hsieh (National Chiao-Tung University); Robert (Shu-I) Hu (National Chiao Tung University);*

- 19:00 A Ka Band GaN on Si Power Amplifier for Space Environment  
*Ferdinando Costanzo (University of Roma "Tor Vergata"); Rocco Giofre (University of Roma "Tor Vergata"); Patrick Ettore Longhi (University of Rome Tor Vergata); Sergio Colangeli (University of Roma Tor Vergata); Ernesto Limiti (University of Rome Tor Vergata);*

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**Session 2P4**

**Novel Mathematical Methods in Electromagnetics: Part 1**

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**Tuesday PM, June 18, 2019**

**Room 8 - 1st Floor**

Organized by Yury V. Shestopalov, Kazuya Kobayashi, Mario Lucido

Chaired by Yury V. Shestopalov, Kazuya Kobayashi

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- 14:30 A Theoretical Method for Estimating the Influence of an Alternating Electric Field on Atomic Spectral Line Profiles  
*Elena Vladimirovna Koryukina (National Research Tomsk State University); Vladimir Ivanovich Koryukin (Siberian State Medical University);*
- 14:50 Synthesis of an Impedance Plane Which Reflects Several Incident Plane Waves in a Given Direction  
*Yury Vladimirovich Yukhanov (Southern Federal University); Tatyana Yurievna Privalova (Southern Federal University); E. E. Privalov (Southern Federal University); T. O. Amirokov (Southern Federal University);*

- 15:10 Analysis of the Scattering Characteristics of Single-mode Van Atta Waveguide Arrays on a Perfectly Conducting Cylinder  
*Yury Vladimirovich Yukhanov (Southern Federal University); Tatyana Yurievna Privalova (Southern Federal University); E. V. Kriuk (Southern Federal University); Feruz Setmerovich Topalov (Southern Federal University); Ilya Vladimirovich Merglodov (Southern Federal University);*
- 15:30 Novel High-sensitivity Non-destructive Technique for the Measurement of Permittivity of a Low-loss Dielectric Slab in Free Space  
*Roman Kushnin (Riga Technical University); Glebs Kuzminovs (Riga Technical University); Janis Semenjako (Riga Technical University); Yury V. Shestopalov (University of Gavle);*
- 15:50 Stability of Least Squares for the Solution of an Ill-posed Inverse Problem of Reconstructing Real Value of the Permittivity of a Dielectric Layer in a Rectangular Waveguide  
*E. A. Sheina (Lomonosov Moscow State University); Yury V. Shestopalov (University of Gavle); Alexander P. Smirnov (M.V. Lomonosov Moscow State University);*
- 16:10 Electromagnetic Scattering from Truncated Thin Cylinders: An Approach Based on the Incomplete Hankel Functions and Surface Impedance Boundary Conditions  
*Diego Caratelli (The Antenna Company Nederland B.V.); Renato Cicchetti (Sapienza University of Rome); Valentina Cicchetti (University of Rome "La Sapienza" Via Eudossiana); Antonio Faraone (Motorola Solutions, Inc.); Orlandino Testa (Sapienza University of Rome);*
- 16:30 **Coffee Break**
- 17:00 Reduction of the RCS of Metal Cylinder Using Conformal Anisotropic Metasurface and Linear Tightly Coupled Dipole Array  
*Andrey I. Semenikhin (Southern Federal University); Diana V. Semenikhina (Southern Federal University); Yury Vladimirovich Yukhanov (Southern Federal University); Pavel V. Blagovisnyy (Southern Federal University);*
- 17:20 Extended Maxwell's Diamond Equations to Unify Electromagnetism, Weak Gravitation, and Classical and Quantum Mechanics and Their Application for Semiconductor Devices  
*Hideki Mutoh (Link Research Corporation);*
- 17:40 Hybrid Waves in a Cylindrical Anisotropic Inhomogeneous Metal-dielectric Waveguide  
*Eugene Smolkin (Penza State University); Maxim Snegur (Penza State University); Yuri Shestopalov (University of Gavle);*
- 18:00 Introduction to TTs Guided by Null-to-Wave-to-Particle Deformations: Inflective Wave Functions of a Single Point Space  
*Taner Sengor (Yildiz Technical University (Retired));*
- 18:20 Simulator of Hydroacoustic Signals for a Complex System of Underwater Environment  
*Dmitry M. Klionskiy (Saint Petersburg Electrotechnical University "LETI"); Dmitrii I. Kaplun (SPbETU "LETI"); V. V. Geppener (Saint Petersburg Electrotechnical University "LETI"); A. S. Voznesenskiy (Saint Petersburg Electrotechnical University "LETI");*
- 18:40 Topological Ingredients of Single Point Spaces: The Phases of Nonexistence to Existence Passages for Null Space to Thing Space  
*Taner Sengor (Yildiz Technical University (Retired));*
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- Session 2P5**  
**Microwave Inverse Scattering Problems and Applications 2**
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- Tuesday PM, June 18, 2019**  
**Room Hall of Frescoes - 1st Floor**  
Organized by Uday K. Khankhoje, Raffaele Solimene  
Chaired by Uday K. Khankhoje, Raffaele Solimene
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- 14:30 Techniques for Incorporating Prior Information in Microwave and Ultrasound Imaging — A Review  
*Max Hughson (University of Manitoba); Joe LoVetri (University of Manitoba); Ian Jeffrey (University of Manitoba);*
- 14:50 Regularization of the Inverse Problem in Focusing Medium Formed by Antenna Array  
*J. Feroj (University of Manitoba); L. Shafai (University of Manitoba); Vladimir Okhmatovski (University of Manitoba);*
- 15:10 A Comparison between Beamforming and Microwave Tomography Approach in Radar Imaging  
*Ilaria Catapano (Institute for Electromagnetic Sensing of Environment, National Research Council); Francesco Soldovieri (Institute for Electromagnetic Sensing of Environment, National Research Council);*

- 15:30 Multiple Signal Classification: Challenges on the Route from Millimeter Resolution to Nanometer Resolution  
*Sebastian Andres Acuna Maldonado (UiT — The Arctic University of Norway); G. M. A. Mehedi Husain (UiT — The Arctic University of Norway); Fred Godtlielsen (UiT — The Arctic University of Norway); Balpreet Singh Ahluwalia (UiT — The Arctic University of Norway); Hoai Phuong Ha (UiT — The Arctic University of Norway); Dilip K. Prasad (UiT — The Arctic University of Norway); Krishna Agarwal (UiT — The Arctic University of Norway);*
- 15:50 Microwave Inverse Profiling for Plasma Diagnostics in Compact Ion Sources  
*Loreto Di Donato (University Mediterranea of Reggio Calabria); Andrea Francesco Morabito (University ‘Mediterranea’ of Reggio Calabria); D. Mascali (Istituto Nazionale di Fisica Nucleare (INFN) — Laboratori Nazionali del Sud (LNS)); Giuseppe Torrasi (Istituto Nazionale di Fisica Nucleare); Tommaso Isernia (University “Mediterranea” of Reggio Calabria); Gino Sorbello (University of Catania);*
- 16:30 **Coffee Break**
- 17:00 Time-domain Microwave Imaging Using a Discontinuous Galerkin Method Forward Solver  
*Forouz Mahdinezhad Saraskanroud (University of Manitoba); Ian Jeffrey (University of Manitoba);*
- 17:20 A Novel Microwave Staring Correlated Imaging Method Based on Coherent Processing  
*Yuanyue Guo (University of Science and Technology of China); Bo Yuan (University of Science and Technology of China);*
- 18:00 Joint Sparsity and Inverse Source for Three-dimensional Shape Estimation of Unknown Targets  
*Martina Teresa Bevacqua (University “Mediterranea” of Reggio Calabria); Tommaso Isernia (University “Mediterranea” of Reggio Calabria);*
- 18:20 Underwater UXO Targets EMI Responses in a Multi-layer Environment  
*Fridon Shubitidze (Dartmouth College); Benjamin E. Barrowes (Cold Regions Research and Engineering Laboratory); Kevin O’Neill (Dartmouth College); Irma Sahmatava (Dartmouth College);*

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**Session 2P6**
**FocusSession.SC1&SC2&SC4: Leaky Waves in Electromagnetics 2**


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**Tuesday PM, June 18, 2019**
**Room Cloister Hall - 1st Floor**

Organized by Paolo Baccarelli, Paolo Burghignoli, Alessandro Galli, Paolo Lampariello

 Chaired by Paolo Baccarelli, Paolo Burghignoli
 

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- 14:30 Leakage from Metasurfaces: From Basic Theory to Antenna Applications  
 Keynote  
*Stefano Maci (University of Siena);*
- 15:00 On the Use of Bianisotropic Huygens’ Metasurfaces to Build Leaky-wave Antennas  
 Invited  
*Elena Abdo-Sanchez (Universidad de Malaga); M. Chen (University of Toronto); Ariel Epstein (Technion-Israel Institute of Technology); George V. Eleftheriades (University of Toronto);*
- 15:20 Enlarging Bandwidth of Modulated Metasurface Antennas  
 Invited  
*Marco Faenzi (Univ Rennes); David Gonzalez-Ovejero (Univ Rennes); Enrica Martini (University of Siena); Stefano Maci (University of Siena);*
- 15:40 Terahertz Fabry-Perot Cavity Leaky-wave Antennas  
 Invited  
*Walter Fuscaldo (Sapienza University of Rome); S. Tofani (Sapienza University of Rome); Paolo Burghignoli (Sapienza University of Rome); Paolo Baccarelli (Roma Tre University); Alessandro Galli (Sapienza University of Rome);*
- 16:00 A Binary-switch Controlled Periodic Half-width Leaky-wave Antenna for Fixed Frequency Beam Steering near the Endfire Region  
 Invited  
*Debabrata K. Karmokar (Macquarie Univ); Karu P. Esselle (Macquarie University); Trevor S. Bird (CSIRO ICT Centre); Y. Jay Guo (University of Technology Sydney (UTS));*
- 16:30 **Coffee Break**
- 17:00 Exotic Leaky-wave Phenomena in Meta-structures  
 Keynote  
*Andrea Alu (City University of New York);*

- 17:30 Study of the Near Field from an Electro-optic Leaky Waveguide for Application in All-optical Analog-to-digital Converters  
*Pierre-Vincent Dugue (University Brittany Loire, University of Nantes, Institute of Electronics and Telecommunications of Rennes, UMR CNRS 6164); Mohammed El-Gibari (University Brittany Loire, University of Nantes, Institute of Electronics and Telecommunications of Rennes, UMR CNRS 6164); Jean-Pierre Vilcot (Institute of Electronics, Microelectronics and Nanotechnologies, UMR CNRS 8520, University of Lille); Hongwu Li (Université de Nantes, UBL);*
- 17:50 Leaky Wave Antennas with Distributed Gain Based on Exceptional Points of Degeneracy  
 Invited *Ahmed F. Abdelshafy (University of California); Tarek Mealy (University of California); Hamidreza Kazemi (University of California); Mohamed Y. Nada (University of California); Filippo Capolino (University of California);*
- 15:30 Tandem TN-cell Achromatic Polarization Rotator Tolerance Analysis  
 Invited *Te-Yuan Chung (National Central University); Wei-Lun Cao (National Central University); Ko-Ting Cheng (National Central University);*
- 15:50 Fast Electrooptical Modes in Ferroelectric Liquid Crystal and Their Applications  
 Invited *Qi Guo (Beihang University); Huijie Zhao (Beihang University); Vladimir G. Chigrinov (Hong Kong University of Science and Technology); Hoi Sing Kwok (Hong Kong University of Science and Technology);*
- 16:10 Polarization-controlled Guided-mode Resonance Filter with a 90° Hybrid-twisted Nematic Liquid Crystal Cladding  
 Invited *Chun-Ta Wang (National Sun Yat-sen University); Li-Min Chang (National Sun Yat-sen University); Chuan-Ci Yin (National Sun Yat-sen University); Duan-Yi Guo (National Sun Yat-sen University); Yung-Jr Hung (National Sun Yat-sen University);*

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**Session 2P7**
**SC3: Liquid Crystal Devices and Applications**  
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Tuesday PM, June 18, 2019

Room 17 - 1st Floor

Organized by Yi-Hsin Lin, Wei Hu

 Chaired by Yi-Hsin Lin, Wei Hu
 

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- 14:30 Beam Shaping via Photopatterned Liquid Crystals  
 Invited *Wei Hu (Nanjing University); Peng Chen (Nanjing University); Yan-Qing Lu (Nanjing University);*
- 14:50 Multidimensional Twist Structure Liquid Crystals and Photonic Application  
 Invited *Tengfei Huang (Shanghai Jiao Tong University); Yifan Feng (Shanghai Jiao Tong University); Changli Sun (Shanghai Jiao Tong University); Jiangan Lu (Shanghai Jiao Tong University);*
- 15:10 Vortex-vector Airy Beams Realized via Photopatterning Liquid Crystals  
 Invited *Bing-Yan Wei (Northwestern Polytechnical University); Sheng Liu (Northwestern Polytechnical University); Peng Chen (Nanjing University); Wei Hu (Nanjing University); Yan-Qing Lu (Nanjing University); Jian-Lin Zhao (Northwestern Polytechnical University);*
- 16:30 **Coffee Break**
- 17:00 Light Distribution Control by Layer-structured PDLC Fabricated by Using Anisotropically Diffused UV Light  
 Invited *Takahiro Ishinabe (Tohoku University); Yuya Horii (Tohoku University); Yosei Shibata (Tohoku University); Hideo Fujikake (Tohoku University);*
- 17:20 From Scalar to Rigorous Optical Modeling with Experimental Verification for Phase-only Liquid Crystal on Silicon Device in the Telecommunication Application  
 Invited *Po-Ju Chen (Delft University of Technology); Philip Engel (HOLOEYE Photonics AG); H. Paul Urbach (Delft University of Technology);*
- 17:40 Dual-domain Nematic Liquid Crystal Deflector  
 Invited *Irina I. Rushnova (Belarusian State University); Volha S. Kabanava (Belarusian State University); E. A. Melnikova (Belarusian State University); A. L. Tolstik (Belarusian State University);*
- 18:00 Our Initiatory Work on Microwave Application Using Liquid Crystal: From Material Synthesis, Measurement, Device Developments  
 Invited *Xiangru Wang (University of Electronic Science and Technology of China); Zhiyong Zhang (Wuhan Polytechnic University); En Li (University of Electronic Science and Technology of China); Chengyong Yu (University of Electronic Science and Technology of China);*

18:20 Ultrafast Synthesis and Switching of Orthogonal Optical Eigenstates Using Cholesteric Liquid Crystals  
Invited *Yikun Liu (Sun Yat-sen University);*

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**Session 2P8**

**SC3: Soft Matter Photonics:  
Photo-responsive Materials and Devices**

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**Tuesday PM, June 18, 2019**

**Room 6 - Mezzanine**

Organized by Gabriella Cipparrone, Pasquale Pagliusi

Chaired by Gabriella Cipparrone, Pasquale Pagliusi

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14:30 Self-regulating Capabilities in Photonic Robotics  
Invited *Daniele Martella (University of Florence); Sara Nocentini (University of Florence); Camilla Parmeggiani (University of Florence); Diederik S. Wiersma (University of Florence);*

14:50 Photoactivated Liquid Crystal Hierarchical Architectures for Optics  
Invited *Zhigang Zheng (East China University of Science and Technology); Yan-Qing Lu (Nanjing University); Quan Li (Kent State University);*

15:10 Optical Sensing of Relative Humidity via Azobenzene Photoisomerization  
Invited *Arri Priimagi (Tampere University of Technology);*

15:30 Holographic Recording on Photochromic Liquid Crystalline Triblock Copolymers  
*Biagio Audia (University of Calabria); M. A. Bugakov (Lomonosov Moscow State University); N. I. Boiko (Lomonosov Moscow State University); Pasquale Pagliusi (University of Calabria); Gabriella Cipparrone (University of Calabria); P. V. Shibaev (Lomonosov Moscow State University);*

15:50 Light-responsive Nanocarriers Based on Amphiphilic Block Copolymers  
Invited *M. Abad (Universidad de Zaragoza-CSIC); H. Garcia (Universidad de Zaragoza-CSIC); A. Roche (Universidad de Zaragoza-CSIC); R. M. Tejedor (Centro Universitario de la Defensa, Academia General Militar); M. Pinol (Universidad de Zaragoza-CSIC); Luis Oriol (Universidad de Zaragoza-CSIC);*

16:30 **Coffee Break**

17:00 Shining Light on Life-like Molecular Systems  
Invited *Nathalie Katsonis (University of Twente);*

17:40 Photonic Micro-fingerprints as Anti-counterfeiting Devices  
*Maria Penelope De Santo (University of Calabria); Gia Petriashvili (Institute of Cybernetics of the Georgian Technical University); Mauro Daniel Luigi Bruno (University of Calabria); Erica Fuoco (University of Calabria); Riccardo Barberi (University of Calabria);*

18:00 Light-controlled Polymeric Photonic Structures  
*Sara Nocentini (European Laboratory for Non-linear Spectroscopy); Francesco Riboli (European Laboratory for Non-linear Spectroscopy); Daniele Martella (European Laboratory for Non-linear Spectroscopy); Camilla Parmeggiani (University of Florence); Diederik S. Wiersma (University of Florence);*

18:20 Disorder-mediated Optical Self-assembly of Colloidal Structures  
Invited *Giorgio Volpe (University College London);*

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**Session 2P9**

**SC3: Resonant Optics: Fundamentals and Applications 2**

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**Tuesday PM, June 18, 2019**

**Room 4 - Mezzanine**

Organized by Philippe Lalanne, Sven Burger

Chaired by Philippe Lalanne, Sven Burger

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14:30 Spatio-temporal Lasing Dynamics in Wave-chaotic and Disordered Resonators  
Invited *Hui Cao (Yale University);*

14:50 Computation of Field Approximations in Dispersive Media Using Quasinormal Mode Expansions  
Invited *Jorn Torsten Zimmerling (University of Michigan); Rob F. Remis (Delft University of Technology);*

15:10 Resonant Metastructures and Nanomaterials: Hot-electron Generation and Anomalous Ultrafast Carrier Dynamics  
Invited *Alexander Govorov (University of Electronic Science and Technology of China); Lucas V. Besteiro (University of Electronic Science and Technology of China); Larousse Khosravi Khorashad (Ohio University); Gary P. Wiederrecht (Argonne National Laboratory);*

15:30 The Reflectionless Scattering Modes  
Invited

*William R. Sweeney (Yale University); Chia Wei Hsu (Yale University); A. Douglas Stone (Yale University);*

15:50 Zero-order Optical Harmonic Generation from Semi-conductor Metasurfaces  
Invited

*Giuseppe Marino (Universite Paris Diderot & CNRS); Carlo Gigli (Universite Paris Diderot & CNRS); Davide Rocco (Universita degli Studi di Brescia & INO-CNR); Ivan Favero (Universite Paris Diderot, UMR7162, CNRS); Stéphan Suffit (Universite Paris Diderot & CNRS); Gilles Patriarche (CNRS — Université Paris-Saclay); Grégoire Beaudoin (Laboratoire de Photonique et de Nanostructures); Konstantinos Pantzas (CNRS — Université Paris-Saclay); Isabelle Sagnes (CNRS — Université Paris Saclay); Aristide Lemaitre (LPN/CNRS); Costantino De Angelis (Universita degli Studi di Brescia); Giuseppe Leo (Universite Paris Diderot);*

16:10 Programmable Plasmonic Phase Modulation of Free-space Wavefronts at GHz Rates  
Invited

*Yeshaiahu Shaya Fainman (University of California at San Diego); Alexei Smolyaninov (University of California at San Diego);*

16:30 **Coffee Break**

17:00 Modal Analysis of Dielectric Mie Resonators  
Invited

*R. Colom (Aix Marseille Univ., CNRS, Centrale Marseille, Institut Fresnel); R. C. R. C. McPhedran (University of Sydney); B. Stout (Aix Marseille Univ., CNRS, Centrale Marseille, Institut Fresnel); Nicolas Bonod (Aix Marseille Univ., CNRS, Centrale Marseille, Institut Fresnel);*

17:20 Light-matter Interaction in Optical Resonators: Spectral Expansion by Riesz Projection  
Invited

*Lin Zschiedrich (JCMwave GmbH); Felix Binkowski (Zuse Institute Berlin); Sven Burger (Zuse Institute Berlin);*

17:40 Computing Optical Resonances in Plasmonic Systems Using a Contour Integral Method

*Felix Binkowski (Zuse Institute Berlin); Lin Zschiedrich (JCMwave GmbH); Sven Burger (Zuse Institute Berlin);*

18:00 Transformation Optics Modal Decomposition for the Study of Light-forbidden Transitions in Plasmon-emitter Coupling

*Alvaro Cuartero-Gonzalez (Universidad Autónoma de Madrid); Antonio I. Fernandez-Dominguez (Universidad Autonoma de Madrid);*

18:20 Multipolar Decomposition of Quasi-normal Modes: A New Design Tool for Nano-optics  
Invited

*Tong Wu (CRPP); Philippe Lalanne (Institut d'Optique-LP2N/CNRS); A. Baron (University Bordeaux); Kevin Vynck (CNRS-IOGS-University Bordeaux);*

18:40 Octupole-dependent Electromagnetic Field-induced Inter-molecular Energy Shift

*Akbar Salam (Wake Forest University);*

19:00 On the Nanosphere Resonances in the Full-wave Regime  
Invited

*Carlo Forestiere (Università degli Studi di Napoli Federico II); Giovanni Miano (Università di Napoli Federico II); M. Pascale (Università degli Studi di Napoli Federico II); R. Tricarico (Università degli Studi di Napoli Federico II);*

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### Session 2P10

#### FocusSession.SC3: Nonlinear Optics at the Nanoscale 2

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Tuesday PM, June 18, 2019

Room 12 - Mezzanine

Organized by Costantino De Angelis, Michele Celebrano

Chaired by Costantino De Angelis, Michele Celebrano

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14:30 Vector-field Nonlinear Microscopy of Nano-objects  
Invited

*Martti Kauranen (Tampere University); Xiaorun Zang (Tampere University); Leo Turquet (Tampere University); Mikko Huttunen (Tampere University); Godofredo Bautista (Tampere University);*

14:50 Photon-pair Generation at the Nanoscale: From Nanoantennas to Metasurfaces  
Invited

*Giuseppe Marino (Universite Paris Diderot & CNRS); Adrien Borne (Universite Paris Diderot & CNRS); Carlo Gigli (Universite Paris Diderot & CNRS); Matthieu Vanhoeffe (Universite Paris Diderot & CNRS); Aristide Lemaitre (LPN/CNRS); Ivan Favero (Universite Paris Diderot, UMR7162, CNRS); Giuseppe Leo (Universite Paris Diderot);*

15:10 Mie Resonators in Nonlinear Metal Oxide Nanostructures  
Invited

*Flavia Timpu (ETH Zurich);*

- 15:50 Harmonic Nanoparticles: Nonlinear Dielectric  
Invited Nanophotonics Meets Bioimaging  
*G. Camparugue (Université de Geneve); V. Kilin (Université de Geneve); S. Sakong (Université de Geneve); G. Giardina (Université de Geneve); J.-P. Wolf (Université de Geneve); Luigi Bonacina (Université de Geneve);*
- 16:10 Third Harmonic Generation Modulation through  
Ground State Depletion  
*Szu-Yu Chen (National Central University); Hao-Hao Wu (National Central University); Jui-Ting Hung (National Central University); Jian-Ling Chen (National Central University);*
- 16:30 **Coffee Break**
- 17:00 Enhancing Ultrafast Nonlinearities with Dielectric  
KeynoteNanocavities  
*Stefan Maier (LMU Munich);*
- 17:30 Optical Control of Second Harmonic Generation form  
Invited AlGaAs Nanopillars  
*Marco Finazzi (Politecnico di Milano); Lavinia Ghirardini (Politecnico di Milano); Francesco Rusconi (Politecnico di Milano); Michele Celebrano (Politecnico di Milano); Paolo Biagioni (Politecnico di Milano); Lamberto Duo (Politecnico di Milano); Giuseppe Della Valle (Politecnico di Milano); Eva Pogna (Politecnico di Milano); Giulio Cerullo (Politecnico di Milano); Luca Carletti (University of Brescia); Davide Rocco (Università degli Studi di Brescia & INO-CNR); Costantino De Angelis (Università degli Studi di Brescia); Carlo Gigli (Laboratoire Materiaux et Phenomenes Quantiques, CNRS UMR 7162, Université Paris Diderot); Giuseppe Leo (Université Paris Diderot);*
- 17:50 Second- and Third-harmonic Generation from Mie-  
Invited resonant GaAs Nanowires  
*Domenico De Ceglia (University of Padova); L. Carletti (University of Padova); Andrea Galtarossa (University of Padova); M. A. Vincenti (University of Brescia); Costantino De Angelis (Università degli Studi di Brescia); Michael Scalora (Charles M. Bowden Research Center, AMRDEC, RDECOM);*
- 18:10 Transient Optical Dichroism in Nonlinear Anisotropic  
Invited Dielectric Metasurfaces  
*Giuseppe Della Valle (Politecnico di Milano); Lucia Ganzer (Politecnico di Milano); Andrea Mazzanti (Politecnico di Milano); Andrea Camellini (Politecnico di Milano); Giulio Cerullo (Politecnico di Milano); Margherita Zavelani-Rossi (Politecnico di Milano); Costantino De Angelis (Università degli Studi di Brescia); Francesco Buatier de Mongeot (Istituto Nazionale per la Fisica della Materia); Ben Hopkins (The Australian National University); Mohsen Rahmani (Imperial College London); Yuri S. Kivshar (Australian National University); Dragomir N. Neshev (Australian National University);*
- 18:30 Talbot Carpets by Rogue Waves of the Extended Non-  
linear Schrödinger Equation  
*Milivoj R. Belic (Texas A&M University at Qatar); Stanko N. Nikolic (Texas A&M University at Qatar); Omar A. Ashour (University of California); Najdan B. Aleksic (Institute of Physics Belgrade); Yiqi Zhang (Xi An Jiao Tong University); Siu A. Chin (TAMU College Station);*
- 18:45 Conservation of the Spin Angular Momentum in  
Second-harmonic Generation  
*Bing Gu (Southeast University); Tianyu Liu (Southeast University); Guanghao Rui (Southeast University); Changgui Lv (Southeast University); Yiping Cui (Southeast University);*

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**Session 2P11a**
**SC3: Quantum Sensing and Information Processing**


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**Tuesday PM, June 18, 2019**
**Room 11 - Mezzanine**

Organized by Joanna Ptasinski

Chaired by Joanna Ptasinski

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- 14:30 Optical Eigenmodes of Perturbation Fields, Single  
Photons  
*Graeme Docherty-Walthew (University of St Andrews); Kyle Ballantine (University of St Andrews); Michael Mazilu (University of St. Andrews);*
- 14:50 Symmetry Adapted Quantum Computing  
*Sean A. Fischer (U.S. Naval Research Laboratory); Stephen Hellberg (U.S. Naval Research Laboratory); Sergio Tafur (U.S. Naval Research Laboratory); Daniel Gunlycke (U.S. Naval Research Laboratory);*

- 15:10 Transport Dynamics of Step Edge YBCO SQUID Arrays  
*Marcio C De Andrade (SPAWAR Systems Center Pacific); Michael O'Brien (Space and Naval Warfare Systems Center Pacific (SSC Pacific)); Susan Berggren (SPAWAR Systems Center Pacific);*
- 15:30 SQUID Arrays for Underwater Sensing  
*Michael O'Brien (Space and Naval Warfare Systems Center Pacific (SSC Pacific));*
- 15:50 Superconducting Quantum Interference Device Arrays for Radio Frequency Detection  
*Anna M. Leese De Escobar (SPAWAR Systems Center Pacific);*
- 16:10 Quantum-enhanced Magnetic Field Sensing Using a Transmon Qubit  
*Gheorghe Sorin Paraoanu (Aalto University);*
- 16:30 **Coffee Break**
- 17:00 Prediction of Neutral Oxygen-vacancy Defect in Cubic Boron Nitride for a Plausible Qubit  
*G. C. Bian (Beihang University); Guangcun Shan (Beihang University, City University of Hong Kong); J. C. Fang (Beihang University);*
- 17:20 Spin Decoherence in Inhomogeneous Media  
*John Alexander Crosse (New York University Shanghai & New York University);*

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**Session 2P11b**

**SC2: Recent Advances of Metamaterials for Novel Electromagnetic and Photonic Devices 2**

**Tuesday PM, June 18, 2019**

**Room 11 - Mezzanine**

Organized by Yungui Ma, Sailing He

Chaired by Sailing He

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- 17:40 Optical Metamaterials with Large Optical Nonlinearity  
 Invited *Haoliang Qian (University of California); Shilong Li (University of California); Ching-Fu Chen (University of California); Su-Wen Hsu (University of California); Steven Edward Bopp (University of California); Qian Ma (University of California); Andrea R. Tao (University of California); Zhaowei Liu (University of California);*

- 18:00 Experimental Observation of Superscattering  
 Invited *Chao Qian (Zhejiang University); Xiao Lin (Nanyang Technological University); Yi Yang (Massachusetts Institute of Technology); Xiaoyan Xiong (Zhejiang University); Huaping Wang (Zhejiang University); Er Ping Li (Zhejiang University — UIUC Institute); Ido Kaminer (Massachusetts Institute of Technology); Baile Zhang (Nanyang Technological University); Hongsheng Chen (Zhejiang University);*
- 18:20 Novel Effects and Applications Based on the Combination of Coherent Perfect Absorption and Zero-index Media  
 Invited *Jie Luo (Soochow University); Yun Lai (Nanjing University);*
- 18:40 Orbital Angular Momentum Generation by Using a Point Defect in Photonic Crystals  
*Menglin L. N. Chen (The University of Hong Kong); Li Jun Jiang (University of Hong Kong); Wei E. I. Sha (Zhejiang University);*

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**Session 2P12**

**FocusSession.SC2: Thermoplasmonics and Photo-thermal Applications 2**

**Tuesday PM, June 18, 2019**

**Room 21 - 2nd Floor**

Organized by Alessandro Alabastri, Remo Proietti Zaccaria

Chaired by Remo Proietti Zaccaria, Alessandro Alabastri

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- 14:30 Light, Heat, Water from Plasmonic Particles to Solar Powered Desalination  
*Alessandro Alabastri (Rice University);*
- 15:00 Photoexcited Hot-electron Dynamics in Plasmonic Materials  
 Invited *Daniele Catone (CNR-ISM); Alessandra Paladini (CNR-ISM); Lorenzo Di Mario (Istituto di Struttura della Materia (ISM), CNR, Division of Ultrafast Processes in Materials (FLASHit)); Patrick O'Keeffe (CNR-ISM); Francesco Toschi (CNR-ISM); Jacopo Stefano Pelli Cresi (CNR-ISM); Michele Magnozzi (Università di Genova); Andrea Toma (Istituto Italiano di Tecnologia); Francesco Bisio (CNR-SPIN); Paola Luches (Università di Modena e Reggio Emilia); Sergio D'Addato (Università di Modena e Reggio Emilia);*

15:20 Nanoscale Optical Memristors for Digital Optoelectronic Applications  
Invited

*Alexandros Emboras (ETH Zurich); Alessandro Alabastri (Rice University); Fabian Ducry (ETH Zurich); Bojun Cheng (ETH Zurich); Yannick Salamin (Institute of Electromagnetic Fields (IEF), ETH Zurich); Ping Ma (ETH Zurich); Kevin Portner (ETH Zurich); Christoph Weillmann (ETH Zurich); Mila Lewerenz (ETH Zurich); Jan Aeschlimann (ETH Zurich); Mathieu Luisier (ETH Zurich); Peter Nordlander (Rice University); Juerg Leuthold (Institute of Electromagnetic Fields (IEF), ETH Zurich);*

15:40 Active and Passive Control of Thermal Radiation at the Nanoscale  
Invited

*Svend-Age Biehs (Carl von Ossietzky Universität); Annika Ott (Carl von Ossietzky Universität); R. Messina (Institut d'Optique, CNRS, Université Paris-Saclay); Philippe Ben-Abdallah (Université Paris-Sud 11);*

16:00 From Perfect Absorber to Perfect Heater: Photon-to-phonon Conversion and Thermal Management

*Tian-Long Guo (Cixi Institute of Biomedical Engineering, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Science); Joao Cunha (Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences); Alessandro Alabastri (Rice University); Remo Proietti Zaccaria (Cixi Institute of Biomedical Engineering, Ningbo Institute of Materials and Technology Engineering, Chinese Academy of Sciences);*

16:30 **Coffee Break**

17:00 Nanoscale Surface Thermal Gradients Activated by Enhanced Molecular Absorption in Mid-infrared Vertical Antenna Arrays  
Invited

*Andrea Mancini (Sapienza University of Rome); Valeria Giliberti (Istituto Italiano di Tecnologia); Alessandro Alabastri (Rice University); Eugenio Calandrini (Synchrotron SOLEIL); Francesco De Angelis (Istituto Italiano di Tecnologia); Denis Garoli (Istituto Italiano di Tecnologia); Michele Ortolani (Sapienza University of Rome);*

17:20 Mid-infrared Photothermal Imaging beyond the Diffraction Limited Spot Size

*Panagis D. Samolis (Boston University); Michelle Y. Sander (Boston University);*

17:35 Releasable Micro-waveplates

Keynote

*L. Grineviciute (State Research Institute Center for Physical Sciences and Technology); T. Tolenis (State Research Institute Center for Physical Sciences and Technology); M. Ryu (Tokyo Institute of Technology); T. Moein (Swinburne University of Technology); S.-H. Ng (Swinburne University of Technology); T. Katkus (Swinburne University of Technology); Jovan Maksimovic (Swinburne University of Technology); R. Drazdys (State Research Institute Center for Physical Sciences and Technology); Junko Morikawa (Tokyo Institute of Technology); Saulius Juodkazis (Swinburne University of Technology);*

18:05 Hyperbolic Meta-antennas: Arbitrary Control of Light Scattering and Absorption towards Thermoplasmonic Bio-medical Applications  
Invited

*Nicolò Maccaferri (University of Luxembourg); Yingqi Zhao (Istituto Italiano di Tecnologia); Tommi Isoniemi (Istituto Italiano di Tecnologia); Marzia Iarossi (Istituto Italiano di Tecnologia); Antonietta Parracino (Istituto Italiano di Tecnologia); Giuseppe Strangi (Case Western Reserve University); Francesco De Angelis (Istituto Italiano di Tecnologia);*

18:25 Thermoplasmonics for Light Robotics

*Ada-Ioana Bunea (Technical University of Denmark); Einstom Engay (Technical University of Denmark); Jesper Gluckstad (Technical University of Denmark);*

18:40 Passive High-yield Seawater Distillation and Cogeneration under One Sun by Modular and Low-cost Assembly  
Invited

*Matteo Fasano (Politecnico di Torino); Matteo Morciano (Politecnico di Torino); Matteo Alberghini (Politecnico di Torino); Giovanni Antonetto (Politecnico di Torino); Eliodoro Chiavazzo (Politecnico di Torino); Pietro Asinari (Politecnico di Torino);*

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### Session 2P13

#### FocusSession.SC3: Optical Fibers for High Power Applications

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Tuesday PM, June 18, 2019

Room 22 - 2nd Floor

Organized by Stefano Selleri, Jesper Lægsgaard

Chaired by Stefano Selleri, Jesper Lægsgaard

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14:30 Fundamental Power Scaling Limits in High Power Fibre Lasers and Amplifiers  
Keynote

*Michalis N. Zervas (University of Southampton);*

- 15:00 Review on Fully-Aperiodic Large-pitch-fiber for High Power Operation: Concept and Last Experimental Results  
*Philippe Roy (University of Limoges); Marie-Alicia Malleville (University of Limoges); Baptiste Leconte (University of Limoges); Romain Dauliat (University of Limoges); Anka Schwuchow (Leibniz Institute of Photonic Technology); Katrin Wondraczek (Leibniz Institute of Photonic Technology); Julien Didierjean (Eolite Systems); Raphael Jamier (University of Limoges);*
- 15:30 Supermodes in Yb-doped Multi-core Fibers under Heat Load  
 Invited *Federica Poli (University of Parma); Jesper Lægsgaard (Technical University of Denmark);*
- 15:50 Thermo-optic Mode Instabilities in Single- and Dual-core Amplifiers  
*Jesper Lægsgaard (Technical University of Denmark); F. Poli (University of Parma); Annamaria Cucinotta (Università di Parma); Stefano Selleri (Università di Parma);*
- 16:10 Random Fiber Laser Reaching to Kilo-watt Level  
*Hanwei Zhang (National University of Defense Technology); Long Huang (National University of Defense Technology); Jiaxin Song (National University of Defense Technology); Pu Zhou (National University of Defense Technology); Xiaolin Wang (National University of Defense Technology); Jian Wu (National University of Defense Technology); Jiangming Xu (National University of Defense Technology); Xiaojun Xu (National University of Defense Technology);*
- 16:30 **Coffee Break**
- 17:00 Reduced Pulse Duration with Thin Film Compression and Potential Application in Coherent Array of Fiber Lasers  
*Masruri Masruri (Extreme Light Infrastructure Nuclear Physics (ELI-NP)); J. Wheeler (IZEST); A. Naziru (Extreme Light Infrastructure Nuclear Physics (ELI-NP)); R. Secareanu (Extreme Light Infrastructure Nuclear Physics (ELI-NP)); F. Perez (Ecole Polytechnique); Sergey Mironov (Institute of Applied Physics of the Russian Academy of Science (IAP RAS)); G. Koliopoulos (Extreme Light Infrastructure Nuclear Physics (ELI-NP)); I. Dancus (Extreme Light Infrastructure Nuclear Physics (ELI-NP)); Daniel Ursescu (Extreme Light Infrastructure Nuclear Physics (ELI-NP)); R. Dabu (Extreme Light Infrastructure Nuclear Physics (ELI-NP));*
- 17:20 Electromagnetic Analysis of a 9-core Yb-doped Fiber for High Power Applications  
*Seyyedhossein Mckee (Università di Parma); Lorenzo Rosa (University of Modena and Reggio Emilia); Federica Poli (Università di Parma); Stefano Selleri (Università di Parma); Luca Vincetti (University of Modena and Reggio Emilia); Annamaria Cucinotta (Università di Parma);*
- 17:40 First Demonstration of Temperature Control Enabled High Power Mode-switchable Fiber Laser  
*Jiaxin Song (National University of Defense Technology); Haiyang Xu (National University of Defense Technology); Hanshuo Wu (National University of Defense Technology); Liangjin Huang (National University of Defense Technology); Jiangming Xu (National University of Defense Technology); Pu Zhou (National University of Defense Technology);*
- 18:00 Full Non-destructive Characterization of Doped Optical Fibre Preforms for Advanced Applications  
*Marilena Vivona (University of Southampton); Michalis N. Zervas (University of Southampton);*
- 18:20 Bend Loss Properties of the Octagonal-core and Nodeless Large-mode-area Anti-resonant Hollow-core Fibers  
*Elizaveta A. Yelistratova (Bauman Moscow State Technical University); S. O. Leonov (Bauman Moscow State Technical University); V. V. Demidov (Research and Production Association S.I. Vavilov State Optical Institute); V. A. Ananyev (Research and Production Association S.I. Vavilov State Optical Institute); Grigory K. Alagashev (Fiber Optics Research Center of the Russian Academy of Sciences); Andrey D. Pryamikov (Fiber Optics Research Center of the Russian Academy of Sciences);*
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- Session 2P14**  
**FocusSession.SC3: Nanophotonics 3**
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- Tuesday PM, June 18, 2019**  
**Room 24 - 2nd Floor**  
 Organized by Yeshaiahu Shaya Fainman, Newton C. Frateschi  
 Chaired by Yeshaiahu Shaya Fainman, Newton C. Frateschi
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- 14:30 Nonclassical Surface Response in Nanoplasmonics  
 Invited *Thomas Christensen (Massachusetts Institute of Technology); Marin Soljacic (Massachusetts Institute of Technology);*

- 14:50 Plasmonic Nanoparticles for Water Purification  
Invited  
*Ye Pu (Ecole Polytech Fed Lausanne); Demetri Psaltis (Ecole Polytechnique Federale de Lausanne (EPFL));*
- 15:10 Epsilon (and mu) Near Zero Materials — Photonics  
Keynote on Steroids?  
*Jacob B. Khurgin (Johns Hopkins University);*
- 15:40 Two-dimensional Electron Energy-loss Spectroscopy  
*George Mouloudakis (ICFO — Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); Renwen Yu (The Barcelona Institute of Science and Technology); F. Javier Garcia de Abajo (ICFO — Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology);*
- 15:55 Zero Admittance Multidielectric Stratified Materials for Energy Density Engineering  
*Myriam Zerrad (Université Paul Cezanne); D. Niu (Aix-Marseille Université, CNRS); F. Lemarchand (Aix-Marseille Université, CNRS); A. Lereu (Aix-Marseille Université, CNRS); V. Aubry (Centre Technique de Velizy); A. Passian (Oak Ridge National Laboratory); A. Zapien (City University of Hong Kong); M. Lequime (Aix-Marseille Université, CNRS); C. Amra (Aix-Marseille Université, CNRS);*
- 16:05 Quantum Landau Damping Resonances and Dark Photonic Modes  
*Nykolay M. Makarov (Benemerita Universidad Autonoma de Puebla); S. G. Castillo-Lopez (Benemerita Universidad Autonoma de Puebla); A. A. Krokhin (University of North Texas); Felipe Perez-Rodriguez (Benemerita Universidad Autonoma de Puebla);*
- 16:30 **Coffee Break**
- 17:00 Toward Strong Coupling between Free Electrons and Confined Optical Modes  
*Valerio Di Giulio (ICFO-Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); Vahagn Mkhitarian (ICFO-Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); F. Javier Garcia De Abajo (ICFO Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology);*
- 17:15 Optical Wireless Power Transfer between an Optical Antenna and a Transducing Rectenna  
*A. Dasgupta (Université de Bourgogne Franche-Comté); Gerard Colas des Francs (CNRS-Université de Bourgogne); Alexandre Bouhelier (Université Bourgogne Franche-Comte);*
- 17:30 High Order Toroidal Moments and Anapole States in Focus of Irreducible Cartesian Multipole Decomposition  
*Egor A. Gurvitz (ITMO University); Konstantin S. Ladutenko (St. Petersburg National Research University of Information Technologies, Mechanics and Optics); Pavel A. Dergachev (National Research University Moscow Power Engineering Institute); Andrey B. Evlyukhin (Laser Zentrum Hannover e.V.); Andrey E. Miroshnichenko (Australian National University); Alexander Sergeevich Shalin (ITMO University);*
- 17:45 Resonant Diffractive Structure for Enhancing and Beaming the Spontaneous Emission from Organic Dyes on Dielectric Multilayers  
*Emiliano Descrovi (Polytechnic University of Turin); Ugo Stella (Polytechnic University of Turin); Luca Boarino (Istituto Nazionale di Ricerca Metrologica, INRIM); Natascia De Leo (Istituto Nazionale di Ricerca Metrologica, INRIM); Peter Munzert (Fraunhofer Institute for Applied Optics and Precision Engineering IOF);*
- 18:00 Grating Filters in Nanophotonics Integration  
Invited  
*Mario Dagenais (University of Maryland);*
- 18:20 Metasurfaces — Myths and Reality  
Invited  
*Hans Peter Herzig (Swiss Federal Institute of Technology in Lausanne (EPFL));*
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- Session 2P15a**  
**Photonics for Microwave Systems**
- 
- Tuesday PM, June 18, 2019**  
**Room 25 - 2nd Floor**  
Organized by A. Bogoni, P. Ghelfi  
Chaired by A. Bogoni
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- 14:30 Investigation of 100 GHz Output Power Performance in Uni-travelling Carrier Photodetector under Zero-bias Condition  
*Toshimasa Umezawa (National Institute of Information and Communications Technology); Atsushi Matsumoto (National Institute of Information and Communications Technology); Atsushi Kanno (National Institute of Information and Communications Technology); Naokatsu Yamamoto (National Institute of Information and Communications Technology); Tet-suya Kawanishi (National Institute of Information and Communications Technology);*

- 14:50 Automated Prototype of Photonics-based RF Receiver with Extended Bandwidth and Increased Tuning Speed  
*Filippo Scotti (CNIT); D. Onori (TeCIP Institute); A. Zaccaron (Elettronica S.p.A.); Luca Scorrano (Elettronica SpA); Marco Bartocci (Elettronica SpA); Antonio Tafuto (Elettronica SpA); Antonella Bogoni (Sant'Anna School of Advanced Studies); Paolo Ghelfi (CNIT);*
- 15:10 Beamforming with Photonic Integrated Circuits for Millimeter Wave Communications and Phased Arrays  
*Jonathan Klamkin (University of California); Yuan Liu (University of California); Brandon Isaac (University of California); Jean Kalkavage (University of California); Eric Adles (University of California); Thomas Clark (University of California);*
- 15:30 Photonics for Radar Systems  
*Leonardo Lembo (Scuola Superiore Sant'Anna); Filippo Scotti (CNIT); Giovanni Serafino (Scuola Superiore Sant'Anna); Antonio Malacarne (Scuola Superiore Sant'Anna); Paolo Ghelfi (CNIT); Antonella Bogoni (Scuola Superiore Sant'Anna);*
- 15:50 Recent Advances in Optoelectronic Oscillators  
*Ming Li (Institute of Semiconductors, Chinese Academy of Sciences); Tengfei Hao (Institute of Semiconductors, Chinese Academy of Sciences);*
- 16:10 Photonics-based Radar Systems  
*Shilong Pan (Nanjing University of Aeronautics and Astronautics); Fangzheng Zhang (Nanjing University of Aeronautics and Astronautics); Yamei Zhang (Nanjing University of Aeronautics and Astronautics);*
- 16:30 **Coffee Break**
- 17:00 Integrated Microwave Photonics Chip Platform by Hybrid Integration of InP and TriPleX  
*Chris G. H. Roeloffzen (LioniX International BV); Ilka Visscher (LioniX International BV); Caterina Taddei (LioniX International BV); Marcel Hoekman (LioniX BV); Ruud M. Oldenbewing (SATRAX BV); Paulus W. L. Van Dijk (LioniX International BV); Roelof Bernardus Timens (LioniX International BV); Jorn P. Epping (LioniX International BV); Robert Grootjans (LioniX International BV); Dimitri Geskus (LioniX International BV); Ronald Dekker (LioniX International BV); Arne Leinse (LioniX International BV); Rene G. Heideman (LioniX BV);*
- 17:20 Plasmonic Modulators for Sub-THz Analog Photonics  
*Maurizio Burla (Institute of Electromagnetic Fields, ETH Zurich); Claudia Hoessbacher (Institute of Electromagnetic Fields, ETH Zurich); Wolfgang Heni (Institute of Electromagnetic Fields, ETH Zurich); Christian Haffner (Institute of Electromagnetic Fields, ETH Zurich); Yuriy Fedoryshyn (Institute of Electromagnetic Fields (IEF), ETH Zurich); Dominik Werner (Institute of Electromagnetic Fields, ETH Zurich); Tatsuhiko Watanabe (Institute of Electromagnetic Fields, ETH Zurich); Hermann Massler (Fraunhofer Institute for Applied Solid State Physics (IAF)); Delwin Elder (University of Washington); Larry R. Dalton (University of Washington); Juerg Leuthold (Institute of Electromagnetic Fields (IEF), ETH Zurich);*
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- Session 2P15b**  
**Disordered Photonics 2**
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- Tuesday PM, June 18, 2019**  
**Room 25 - 2nd Floor**
- Organized by Pedro David Garcia Fernandez, Jacopo Bertolotti  
Chaired by Jacopo Bertolotti, Pedro David Garcia Fernandez
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- 17:40 Role of Anisotropy and Refractive Index in Scattering and Whiteness Optimization  
*Gianni Jacucci (University of Cambridge); Jacopo Bertolotti (University of Exeter); Silvia Vignolini (University of Cambridge);*
- 18:00 All-optical Radio-frequency Modulation of Anderson-localized Modes  
*Guillermo Arregui (CSIC and The Barcelona Institute of Science and Technology, Campus UAB);*
- 18:20 Massively-parallel Calculation of Multiple Light Scattering in Discrete Random Media  
*Lorenzo Pattelli (University of Florence); Amos Egel (Light Technology Institute, Karlsruhe Institute of Technology (KIT)); Ulrich Lemmer (Light Technology Institute, Karlsruhe Institute of Technology (KIT)); Diederik S. Wiersma (University of Florence);*

- 18:40 Optimized Reflectance in Bioinspired Polymer Network Structures  
*Lorenzo Pattelli (University of Florence); Weizhi Zou (Beijing National Laboratory for Molecular Sciences, CAS Research/Education Center for Excellence in Molecular Sciences, Laboratory of Polymer Physics); Jing Guo (Beijing National Laboratory for Molecular Sciences, CAS Research/Education Center for Excellence in Molecular Sciences, Laboratory of Polymer Physics); Shijia Yang (Beijing National Laboratory for Molecular Sciences, CAS Research/Education Center for Excellence in Molecular Sciences, Laboratory of Polymer Physics); Meng Yang (Beijing National Laboratory for Molecular Sciences, CAS Research/Education Center for Excellence in Molecular Sciences, Laboratory of Polymer Physics); Ning Zhao (Beijing National Laboratory for Molecular Sciences, CAS Research/Education Center for Excellence in Molecular Sciences, Laboratory of Polymer Physics); Jian Xu (Institute of Chemistry, Chinese Academy of Sciences); Diederik S. Wiersma (University of Florence);*
- 19:00 Correlations and Entropy of the LDOS in Disordered Photonic Systems  
 Invited *Francesco Riboli (European Laboratory for Nonlinear Spectroscopy (LENS));*
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- Session 2P16**  
**FocusSession.SC3: Organic Photonics for Optical Interconnections and Switching**
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- Tuesday PM, June 18, 2019**  
**Room 15 - 2nd Floor**  
 Organized by Antonio D'Alessandro, Rita Asquini  
 Chaired by Antonio D'Alessandro, Rita Asquini
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- 14:30 Liquid Crystalline Photonic Crystals for Ultrafast Keynote(pico-femtoseconds) All-optical Self-action Processes  
*Iam-Choon Khoo (Pennsylvania State University); Chun-Wei Chen (Pennsylvania State University);*
- 15:00 Photonic Switches Based on Liquid Crystal Electro-optical Waveguides  
*Antonio d'Alessandro (Sapienza University of Rome); Luca Civita (University of Rome La Sapienza); Rita Asquini (Sapienza University of Rome); Cesare Chiccoli (Istituto Nazionale di Fisica Nucleare); Paolo Pasini (Istituto Nazionale di Fisica Nucleare);*
- 15:15 Switching Thermo-plasmonic Behavior of Au Nanoparticles in Presence of an Optically Tunable Organic Layer  
 Invited *Giovanna Palermo (University of Calabria); Alexa Guglielmelli (University of Calabria); U. Cataldi (University of Geneva); Thomas Buerger (University of Geneva); Luciano De Sio (Sapienza University of Rome); N. V. Tabiryan (BEAM Corp); Cesare Paolo Umerton (University of Calabria); Roberto Caputo (University of Calabria);*
- 15:35 Reflective Anisotropic Lenses via Nematic Liquid Crystals  
 Invited *Yu-Jen Wang (National Chiao Tung University); Ozan Cakmakci (Google Inc.); Yi-Hsin Lin (National Chiao Tung University);*
- 15:55 Structured Liquid Crystal Patterns for Switchable Diffraction Gratings  
 Invited *Kristiaan Neyts (Ghent University); Inge Nys (Ghent University); Jeroen Beeckman (Ghent University);*
- 16:15 Multi-photon Laser Fabrication of Compact, Low-loss Waveguides in Polydimethylsiloxane  
*Giulia Panusa (Ecole Polytechnique Federale de Lausanne (EPFL)); Ye Pu (Ecole Polytech Fed Lausanne); Jieping Wang (Ecole Polytechnique Federale de Lausanne (EPFL)); Christophe Moser (Ecole Polytechnique Federale de Lausanne (EPFL)); Demetri Psaltis (Ecole Polytechnique Federale de Lausanne (EPFL));*
- 16:30 **Coffee Break**
- 17:00 Slippery Interfaces  
 Invited *Jun Yamamoto (Kyoto University);*
- 17:20 Controlling Reflected Light Based on Cholesteric Liquid Crystals  
 Invited *Masanori Ozaki (Osaka University); Hiroyuki Yoshida (Osaka University);*
- 17:40 Plasmons at the Interface between Physics and Biophotonics  
 Invited *Giuseppe Strangi (Case Western Reserve University);*
- 18:00 Enhanced Efficiency of Electric Field Tunability in Au/Ag Nanoparticles-doped Photonic Liquid Crystal Fibers  
 Invited *Tomasz R. Wolinski (Warsaw University of Technology); D. Budaszewski (Warsaw University of Technology); M. Chychlowski (Warsaw University of Technology); A. Budaszewska (Warsaw University of Technology); B. Bartosewicz (Military University of Technology); B. Jankiewicz (Military University of Technology);*

- 18:20 Thermo-plasmonic Driven Hydrogel Based Optical  
Invited Beam Shutter  
*Filippo Pierini (Institute of Fundamental Technological Research, Polish Academy of Sciences); Alexa Guglielmelli (University of Calabria); Olga Urbanek (Institute of Fundamental Technological Research, Polish Academy of Sciences); Pawel Nakielski (Institute of Fundamental Technological Research, Polish Academy of Sciences); Sylwia Pawlowska (Institute of Fundamental Technological Research, Polish Academy of Sciences); Tomasz A. Kowalewski (Institute of Fundamental Technological Research, Polish Academy of Sciences); Timothy J. Bunning (Wright-Patterson Air Force Base); Luciano De Sio (Sapienza University of Rome);*
- 18:40 Metamaterial-liquid Crystal Ultra-thin Spatial Phase  
Invited Modulator for THz Applications  
*Oleksandr Buchnev (University of Southampton); Nina Podoliak (University of Southampton); Korbinian Kaltenecker (Technical University of Denmark); Markus Walther (University of Freiburg); Malgosia Kaczmarek (University of Southampton); Vasily A. Fedotov (University of Southampton);*
- 19:00 All-organic Integrated LC Optical Polarization Cross-  
Invited connect  
*Manuel Caño-García (International Iberian Nanotechnology Laboratory (INL)); Fernando Jose Gordo Quiroga (Technical University of Madrid (UPM), CEMDATIC, Universidad Politecnica de Madrid); Jeroen Missinne (Ghent University and IMEC); Morten A. Geday (Technical University of Madrid (UPM), CEMDATIC, Universidad Politecnica de Madrid); Jose M. Oton (Technical University of Madrid (UPM), CEMDATIC, Universidad Politecnica de Madrid); Geert Van Steenberge (Ghent University and IMEC); Xabier Quintana (Technical University of Madrid (UPM), CEMDATIC, Universidad Politecnica de Madrid);*
- 14:30 Preparation and Microwave Absorption Properties of  
Doped Barium Ferrite Ceramics  
*Jun Li (Harbin Institute of Technology); San He (Harbin Institute of Technology); Kouzhong Shi (Harbin Institute of Technology); You Wu (Harbin Institute of Technology); Han Bai (Harbin Institute of Technology); Yang Hong (Harbin Institute of Technology); Qingxin Meng (Harbin Institute of Technology); Zhongxiang Zhou (Harbin Institute of Technology);*
- 14:50 Structure, Electromagnetic and Microwave Absorption  
Properties of Bismuth Ferrite Nanoparticles  
*Yang Hong (Harbin Institute of Technology); Jun Li (Harbin Institute of Technology); Kouzhong Shi (Harbin Institute of Technology); Han Bai (Harbin Institute of Technology); Zhongxiang Zhou (Harbin Institute of Technology);*
- 15:10 Influence of Dust Particles on a Wave Propagation in  
a Glow Discharge Plasma  
*Dmitry V. Bogdanov (St. Petersburg State University); E. A. Bogdanov (St. Petersburg State University); A. A. Kudryavtsev (St. Petersburg State University); C. Yuan (Harbin Institute of Technology);*
- 15:30 GMM Estimation and BER of Bursty Impulsive Noise  
in Low-voltage PLC Networks  
*Steven Omondi Awino (University of KwaZulu Natal); Thomas Joachim Odhiambo Afullo (University of KwaZulu-Natal (UKZN)); Modisa Mosalaosi (University of KwaZulu-Natal); Peter O. Akuon (University of Kwa-Zulu Natal (UKZN));*
- 15:50 The Features and Improvements of the Topside Ionospheric  
Data Extraction from the Irkutsk Incoherent Scatter Radar  
*Denis S. Khabituev (Institute of Solar Terrestrial Physics); Boris G. Shpynev (Institute of Solar Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); A. G. Setov (Institute of Solar Terrestrial Physics);*

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**Session 2P17**

**Electromagnetic Wave Propagation in Ionized  
and Complex Media 2**

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**Tuesday PM, June 18, 2019**

**Room 33 - Bank Building**

Organized by Anatoly A. Kudryavtsev, Chengxun  
Yuan

Chaired by Anatoly A. Kudryavtsev, Chengxun Yuan

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- 16:10 Features of Longitudinal Variations of Geomagnetic and Ionospheric Parameters during Severe Magnetic Storms in 2015  
*Marina A. Chernigovskaya (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); Boris G. Shpynev (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); Denis S. Khabituev (Institute of Solar Terrestrial Physics); Konstantin G. Rarovsky (Institute of Solar-Terrestrial Physics, SB RAS); Anastasiya Yu. Belinskaya (Geophysical Survey SB RAS); Alexander E. Stepanov (Institute of Cosmophysical Research and Aeronomy of Siberian Branch of Russian Academy of Sciences); Vasily V. Bychkov (Institute of Cosmophysical Researches and Radio Wave Propagation EB RAS); Svetlana A. Grigorieva (Institute of Geophysics UB RAS); Valery A. Panchenko (Pushkov Institute of Terrestrial Magnetism Ionosphere and Radio Wave Propagation); Daniel Kouba (Institute of Atmospheric Physics CAS); Jens Mielich (Kuhlungsborn);*
- 16:30 **Coffee Break**
- 17:00 Two Approaches for Point-to-point Radio Ray Tracing in the Ionosphere: Comparison, Scope and Advantages  
*Daria Sergeevna Kotova (West Department of Pushkov Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation RAS); Igor A. Nosikov (Immanuel Kant Baltic Federal University); Maxim V. Klimenko (Immanuel Kant Baltic Federal University); Elizaveta R. Somina (Immanuel Kant Baltic Federal University);*
- 17:20 Equatorial Ionosphere Perturbation Indices Based on BDS-GEO Data  
*Yu. S. Tumanova (Lomonosov Moscow State University); Nikita Alekseyevich Tereshin (Lomonosov Moscow State University); Ekaterina Anatolyevna Kozlovteva (Lomonosov Moscow State University); G. A. Kurbatov (Lomonosov Moscow State University); Artem M. Padokhin (M. V. Lomonosov Moscow State University);*
- 17:40 Possibilities of Satellite Radio Tomography and Related Products for Studying the Ionospheric Structures in Various Geophysical Conditions  
*Elena S. Andreeva (M. V. Lomonosov Moscow State University); M. O. Nazarenko (M. V. Lomonosov Moscow State University); I. A. Nesterov (M. V. Lomonosov Moscow State University); Artem M. Padokhin (M. V. Lomonosov Moscow State University); Nikita Alekseyevich Tereshin (Lomonosov Moscow State University); Yulia S. Tumanova (M. V. Lomonosov Moscow State University);*
- 18:00 Dispersion Properties of a Backward Wave Oscillator with Modified Rectangular Corrugations  
*Rakibul Hasan Sagor (Islamic University of Technology); Md. Ruhul Amin (Islamic University of Technology);*
- 18:20 Design and Modeling of a Microwave Plasma Enhanced Chemical Vapor Deposition System  
*Yilang Jiang (Hanyang University); Kaviya Aranganadin (Hanyang University); Jing-Shyang Yen (National Taipei University of Technology); Hua-Yi Hsu (National Taipei University of Technology); Ming-Chieh Lin (Hanyang University);*

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**Session 2P18**
**Antenna and RCS Measurements 2**


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**Tuesday PM, June 18, 2019**
**Room 38 - Chemistry Building**

Organized by Amedeo Capozzoli, Francesco D'Agostino

 Chaired by Claudio Curcio, Francesco D'Agostino
 

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- 14:30 Measurements of Polarized Radar Clutter of Tree Canopy at Ka-band  
*Chiung-Shen Ku (Institute of Remote Sensing and Digital Earth, CAS); Chih-Yuan Chu (Xuchang University); Kun-Shan Chen (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Zhao-Liang Li (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Gen-Yuan Du (Xuchang University);*
- 14:50 Use of Software Defined Radio Receivers for Antenna Measurements  
*Ruben Tena Sanchez (Universidad Politecnica de Madrid); Manuel Sierra Castaner (Universidad Politecnica de Madrid); L. J. Foged (SATIMO);*

- 15:10 On the Optimality of SVO in Near-field Antenna Characterization  
*Amedeo Capozzoli (Università di Napoli Federico II); Claudio Curcio (Università di Napoli Federico II); Angelo Liseno (Università di Napoli Federico II);*
- 15:30 Optimized Partial Near Field Antenna Characterization  
*Amedeo Capozzoli (Università di Napoli Federico II); Claudio Curcio (Università di Napoli Federico II); Angelo Liseno (Università di Napoli Federico II);*
- 15:50 Design and Electrical Characteristics of a Microwave Multiband Single Slotted Antenna with Different Dielectric Substrate Materials  
*Vandana (Amity University); Sujata Pandey (Amity University); Mukul Varshney (Amity University); Manoj Kumar Pandey (Amity University);*
- 16:30 **Coffee Break**
- 17:00 Spatial Sampling Patterns for Robust Field Reconstruction in 2-D  
*Alex J. Yuffa (National Institute of Standards and Technology); Benjamin F. Jamroz (National Institute of Standards and Technology); Jacob D. Rezac (National Institute of Standards and Technology);*
- 17:20 The Radar Detection Method Based on Detecting Signal to Clutter Ratio (SCR) in the Spectrum  
*Jiangkun Gong (Wuhan University); Jun Yan (Wuhan University); Deren Li (Wuhan University);*
- 17:40 On the Influence of Probe Positioning Errors due to Mechanical Uncertainties in Spherical Near-field Measurements at Terahertz Frequencies in Modern Positioner Systems  
*Cosme Culotta-Lopez (RWTH Aachen University); R. Moch (RWTH Aachen University); R. Wilke (RWTH Aachen University); Dirk Heberling (RWTH Aachen University);*
- 18:00 Wideband Spiral Antenna with Superstrate Designs for Radio Altimeter  
*Shashank Khorgade (National Institute of Technology); Damera Vakula (National Institute of Technology); Nookala Venkata Satya Narasimha Sarma (National Institute of Technology);*
- 18:20 Gain and Bandwidth Enhancement of Patch Antenna  
*Guthi Srinivas (National Institute of Technology); Nookala Venkata Satya Narasimha Sarma (National Institute of Technology); Damera Vakula (National Institute of Technology);*
- 18:40 Design of a Batman Shaped Compact Conformal Antenna for WiMAX Application  
*Ratikanta Sahoo (National Institute of Technology); Damera Vakula (National Institute of Technology); Nookala Venkata Satya Narasimha Sarma (National Institute of Technology);*
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- Session 2P19**  
**SC1: Stochastic Methods in Electromagnetic Compatibility**
- 
- Tuesday PM, June 18, 2019**  
**Room 39 - Electrical Building**  
Organized by Gabriele Gradoni, Valter Mariani Primiani  
Chaired by Valter Mariani Primiani, Gabriele Gradoni
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- 14:30 Performance Enhancement Estimation of a Source Stirred Reverberation Chamber with Stochastic Diffractors  
*Alfredo De Leo (Università Politecnica delle Marche); Gabriele Gradoni (University of Nottingham); Graziano Cerri (Università Politecnica delle Marche); Paola Russo (Università Politecnica delle Marche); Valter Mariani Primiani (Università Politecnica delle Marche);*
- 14:50 Full Wave Simulations of Reverberation Chamber Deformed by Hemispheres  
*Luca Bastianelli (DII — Università Politecnica delle Marche); V. Mariani Primiani (DII — Università Politecnica delle Marche); F. Moglie (DII — Università Politecnica delle Marche); G. Gradoni (University of Nottingham);*
- 15:10 Efficient Stirring and Field Uniformity Criterion in Reverberation Chambers with Tunable Metasurfaces  
*Jean-Baptiste Gros (PSL Research University); U. Kuhl (University of Nice Sophia Antipolis); Olivier Legrand (Université Cote d'Azur, CNRS, INΦNI); G. Lerosey (Greenerwave, ESPCI Paris Incubator PC'up);*
- 15:30 Calibration of a Reverberation Chamber for Radiated Emission Measurements by Wall Mounted Antennas  
*Alfredo De Leo (Università Politecnica delle Marche); Graziano Cerri (Università Politecnica delle Marche); Paola Russo (Università Politecnica delle Marche); Valter Mariani Primiani (Università Politecnica delle Marche);*

- 15:50 Probabilistic Approach for Radiated Susceptibility Tests in Reverberation Chambers  
*Guillaume Andrieu (XLIM laboratory); Nicolas Ticaud (University of Limoges and CNRS);*
- 16:10 Transient Simulation of the Pulse Excitation of Transmission Line Networks with Linear and Nonlinear Loads in Reverberation Chambers  
*Mathias Magdowski (Otto-von-Guericke-University); Ralf Vick (Otto-von-Guericke University of Magdeburg);*
- 16:30 **Coffee Break**
- 17:00 Statistics of Scattering and Impedance Matrices for Complex Topologies  
*Thomas M. Antonsen, Jr. (University of Maryland); F. Adnan (University of Maryland); L. Chen (University of Maryland); B. Frazier (University of Maryland); T. Ghutishvili (University of Maryland); S. Ma (University of Maryland); M. Zhou (University of Maryland); Steven M. Anlage (University of Maryland); Edward Ott (University of Maryland); Sendy Phang (University of Nottingham); Gabriele Gradoni (University of Nottingham); Gregor Tanner (University of Nottingham);*
- 17:20 Statistical Analysis of Interference in a Real LTE Access Network by Massive Collection of MDT Radio Measurement Data from Smartphones  
*Davide Micheli (TIM S.p.A.); Riccardo Diamanti (Telecom Italia Mobile);*
- 17:40 Quasi Monte Carlo Methods for Uncertainty Quantification of Partial Element Equivalent Circuit Models  
*Mauro Parise (University Campus Bio-Medico of Rome); F. Ferranti (Institut Mines-Telecom Atlantique); D. Romano (Università degli Studi dell'Aquila); L. Lombardi (Università degli Studi dell'Aquila); Giulio Antonini (University of L'Aquila);*
- 18:00 Cyclostationary Source Separation Based on Electromagnetic Measurements in the Near-field of PCB  
*Yury Kuznetsov (Moscow Aviation Institute (National Research University)); Andrey Baev (Moscow Aviation Institute (National Research University)); Maxim Kononov (Moscow Aviation Institute (National Research University)); Anastasia Gorbunova (Moscow Aviation Institute (National Research University)); Michael Haider (Technical University of Munich); Johannes A. Russer (Technical University of Munich);*
- 18:20 A Novel Approach to Radiated Emissions Modeling of Low Voltage Differential Signal on SpaceWire Cable Employing Differential Evolution  
*Chris D. Nikolopoulos (National Technical University of Athens); Anargyros T. Baklezos (National Technical University of Athens); Christos N. Capsalis (National Technical University of Athens);*
- 18:40 Deep Learning Method for Prediction of Frequency-dependent Electromagnetic Radiating Sources Distribution at IC Level  
*Hanzhi Ma (Zhejiang University); Er Ping Li (Zhejiang University — UIUC Institute); Jose Schutt-Aine (University of Illinois at Urbana-Champaign); Andreas C. Cangellaris (University of Illinois at Urbana-Champaign);*
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- Session 2P20**  
**SC4: Recent Diagnostic and Therapeutic Applications of Microwaves**
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- Tuesday PM, June 18, 2019**  
**Room 40 - Electrical Building**  
Organized by Marta Cavagnaro, Lorenzo Crocco  
Chaired by Marta Cavagnaro, Lorenzo Crocco
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- 14:30 Properties and Status of Radiofrequency and Microwave Electromagnetic Applicators Used in Clinical Hyperthermia  
Invited  
*Johannes Crezee (University of Amsterdam);*
- 14:50 3D Patient-specific Hyperthermia Treatment Planning to Improve the Quality of Clinical Hyperthermia  
Invited  
*H. P. Kok (University of Amsterdam);*
- 15:10 Recent Advances in Hyperthermia Technology for Controlled Tumor Heating  
Invited  
*Gerard C. van Rhoon (Hyperthermia Unit);*
- 15:30 New Tools for Hyperthermia Treatment Planning  
*Martina Teresa Bevacqua (Mediterranea University of Reggio Calabria); Gennaro G. Bellizzi (DIIES — Università Mediterranea di Reggio Calabria); Lorenzo Crocco (CNR — National Research Council of Italy); Tommaso Isernia (Mediterranea University of Reggio Calabria);*
- 15:50 New Clinical Indications for Microwave Thermal Ablation and Corresponding Challenges in the Applicator Design  
*Giuseppe Ruvio (Endowave Ltd.); Marta Cavagnaro (Sapienza University of Rome);*

16:10 Optimizing Temperature-dependent Material Property Models for Microwave Tumor Ablation

*Christopher L. Brace (University of Wisconsin);*

16:30 **Coffee Break**

17:00 Microwave Ablation Antenna for Functional Adenomas in the Adrenal Gland

*Laura Farina (National University of Ireland Galway); Andrea John De Marco (University of Malta); Anna Bottiglieri (Galway); Giuseppe Ruvio (Endowave Ltd.); Jimmy Eaton-Evans (Endowave Ltd., Research and Innovation Centre, NUI Galway); Michael C. Denny (National University of Ireland Galway); Adnan Muhammad Elahi (National University of Ireland Galway); Martin O'Halloran (National University of Ireland Galway);*

17:20 Experimental Prototype for the Monitoring of Brain Stroke via Microwave Tomography

*J. A. Tobon Vasquez (CNR-IREA); Rosa Scapaticci (Institute for Electromagnetic Sensing of the Environment); G. Turvani (CNR-IREA); Gennaro Bellizzi (University of Naples Federico II); N. Joachimowicz (Université Paris Saclay); Bernard Duchene (CNRS, CentraleSupélec, Université Paris-Sud); Mario Roberto Casu (Politecnico di Torino); Lorenzo Crocco (CNR — National Research Council of Italy); Francesca Vipiana (Politecnico di Torino);*

17:40 Non-linear Microwave Imaging Using Fast Iterative Shrinkage Thresholding

*Pan Lu (King's College London); Juan Corcoles (Universidad Autónoma de Madrid); Panagiotis Kosmas (King's College London);*

18:00 From Microwave Tomography to Electric Properties Tomography

*Alessandro Arduino (Istituto Nazionale di Ricerca Metrologica (INRIM)); Oriano Bottauscio (Istituto Nazionale di Ricerca Metrologica); M. Chiampi (Istituto Nazionale di Ricerca Metrologica (INRIM)); Luca Zilberti (Istituto Nazionale di Ricerca Metrologica);*

18:20 Mapping Coaxial Probe Sensitivity to Material Heterogeneities

*Christopher L. Brace (University of Wisconsin);*

18:40 MRM Probe at 17 Tesla Based on High Permittivity Dielectric Resonators

*Marine A. C. Moussu (Multiwave Innovation); Redha Abdeddaim (ESPCI Paris Tech.); Ivan Voznyuk (Multiwave Innovation); Stanislav B. Glybovski (ITMO University); Stefan Enoch (Institut Fresnel); Luisa Ciobanu (Université Paris-Saclay);*

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**Session 2P0**

**Poster Session 2**

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**Tuesday PM, June 18, 2019**

**15:00 PM - 18:00 PM**

**Room Corridor**

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- 1 Three-dimensional Model of Gastric Pacemaking Using Finite-elements and Stochastically Coupled Oscillators  
*Aleksandar Jeremic (McMaster University);*
- 2 Accurate Nyström Solution for Electromagnetic Scattering by Sharp-corner Objects  
*Qing Xu (Tongji University); Jian Zhang (Tongji University); Mei Song Tong (Tongji University);*
- 3 A Dual CS-FMM for Multi-static Scattering Problems  
*Shui-Rong Chai (Xidian University); Li-Xin Guo (Xidian University); Ying Dai (Xidian University);*
- 4 Parallel Computation of 1 mm Diameter Core Plastic Optical Fiber Modes  
*Masashi Eguchi (Chitose Institute of Science and Technology);*
- 5 A Temperature Measurement Method Based on Visible Light Chromaticity Index and  $k$ -nearest Neighbors Algorithm  
*Ming Wang (Huazhong University of Science and Technology); Qizheng Ye (Huazhong University of Science and Technology); Zhe Yuan (Huazhong University of Science and Technology);*
- 6 The Design of Automatic Gain Control Amplifier with Fast Response  
*Dong Su (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University);*
- 7 Generation of Energy-time Entangled Photon Pairs by Cascaded  $\chi^{(2)}$ -processes in Periodically Poled LiNbO<sub>3</sub> Waveguide at 1.5  $\mu\text{m}$   
*Zichang Zhang (University of Electronic Science and Technology of China); Qiang Zhou (University of Electronic Science and Technology of China); Guangwei Deng (University of Electronic Science and Technology of China); Ruiming Zhang (University of Electronic Science and Technology of China); Hao Yu (University of Electronic Science and Technology of China); Qiang Xu (Southwest Institute of Technical Physics); Si Shen (University of Electronic Science and Technology); You Wang (Southwest Institute of Technical Physics); Hai-Zhi Song (Southwest Institute of Technical Physics);*

- 8 The UAPO Solution for the Plane Wave Diffraction by a DPS/DNG Material Coated Wedge  
*Gianluca Gennarelli (National Research Council); Giovanni Riccio (University of Salerno);*
- 9 Wide Incidence Angle with Single Polarized Absorption: A Smart Single Layer Structure  
*Francesco Voci (IDS Ingegneria Dei Sistemi S.p.A.);*
- 10 Comparison of Approaches to Localization of a Wide-band Pulse Signal  
*Radim Kadlec (Brno University of Technology); Petr Drexler (Brno University of Technology); Zdenek Roubal (Brno University of Technology);*
- 11 Study on Design Method of Two-layer Electromagnetic Wave Absorber Using Frequency Selective Surface  
*Keita Kunda (Doshisha University); Fumiya Osame (Doshisha University); Yuuki Sato (Doshisha University); Shinzo Yoshikado (Doshisha University);*
- 12 Experimental Study on Noise Suppression Sheet with Periodic Double Open Square Metal Film  
*Yugo Uchida (National Institute of Technology, Kisarazu College); Takano Ohno (National Institute of Technology, Kisarazu College); Kosei Tani (National Institute of Technology, Kisarazu College); Masahiro Uehara (National Institute of Technology, Kisarazu College);*
- 13 Magnetic-field Induced SPP Near-field Modulation in Magnetoplasmonic Heterostructures with Ultralong-range Propagating Modes  
*Daria O. Ignatyeva (Lomonosov Moscow State University); Andrey N. Kalish (Russian Quantum Center); Vladimir I. Belotelov (Russian Quantum Center);*
- 14 Two Dimension Zero Index Materials Design  
*Jiayi Cheng (Miss Halls School);*
- 15 Complete Transfer of Terahertz Surface Plasmon-polaritons Based on STIRAP  
*Wei Huang (Guilin University of Electronic Technology); S. Yin (Guilin University of Electronic Technology); Wentao Zhang (Guilin University of Electronic Technology);*
- 16 Magneto-optical Properties of Magnetoplasmonic Structure Containing Partially Patterned Gold Layer  
*Mikhail P. Mandrik (M. V. Lomonosov Moscow State University); Andrey N. Kalish (Russian Quantum Center); Mikhail A. Kozhaev (Russian Quantum Center); Daria O. Ignatyeva (Lomonosov Moscow State University); E. Popova (Université Paris-Saclay); Niels Keller (Université Paris-Saclay); Sarkis A. Dagesyan (Lomonosov Moscow State University); Vladimir I. Belotelov (M. V. Lomonosov Moscow State University);*
- 17 Effective Parameters of Ferroelectric Dielectric Mixtures  
*Benjamin Vial (Queen Mary University of London); Yang Hao (Queen Mary University of London);*
- 18 Local Symmetries, Compact Localization, and Non-local Currents in Discrete Photonic Media  
*Christian V. Morfonios (Hamburg University); Malte Rontgen (University of Hamburg); Peter Schmelcher (University of Hamburg);*
- 19 Inverse-design of an Ultra-compact and High-efficiency Silicon-on-insulator Mode Expander  
*Gang Yang (University of Sydney); Shijie Song (University of Sydney); Suenxin Chew (University of Sydney); Liwei Li (University of Sydney); Xiaoke Yi (University of Sydney);*
- 20 Optical Properties of the Helix-free Ferroelectric Liquid Crystals  
*Tatiana B. Andreeva (P. N. Lebedev Physical Institute of RAS); Igor N. Kompanets (P. N. Lebedev Physical Institute of RAS); Nikolay V. Zalyapin (P. N. Lebedev Physical Institute of RAS);*
- 21 Theoretical Studies on InGaAs SAGCM Avalanche Photodiodes  
*Chuanbo Li (Minzu University of China); Siyu Cao (Institute of Semiconductors, Chinese Academy of Sciences); Yue Zhao (Institute of Semiconductors, Chinese Academy of Sciences); Sajid ur Rehman (Institute of Semiconductors, Chinese Academy of Sciences); Shuai Feng (Minzu University of China);*
- 22 DNA Based Materials for Applications in Photonics  
*Ana-Maria Manea-Saghin (University POLITEHNICA of Bucharest); Francois Kajzar (University Politehnica of Bucharest); Ileana Rau (University Politehnica of Bucharest);*
- 23 Multiparameter-detecting Refractive Index Sensor Based on the Coupling of Photonic Crystal Slabs' Surface and Waveguide Modes  
*Shuai Feng (Minzu University of China); Honglian Guo (Minzu University of China); Chuanbo Li (Minzu University of China); Yiquan Wang (Minzu University of China);*

- 24 A Python-based Automatic Detection Method for the Performance of Vibration-temperature Composite Sensor  
*Chen Yang (Tongji University); Guo Chun Wan (Tongji University); Wen Jing Liu (Tongji University); Mei Song Tong (Tongji University);*
- 25 Transverse Mode Instability in High-power Fiber Amplifiers through the Coupled Mode Theory  
*Jiri Petracek (Brno University of Technology); Annamaria Cucinotta (University of Parma); Federica Poli (University of Parma); Stefano Selleri (University of Parma);*
- 26 Physical and Mathematical Aspects of Equivalent Temperature Concept in Laser Physics  
*Georgii A. Aloian (Moscow Institute of Physics and Technology); N. V. Kovalenko (Moscow Institute of Physics and Technology); D. M. Mukhankov (Kotelnikov Institute of Radio-engineering and Electronics of RAS); Aleskey Viktorovich Konyashkin (Moscow Institute of Physics and Technology); Oleg A. Ryabushkin (State University);*
- 27 Piezoelectric Resonance Laser Calorimetry of Nonlinear-optical Crystals at Low Air Pressures  
*Irina Shebarshina (Moscow Institute of Physics and Technology); Alexey Kozhevnikov (Bauman Moscow State Technical University); George Aloyan (Moscow Institute of Physics and Technology); Alexey Konyashkin (Moscow Institute of Physics and Technology); Oleg A. Ryabushkin (State University);*
- 28 Acid Mediated Tunability of Stimulated Laser Emission from Dye Doped Chiral Microdroplets  
*Erica Fuoco (University of Calabria); Gia Petriashvili (Institute of Cybernetics of the Georgian Technical University); Mauro D. L. Bruno (University of Calabria); Maria P. De Santo (University of Calabria); Riccardo Barberi (University of Calabria);*
- 29 Laser Emission Tuning from Dye Doped Cholesteric Liquid Crystal Microresonators  
*Mauro Daniel Luigi Bruno (University of Calabria); Erica Fuoco (University of Calabria); Gia Petriashvili (Institute of Cybernetics of the Georgian Technical University); Maria P. De Santo (University of Calabria); Riccardo Barberi (University of Calabria);*
- 30 Detection of Optically-generated THz Radiations by EO Sampling Using Modulator-based Optical Comb Source  
*Isao Morohashi (National Institute of Information and Communications Technology); Norihiko Sekine (National Institute of Information and Communications Technology); Akifumi Kasamatsu (National Institute of Information and Communications Technology); Iwao Hosako (National Institute of Information and Communications Technology);*
- 31 Capacitive Sensing Element with a Magnetic Fluid for Detecting of Change of Magnetic Field  
*Denis Olegovich Zyatkov (National Research Tomsk State University); Vladimir Borisovich Balashov (Research Institute of Semiconductor Devices); Vasily Ivanovich Yurchenko (Research Institute of Semiconductor Devices); Viktor Nikolayevich Cherepanov (National Research Tomsk State University); Zahar Kochnev (National Research Tomsk State University);*
- 32 Theoretical Assessment of Plasma Current Measurement in Tokamaks in Relation with the OTDR Detector Noise  
*Rastislav Motuz (Brno University of Technology); Eva Gescheidtova (Brno University of Technology); Williem Leysen (Belgian Nuclear Research Center SCK-CEN); Phillippe Jacques Moreau (CEA, IRFM); Andrei I. Gusarov (Belgian Nuclear Research Center SCK-CEN); Petr Drexler (Brno University of Technology); Marc Wuilpart (Universite de Mons, Service d'Electromagnetisme et de Telecommunications);*
- 33 Cooling System Impact on Temperature Distribution in Multi-core Photonic Crystal Fibers  
*Katia Tragni (Università di Parma); Federica Poli (Università di Parma); Stefano Selleri (Università di Parma); Annamaria Cucinotta (Università di Parma);*
- 34 Network Slicing in the Scope of Net Neutrality Rules  
*Inga Smirnova (Public Utilities Commission); Elmars Lipenbergs (Riga Technical University); Vjaceslavs Bobrovs (Riga Technical University); Peteris Gavars (Riga Technical University); Girts Ivanovs (Riga Technical University);*
- 35 Secrecy Performances of Wireless Relay Systems Affected by Hardware Impairments  
*Phu Tran Tin (VSB — Technical University of Ostrava); Miroslav Voznak (VSB — Technical University of Ostrava); Radek Fajdiak (Brno University of Technology); Jiri Misurec (Brno University of Technology);*

- 36 Optoelectronic Oscillator Based on a Fiber Optic Line and the Mach-Zehnder Modulator for Large Values of a Loop Gain  
*Danil A. Maurer (Tomsk State University of Control Systems and Radioelectronics); V. V. Litvinov (Tomsk State University of Control Systems and Radioelectronics); Albert S. Buller (Tomsk State University of Control Systems and Radioelectronics); Rudolph V. Litvinov (Tomsk State University of Control Systems and Radioelectronics); Natalia Rudolfovna Litvinova (Tomsk State University of Control Systems and Radioelectronics);*
- 37 Silicon Photonic Resonator Design with Tunable Multimode Interference Coupling Structures  
*Nattapol Ittipratheep (Chiang Mai University); Ukrit Mankong (Chiang Mai University); Suruk Udomsom (Chiang Mai University); Atsushi Matsumoto (National Institute of Information and Communications Technology); Toshimasa Umezawa (National Institute of Information and Communications Technology); Naokatsu Yamamoto (National Institute of Information and Communications Technology);*
- 38 Beam Position Error Model (BPEM) for Improved Range Estimation in Real-time RSS Based Localization  
*Dorathy O. Abonyi (The University of Sheffield); Jonathan M. Rigelsford (The University of Sheffield);*
- 39 Multi-sensor Data Mining of Single Train Braking System Based on Long Short-term Memory Network  
*Wen Jing Liu (Tongji University); Guo Chun Wan (Tongji University); Mei Song Tong (Tongji University);*
- 40 Intelligent Control of Freight Train Braking System Based on Hardware-in-the-Loop Simulation Platform  
*Yong Kang Kuang (Tongji University); Guo Chun Wan (Tongji University); Wen Jing Liu (Tongji University); Mei Song Tong (Tongji University);*
- 41 Triple-band Ring-type Monopole Antenna for WLAN/WiMAX Applications  
*Sungwoo Park (Kyungsoong University); Jong-Sung Kim (Kyungsoong University);*
- 42 Performance Analysis of Quarter-wavelength Rectangular Microstrip Antenna for Mechanical Strain Detection  
*Guo Chun Wan (Tongji University); He Xu (Tongji University); Fozhi Zhou (Tongji University); Mei Song Tong (Tongji University);*
- 43 A Phase Array Antenna with Four-bit Phase Shifter  
*Jwo-Shiun Sun (National Taipei University of Technology); Guan-Pu Pan (National Taipei University of Technology); Yen-Wen Peng (National Taipei University of Technology);*
- 44 Miniature Multiferroic Interferometer for Voltage-controlled Spin-wave Logic Gates  
*Aleksei A. Nikitin (Saint Petersburg Electrotechnical University "LETI"); Vitaliy V. Vitko (Saint Petersburg Electrotechnical University "LETI"); Andrey A. Nikitin (Saint Petersburg Electrotechnical University "LETI"); Alexey B. Ustinov (Saint Petersburg Electrotechnical University "LETI"); Boris A. Kalinikos (Saint Petersburg Electrotechnical University "LETI");*
- 45 Analysis of RF Performance of AlGaIn/GaN Based Fin-type HEMT with T-gate Depending on Gate Resistance  
*Won Douk Jang (Kyungpook National University); Young Jun Yoon (Kyungpook National University); Min Su Cho (Kyungpook National University); Jun Hyeok Jung (Kyungpook National University); In Man Kang (Kyungpook National University);*
- 46 A Novel Bluetooth-based Vital-sign Sensing Technique  
*Kang-Chun Peng (National Kaohsiung University of Science and Technology); Jen-Hao Lee (National Kaohsiung University of Science and Technology);*
- 47 A 5.8 GHz MMIC Class-F Power Amplifier Using 0.25  $\mu\text{m}$  GaN on SiC HEMT Technology  
*Chia-Hao Yu (Chang Gung University); Chia-Han Lin (Chang Gung University); Hsien-Chin Chiu (Chang Gung University); Hsuan-Ling Kao (Chang Gung University);*
- 48 Design and Analysis of DC/DC Boost Converter Using InAlGaIn/GaN-based High Electron Mobility Transistors  
*Min Su Cho (Kyungpook National University); Young Jun Yoon (Kyungpook National University); Jun Hyeok Jung (Kyungpook National University); Won Douk Jang (Kyungpook National University); In Man Kang (Kyungpook National University);*
- 49 The Study of P-pillar and Trench Technology in VDMOS  
*Xi Zhou (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University); Xiaopei Chen (Southwest Jiaotong University);*

- 50 Design of 850 V VDMOS Termination Structure  
*Fei Ran (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University); Xiaopei Chen (Southwest Jiaotong University); Hongjin Yang (Southwest Jiaotong University);*
- 51 Experimental Study of Complex Relative Permittivity for Volume-reducing High Loss Material by Using Cavity Resonator  
*Shuya Miyakoshi (National Institute of Technology, Kisarazu College); Naoki Keicho (National Institute of Technology, Kisarazu College); Takano Ohno (National Institute of Technology, Kisarazu College); Kosei Tanii (National Institute of Technology, Kisarazu College); Masahiro Uehara (National Institute of Technology, Kisarazu College);*
- 52 Defected Ground Structure for Characteristic Enhancement of CSRR-based Substrate Integrated Waveguide BPF  
*Nanang Ismail (UIN Sunan Gunung Djati Bandung); Abdul Latip (UIN Sunan Gunung Djati Bandung); Eki Ahmad Zaki Hamidi (UIN Sunan Gunung Djati Bandung); Achmad Munir (Institut Teknologi Bandung);*
- 53 A Tunable Power Divider with Continuous Dividing Ratio and Wide Tuning Range  
*Shih-Fong Chao (National Kaohsiung University of Science and Technology); Yen-Ting Lin (National Kaohsiung University of Science and Technology);*
- 54 Realization and Location Control of Attenuation Pole by CRLH-TL Resonator Applying Tap Coupling  
*Ryota Shinozaki (National Institute of Technology, Kisarazu College); Takano Ohno (National Institute of Technology, Kisarazu College); Alphones Arokiaswami (Nanyang Technological University); Kosei Tanii (National Institute of Technology, Kisarazu College); Masahiro Uehara (National Institute of Technology, Kisarazu College);*
- 55 Analytical Study on Extracting Complex Permittivity of High Loss Material Using Rectangular Cavity Resonator with Four Ports  
*Naoki Keicho (National Institute of Technology, Kisarazu College); Shuya Miyakoshi (National Institute of Technology, Kisarazu College); Takano Ohno (National Institute of Technology, Kisarazu College); Kosei Tanii (National Institute of Technology, Kisarazu College); Masahiro Uehara (National Institute of Technology, Kisarazu College);*
- 56 Analytical Study on Selective Heating of Food in Microwave Oven by Using Triplexer  
*Yukiya Sagawa (National Institute of Technology, Kisarazu College); Takano Ohno (National Institute of Technology, Kisarazu College); Kosei Tanii (National Institute of Technology, Kisarazu College); Masahiro Uehara (National Institute of Technology, Kisarazu College);*
- 57 Analytical Study of Diplexer Using BPFs Composed within a 50-ohm Transmission Line  
*Tomoya Suzuki (National Institute of Technology, Kisarazu College); Fumiya Sawamura (National Institute of Technology, Kisarazu College); Kosei Tanii (National Institute of Technology, Kisarazu College); Takano Ohno (Kisarazu National College of Technology); Masahiro Uehara (National Institute of Technology, Kisarazu College);*
- 58 Open-ring Dual-band Bandpass Filter with Independently Selective Passband  
*Yutaro Ikeda (National Institute of Technology, Kisarazu College); Kosei Tanii (National Institute of Technology, Kisarazu College); Takano Ohno (National Institute of Technology, Kisarazu College); Masahiro Uehara (National Institute of Technology, Kisarazu College);*
- 59 Radio Astronomical Signal Preprocessing Technology in the Future  
*Jiyun Li (Shanghai Astronomical Observatory, Chinese Academy of Science); Shaoguang Guo (Shanghai Astronomical Observatory, Chinese Academy of Science); Renjie Zhu (Shanghai Astronomical Observatory, Chinese Academy of Science); Baoqiang Lao (Shanghai Astronomical Observatory, Chinese Academy of Sciences);*
- 60 Non-contact Pulse-based Radar with an Excited RF Pulse Generator for Vital-sign Application  
*Wei-Hsien Chen (National Chiao Tung University); Chia-Hung Chang (Feng Chia University); Chien-Nan Kuo (National Chiao-Tung University); Chia-Chin Hsu (Feng Chia University);*
- 61 Vital-sign Radar with Digital-assisted Calibration for Noise Reduction and DC Offset Elimination  
*Wei-Hsien Chen (National Chiao Tung University); Chia-Hung Chang (Feng Chia University); Chien-Nan Kuo (National Chiao-Tung University);*

- 62 Analytical Study on Aperture Antenna of Diplexer Used for Microwave Oven  
Wataru Azukizawa (National Institute of Technology, Kisarazu College); Yukiya Sagawa (National Institute of Technology, Kisarazu College); Takanobu Ohno (National Institute of Technology, Kisarazu College); Kosei Taniï (National Institute of Technology, Kisarazu College); Masahiro Uehara (National Institute of Technology, Kisarazu College);
- 63 Wireless Power Transmission System for a Rotating Propulsive Shaft with Multiple Transmit and Receive Coils  
Van Ai Hoang (Mokpo National Maritime University); Young Chul Lee (Mokpo National Maritime University);
- 64 Simulation Tool for Optimization of Planar Inductors  
Jelena Bjelica (University of Novi Sad); Nikola Djuric (University of Novi Sad); Snezana M. Djuric (University of Novi Sad);
- 65 Relaying Selection for Information Transmission and Energy Transfer with Energy Harvesting Relaying  
Yifan Hu (Hohai University); Ning Cao (Hohai University); Ye Feng (Hohai University); Minghe Mao (Hohai University); Rui Li (Hohai University);
- 66 Output Power of the Carbon Nanotube-based Rectenna  
David Gabrielyan (National Research University "MPEI"); Olga Stanislavovna Safina (Scientific and Technological Center of Unique Instrumentation RAS); Dmitry V. Churikov (Science Scientific and Technological Center of Unique Instrumentation of the RAS); Oleg V. Kravchenko (Bauman Moscow State Technical University); A. Safin (National Research University); Marat F. Bulatov (Science Scientific and Technological Center of Unique Instrumentation of the RAS);
- 67 Estimation of the Size of Space Debris Objects by the Value of the Radar Cross Section Variations  
A. I. Baskakov (National Research University "Moscow Power Engineering Institute"); Aleksey Aleksandrovich Komarov (National Research University "Moscow Power Engineering Institute"); A. V. Ruban (National Research University "Moscow Power Engineering Institute"); Mikhail Sergeevich Mikhailov (National Research University "Moscow Power Engineering Institute");
- 68 A New Polarimetric SAR Calibration Method Based on Rotation Symmetry  
Lei Huang (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Guangde Sun (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Zhen Li (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences);
- 69 Mass Balance of the Mountain Glacier Detecting by InSAR Method  
Jianmin Zhou (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Zhen Li (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Lei Huang (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences);
- 70 A Novel Sparse Deconvolution Algorithm Based on Iterative Regularization  
Bo Pang (National University of Defense Technology); Shiqi Xing (National University of Defense Technology); Dahai Dai (National University of Defense Technology); Yongzhen Li (National University of Defense Technology); Xuesong Wang (National University of Defense Technology);
- 71 Integrated Scattering Model of Moving Radar Platform and Sea Surface  
Wei Liu (Xidian University); Zeming Liang (Xidian University); Lixin Guo (Xidian University);
- 72 Resource Scheduling Algorithm for Multi-function Phased Array Radar Based on Waveform Optimization  
Yijun Chen (Air Force Engineering University); Yi Qu (Xidian University); Hao Lou (Engineering University of PAP); Depeng Song (Engineering University of PAP);
- 73 On the Application of Randomness in Radars  
Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences); Dong Li (National Space Science Center, Chinese Academy of Sciences); Xiao Dong (Center for Space Science and Applied Research, Chinese Academy of Sciences); Jiefang Yang (The Key Laboratory of Microwave Remote Sensing, Chinese Academy of Sciences); Xiaowen Zhao (Center for Space Science and Applied Research, Chinese Academy of Sciences); Jiafang Liu (National Space Science Center, Chinese Academy of Sciences);

- 74 Comparison of Raindrop Size Distribution Parameters from GPM and Parsivel Network in Indonesia  
Marzuki (*Andalas University*); Hiroyuki Hashiguchi (*Kyoto University*); Mutya Vonnisa (*Andalas University*); Harmadi (*Andalas University*); Muzirwan (*National Institute of Aeronautics and Space*); Sugeng Nugroho (*Indonesian Agency for Meteorological, Climatological and Geophysics*);
- 75 Regional Variability of Raindrop Size Distributions in Indonesia as Inferred from Principal Component Analysis  
Marzuki (*Andalas University*); Hiroyuki Hashiguchi (*Kyoto University*); Sugeng Nugroho (*Indonesian Agency for Meteorological, Climatological and Geophysics*); Muzirwan (*National Institute of Aeronautics and Space*); Mutya Vonnisa (*Andalas University*); Harmadi (*Andalas University*);
- 76 Machine Vision for Obstacle Avoidance, Tripwire Detection, and Subsurface Radar Image Correction on a Robotic Vehicle for the Detection and Discrimination of Landmines  
Alessandro Bartolini (*University of Florence*); Luca Bossi (*University of Florence*); Lorenzo Capineri (*Università di Firenze*); Pierluigi Falorni (*Università di Firenze*); A. Bulletti (*Università di Firenze*); Mattia Dimitri (*Università di Firenze*); Gennadiy Pochanin (*O. Ya. Usikov Institute for Radiophysics and Electronics of the National Academy of Sciences of Ukraine*); V. Ruban (*O. Ya. Usikov Institute for Radiophysics and Electronics of the NAS of Ukraine*); T. Ogurtsova (*O. Ya. Usikov Institute for Radiophysics and Electronics of the NAS of Ukraine*); Fronefield Crawford (*Franklin & Marshall College*); Timothy D. Bechtel (*Franklin & Marshall College*); G. Sallai (*Franklin & Marshall College*); A. Kuske (*Franklin & Marshall College*); J. Sinton (*Franklin & Marshall College*); S. Truskavetsky (*Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsky*); T. Byndych (*Institute for Soil Science and Agrochemistry Research named after O.N. Sokolovsky*);
- 77 Inverse Filtering of 2018 Mars X Radar Section Image  
Karl F. Kasperek (*Energy & Engineering Consultant (CTE)*);
- 78 Machine Learning Techniques for Hand Gesture Recognition Using Short Range Contactless Microwave Sensor  
Ashita Priya Thomas (*Nanyang Technological University*); Karthik Thothathri Chandrasekaran (*Nanyang Technological University*); Muhammad Faeyz Karim (*Nanyang Technological University*);
- 79 High Resolution Magneto-optical Microscopy of Bi:YIG-thin Films with Both Domains and Topography Characterization  
Yu. E. Vysokikh (*Scientific & Technological Center of Unique Instrumentation RAS*); S. Yu. Krasnoborodko (*Science Scientific and Technological Center of Unique Instrumentation of the RAS*); T. V. Mikhailova (*V.I. Vernadsky Crimean Federal University*); A. N. Shaposhnikov (*V.I. Vernadsky Crimean Federal University*); Marat F. Bulatov (*Science Scientific and Technological Center of Unique Instrumentation of the RAS*); Dmitry V. Churikov (*Science Scientific and Technological Center of Unique Instrumentation of the RAS*);

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**Session 3A1**
**Remote Sensing of the Earth, Ocean, and Atmosphere 1**


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**Wednesday AM, June 19, 2019**
**Room 1 - 1st Floor**

Organized by Liang Mei

 Chaired by Liang Mei, Zhongwei Huang
 

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- 09:00 Geocalibrating Millimeter-wave Spaceborne Radiometers for Global-scale Cloud Retrieval  
Mario Papa (*Universita "Sapienza" di Roma*); Vinia Mattioli (*European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)*); Janja Avbelj (*European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)*); Frank Silvio Marzano (*Sapienza University of Rome*);
- 09:20 Applications of the Scheimpflug Lidar Technique in Atmospheric Remote Sensing  
Liang Mei (*Dalian University of Technology*); Zheng Kong (*Dalian University of Technology*); Teng Ma (*Dalian University of Technology*); Limei Li (*Dalian University of Technology*); Zhi Liu (*Dalian University of Technology*);
- 09:40 Comparison of Satellite Products on Total Atmospheric Water Vapor Content over the Arctic Sea Ice  
Elizaveta V. Zabolotskikh (*Russian State Hydrometeorological University*); Bertrand Chapron (*Institut Francais de Recherche pour l'Exploitation de la Mer*);
- 10:00 Satellite-based Diurnal Variations in Global Particulate Mass Concentration Derived from Active Remote Sensing Observations  
Zhongwei Huang (*Lanzhou University*); Xiaojun Ma (*Lanzhou University*);

- 10:20 Assessing the Benefits of Rapid Scan for Severe Storm Warning with Multifunction Radar  
*Tian-You Yu (University of Oklahoma); Andrew Mahre (University of Oklahoma); David Bodine (University of Oklahoma);*
- 10:40 Atmospheric Retrievals in Hurricane Based on MWHTS Aboard FY-3C Satellite  
*Jieying He (National Space Science Center, Chinese Academy of Sciences); Shengwei Zhang (National Space Science Center, Chinese Academy of Sciences); Na Li (National Space Science Center, Chinese Academy of Sciences);*
- 11:00 **Coffee Break**
- 11:30 The Improvement and Application of Convective Parameters in Mesoscale Convective Systems over the Southeastern Tibetan Plateau Based on AIRS Satellite Observations  
*Guoping Li (Chengdu University of Information Technology); Lingyun Wang (Meteorological Centre of Southwest Air Traffic Management Bureau);*
- 11:50 A Design of High Speed and Broadband Hyperspectral Microwave Receiver Subsystem for Sounding Atmosphere  
*Yangjin Luo (National Space Science Center, CAS); Shengwei Zhang (National Space Science Center, Chinese Academy of Sciences); Hao Lu (National Space Science Center, Chinese Academy of Sciences);*
- 12:10 Improved Spatial Collocation and Parallax Correction Approaches for Intercalibration among Different Sensors in Thermal Infrared Band under the Framework of GSICS  
*Qiang Guo (National Satellite Meteorological Center);*
- 12:30 Model of Information Logistics in EMF RATEL System for Long-term EMF Monitoring  
*Nikola Djuric (University of Novi Sad); Nikola Kavecan (Falcon-Tech, IT Consulting and Development); Dragan Kljajic (University of Novi Sad); Gorana Mijatovic (University of Novi Sad); Snezana M. Djuric (University of Novi Sad);*
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- Session 3A2**  
**SC1&SC5: Direct and Inverse Scattering Methods in Complex Environments 1**
- 
- Wednesday AM, June 19, 2019**  
**Room 5 - 1st Floor**  
Organized by Matteo Pastorino, Giuseppe Schettini  
Chaired by Matteo Pastorino, Giuseppe Schettini
- 
- 09:00 An Air Quality Monitoring System with Enhanced Coverage Capabilities by Using the Modulated Scattering Technique (MST)  
*Mohammedhusen Manekiya (University of Trento); Massimo Donelli (ELEDIA Research Center); Sreedevi K. Menon (Amrita Vishwa Vidyapeetham);*
- 09:20 Study of Time-reversal Music Performance in a Half-space Medium  
*Raffaele Solimene (Università degli studi della Campania Luigi Vanvitelli);*
- 09:40 Toward Quantitative Inversion Methods via Orthogonality Sampling Method  
Invited  
*Martina Teresa Bevacqua (Mediterranea University of Reggio Calabria); Roberta Palmeri (Mediterranea University of Reggio Calabria); Lorenzo Crocco (CNR — National Research Council of Italy); Tommaso Isernia (Mediterranea University of Reggio Calabria);*
- 10:00 A 1–3 GHz Stepped Frequency Radar System Equipped with Vivaldi Antennas for Through-the-wall Radar Imaging  
Invited  
*Stefano Pisa (Sapienza University of Rome); Renato Cicchetti (Sapienza University of Rome); Emanuele Piuze (Sapienza University of Rome); Erika Pittella (Sapienza University of Rome); Orlandino Testa (Sapienza University of Rome); Giulia Sacco (Sapienza University of Rome);*
- 10:20 Rigorous Integral-equation Modeling of Wave Scattering and Guiding by All-dielectric Grating-assisted Metasurfaces  
Invited  
*Nikolaos L. Tsitsas (Aristotle University of Thessaloniki);*
- 11:00 **Coffee Break**
- 11:30 Gradient Methods in the Minimization of Quartic Functionals: Phase Retrieval in Circular Case  
Invited  
*Giovanni Leone (Università della Campania Luigi Vanvitelli); Raffaele Moretta (Università degli Studi della Campania “Luigi Vanvitelli”); Rocco Pierri (Università degli studi della Campania Luigi Vanvitelli);*
- 11:50 An Effective Microwave Tomography Imaging Approach for Stratified Reference Scenarios  
Invited  
*Ilaria Catapano (Institute for Electromagnetic Sensing of Environment, National Research Council); G. Ludeno (Institute for Electromagnetic Sensing of Environment, National Research Council); Gianluca Gennarelli (Institute for Electromagnetic Sensing of Environment, National Research Council); F. Soldovieri (Institute for Electromagnetic Sensing of Environment, National Research Council);*

12:10 A Study on Spectral-domain Approach to Electro-magnetic Scattering from Finite Periodic Circular Cylinder Array

*Koki Watanabe (Fukuoka Institute of Technology);*

12:30 Polarization Tensors for Underground Object Detection

*Paul Ledger (University of Manchester); William R. B. Lionheart (University of Manchester); Francis Watson (University of Manchester);*

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### Session 3A3

#### SC4: Millimetre-wave Components for Next-generation Communications

Wednesday AM, June 19, 2019

Room 7 - 1st Floor

Organized by Sergio Colangeli, Ernesto Limiti

Chaired by Sergio Colangeli, Ernesto Limiti

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09:00 Physics-based Analysis to Address Critical Aspects of FinFET Mm-wave Applications: Variability and Thermal Management

*Guerrieri Simona Donati (Politecnico di Torino); Fabrizio Bonani (Politecnico di Torino); Giovanni Ghione (Politecnico di Torino);*

09:20 Theory and Experiment of a Compact Waveguide Polarization Diplexer

*Vladimir Litun (Bauman Moscow State Technical University); Vasily Ovechkin (SVV, Ltd.); Maxim Golubtsov (SVV, Ltd.);*

09:40 Spinning Resonators Allow Irreversible Refractive Index

*Tal Carmon (Technion — Israel Institute of Technology);*

10:00 Integrated Fourth Harmonic Mixer Based on Schottky Diode Technology and Flip Chip Local Oscillator Developed on Planar Technology

*Jose M. Perez-Escudero (Public University of Navarra); Carlos Quemada (Public University of Navarra); Ramon Gonzalo (Universidad Publica de Navarra); Inigo Ederra (Public University of Navarra);*

10:20 Electromagnetic Characterization and Design Note of a Sub-THz SiGe Voltage-controlled Oscillator

*H. Bello (University of L'Aquila); Leonardo Pantoli (University of L'Aquila); Jongwon Yun (IHP-Leibniz-Institut für innovative Mikroelektronik); Dietmar Kissinger (Ulm University); G. Leuzzi (University of L'Aquila);*

10:40 Development, Microfabrication and Study of Planar Slow Wave Structures for Millimeter-band Vacuum Electronic Devices

*Andrei Victorovich Starodubov (1. Saratov State University; 2. IRE RAS — Saratov Branch); Alexey Alexandrovich Serdobintsev (Saratov State University); Anton Mikhailovich Pavlov (Saratov State University); Victor Vladimirovich Galushka (Saratov State University); Ilya Olegovich Kozhevnikov (Saratov State University); Igor Shamilevich Bakhteev (Central Institute of Measurement Equipment (JSC CIME)); Sergei Yurevich Molchanov (Central Institute of Measurement Equipment (JSC CIME)); Andrei Georgievich Rozhnev (Saratov State University); Roman Antonovich Torgashov (V. A. Kotel'nikov Institute of Radio Engineering and Electronics RAS); Gennadiy Vasilievich Torgashov (V. A. Kotel'nikov Institute of Radio Engineering and Electronics RAS); Nikita Mikhailovich Ryskin (V. A. Kotel'nikov Institute of Radio Engineering and Electronics RAS);*

11:00 **Coffee Break**

11:30 An Air-filled Circularly Polarized Monochromatic Multimode Helical Beam Antenna

*Gary Junkin (Universitat Autònoma de Barcelona);*

11:50 3-D Beamforming Wideband Antenna for 5G Application

*Shailendra Kaushal (Fujikura Ltd.); Ning Guan (Fujikura Ltd.);*

12:10 Design and Implementation of a Multi-gigabaud, mm-wave Communication System

*Adriana Brancaccio (Seconda Università di Napoli); Aldo Minardo (Università della Campania "Luigi Vanvitelli"); Alessandro Lo Schiavo (Università della Campania "Luigi Vanvitelli"); Valerio Di Maio (MBDA Italia SPA); Giuseppe Santoriello (Medinok SPA); Alfonso Avella (Medinok SPA); Massimo Costarella (Medinok SPA);*

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### Session 3A4

#### SC1: Computational Techniques in Electromagnetics and Applications 1

Wednesday AM, June 19, 2019

Room 8 - 1st Floor

Organized by Tsuneki Yamasaki, Yoichi Okuno

Chaired by Tsuneki Yamasaki, Yasuhide Tsuji

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- 09:00 Design and Modeling of a Microstrip Patch Antenna by Using Finite Difference Time Domain (FDTD) Method and Computer Aided Simulations  
*Kayhan Ates (Akdeniz University); Sukru Ozen (Akdeniz University); Halil Ibrahim Keskin (Akdeniz University); Lutfiye Nurel Ozdinc Polat (Akdeniz University);*
- 09:20 Analysis of a TM-pass Terahertz Waveguide Polarizer  
*J. Shibayama (Hosei University); Shoko Gomi (Hosei University); J. Yamauchi (Hosei University); H. Nakano (Hosei University);*
- 09:40 EM Simulation and Characterization of  $E$ -field Distribution around Human Arm for Human Body Communication Applications  
*Andrey S. Andrenko (National Institute of Information and Communications Technology); Kanako Wake (National Institute of Information and Communications Technology);*
- 10:00 Tunable Plasmonic Nanocavities: Optical Properties of the Light Emitted from a Tunnel Junction  
*Christin David (Madrid Institute for Advanced Studies in Nanoscience (IMDEA Nanoscience)); A. Martin Jimenez (Madrid Institute for Advanced Studies in Nanoscience (IMDEA Nanoscience)); R. Otero Martin (Madrid Institute for Advanced Studies in Nanoscience (IMDEA Nanoscience));*
- 10:20 Interpolation Type Schemes Application to Analysis of Electromagnetic Field Propagation  
*Oleg V. Kravchenko (Bauman Moscow State Technical University); Dobroslav P. Egorov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); N. T. Vilisova (Bauman Moscow State Technical University); Dmitry V. Churikov (Science Scientific and Technological Center of Unique Instrumentation of the RAS); A. D. Titov (Bauman Moscow State Technical University);*
- 10:40 A Mechanism of Simultaneous Switching Noise in Multiple Plane Conductors Using Two Dimensional Transport Theory  
*Souma Jinno (Osaka University); Shuji Kitora (Osaka University); Hiroshi Toki (Osaka University); M. Abe (Osaka University);*
- 11:00 **Coffee Break**
- 11:30 Beam Propagation Analysis for Discontinuity Structures of Plasmonic Waveguides Using Field-based Propagation Operator  
*Keita Morimoto (Muroran Institute of Technology); Yasuhide Tsuji (Muroran Institute of Technology);*
- 11:50 Structural Optimization with Sensitivity Analysis for Optical Waveguide Devices Utilizing Bi-directional Beam Propagation Method  
*Akito Iguchi (Muroran Institute of Technology); Yasuhide Tsuji (Muroran Institute of Technology);*
- 12:10 Solution of Large-scale Problems with Surface-Volume-Surface Electric Field Integral Equation  
*Vladimir Okhmatovski (University of Manitoba); S. Zheng (University of Manitoba); R. Gholami (University of Manitoba); J. Mojolagbe (University of Manitoba); Z. Cheng (University of Manitoba);*
- 12:30 Development of Mode-matching Techniques to Efficiently Model Multi-mode Horns with Non-PEC Walls  
*Joseph Brennan (Maynooth University); Marcin Gradziel (Maynooth University); Neil Trappe (Maynooth University);*
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- Session 3A5**  
**SC1&SC5: Machine Learning Techniques for Remote Sensing and Electromagnetic Applications 1**
- 
- Wednesday AM, June 19, 2019**  
**Room Hall of Frescoes - 1st Floor**  
Organized by Massimo Panella  
Chaired by Massimo Panella
- 
- 09:00 Fast Evaluation of Refractive Index with Machine Learning  
*Ergun Simsek (University of Maryland Baltimore County);*
- 09:20 Neural Networks for Reconstruction of Nanostructures from Wide-angle X-ray Scattering Images  
*Thomas Stielow (Institut für Physik, Universität Rostock); Robin Schmidt (Institut für Physik, Universität Rostock); Thomas Fennel (University of Rostock); Stefan Scheel (University of Rostock);*
- 09:40 Deep Learning of Wildfire Intensity Using Bitemporal Synthetic Aperture Radar Images  
*Zhiqiang Chen (University of Missouri-Kansas City); Shiming Tang (University of Missouri-Kansas City); Jay W. Parker (California Institute of Technology);*
- 10:00 Model of Resonant Frequency of Rectangular Microstrip Antenna Based on Gaussian Process with Mixed Kernel Function  
*Xie Zheng (Jiangsu University of Science and Technology); Yu-Bo Tian (Jiangsu University of Science and Technology);*

- 10:20 Change Detection in Sentinel 2 Images Using Fully Convolutional Siamese ResNets with Local Similarity Loss Function  
*Andrea Pomente (University of Rome "Tor Vergata"); Matteo Picchiani (GEO-k s.r.l.); Fabio Del Frate (University of Rome "Tor Vergata"); Giovanni Schiavon (University of Rome "Tor Vergata");*
- 11:00 **Coffee Break**
- 11:30 A Deep Recurrent Neural Network Architecture for Land Cover and Crop Classification from Heterogeneous Remote Sensing Data  
*Corrado Avolio (E-GEOS — An Italian Space Agency/Telespazio Company); Alessia Tricomi (E-GEOS — An Italian Space Agency/Telespazio Company); Claudio Mammone (E-GEOS — An Italian Space Agency/Telespazio Company); Massimo Zavagli (E-GEOS — An Italian Space Agency/Telespazio Company); Mario Costantini (E-GEOS — An Italian Space Agency/Telespazio Company);*
- 11:50 Change Detection in Off-nadir Satellite Images Using a Hybrid CNN and an Ensemble Learning Approach  
*Mohammad Rezaee (University of New Brunswick); Shabnam Jabari (University of New Brunswick); Yun Zhang (University of New Brunswick);*
- 12:10 Performance Comparison of Learned vs. Engineered Features for Polarimetric SAR Terrain Classification  
*Muharrem Mete Ahishali (Izmir University of Economics); Turker Ince (Izmir University of Economics); Serkan Kiranyaz (Qatar University); Moncef Gabbouj (Tampere University of Technology);*
- 12:30 Neural Networks Algorithms for the Retrieval of Geophysical Parameters from Microwave Satellite Acquisitions  
*Emanuele Santi (Consiglio Nazionale delle Ricerche); Simonetta Paloscia (CNR-IFAC); Simone Pettinato (Consiglio Nazionale delle Ricerche); G. Fontanelli (Institute of Applied Physics — National Research Council (IFAC-CNR)); Enrico Palchetti (IFAC CNR);*
- 09:00 Single-input Multiple-output Multi-carrier Wireless Indoor Direction Finding in a Compact Multipath Scenario Using 2.4 GHz ISM Band  
*Burak Sahinbas (Friedrich Alexander University); Doga Gurgunoglu (Bilkent University); Maximilian Rausch (Metirionic GmbH); Dietmar Eggert (Metirionic GmbH); Jorn Thielecke (Friedrich Alexander University);*
- 09:20 Adaptive Beamforming Algorithm in Real Numbers Arithmetic  
*Ilya V. Korogodin (National Research University "Moscow Power Engineering Institute"); Sergey P. Ippolitov (Moscow Power Engineering Institute); Ivan V. Lipa (Moscow Power Engineering Institute);*
- 09:40 Triangulation Positioning by Means of Wi-Fi Signals in Indoor Conditions  
*Ilya V. Korogodin (National Research University "Moscow Power Engineering Institute"); Vladimir V. Dneprov (Moscow Power Engineering Institute); Olga K. Mikhaylova (National Research University);*
- 10:00 Reconfigurable Antenna Based System for Spectrum Monitoring and Radio Direction Finding  
*Hassan El-Sallabi (Emiri Signal and Information Technology Corps); Abdalla Albadr (Emiri Signal and Information Technology Corps); Abdulaziz Aldosari (Emiri Signal and Information Technology Corps);*
- 10:20 Comparison of Phase-less Direction of Arrival Estimation Methods for Switched Beam Antennas  
*Alessandro Cidronali (University of Florence); Giovanni Collodi (University of Florence); Matteo Lucarelli (University of Florence); Stefano Maddio (University of Florence); Marco Passafiume (University of Florence); Giuseppe Pelosi (University of Florence); Stefano Selleri (University of Florence);*
- 11:00 **Coffee Break**

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**Session 3A6a**
**Special Antennas for Direction of Arrival Estimation/Positioning**


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**Wednesday AM, June 19, 2019**
**Room Cloister Hall - 1st Floor**

Organized by Stefano Maddio

 Chaired by Stefano Maddio, Stefano Selleri

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**Session 3A6b**
**Massive MIMO**


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**Wednesday AM, June 19, 2019**
**Room Cloister Hall - 1st Floor**

Organized by Mario Marques da Silva

 Chaired by Mario Marques da Silva

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- 11:30 Performance Evaluation of IB-DFE Schemes in Underwater MIMO Spatially Correlated Channels  
*Joao Guerreiro (Instituto de Telecomunicacoes); Sergio Silva (Universidade Autonoma de Lisboa); Mario Marques Da Silva (Instituto de Telecomunicacoes); Rui Dinis (Universidade Nova de Lisboa); Paulo Montezuma Carvalho (Universidade Nova de Lisboa);*
- 11:50 Performance Evaluation of Low-complexity Receivers for MIMO Underwater Spatially Correlated Channels  
*Mario Marques da Silva (Universidade Autonoma de Lisboa); Joao Aleixo (Instituto de Telecomunicacoes); Joao Guerreiro (Instituto de Telecomunicacoes); Rui Dinis (ISCTE/Instituto de Telecomunicacoes); Paulo Montezuma Carvalho (Universidade Nova de Lisboa);*
- 12:10 A Multi-antenna Iterative Frequency-domain Detection for Power-efficient NOMA Schemes  
*Joao Guerreiro (Instituto de Telecomunicacoes); Filipe Casal Ribeiro (IT — Instituto de Telecomunicacoes); Rui Dinis (ISCTE/Instituto de Telecomunicacoes); Paulo Montezuma Carvalho (Universidade Nova de Lisboa); Dushantha Jayakody (National Research Tomsk Polytechnic University); Mario Marques Da Silva (Instituto de Telecomunicacoes);*
- 12:30 Multi-beam Physical Security Scheme: Security Assessment and Impact of Array Impairments on Security and Quality of Service  
*Pedro Viegas (FCT Universidade Nova de Lisboa); Paulo Montezuma Carvalho (Universidade Nova de Lisboa); David Borges (FCT Universidade Nova de Lisboa); Rui Dinis (Universidade Nova de Lisboa); Mario Marques Da Silva (Instituto de Telecomunicacoes);*
- 12:50 Low Complexity Millimeter Wave Point-to-point Communication: Interference Assessment of BPSK vs QPSK Decomposition  
*David Borges (FCT Universidade Nova de Lisboa); Pedro Viegas (FCT Universidade Nova de Lisboa); Paulo Montezuma Carvalho (Universidade Nova de Lisboa); Rui Dinis (Universidade Nova de Lisboa); Mario Marques da Silva (Universidade Autonoma de Lisboa);*

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**Session 3A7**
**SC3: Ultrafast Nonlinear Optics: Ultrafast Fiber Lasers and Nonlinear Applications 1**


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**Wednesday AM, June 19, 2019**
**Room 17 - 1st Floor**

Organized by Zhiwen Liu, Michelle Y. Sander

 Chaired by Michelle Y. Sander
 

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- 09:00 Gain-managed Nonlinear Fiber Amplification  
 Keynote  
*Pavel Sidorenko (Cornell University); Frank Wise (Cornell University);*
- 09:30 Advanced Designs for Passively Modelocked Fibre Inverted Lasers  
*Neil G. R. Broderick (University of Auckland); Claude Aguergaray (University of Auckland); Miro Erkintalo (University of Auckland); S. Tang (University of Auckland);*
- 09:50 Polarization Soliton Dynamics in Linear Ultrafast Inverted Fiber Lasers  
*Junjie Zeng (Boston University); Michelle Y. Sander (Boston University);*
- 10:10 Repetition Rate Adjustable Dual-wavelength Solitons Fiber Laser Based on Highly Nonlinear Fiber  
*Qianchao Wu (The University Town of Shenzhen); Yong Yao (Harbin Institute of Technology); Yanfu Yang (Harbin Institute of Technology); Jiajun Tian (Harbin Institute of Technology); Ke Xu (Harbin Institute of Technology); Yunxu Sun (The University Town of Shenzhen); Jun Jun Xiao (Harbin Institute of Technology);*
- 10:30 Dynamics of High Peak Power Pulses near 1.9  $\mu\text{m}$  in a Standard Single-mode Telecom Fiber  
*Aleksandr I. Donodin (Bauman Moscow State Technical University); Vasilii Sergeevich Voropaev (Bauman Moscow State Technical University); A. I. Voronec (Bauman Moscow State Technical University); V. A. Lazarev (Bauman Moscow State Technical University); M. K. Tarabrin (Bauman Moscow State Technical University); Valeriy E. Karasik (Bauman Moscow State Technical University);*
- 11:00 **Coffee Break**

11:30 Frequency Comb Optical Two-way Time-frequency Transfer  
Invited

*Laura C. Sinclair (National Institute of Standards and Technology); Jean-Daniel Deschenes (Octosig Consulting Inc.); Martha Bodine (National Institute of Standards and Technology); Sarah Stevenson (National Institute of Standards and Technology); Jennifer Ellis (National Institute of Standards and Technology); William C. Swann (National Institute of Standards and Technology); Isaac Khader (National Institute of Standards and Technology); Emily Hannah (National Institute of Standards and Technology); Paritosh Manurkar (National Institute of Standards and Technology); Nathan R. Newbury (National Institute of Standards and Technology);*

11:50 New Optical Comb Spectroscopy Combined with Optical Vortex  
Invited

*Akifumi Asahara (University of Electro-Communications); Kaoru Minoshima (University of Electro-Communications);*

12:10 Voltage Controlled Graphene Supercapacitors for Femtosecond Pulse Generation in the Near Infrared  
Invited

*Alphan Sennaroglu (Koc University); Isinsu Baylam (Koc University); Nurbek Kakenov (Bilkent University); Coskun Kocabas (Bilkent University); Sarper Ozharar (Bahcesehir University);*

12:30 Novel Ultrashort-pulse Sources  
Invited

*William Renninger (University of Rochester);*

12:50 High Power Multi-soliton and Noise-like Pulse Generation Regimes in a Passively Mode-locked Thulium-doped All-fiber Ring Oscillator

*Vasilii Sergeevich Voropaev (Bauman Moscow State Technical University); Aleksandr I. Donodin (Bauman Moscow State Technical University); A. I. Voronets (Bauman Moscow State Technical University); D. S. Vlasov (Bauman Moscow State Technical University); D. T. Batov (Bauman Moscow State Technical University); V. A. Lazarev (Bauman Moscow State Technical University); M. K. Tarabrin (Bauman Moscow State Technical University); V. E. Tarabrin (Bauman Moscow State Technical University); A. A. Krylov (Fiber Optics Research Center of the Russian Academy of Sciences);*

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### Session 3A8

#### 2D Materials and Optoelectronic Devices

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Wednesday AM, June 19, 2019

Room 6 - Mezzanine

Organized by Guangcun Shan

Chaired by Guangcun Shan

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09:00 Perovskite Solar Cells with 2D Materials

Keynote

*Aldo Di Carlo (University of Rome Tor Vergata); Antonio Agresti (University of Rome Tor Vergata); Sara Pescetelli (University of Rome Tor Vergata); Paolo Mariani (University of Rome Tor Vergata); Anna Pazniak (National University of Science and Technology NUST-MISIS); Dimitry Muratow (National University of Science and Technology NUST-MISIS); Danila Saranin (National University of Science and Technology NUST-MISIS);*

09:30 Plasmon Generation through Electron Tunneling in Double-Layer-Graphene and Metal-Insulator-Graphene Systems

*Sandra De Vega (ICFO — Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); F. Javier Garcia De Abajo (ICFO Institut de Ciències Fotoniques, Mediterranean Technology Park);*

09:50 Nonlinear Optical Properties and Ultrafast Carrier Dynamics in Layered PtSe<sub>2</sub> and Nonlayered PtS Materials

*Jun Wang (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences);*

10:10 Numerical Analysis of EL-spectra of Blue-green Light-emitting Diode with InGaN/GaN Quantum Wells and Patterned Electrode

*Yohei Nishidate (University of Aizu); Irina Khmyrova (The University of Aizu); S. Shapoval (IMT RAS);*

10:30 Plasmonics in Two-dimensional Crystals

Keynote

*F. Javier Garcia De Abajo (ICFO Institut de Ciències Fotoniques, Mediterranean Technology Park);*

11:00 **Coffee Break**

11:30 Electronic and Optical Properties of Few-layer Films of 2D Semiconductors

*Vladimir Fal'ko (University of Manchester);*

- 12:00 Bismuth and Bismuth Telluride Thin Films Deposited by MOCVD upon Tapered Fiber Sections as Q-switches for Fiber Lasers  
*Evgeny Aleksandrovich Savelyev (Kotel'nikov Institute of Radioengineering and Electronics of the Russian Academy of Sciences); Petr Ivanovich Kuznetsov (Kotel'nikov Institute of Radioengineering and Electronics of the Russian Academy of Sciences); Dmitriy Petrovich Sudas (Kotel'nikov Institute of Radioengineering and Electronics of the Russian Academy of Sciences); Leonid Yur'yevich Zakharov (Kotel'nikov Institute of Radioengineering and Electronics of the Russian Academy of Sciences); Konstantin Mikhailovich Golant (Kotel'nikov Institute of Radioengineering and Electronics of the Russian Academy of Sciences);*
- 12:20 Wave Propagation Behavior of Photonic Structure  
*Seekin Filiz (Tekirdag Namik Kemal University);*
- 12:40 Yb-doped Fiber Laser with Black Phosphorus: Versatility in Spatial/Temporal Domain  
*Jian Wu (National University of Defense Technology); Tao Wang (National University of Defense Technology); Hanshuo Wu (National University of Defense Technology); Hanwei Zhang (National University of Defense Technology); Rongtao Su (National University of Defense Technology (NUDT)); Pu Zhou (National University of Defense Technology);*
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- Session 3A9**  
**FocusSession.SC3: Multimode Nonlinear Optical Fibers 1**
- 
- Wednesday AM, June 19, 2019**  
**Room 4 - Mezzanine**  
Organized by Stefan Wabnitz, Demetri Psaltis  
Chaired by Stefan Wabnitz, Demetri Psaltis
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- 09:00 Multimodal Propagation, Deep Learning, and Optical Neural Networks  
Invited *Claudio Conti (University Sapienza);*
- 09:20 Spectrally-selective Holography for Space-division Modal-demultiplexing and Dispersion Compensation in Multimode Fiber  
*Kelvin H. Wagner (University of Colorado at Boulder); M. Brand (University of Colorado at Boulder);*
- 09:35 Imaging with Multimode Fibers  
Keynote *Demetri Psaltis (Ecole Polytechnique Federale de Lausanne (EPFL));*
- 10:05 Fast and Nonlinear Wavefront Control in Multimode Fibers  
Invited *Omer Tzang (University of Colorado Boulder); Antonio M. Caravaca-Aguirre (University of Colorado Boulder); Eyal Niv (University of Colorado Boulder); Sakshi Singh (University of Colorado Boulder); Simon Labouesse (University of Colorado Boulder); Kelvin Wagner (University of Colorado at Boulder); Rafael Piestun (University of Colorado Boulder);*
- 10:25 Four-wave Mixing with Orbital Angular Momentum Light in a Ring-core Fiber  
*Wen-Tan Fang (University of Science and Technology of China); Runxia Tao (University of Science and Technology of China); Zhi-Yuan Zhou (University of Science and Technology of China); Baosen Shi (University of Science and Technology of China); Lixin Xu (University of Science and Technology of China);*
- 10:40 Nonlinear Propagation in Optical Fibers for Space-division Multiplexing  
Invited *Cristian Antonelli (University of L'Aquila); A. Mecozzi (University of L'Aquila); M. Shtaif (Tel Aviv University);*
- 11:00 **Coffee Break**
- 11:30 Efficient Simulation of Symmetric Field Propagation in Parabolic-index Fibers  
*Jesper Lægsgaard (Technical University of Denmark);*
- 11:45 Characterization and Control of Whispering Gallery Modes on Surface of Optical Fibers  
Invited *Zhiyong Han (Novosibirsk State University); Semen S. Fast (Novosibirsk State University); Emile Klotz (Institut d'Optique Graduate School); Darya Bocheck (Novosibirsk State University); Ilya D. Vatnik (Novosibirsk State University); Misha Sumetsky (Aston University); Dmitry V. Churkin (Novosibirsk State University);*
- 12:05 Complex Optical Pulse Shaping in Nonlinear Multimode Optical Fibers  
Keynote *Alessandro Tonello (Université de Limoges); Vincent Couderc (Université de Limoges); Katarzyna Krupa (Université Bourgogne Franche-Comte, ICB, UMR CNRS 6303); Guy Millot (Université de Bourgogne); Daniele Modotto (Università degli Studi di Brescia); Evgeny V. Podivilov (Institute of Automation and Electrometry, Siberian Branch, Russian Academy of Sciences); Denis S. Kharenko (Institute of Automation and Electrometry, SB, RAS); Sergey A. Babin (Institute of Automation and Electrometry SB RAS); Stefan Wabnitz (Sapienza University of Rome);*

12:35 Impact of Periodic Self-imaging on the Nonlinear  
Invited Propagation in GRIN Multimode Fibers  
*Tigran Mansuryan (Université de Limoges); K. Krupa (Université Bourgogne Franche-Comté, ICB, UMR CNRS 6303); A. Niang (Università degli Studi di Brescia); E. Deliancourt (Université de Limoges); A. Tonello (Université de Limoges); P. Leproux (Université de Limoges); Marc Fabert (Université de Limoges); J. L. Auguste (Université de Limoges); Agnes Desfarges-Berthelemot (Université de Limoges); V. Kermene (Université de Limoges); Alain Barthelemy (XLIM/Université de Limoges); Umberto Minoni (Università degli Studi di Brescia); Daniele Modotto (Università degli Studi di Brescia); Guy Millot (Université de Bourgogne); Stefan Wabnitz (Sapienza University of Rome); Vincent Couderc (Université Bourgogne Franche-Comté, ICB, UMR CNRS 6303);*

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**Session 3A10**

**SC3: Luminescence and Lasing of Nanomaterials**

**Wednesday AM, June 19, 2019**

**Room 12 - Mezzanine**

Organized by Chunxiang Xu, Lei Liu

Chaired by Chunxiang Xu

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09:00 New Approach to Control Photoluminescence Efficiency by Using Orbit-orbit Interaction in Perovskite Quantum Dots  
*Bin Hu (University of Tennessee);*

09:20 Electric-driven Mode Regulation for ZnO Whispering-gallery Lasing  
*Chunxiang Xu (Southeast University); Jie Zhao (Southeast University);*

09:40 Developing Lasers from All-inorganic Halide Perovskites  
*Handong Sun (Nanyang Technological University);*

10:00 Anderson Localization of Surface Plasmon Polaritons with Engineered Disorder  
*Ru-Wen Peng (Nanjing University); Wen-Bo Shi (Nanjing University); Ren-Hao Fan (Nanjing University); Mu Wang (Nanjing University);*

10:20 Optical Studies of Electron Transfer in Two-dimensional Heterostructures  
*Yongsheng Wang (Beijing Jiaotong University); Hui Zhao (Beijing Jiaotong University);*

10:40 Mapping Strain/Pressure with ZnO Nanowire Arrays by Piezotronic and Piezo-phototronic Effect  
*Caofeng Pan (Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences);*

11:00 **Coffee Break**

11:30 Highly Efficient Light Emitting Devices on Silicon With Rare Earth Doped Al<sub>2</sub>O<sub>3</sub> Nanolaminated Gate Oxides  
*Jiaming Sun (Nankai University); Yao Liu (Nankai University); Na Li (Nankai University); Xihuan Xiong (Nankai University);*

11:50 Photocarrier Dynamics in Black Phosphorus and Its Heterostructures Studied by Photoluminescence and Transient Absorption  
*Dawei He (Beijing Jiaotong University);*

12:10 Time-resolved Measurements of Two-photon Absorption Coefficients of 2D Semiconductors  
*Qianman Cui (Southeast University); Yuanyuan Li (Nanjing University of Information Science & Technology); Jianhua Chang (Nanjing University of Information Science & Technology); Hui Zhao (University of Kansas); Chunxiang Xu (Southeast University);*

12:30 Side-mode Suppression in Ultraviolet Quasi-semicircle GaN Microlaser Cavity  
*Canran Zhang (Jiangsu University of Science and Technology); Songchao Shen (Jiangsu University of Science and Technology); Jun Dai (Southeast University);*

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**Session 3A11**

**SC2: Analytical Methods for Metamaterials, Metasurfaces, and 2D Materials from Microwaves to Optics 1**

**Wednesday AM, June 19, 2019**

**Room 11 - Mezzanine**

Organized by Alexander B. Yakovlev, Juan Sebastian Gomez-Diaz

Chaired by Alexander B. Yakovlev, Juan Sebastian Gomez-Diaz

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09:00 Nanophotonics in Graphene and van der Waals Structures  
Invited  
*Alexey Nikitin (Donostia International Physics Center (DIPC));*

09:20 Analytical Models of Polaritonic Antennas and Metasurfaces Using 2D Materials  
Invited  
*Michele Tamagnone (Harvard University); Juan R. Mosig (Ecole Polytechnique Federale de Lausanne); Federico Capasso (Harvard University);*

- 09:40 Transient Excitation of Free-standing Graphene Sheets  
Invited Paolo Burghignoli (*Sapienza University of Rome*); Giampiero Lovat (*University of Roma "La Sapienza"*); Rodolfo Araneo (*University of Roma "La Sapienza"*); Salvatore Celozzi (*Sapienza University of Rome*);
- 10:00 Mantle Cloaking of a Dielectric Cylinder under Oblique Incidence with Metasurfaces  
Invited Zahra Hamzavi-Zarghani (*Shiraz University*); Alireza Yahaghi (*Shiraz University*); Ladislau Matekovits (*Politecnico di Torino*);
- 10:20 Chiral Metamaterials for a Robust Waveguiding Scheme  
Invited Bakhtiyar Orazbayev (*Ecole Polytechnique Federale de Lausanne (EPFL)*); Nadege Kaina (*Ecole Polytechnique Federale de Lausanne (EPFL)*); Romain Fleury (*Ecole Polytechnique Federale de Lausanne (EPFL)*);
- 10:40 Electromagnetic "Beasts" and Where to Find Them: Analyzing Extreme Effects and Singularities in Metasurfaces  
Invited Francesco Monticone (*Cornell University*);
- 11:00 **Coffee Break**
- 11:30 Nonreciprocal Light Manipulation Using Time-modulated Metasurfaces  
Invited Alejandro Alvarez Melcon (*Universidad Politecnica de Cartagena*); J. Zang (*University of California Davis*); D. Correas-Serrano (*University of California Davis*); J. Do (*University of California Davis*); X. Liu (*University of California Davis*); Juan Sebastian Gomez-Diaz (*University of California Davis*);
- 11:50 Understanding the Leaky-wave Mechanism on Truncated Subwavelength Hole Arrays with Method of Moments and Quasi-optical Measurements  
Invited Miguel Camacho (*University of Exeter*); Rafael R. Boix (*University of Seville*); Sergei Alexandrovich Kuznetsov (*Novosibirsk State University*); Miguel Beruete (*Universidad Publica de Navarra*); Miguel Navarro-Cia (*Imperial College London*);
- 12:10 Circuit Models for Classical Electromagnetic Analogs of Electromagnetically Induced Transparency  
Invited Raul Rodriguez-Berral (*University of Seville*); Francisco L. Mesa (*Universidad de Sevilla*); Francisco Medina (*University of Seville*); Fulya Bagci (*Ankara University*);
- 12:30 Impedance Matrix Approach for MRI Metamaterials Applications  
Marc Dubois (*Aix-Marseille Université*); Redha Abdeddaim (*ESPCI Paris Tech.*); Luisa Ciobanu (*Université Paris-Saclay*); Alexandre Vignaud (*Université Paris-Saclay*); Stefan Enoch (*Institut Fresnel*);
- 12:50 Equivalent Transmission Network for Bounded Wire-Medium Structures with Arbitrary Terminations  
Invited Alexander B. Yakovlev (*The University Mississippi*); Mario G. Silveirinha (*University of Lisbon*); George W. Hanson (*University of Wisconsin-Milwaukee*); Chandra S. R. Kaipa (*Independent Researcher*);
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- Session 3A12**  
**FocusSession.SC2: Advanced Metasurface Designs and Devices 1**
- 
- Wednesday AM, June 19, 2019**  
**Room 21 - 2nd Floor**  
Organized by Tao Li, Yun Lai  
Chaired by Tao Li, Yun Lai
- 
- 09:00 A Compact On-chip Spectrometer Enabled by Metasurface-decorated Waveguides  
Invited Xingjie Ni (*Pennsylvania State University*); Yimin Ding (*Pennsylvania State University*); Yao Duan (*Pennsylvania State University*); Xi Chen (*Pennsylvania State University*); Xuexue Guo (*Pennsylvania State University*);
- 09:20 Tomographic Microscopy by Chromatic Metalens  
Invited Chen Chen (*Nanjing University*); Jia-Wern Chen (*Research Center for Applied Sciences, Academia Sinica*); Din Ping Tsai (*Academia Sinica*); Shi-Ning Zhu (*Nanjing University*); Tao Li (*Nanjing University*);
- 09:40 Active Tunable Photonic Microstructures  
Invited Xiaoyong Hu (*Peking University*); Yutian Ao (*Peking University*); You Wu (*Peking University*); Xinxiang Niu (*Peking University*);
- 10:20 Deep-learning Designs of Deflection Digital Coding Metasurfaces with Continuous Controls of Beams  
Invited Che Liu (*Southeast University*); Qian Zhang (*Southeast University*); Tie Jun Cui (*Southeast University*);
- 10:40 Angular-adaptive Spin-locked Retroreflector Based on Reconfigurable Magnetic Metagrating  
Invited Min Li (*Zhejiang University*); Zuojia Wang (*Shandong University*); Hongsheng Chen (*Zhejiang University*);
- 11:00 **Coffee Break**

- 11:30 Controlling Angular Dispersions in Metasurfaces:  
Invited Physics and Applications  
*Xiyue Zhang (Fudan University); Qi Li (Fudan University); Feifei Liu (Fudan University); Meng Qiu (Fudan University); Shulin Sun (Fudan University); Qiong He (Fudan University); Lei Zhou (Fudan University);*
- 11:50 Chirality-dependent Surface Wave Excitations and  
Invited Wavefront Controls by Metasurfaces  
*Xiaoer Li (Fudan University); Zhuo Wang (Fudan University); Shaohua Dong (Fudan University); Sixiong Yi (Fudan University); Yizhen Chen (Fudan University); Huijie Guo (Fudan University); Fuxin Guan (Fudan University); Qiong He (Fudan University); Lei Zhou (Fudan University); Shulin Sun (Fudan University);*
- 12:10 Design of a Broadband Omnidirectional Metasurface  
Antenna Using Characteristic Mode Analysis  
*Junjie Tang (Northwestern Polytechnical University); Huilong Zhao (Northwestern Polytechnical University); Lin Song (Northwestern Polytechnical University);*
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- Session 3A13**  
**SC3: Resonant Optics: Fundamentals and Applications 3**
- 
- Wednesday AM, June 19, 2019**  
**Room 22 - 2nd Floor**  
Organized by Philippe Lalanne, Sven Burger  
Chaired by Philippe Lalanne, Sven Burger
- 
- 09:00 Regularization and Completeness of Quasi-normal  
Modes Using Causality Principle  
*Boris Gralak (CNRS, Aix-Marseille University); Mohamed I. Abdelrahman (CNRS, Aix-Marseille University);*
- 09:20 Dielectric Nanocavities for Enhanced Purcell Effect  
and Strong Directionality  
*Riccardo Sapienza (Imperial College London);*
- 09:40 Disorder Induced Phase Transition in an Optical  
Metasurface  
*A. Rahimzadegan (Karlsruhe Institute of Technology); D. Arslan (Friedrich Schiller University Jena); R. N. S. Suryadharma (Karlsruhe Institute of Technology); Stefan Fasold (Friedrich Schiller University); Matthias Falkner (Friedrich-Schiller-Universität Jena); Thomas Pertsch (Friedrich-Schiller-Universität Jena); Isabelle Staude (Friedrich-Schiller-Universität Jena); Carsten Rockstuhl (Karlsruhe Institute of Technology);*
- 10:00 On the Mechanisms of Plasmon-enhanced Chiroptical  
Invited Response  
*Thomas Weiss (University of Stuttgart); Egor A. Muljarov (Cardiff University);*
- 10:20 Photonic Crystal Structures Treated by the Resonant  
Invited State Expansion  
*Sam Neale (Cardiff University); Egor A. Muljarov (Cardiff University);*
- 10:40 Rigorous Modal Analysis of Resonators with Dispersive  
Materials  
*Alexandre Gras (Univ. Bordeaux); Philippe Lalanne (Univ. Bordeaux); Wei Yan (Univ. Bordeaux);*
- 11:00 **Coffee Break**
- 11:30 Quasi-normal Mode Expansion of Electromagnetic  
Fields Using Dispersive Perfectly Matched Layers  
*Guillaume Demesy (Aix-Marseille Université); B. Gralak (Aix-Marseille Université); A. Nicolet (Aix-Marseille Université); F. Zolla (Aix-Marseille Université);*
- 11:50 Interference Phenomena at Resonances in Dense Silicon  
Metasurfaces  
*Saeid Jamilan (Michigan Technological University); George Semouchkin (Michigan Technological University); Fatemeh Safari (Michigan Technological University); Elena Semouchkina (Michigan Technological University);*
- 12:10 Scattering Electromagnetic Eigenstates of a Two-  
constituent Composite and Their Exploitation for  
Calculating a Physical Field  
*David J. Bergman (Tel Aviv University);*
- 12:30 Lasing and Amplification from Two-dimensional  
Invited Atom Arrays  
*Vahagn Mkhitarian (ICFO-Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); Lijun Meng (The Barcelona Institute of Science and Technology); Andrea Marini (The Barcelona Institute of Science and Technology); F. Javier Garcia De Abajo (ICFO Institut de Ciències Fotoniques, Mediterranean Technology Park);*
- 12:50 Optomechanical Interaction in Complex Dielectric  
Media  
*Guillermo Arregui (CSIC and The Barcelona Institute of Science and Technology, Campus UAB); C. M. Sotomayor-Torres (Catalan Institute of Nanotechnology); Pedro David Garcia Fernandez (Catalan Institute of Nanoscience and Nanotechnology (ICN2));*

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**Session 3A14**
**FocusSession.SC3: Advanced Photonic Technologies for Spectroscopic Applications 2**


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**Wednesday AM, June 19, 2019**
**Room 24 - 2nd Floor**

 Organized by Wei Dong Chen, Vincenzo Spagnolo,  
Ulrike Willer

 Chaired by Wei Dong Chen, Vincenzo Spagnolo,  
Ulrike Willer
 

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- 09:00 Chemical Sensing and Hyperspectral Imaging Using Dual Quantum- and Interband-cascade Frequency Comb Spectrometers  
*Gerard Wysocki (Princeton University);*
- 09:20 Spectroscopic Instrumentation for Measurement of Gaseous and Volatile Biomarkers of Infectious Disease  
*Jane Hodgkinson (Cranfield University); Daniel Francis (Cranfield University); Christopher Walton (Cranfield University); Celia Lourenco (Cranfield University); Jeremy Sizer (Bedford Hospital NHS Trust); Paul Black (Cascade Technologies Ltd); Beth Livingstone (Cascade Technologies Ltd); Dawn P. Fowler (Cranfield University); Mitesh K. Patel (Cranfield University); Ralph P. Tatam (Cranfield University);*
- 09:40 Precision Biodiagnostics Using Cascade Lasers  
*Boris Mizaikoff (Ulm University);*
- 10:00 Development of a SERS-based Diagnostic Method for Coronary Heart Disease with Urine  
*Huinan Yang (University of Shanghai for Science and Technology); Mengmeng Xing (University of Shanghai for Science and Technology); Wenyu Qiao (University of Shanghai for Science and Technology); Chengfang Luo (University of Shanghai for Science and Technology); Xiaoshu Cai (University of Shanghai for Science and Technology);*
- 10:20 Broadband Detection of Nitrous Oxide and Methane Exploiting a Quartz-enhanced Photoacoustic Spectroscopy-based Sensor  
*Marilena Giglio (University and Politecnico of Bari); Pietro Patimisco (University and Politecnico of Bari); Angelo Sampaolo (University and Politecnico of Bari); Andrea Zifarelli (Università degli Studi di Bari and Politecnico di Bari); Giansergio Menduni (Politecnico and University of Bari); Arianna Elefante (Politecnico and University of Bari); Romain Blanchard (Pendar Technologies); Christian Pfluegl (Pendar Technologies); Mark F. Witinski (Pendar Technologies); Daryoosh Vakhshoori (Pendar Technologies); Hongpeng Wu (Shanxi University); Lei Dong (Shanxi University); Vittorio M. N. Passaro (Politecnico di Bari); Frank K. Tittel (Rice University); Vincenzo Spagnolo (Technical University of Bari);*
- 10:40 Formaldehyde Detection with an Interband Cascade Laser at 3.53  $\mu\text{m}$   
*Weixiong Zhao (Hefei Institutes of Physical Science, Chinese Academy Sciences); Bo Fang (Anhui Institute of Optics and Fine Mechanics, Chinese Academy Sciences); Nana Yang (Anhui Institute of Optics and Fine Mechanics, Chinese Academy Sciences); Chunhui Wang (Beijing University of Posts and Telecommunications); Weijun Zhang (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Weidong Chen (Université du Littoral Côte d'Opale);*
- 11:00 **Coffee Break**
- 11:30 Trace Gas Detection with Quartz-enhanced Photoacoustic Spectroscopy for Real World Applications  
*Pietro Patimisco (University and Politecnico of Bari); Angelo Sampaolo (University and Politecnico of Bari); Marilena Giglio (University and Politecnico of Bari); Giansergio Menduni (Politecnico and University of Bari); Arianna Elefante (Politecnico and University of Bari); Stefano Dello Russo (Università degli Studi di Bari and Politecnico di Bari); Andrea Zifarelli (Università degli Studi di Bari and Politecnico di Bari); Fabrizio Sgobba (Università degli Studi di Bari and Politecnico di Bari); Lei Dong (Shanxi University); Hongpeng Wu (Shanxi University); Frank K. Tittel (Rice University); Vincenzo Spagnolo (Technical University of Bari);*

- 11:50 Development of Multi-gas Photoacoustic Sensor for  
Invited SF<sub>6</sub> Decomposition Online Monitoring  
*Lei Dong (Shanxi University); Xukun Yin (Shanxi University); Hongpeng Wu (Shanxi University); Liantuan Xiao (Shanxi University); Suotang Jia (Shanxi University); Frank K. Tittel (Rice University);*
- 12:10 Simultaneous Dual Gas QEPAS Sensors for Environ-  
mental Monitoring and Natural Gas Analysis  
*Angelo Sampaolo (University and Politecnico of Bari); Pietro Patimisco (University and Politecnico of Bari); Marilena Giglio (University and Politecnico of Bari); Giansergio Menduni (Politecnico and University of Bari); Arianna Elefante (Politecnico and University of Bari); Lei Dong (Shanxi University); Hongpeng Wu (Shanxi University); Vittorio M. N. Passaro (Politecnico di Bari); Frank K. Tittel (Rice University); Vincenzo Spagnolo (Technical University of Bari);*
- 12:30 Phase Optimized Photoacoustic Sensing of Gas Mix-  
Invited tures  
*Mario Mordmuller (Clausthal University of Technology); Ulrike Willer (Clausthal University of Technology); Wolfgang Schade (Clausthal University of Technology); Simon Edelmann (Knestel Technologie und Elektronik GmbH); Markus Knestel (Knestel Technologie und Elektronik GmbH);*
- 12:50 Trace Gases and Aerosols Measurement with Photoa-  
coustic Spectroscopy  
*Kun Liu (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Yuan Cao (Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Guishi Wang (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Weidong Chen (Université du Littoral Côte d'Opale); Xiaoming Gao (Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences);*
- 09:40 Annealing Effect on the Nano-meter Scale Tita-  
Invited nia/Silica Multi-layers for Mirror Coatings of the Laser Interferometer Gravitational Waves Detector  
*Ling-Chi Kuo (National Tsing Hua University); Huang-Wei Pan (National Tsing Hua University); Chi-Li Chang (National Tsing Hua University); Shih-Chao (National Tsing Hua University); Maria Principe (University of Salerno and Centro Fermi); Innocenzo M. Pinto (Università del Sannio a Benevento); Joshua Neilson (University of Sannio); Riccardo De Salvo (University of Sannio at Benevento);*
- 10:00 Fabrication of Ta<sub>2</sub>O<sub>5</sub>, Zr:Ta<sub>2</sub>O<sub>5</sub> and aSi by ECR Ion  
Invited Beam Deposition for Use as High-index Coating Layers in Ultra-stable Optical Cavities  
*Stuart Reid (SUPA University of Strathclyde); Svetoslava Angelova (SUPA University of Strathclyde); Ross Birney (SUPA University of Strathclyde); Chalisa Gier (SUPA University of Strathclyde); Paul R. Edwards (SUPA University of Strathclyde); Desmond Gibson (SUPA University of the West of Scotland); James Hough (SUPA University of Glasgow); Sean MacFoy (SUPA University of Strathclyde); Iain Martin (SUPA University of Glasgow); Robert W. Martin (SUPA University of Strathclyde); Sheila Rowan (SUPA University of Glasgow); Jessica Steinlechner (Universität Hamburg); Zeno Tornasi (SUPA University of Glasgow); Simon Tait (SUPA University of Glasgow); David Vine (SUPA University of the West of Scotland); Gavin Wallace (SUPA University of Strathclyde);*
- 10:20 High-index Coating Materials and Their Impact on  
Invited the Limits of High-precision Experiments  
*Stefanie Kroker (Physikalisch-Technische Bundesanstalt); Rene Glaser (Friedrich-Schiller-Universität Jena); Johannes Dickmann (Physikalisch-Technische Bundesanstalt); Walter Dickmann (Technische Universität Braunschweig); Tim Kaseberg (Physikalisch-Technische Bundesanstalt); Jan Meyer (Technische Universität Braunschweig); Ronny Nawrodt (Universität Stuttgart); Richard Norte (Faculty 3mE); Carol B. Rojas Hurtado (Physikalisch-Technische Bundesanstalt); Thomas Siefke (Friedrich-Schiller-Universität Jena); P. Steeneken (Faculty 3mE); Andrey Surzhykov (Physikalisch-Technische Bundesanstalt); Sebastian Ulbricht (Physikalisch-Technische Bundesanstalt);*

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### Session 3A15

#### Optical Coatings for Extreme Metrology

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Wednesday AM, June 19, 2019

Room 25 - 2nd Floor

Organized by Maria Principe, Innocenzo M. Pinto

Chaired by Maria Principe, Innocenzo M. Pinto

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- 09:00 Aluminum Gallium Arsenide as a Low Thermal Noise  
Invited Coating for Gravitational Wave Interferometers  
*Gregory M. Harry (American University);*
- 09:20 Substrate-transferred Crystalline Coatings for Next-  
Invited generation Gravitational-wave Detectors  
*Garrett D. Cole (Crystalline Mirror Solutions LLC);*

10:40 Extreme Metrology for High-performance Optical Coatings: Transmittance, Reflectance and Scattering  
*Myriam Zerrad (Université Paul Cezanne); Michel Lequime (Aix-Marseille Université, CNRS); C. Amra (Aix-Marseille Université, CNRS);*

11:00 **Coffee Break**

11:30 Semiconducting 2D-Materials: New Platform for Sub-nanometer-functionalization of Optical Coatings and Nano-sandbox for Fundamental Physics, and Quantum Light Sources  
*Falk Eilenberger (Friedrich Schiller University);*

11:50 High-frequency Analysis of Diffraction from Baffles in Gravitational Wave Interferometers  
*Giuseppe Pelosi (University of Florence); Riccardo De Salvo (University of Sannio at Bénévento); Stefano Selleri (University of Florence); Innocenzo M. Pinto (Università del Sannio a Bénévento);*

12:10 Problems Connected with Fempto-scatterers in Dielectric Coating Mirrors for Gravitational Wave Detectors

*Invited Riccardo De Salvo (University of Sannio at Bénévento); Mary Becker (California State University Los Angeles); Timothy Bennett (California State University Los Angeles); Jeremy Blow (Incera Solutions LLC); Chi-Li Chang (National Tsing Hua University); Shih-Chao (National Tsing Hua University); Fred Daneshgaran (California State University Los Angeles); Lara Daneshgaran (University of California San Diego); Ling-Chi Kuo (National Tsing Hua University); Seth Linker (California State University Los Angeles); Michael Milovich-Goff (California State University Los Angeles); Marina Mondin (Politecnico di Torino); Bhavna Nayak (California State University Los Angeles); Joshua Neilson (University of Sannio); Huang-Wei Pan (National Tsing Hua University); Innocenzo M. Pinto (Università del Sannio a Bénévento); Maria Principe (University of Salerno and Centro Fermi); Eric Robinson (California State University Los Angeles); John Tamkin (California State University Los Angeles); Harry Themann (California State University Los Angeles); Deanna Zapata (California State University Los Angeles);*

12:30 Acoustic Spectroscopy as a Tool for Thermo-mechanical Characterization of Materials in Coating Research

*Elisabetta Cesarini (INFN — Istituto Nazionale di Fisica Nucleare); L. Aiello (INFN — Istituto Nazionale di Fisica Nucleare); V. Fafone (INFN — Istituto Nazionale di Fisica Nucleare); M. Lorenzini (INFN — Istituto Nazionale di Fisica Nucleare); D. Lumaca (INFN — Istituto Nazionale di Fisica Nucleare); Y. Minenkov (INFN — Istituto Nazionale di Fisica Nucleare); I. Nardecchia (INFN — Istituto Nazionale di Fisica Nucleare); A. Rocchi (INFN — Istituto Nazionale di Fisica Nucleare);*

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**Session 3A16**

**SC3: Visible, Near-infrared and Beyond: Materials and Devices 1**

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**Wednesday AM, June 19, 2019**

**Room 15 - 2nd Floor**

Organized by Silvia Maria Pietralunga, Jonathan D. B. Bradley

Chaired by Silvia Maria Pietralunga, Jonathan D. B. Bradley

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09:00 Ultra-narrow-linewidth Rare-earth-doped Integrated Lasers

*Invited Markus Pollnau (University of Surrey);*

09:20 Mid-IR Lasers in Fluoride Fibres

*Invited Slawomir Sujecki (Wroclaw University of Science and Technology); L. Sojka (Wroclaw University of Science and Technology); L. Pajewski (Wroclaw University of Science and Technology); A. B. Seddon (University of Nottingham); Trevor Mark Benson (The University of Nottingham); Samir Lamrini (Fotonics Laser GmbH); K. Scholle (Fotonics Laser GmbH); P. Fuhrberg (Fotonics Laser GmbH); Ori Henderson-Sapir (The University of Adelaide); A. Malouf (The University of Adelaide); David J. Ottaway (The University of Adelaide);*

09:40 Silicon-germanium: A Material Platform for Near- and Mid-infrared Photonics

*Invited Giovanni Isella (Politecnico di Milano);*

- 10:00 Functionalisation of Optical Fibres via Deposition of  
Invited 2D Materials and Semiconductors  
*Pier J. A. Sazio (University of Southampton); Adam H. Lewis (University of Southampton); Francesco De Lucia (University of Southampton); Walter Belardi (University of Southampton); John R. Hayes (University of Southampton); Francesco Poletti (University of Southampton); Chung-Che Huang (University of Southampton); Daniel Hewak (University of Southampton); John V. Badding (Pennsylvania State University);*
- 10:20 Spectroscopic Techniques for Agrofood and Energy  
Invited  
*Luca Poletto (CNR — Institute for Photonics and Nanoechnologies); Lorenzo Cocola (CNR — Institute for Photonics and Nanoechnologies); Massimo Fedel (CNR — Institute for Photonics and Nanoechnologies); Giuseppe Tondello (CNR — Institute for Photonics and Nanoechnologies);*
- 10:40 Nanostructured SiGeSn Alloy Layers and Structures for Optoelectronic Applications  
*Peter I. Gaiduk (Belarusian State University);*
- 11:00 **Coffee Break**
- 11:30 Photonics Glass-ceramics  
Invited  
*T. N. L. Tran (IFN-CNR CSMFO Lab. and FBK CMM); D. Massella (University of Trento); L. Zur (IFN-CNR CSMFO Lab. and FBK CMM); Anna Lukowiak (Institute of Low Temperature and Structure Research, PAS); A. Chiasera (IFN-CNR CSMFO Lab. and FBK CMM); Andrea Chiappini (IFN-CNR CSMFO Lab. and FBK CMM); Francesco Prudeniano (Politecnico di Bari); Wilfried Blanc (Université Côte d'Azur, Institut de Physique de Nice); S. Varas (IFN-CNR CSMFO Lab. and FBK CMM); C. Armellini (IFN-CNR CSMFO Lab. and FBK CMM); A. Carpentiero (IFN-CNR CSMFO Lab. and FBK CMM); D. Zonta (IFN-CNR CSMFO Lab. and FBK CMM); B. Boulard (IMMM UMR CNRS 6283, Université du Maine); J. Gates (ORC, University of Southampton); Pier J. Sazio (University of Southampton); B. Rossi (Elettra-Sincrotrone Trieste); S. Berneschi (Istituto di Fisica Applicata "Nello Carrara", C.N.R.); Gualtiero Nunzi Conti (Istituto di Fisica Applicata "Nello Carrara", C.N.R.); G. C. Righini (IFAC CNR); Maurizio Ferrari (CNR-IFN, Istituto di Fotonica e Nanotecnologie);*
- 11:50 Silicon-based Nanostructured Thin Films for Photonic  
Invited Applications  
*Peter Mascher (McMaster University);*
- 12:10 Impact of the Pressure Applied during Sintering on  
Invited the Structure and Persistent Luminescence Properties of the Ceramics  
*Pawel Gluchowski (Institute of Low Temperature and Structure Research, PAS); M. Lastusaari (University of Turku); A. Patej (Wroclaw University); K. Rajfur (Wroclaw University of Technology); R. Tomala (Institute of Low Temperature and Structure Research, PAS); Wieslaw Strek (Institute of Low Temperature and Structure Research, PAS);*
- 12:30 Active Graphene-based Composites for Biological Ap-  
Invited plications  
*Anna Lukowiak (Institute of Low Temperature and Structure Research, PAS); Yuriy Gerasymchuk (Institute of Low Temperature and Structure Research, PAS); Leili Tahershamsi (Institute of Low Temperature and Structure Research, PAS); Katarzyna Halubek-Gluchowska (Institute of Low Temperature and Structure Research, PAS); Maria Wierzbowska (Wroclaw University of Science and Technology); Beata Borak (Wroclaw University of Science and Technology); Dominika Piatek (F. Skubiszewski Medical University); Anna Kedziora (University of Wroclaw); Gabriela Bugla-Ploskonska (University of Wroclaw); Maurizio Ferrari (IFN-CNR CSMFO Lab.);*
- 12:50 Double-gate Tri-active Layer Channel Amorphous-IGZO Thin Film Transistor for AMLCD Pixel Circuit  
*Shashi K. Dargar (University of KwaZulu-Natal); Vikiranjay M. Srivastava (University of KwaZulu-Natal);*
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- Session 3A17**  
**FocusSession.SC1: Casimir Effect and Forces at the Nanoscale 1**
- 
- Wednesday AM, June 19, 2019**  
**Room 33 - Bank Building**  
Organized by Mauro Antezza, Brahim Guizal  
Chaired by Mauro Antezza, Brahim Guizal
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- 09:00 Nonreciprocity and the Casimir Effect  
Invited  
*Mario G. Silveirinha (University of Lisbon);*
- 09:20 Quantum Levitation of Antihydrogen above a  
Invited Casimir-Polder Well  
*Pierre-Philippe Crepin (Sorbonne Université, CNRS); Romain Guerout (Sorbonne Université, CNRS); Serge Reynaud (Sorbonne Université, CNRS);*

## 09:40 Casimir Forces in Nonlinear Systems

Invited

*Matthias Kruger (Georg-August-Universität Göttingen); Heino Soo (Georg-August-Universität Göttingen);*

## 10:00 Casimir Forces in Inhomogeneous Media

Invited

*Kimball A. Milton (University of Oklahoma);*

## 10:20 Casimir-van der Waals Torques in Nanoparticles

Invited

*Raul P. Esquivel-Sirvent (Universidad Nacional Autónoma de Mexico);*

10:40 Ice Coatings Stabilised by Lifshitz Forces Can Induce a Size Dependent Float to Sink Transition for CO<sub>2</sub> Gas Hydrate Clusters in Remote Water Worlds

Invited

*Mathias Bostrom (Norwegian University of Science and Technology); Robert Corkery (KTH Royal Institute of Technology); Eduardo R. A. Lima (Universidade do Estado do Rio de Janeiro); Oleksandr I. Malyi (University of Oslo); Stefan Yoshi Buhmann (University of Freiburg); Clas Persson (University of Oslo); Iver Brevik (Norwegian University of Science and Technology); Drew F. Parsons (Murdoch University); Johannes Fiedler (University of Oslo);*

## 11:00 Coffee Break

## 11:30 Collective Dipole-dipole Interactions in Planar Cavities

Invited

*Helge Dobbertin (University of Rostock); Stefan Scheel (University of Rostock);*

## 11:50 Engineering Casimir Forces: From Topological Insulators to (Collective) Photon Recoil

Invited

*Stefan Yoshi Buhmann (University of Freiburg); Pablo Barcellona (University of Freiburg); Robert Bennett (University of Freiburg); Sebastian Fuchs (University of Freiburg); Frieder Lindel (University of Freiburg); Mauro Antezza (Université de Montpellier);*

## 12:10 Screening of the Casimir Interaction across an Electrolyte Solution

Invited

*L. B. Pires (UFRJ); Diney S. Ether, Jr. (Instituto de Física UFRJ); F. S. S. Da Rosa (UFRJ); A. Canaguier-Durand (UPMC-Sorbonne Université, CNRS); Astrid Lambrecht (ENS-PSL Research Universities); Romain Guerout (Sorbonne Université, CNRS); Serge Reynaud (Sorbonne Université, CNRS); B. Pontes (UFRJ); G. R. S. Araujo (UFRJ); S. Frases (UFRJ); B. Spreng (Universität Augsburg); Gert-Ludwig Ingold (Universität Augsburg); H. Moyses Nussenzeig (Instituto de Física UFRJ); Nathan B. Viana (Instituto de Física UFRJ); Paulo A. Maia Neto (Universidade Federal do Rio de Janeiro);*

## 12:30 Repulsive Casimir Force, and Magnetodielectric Casimir Friction

Invited

*Iver Brevik (Norwegian University of Science and Technology);*

## 12:50 Calculations of Casimir Force Using Hybrid FMA and Randomized SVD

*Tian Xia (University of Illinois); Weng Cho Chew (Purdue University);*

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**Session 3A18**
**Terahertz Radiation: From Generation to Applications in Condensed Matter, Biomedicine and Particle Physics 1**


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**Wednesday AM, June 19, 2019**
**Room 38 - Chemistry Building**

Organized by Stefano Lupi, Augusto Marcelli

 Chaired by Stefano Lupi, Akinori Irizawa
 

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## 09:00 The TeraFERMI THz Beamline at the FERMI Free-electron-laser

Invited

*Paola Di Pietro (Elettra — Sincrotrone Trieste S.C.p.A); Nidhi Adhlakha (Elettra — Sincrotrone Trieste S.C.p.A); Federica Piccirilli (CNR-IOM); Simone Di Mitri (Elettra — Sincrotrone Trieste S.C.p.A); Stefano Lupi (Università La Sapienza); Andrea Perucchi (Elettra — Sincrotrone Trieste S.C.p.A);*

## 09:20 Novel Schemes for Compact FELs in the THz Region: ENEA Experience and Perspectives

Invited

*Andrea Doria (ENEA); Emilio Giovenale (ENEA); Gian Piero Gallerano (ENEA);*

- 09:40 Extremely Efficient THz High Harmonic Generation  
Invited in Graphene  
*Hassan A. Hafez (Universität Duisburg-Essen); Sergey Kovalev (Helmholtz-Zentrum Dresden-Rossendorf); Jan-Christoph Deinert (Helmholtz-Zentrum Dresden-Rossendorf); Mischa Bonn (Max-Planck-Institut für Polymerforschung); Michael Gensch (Institut für Optische Sensorsysteme); Dmitry Turchinovich (Universität Bielefeld);*
- 10:00 Spiral Metamaterials for Terahertz Magnetic Field  
Invited Enhancement  
*Debanjan Polley (Stockholm University); Matteo Pancaldi (Stockholm University); Nanna Zhou Hagstrom (Stockholm University); Matthias Hudl (Stockholm University); Paolo Vavassori (CIC NanoGUNE); Sergei Urazhdin (Emory University); Clemens von Korff Schmising (MBI Max-Born Institute for Nonlinear Optics and Short Pulse Spectroscopy); Stefan Eisebitt (MBI Max-Born Institute for Nonlinear Optics and Short Pulse Spectroscopy); Stefano Bonetti (Stockholm University);*
- 10:20 Light-induced Superconductivity in Strong Magnetic  
Invited Fields  
*Daniele Nicoletti (Max Planck Institute for the Structure and Dynamics of Matter);*
- 10:40 Terahertz Modal Analysis of a Grounded Liquid-  
Invited crystal Cell and Its Application as a Tunable Cavity Antenna  
*Silvia Tofani (Sapienza University of Rome); Walter Fuscaldo (Sapienza University of Rome); Dimitris C. Zografopoulos (Istituto per la Microelettronica e Microsistemi (CNR-IMM)); Paolo Burghignoli (Sapienza University of Rome); Paolo Baccarelli (Roma Tre University); Romeo Beccherelli (Istituto per la Microelettronica e Microsistemi (CNR-IMM)); Alessandro Galli (Sapienza University of Rome);*
- 11:00 **Coffee Break**
- 11:30 THz Field Induced Second Harmonic Generation in  
Invited Air  
*Sen Mou (Università di Roma 'La Sapienza'); Andrea Rubano (Università di Napoli "Federico II"); Domenico Paparo (ISASI — Institute of Applied Sciences and Intelligent Systems);*
- 11:50 Electromagnetic Characterization of Materials in the  
Invited Sub-THz Frequency Range Using Time Domain Waveguide Measurements  
*Antonello Andreone (University of Naples "Federico II"); G. P. Papari (University of Naples "Federico II"); A. Passarelli (University of Naples "Federico II"); C. Koral (INFN Naples Unit); Maria Rosaria Masullo (Ist Nazl Fis Nucl); V. G. Vaccaro (INFN Naples Unit); H. Bartosik (CERN); Y. Papaphilippou (CERN);*
- 12:10 Volatile Organic Compounds Characterization with  
Invited THz Time-domain Spectroscopy  
*Annalisa D'Arco (INFN); Marta Di Fabrizio (Roma University "La Sapienza"); Valerio Dolci (INFN); Massimo Petrarca (Sapienza University of Rome); Giancarlo Della Ventura (University ROMA TRE); Augusto Marcelli (LNF-INFN); Stefano Lupi (Sapienza University of Rome);*
- 12:30 THz Applications: From Acceleration to Laser Pulse  
Invited and Plasma Diagnostic  
*Massimo Petrarca (Sapienza University of Rome);*

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**Session 3A19a**
**Computational Fractional Dynamic Systems  
and Its Applications**


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**Wednesday AM, June 19, 2019**
**Room 39 - Electrical Building**

Organized by Fawang Liu, Minling Zheng

 Chaired by Fawang Liu, Minling Zheng
 

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- 09:00 Computational Multi-term Time-space Fractional  
Bloch-Torrey Models in Three-dimensions  
*Fawang Liu (Queensland University of Technology); Jing Li (Changsha University of Science and Technology); Vo Anh (Swinburne University of Technology);*
- 09:20 On Fractional Viscoelastic Fluids Flowing over a Per-  
meable Surface  
*Botong Li (University of Science and Technology Beijing); Fawang Liu (Queensland University of Technology); Yang Liu (Inner Mongolia University);*
- 09:40 Heat Transfer of Fractional Maxwell Fluid over a Mov-  
ing Plate with Cattaneo-Christov Flux  
*Lin Liu (University of Science and Technology Beijing); Liancun Zheng (University of Science and Technology Beijing); Fawang Liu (Queensland University of Technology);*

- 10:00 Investigations on Thermal Shock Resistance of Edge Cracked Plate Subjected to Convective Cold Shock with Fractional Conduction Equation  
*Jin-Bao Wang (Zhejiang Ocean University); Da-Wen Xue (Zhejiang Ocean University); Guang-Ying Xu (Zhejiang Ocean University);*
- 10:20 Unsteady Mixed Convection Heat Transfer of Fractional Viscoelastic Nanofluids over an Inclined Plate  
*Xuehui Chen (University of Science and Technology Beijing); Yifan Ye (University of Science and Technology Beijing); Xinru Zhang (University of Science and Technology Beijing); Liancun Zheng (University of Science and Technology Beijing); Fawang Liu (Queensland University of Technology);*
- 10:40 Numerical Simulation of Fractional Model of Tumor Growth  
*Minling Zheng (Huzhou University); Fawang Liu (Queensland University of Technology);*
- 11:00 **Coffee Break**

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**Session 3A19b**

**SC2: Nonreciprocal and Topological Electromagnetics 1**

**Wednesday AM, June 19, 2019**

**Room 39 - Electrical Building**

Organized by Mário G. Silveirinha, Tiago Andre Nogueira Morgado

Chaired by Mário G. Silveirinha, Tiago Andre Nogueira Morgado

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- 11:30 Magnet-free Non-reciprocity and Topological Order in Invited Electromagnetics  
*Andrea Alu (City University of New York);*
- 11:50 Spatial Magnetless Nonreciprocity Invited  
*Christophe Caloz (Ecole Polytechnique de Montreal);*
- 12:10 Drift-induced Nonreciprocal Graphene Plasmonics  
*Tiago Andre Nogueira Morgado (University of Coimbra); Mario G. Silveirinha (University of Lisbon);*
- 12:30 Non-reciprocal and Topological Wave Phenomena at Invited the Subwavelength Scale  
*Romain Fleury (Ecole Polytechnique Federale de Lausanne (EPFL));*
- 12:50 Robust Topological Scattering and Radiating Structures Invited  
*Francesco Monticone (Cornell University);*

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**Session 3A20**

**Applications of EM Field in Medical Diagnostics and Therapy**

**Wednesday AM, June 19, 2019**

**Room 40 - Electrical Building**

Organized by Jan Vrba

Chaired by Jan Vrba

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- 09:00 The Impact of Antenna Positioning Errors in Breast Microwave Imaging Systems  
*Mario Solis Nepote (University of Manitoba); Tyson Reimer (University of Manitoba); Stephen Pistorius (University of Manitoba);*
- 09:20 Sensitivity and Sensing Depth Analysis of Open-ended Contact Probes for Cancer Diagnosis  
*Cemanur Aydinalp (Istanbul Technical University); Sulayman Joof (Istanbul Technical University); Tuba Yilmaz (Istanbul Technical University); Ibrahim Akduman (Istanbul Technical University);*
- 09:40 Numerical Comparison of Antennas in Terms of Differential Temperature Imaging via UWB Radar  
*Ondrej Fiser (Czech Technical University in Prague); Vojtech Hruby (Czech Technical University in Prague); Jan Vrba, Jr. (Czech Technical University in Prague); David Vrba (Czech Technical University in Prague); Jan Vrba (Czech Technical University in Prague); Tomas Pokorny (Czech Technical University in Prague);*
- 10:00 Dielectric-loaded 5.8 GHz Interstitial Monopole Antenna for Spherically-shaped Hepatic Tumors Ablation  
*Mazen M. Yassin (Minia University); Emad Tammam (Minia University); Ahmed A. Ibrahim (El-Minia University); Ashraf M. Said (Minia University); Ahmed I. Galal (El-Minia University);*
- 10:20 Non-contact Monitoring of Respiration and Heart Activity of Infants Using UWB Signals  
*Ondrej Fiser (Czech Technical University in Prague); Jan Tesarik (Czech Technical University in Prague); Tomas Pokorny (Czech Technical University in Prague); Jan Vrba (Czech Technical University in Prague);*
- 10:40 Redesign of Hyperthermia System with Non-invasive Temperature Measurement via UWB Radar  
*Ondrej Fiser (Czech Technical University in Prague); Jan Tesarik (Czech Technical University in Prague); Tomas Pokorny (Czech Technical University in Prague);*
- 11:00 **Coffee Break**

- 11:30 Improving SAR Homogeneity in a Layered Spherical Model of Head for Hyperthermia Treatments with RF Phased Array Systems  
*Fernando Bardati (University of "Tor Vergata"); Alessandro Di Carlofelice (University of L'Aquila); Piero Tognolatti (University of L'Aquila);*
- 11:50 Lens Applicator for Deep-local Treatment of Cancer by Microwave Hyperthermia  
*Jan Vrba (Czech Technical University in Prague); Jiri Kubes (Proton Therapy Center); Ferdinand Trebicky (Institute of Radiation Oncology); Jan Vrba, Jr. (Czech Technical University in Prague); David Vrba (Czech Technical University in Prague); Ondrej Fiser (Czech Technical University in Prague); Ilja Merunka (Czech Technical University in Prague); Jesus Cumana (Czech Technical University);*
- 12:10 MRI-induced Heating of Coils for Microscopic Magnetic Stimulation at 1.5 Tesla  
*Giorgio Bonmassar (Massachusetts General Hospital); Peter Serano (Massachusetts General Hospital);*
- 12:30 Metamaterial Hyperthermia Applicators for Cancer Treatment  
*David Vrba (Czech Technical University in Prague); Jan Vrba, Jr. (Czech Technical University in Prague);*
- 3 Design of Effective Gradient-index Lenses Involving Penetrable Elements via Heuristic Optimizations and Full-wave Simulations  
*Sadri Guler (Middle East Technical University); Ozgur Eris (Middle East Technical University); Ali Samet Ayik (Middle East Technical University); Ozgur Ergul (Middle East Technical University);*
- 4 Combining Parabolic Equation Method with Surface Integral Equations  
*Mikhail Sergeevich Mikhailov (National Research University "Moscow Power Engineering Institute"); Aleksey Aleksandrovich Komarov (National Research University "Moscow Power Engineering Institute");*
- 5 The Use of Electronic Terrain Maps for Solving the Problem of Calculating the Propagation of Radio Waves above the Earth's Surface  
*Elena Sergeevna Malevich (National Research University "Moscow Power Engineering Institute"); Mikhail Sergeevich Mikhailov (National Research University "Moscow Power Engineering Institute"); A. A. Volkova (National Research University "Moscow Power Engineering Institute");*
- 6 Accurate Image Recognition in Convolutional Neural Networks Based on Two-dimensional Discrete Fourier Transform  
*Fozhi Zhou (Tongji University); Guo Chun Wan (Tongji University); Mei Song Tong (Tongji University);*

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**Session 3A0**  
**Poster Session 3**

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**Wednesday AM, June 19, 2019**  
**9:30 AM - 12:30 AM**  
**Room Corridor**

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- 1 A Nyström Method with Lagrange's Interpolation for Solving Electromagnetic Scattering by Dielectric Objects  
*Ruo Xing Gao (Tongji University); Shu Run Tan (ZJU-UIUC Institute, Zhejiang University); Leung Tsang (University of Michigan); Mei Song Tong (Tongji University);*
- 2 Research of Time-domain Model of Microwave Radiation Field Measurement System Based on Scatter Parameters Transient Analysis  
*Zhen-Bo Cheng (Northwest Institute of Nuclear Technology); Tingyong Jiang (Northwest Institute of Nuclear Technology); Jiawei Yao (Northwest Institute of Nuclear Technology); Youjie Yan (Northwest Institute of Nuclear Technology); Zhanjun Liu (Northwest Institute of Nuclear Technology);*
- 7 Experimental X and Gamma Ray Measurement of Nanoparticles and Nanolayers  
*Pavel Fiala (Brno University of Technology); P. Londak (Brno University of Technology); Karel Bartusek (Institute of Scientific Instruments of the ASCR);*
- 8 Multi-chip Communication System of VLBI Hardware Correlator  
*Jiangying Gan (Shanghai Astronomical Observatory, Chinese Academy of Science); Zhijun Xu (Shanghai Astronomical Observatory, Chinese Academy of Science);*
- 9 A Study of Fast Near-field Far-field Transformation Method in Hierarchical Style  
*Xinyi He (Science and Technology on Electromagnetic Scattering Laboratory); Guangde Tong (Science and Technology on Electromagnetic Scattering Laboratory); Yanan Chen (Shanghai Key Laboratory of Electromagnetic Environmental Effects for Aerospace Vehicle); Xiao Lin Mi (Science and Technology on Electromagnetic Scattering Laboratory); Feiming Wei (Science and Technology on Electromagnetic Scattering Laboratory);*

- 10 Design Analysis of Omnidirectional Single Reflector Antennas Synthesized for a Coscant Squared Coverage in Elevation Plane  
*Isabelle Marcansola (Sao Paulo State University (UNESP)); Lucas Ribeiro Gomes Da Silva (Sao Paulo State University (UNESP)); Rafael Abrantes Penchel (Sao Paulo State University (UNESP), Campus of Sao Joao da Boa Vista); Denilson Paulo Souza Dos Santos (Sao Paulo State University (UNESP));*
- 11 NDF and PSF Numeric Results of Elliptical Sources  
*Giovanni Leone (Universita della Campania Luigi Vanvitelli); Fortuna Munno (Universita della Campania Luigi Vanvitelli); Rocco Pierri (Universita degli Studi della Campania "Luigi Vanvitelli");*
- 12 Detection of Multiple Nonlinear Targets using the PI-DORT Method  
*Rohit Chandra (Rose-Hulman Institute of Technology); Matthew Howlett (Rose-Hulman Institute of Technology); Ian Sheffert (Rose-Hulman Institute of Technology); John Michael Van Treeck (Rose-Hulman Institute of Technology); Sun K. Hong (Soongsil University); Edward Wheeler (Rose-Hulman Institute of Technology);*
- 13 Microwave Absorbing Sheets of Two-layer Composites Laminate for Surface Wave Attenuation at Wide Frequency Band of 1–18 GHz  
*Yinrui Li (Huazhong University of Science and Technology); Jiaji Yang (Huazhong University of Science and Technology); Xian Wang (Huazhong University of Science and Technology); Jieling Liu (Huazhong University of Science and Technology); Hui Luo (Huazhong University of Science and Technology); Dong Qi (Huazhong University of Science and Technology); Rongzhou Gong (Huazhong University of Science and Technology);*
- 14 Impulsive Noise Characterization in Narrowband Power Line Communication  
*L. Bai (University of Pisa); Mauro Tucci (University of Pisa); Sami Barmada (University of Pisa); Marco Raugi (University of Pisa); T. Zheng (Xi'an Jiaotong University);*
- 15 Photonic Doped Zero-index Media for Coherent Perfect Absorption  
*Wenjie Ji (Soochow University); Jie Luo (Soochow University); Yun Lai (Nanjing University);*
- 16 A Bending and Absorption Band Shift Absorber Based on Plasma  
*Xin-Ru Kong (Nanjing University of Posts and Telecommunications); Ri-Na Dao (Nanjing University of Posts and Telecommunications); Hai Feng Zhang (Nanjing University of Posts and Telecommunications); Xing-Liang Tian (Nanjing University of Posts and Telecommunications);*
- 17 Comparing Planar Resonant Periodic Structures  
*Tomas Kriz (Brno University of Technology); Radim Kadlec (Brno University of Technology);*
- 18 Graphene Plasmonics Modulator Structured by Groove Array Metasurface  
*Yulin Wang (Nanjing Tech University);*
- 19 Subwavelength Diffraction Grating with Continuous Ridges for Inverse Energy Flux Generation  
*Sergey A. Degtyarev (Samara National Research University (Samara University)); Dmitry A. Saveleyev (Samara National Research University); Svetlana N. Khonina (Samara State Aerospace University);*
- 20 Quantization of Landau Damping in Metal Nanoslabs  
*Felipe Perez-Rodriguez (Benemerita Universidad Autonoma de Puebla); S. G. Castillo-Lopez (Benemerita Universidad Autonoma de Puebla); Nykolay M. Makarov (Benemerita Universidad Autonoma de Puebla);*
- 21 Second Harmonic Scattering from Hybrid Gold — Dielectric Nanoparticles  
*Zacharie Behel (UMR CNRS 5306 and Université Claude Bernard Lyon 1); Rachael Taitt (Université de Lyon); Virginie Monnier (Université de Lyon); Yann Chevolut (Université de Lyon); Melissa Maldonado (Universidade Federal de Pernambuco); Renato E. De Araujo (Universidade Federal de Pernambuco); Anderson S. L. Gomes (Universidade Federal de Pernambuco); Ch. Jonin (Université de Lyon); Pierre-Francois Brevet (Université Claude Bernard Lyon 1);*

- 22 Fabrication of Polymer-based Optical Waveguides Using Direct Laser Writing Techniques for Biosensing in the Visible Spectrum  
*Fernando Jose Gordo Quiroga (Technical University of Madrid (UPM), CEMDATIC, Universidad Politecnica de Madrid); Manuel Caño-García (International Iberian Nanotechnology Laboratory (INL)); Morten A. Geday (Technical University of Madrid (UPM), CEMDATIC, Universidad Politecnica de Madrid); Xabier Quintana (Technical University of Madrid (UPM), CEMDATIC, Universidad Politecnica de Madrid); Jose M. Oton (Technical University of Madrid (UPM), CEMDATIC, Universidad Politecnica de Madrid);*
- 23 Modeling of Distorted Optical Signals in Long-haul Transmission Systems  
*Andis Supe (Riga Technical University); Jurgis Porins (Riga Technical University);*
- 24 General Theory of the Resonant Spectrum of Multi-ring Resonators  
*Vitaliy V. Vitko (Saint Petersburg Electrotechnical University “LETI”); Andrey A. Nikitin (Saint Petersburg Electrotechnical University “LETI”); Alexey B. Ustinov (Saint Petersburg Electrotechnical University “LETI”); Boris Kalinikos (Saint Petersburg Electrotechnical University “LETI”);*
- 25 Terahertz Pulsed Spectroscopy of Astrophysical Ice Analogs: A Pilot Study  
*Arseniy A. Gavidush (Bauman Moscow Technical University (BMSTU)); B. M. Giuliano (Max-Planck-Institute fur extraterrestrische Physik); B. Muller (Max-Planck-Institute fur extraterrestrische Physik); Gennadii A. Komandin (Prokhorov General Physics of Russian Academy of Science); M. E. Palumbo (Osservatorio Astrofisico di Catania); G. A. Baratta (Osservatorio Astrofisico di Catania); C. Scire (Osservatorio Astrofisico di Catania); Stanislav Olegovich Yurchenko (Bauman Moscow State Technical University); Kirill Igorevich Zaytsev (Bauman Moscow State Technical University); A. V. Ivlev (Max-Planck-Institute fur extraterrestrische Physik); P. Caselli (Max-Planck-Institute fur extraterrestrische Physik);*
- 26 Effect of Electric Fields on Magnetic Resonance in Multiferroic Borates  
*A. M. Kuzmenko (Prokhorov General Physics Institute, Russian Academy of Sciences); A. A. Gavidush (Prokhorov General Physics Institute, Russian Academy of Sciences); D. Szaller (Vienna University of Technology); Th. Kain (Vienna University of Technology); L. Weymann (Vienna University of Technology); A. Shuvaev (Vienna University of Technology); Anna Pimenov (Vienna University of Technology); Alexander A. Mukhin (Prokhorov General Physics Institute, Russian Academy of Sciences); V. Yu. Ivanov (Prokhorov General Physics Institute, Russian Academy of Sciences); A. Pimenov (Vienna University of Technology);*
- 27 Elimination of Fabry-Pérot Resonances in a Broad Spectrum by Designing Terahertz Photonic Crystals  
*Shanshan Li (Soochow University); Yu Wang (Soochow University); Wenya Zhang (Soochow University); Weixin Lu (Soochow University); Bo Hou (Soochow University); Jie Luo (Soochow University); Yun Lai (Nanjing University);*
- 28 Design of a Photoconductive Vacuum Diode Arrays in Terahertz Band  
*Yikun Ding (Beihang University); Jun Dai (Beihang University); Cun-Jun Ruan (Beihang University);*
- 29 Differentiation of the Laser Pulse in a Waveguide with a Bragg Grating  
*Stanislav V. Krasnov (Samara National Research University); Sergey G. Volotovskii (Image Processing Systems Institute of RAS — Branch of the FSRC “Crystallography and Photonics” RAS); Dmitry A. Savelyev (Samara National Research University);*
- 30 Heat-induced Active Centers in Bismuth-doped Optical Fibers for 1.7- $\mu\text{m}$ -region Laser Applications  
*Sergei V. Firstov (Fiber Optics Research Center of the Russian Academy of Sciences); A. V. Kharakhordin (Fiber Optics Research Center of the Russian Academy of Sciences); S. V. Alyshev (Fiber Optics Research Center of the Russian Academy of Sciences); K. E. Riumkin (Fiber Optics Research Center of the Russian Academy of Sciences); E. G. Firstova (Fiber Optics Research Center of the Russian Academy of Sciences); M. A. Melkumov (Fiber Optics Research Center of the Russian Academy of Sciences); A. M. Khagai (Fiber Optics Research Center of the Russian Academy of Sciences); V. F. Khopin (Institute of Chemistry of High-Purity Substances of the Russian Academy of Sciences); Alexej N. Guryanov (Institute of Chemistry of High Purity Substances of RAS);*

- 31 Incoherently Pumped High Power Random Fiber Laser with Ultra-high Spectral Purity  
*Jun Ye (National University of Defense Technology); Jiangming Xu (National University of Defense Technology); Jiabin Song (National University of Defense Technology); Jinyong Leng (National University of Defense Technology); Pu Zhou (National University of Defense Technology);*
- 32 Analysis of Underwater Optical Wireless Communication System Based on LPWA Networking  
*Taehyun Seo (Chosun University); Jiseong Jeong (Chosun University); Chung Ghu Lee (Chosun University); Soan Kim (Gwangju Institute of Science and Technology);*
- 33 Application of Optimization Methods to DWDM Optical Node Model  
*K. Wnuk (Wroclaw University of Science and Technology); Slawomir Sujecki (Wroclaw University of Science and Technology); S. Kozdrowski (Wroclaw University of Science and Technology);*
- 34 Evaluation of the Impact of MZM Frequency Response on BER Performance of PAM-4 Modulated WDM-PON  
*Sandis Spolitis (Riga Technical University); Inna Kurbataska (Riga Technical University); Vjaceslavs Bobrovs (Riga Technical University);*
- 35 Performance Analysis of Electronic Dispersion Compensation for 40 Gbit/s WDM-PON Transmission System with ITU-T G.652 Optical Fiber  
*Valts Dilendorfs (Riga Technical University); Mareks Parfjonovs (Riga Technical University); Sandis Spolitis (Riga Technical University); Vjaceslavs Bobrovs (Riga Technical University);*
- 36 Research of Four-wave Mixing Optical Effect for Realization of up to 16-channel DWDM Transmission Systems  
*Klinta Vilcane (Riga Technical University); Svitlana Matsenko (Sumy State University); Mareks Parfjonovs (Riga Technical University); Marina Aleksejeva (Riga Technical University); Sandis Spolitis (Riga Technical University);*
- 37 The Influence of Temperature on Pulse Duration and Spectrum of Laser Diode Matrixes Used for Range-gate Vision Systems  
*Denis V. Shabrov (B. I. Stepanov Institute of Physics); V. A. Gorobets (SSPA "Optics, Optoelectronics and Laser Technology"); B. F. Kuntsevich (SSPA "Optics, Optoelectronics and Laser Technology"); R. Y. Mikulich (SSPA "Optics, Optoelectronics and Laser Technology");*
- 38 Simultaneous Measurement of NO<sub>2</sub> and Particulate Matter (PM) by Broad-band Cavity-enhanced Absorption Spectroscopy Using Supercontinuum Light  
*Gaoxuan Wang (Université du Littoral Côte d'Opale); Lingshuo Meng (Université du Littoral Côte d'Opale); Benjamin Hanoune (Université de Lille1); Suzanne Crumeyrolle (Université de Lille1); Eric Fertein (Université du Littoral Côte d'Opale); Thomas Fagniez (Université du Littoral Côte d'Opale); Cecile Coeur (Université du Littoral Côte d'Opale); Wei Dong Chen (Université du Littoral Côte d'Opale);*
- 39 Localization of a Spin-orbit Coupled Bose-Einstein Condensate in a Bichromatic Optical Lattice  
*Yongshan Cheng (Hubei Normal University); Gao-hui Tang (Hubei Normal University); S. K. Adhikari (UNESP — Universidade Estadual Paulista);*
- 40 Temperature Rises in Human Fetuses in Second and Third Trimesters of Pregnancy during MRI  
*Tomoaki Nagaoka (National Institute of Information and Communications Technology);*
- 41 Development of a Robotic Surgical System of Thermal Ablation and Microwave Coagulation  
*Mattia Dimitri (Universita di Firenze); Guido Biffi Gentili (Università degli Studi di Firenze); Fabio Staderini (Dipartimento di Chirurgia e Medicina Traslazionale (DCMT)); Margherita Brancadoro (Istituto di BioRobotica — Scuola Superiore Sant'Anna); Arianna Menciassi (Istituto di BioRobotica — Scuola Superiore Sant'Anna); Andrea Coratti (Università degli Studi di Firenze); Fabio Cianchi (Dipartimento di Chirurgia e Medicina Traslazionale (DCMT)); Andrea Corvi (Università degli Studi di Firenze); Lorenzo Capineri (Universita di Firenze);*
- 42 Image Reconstruction Based on Compressive Sensing Using Total Variation Spatial Regulation for Microwave Imaging  
*Izra Halim Razzak (Universitas Indonesia); Mia Rizkinia (Universitas Indonesia); Basari Basari (Universitas Indonesia);*
- 43 Evaluation of Biophysical Therapy on Stress Management through Salivary Alpha-amylase in a Randomized Controlled Trial  
*Ida Ferrara (Clinical Biophysics International Research Group); Alberto Foletti (Clinical Biophysics International Research Group);*
- 44 A Compact UHF Planar Monopole Antenna Using Magnetodielectric Ferrite Substrate  
*Yongwei Li (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University);*

- 45 A Dual-band CPW-fed Circularly Polarized Open-slot Antenna for WLAN/WiMAX Applications  
*Lingling Li (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University); Yongwei Li (Southwest Jiaotong University);*
- 46 Reflectarray Cloaking Using Spiral-shaped Resonant Elements for Dual-polarization  
*Shinichiro Wakashima (Doshisha University); Yuki Fujimoto (Sony Mobile Communications Inc); Hiroyuki Deguchi (Doshisha University); Mikio Tsuji (Doshisha University);*
- 47 An 150 GHz Waveguide Bandpass Filter Based on Micro-satellite Platform  
*Yao Chen (University of Chinese Academy of Sciences); Shengwei Zhang (National Space Science Center, Chinese Academy of Sciences); Jing Wang (University of Chinese Academy of Sciences);*
- 48 Ring Resonator Characterization at Microwave Frequencies of a Novel Soft Dielectric  
*Tessnim Sghaier (University of Nantes); Mohammed El-Gibari (Lunam Université, Université de Nantes); Benoit Guiffard (University of Nante);*
- 49 Design of W-band Millimeter-wave CMOS Low-power Active Ring Mixer  
*Chia-Yu Liu (National Cheng Kung University); Huey-Ru Chuang (National Cheng Kung University);*
- 50 Many-body Near Field Radiative Heat Transfer between a Dielectric Nanoparticle and Plates  
*Jie-Long Fang (Harbin Institute of Technology); Yong Zhang (Harbin Institute of Technology); Hong-Liang Yi (Harbin Institute of Technology);*
- 51 Manufacturing Process Development of the Multi Steps Optical Filter for Narrow Spectral Selection  
*Sergey A. Fomchenkov (Samara National Research University); Elena Sergeevna Kozlova (Samara National Research University);*
- 52 A GaAs Integrated Power Divider Based on Microstrip and LC Structure with Optimized Capacitance  
*Mingye Fu (Southwest Jiaotong University); Qianyin Xiang (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University);*
- 53 Fourth-order Electrical Tunable Microstrip LC Cross-coupled Bandpass Filter  
*Xue Li (Chengdu Agricultural College); Chengjun Zou (Chengdu Agricultural College); Qianyin Xiang (Southwest Jiaotong University);*
- 54 A 3-Bit Passive Wireless Strain Sensor Design Based on Backscattering Principle  
*Guo Chun Wan (Tongji University); Ming Xu Zhang (Tongji University); Meng Meng Li (Tongji University); Mei Song Tong (Tongji University);*
- 55 Novel Distance Measurement Method Using Inband-RFID-Technology  
*Philip Schmidt (Fraunhofer Institute for Microelectronic Circuits and Systems (IMS)); Peter Kuhn (Fraunhofer Institute for Microelectronic Circuits and Systems (IMS)); Thorben Greuter (Fraunhofer Institute for Microelectronic Circuits and Systems (IMS)); Anton Grabmaier (Fraunhofer Institute for Microelectronic Circuits and Systems (IMS));*
- 56 Measurement of Electromagnetic Characteristics Materials in a Rectangular Waveguide  
*Vladimir Ivanovich Evseev (LLC "Arzamas Instrument-making Design Bureau"); Elena Alexandrovna Lupanova (Nizhniy Novgorod State Technical University n.a. R. E. Alekseev); Sergey Michailovich Nikulin (Alekseev's Nizhny Novgorod State Technical University); Vitaliy Vladimirovich Petrov (Nizhniy Novgorod State Technical University n.a. R. E. Alekseev);*
- 57 Wireless Energy Harvesting Circuit for IoT Sensor Networks  
*Jin-Sup Kim (Korea Electronics Technology Institute);*
- 58 A Wireless Charging Station for Multipurpose Electronic Systems  
*Josef Pokorny (Brno University of Technology); Petr Marcon (Brno University of Technology); Jiri Janousek (Brno University of Technology); Tomas Kriz (Brno University of Technology); Premysl Dohnal (Brno University of Technology);*
- 59 Design and Optimization of High-efficiency Rectenna for RF Energy Harvesting  
*Chayma Bahhar (University of Tunis El Manar); Mourad Aidi (University of Tunis El Manar); Fethi Mejri (Ecole Nationale d'Ingenieurs de Tunis); Taoufik Aguilu (University of Tunis El Manar (UTM));*
- 60 Reducing the Noise Level in a Gaussmeter with a Hall Probe for Reliable Magnetic Impedance Tomography  
*Tomas Hejtmanek (Brno University of Technology); Zdenek Roubal (Brno University of Technology);*

- 61 A New Method for Estimation of Baseline Incline Angle for Double-side Looking Interferometric Imaging Radar Altimeter  
Wenshuai Zhai (Center for Space Science and Applied Research, Chinese Academy of Sciences); Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences); Xiaojin Shi (Center for Space Science and Applied Research, CAS); Xiao Dong (Center for Space Science and Applied Research, Chinese Academy of Sciences); Xueyan Kang (National Space Science Center, Chinese Academy of Sciences);
- 62 High-vivid Uniformly-moving Target Deception Jamming Method against SAR-GMTI Based on Inverse Omega-K Algorithm  
Qingyang Sun (Shanghai Jiao Tong University); Mang Tang (Shanghai Jiao Tong University); Ting Shu (Shanghai Jiaotong University); Kai-Bor Yu (Shanghai Jiao Tong University); Wenxian Yu (Shanghai Jiao Tong University);
- 63 Effect of Earthquake Intensity to Land Deformation Observed from Space  
Pakhrur Razi (Universitas Negeri Padang); Josephat Tetuko Sri Sumantyo (Chiba University); Katsunoshin Nishi (Chiba University); Joko Widodo (Chiba University); Achmad Munir (Bandung Institute of Technology); Fajar Febriany (Universitas Negeri Padang);
- 64 Researches on Wavenumber Domain Stolt Interpolation Algorithm for Highly-squint Wide Swath FMCW SAR  
Zhan Wang (National University of Defense Technology); Shuang-Xun Li (National University of Defense Technology);
- 65 A Distributed Cooperative SAR Three-dimensional Imaging Method  
Dou Sun (National University of Defense Technology); Shiqi Xing (National University of Defense Technology); Bo Pang (National University of Defense Technology); Yongzhen Li (National University of Defense Technology); Xuesong Wang (National University of Defense Technology);
- 66 Ionospheric Response to the Atmospheric Waves Generated during First Launches from the Vostochny Space Center  
Geliy A. Zhrebtsov (Institute of Solar-Terrestrial Physics, SB RAS); Nataly Petrovna Perevalova (Institute of Solar-Terrestrial Physics (ISTP) SB RAS); Irina V. Medvedeva (Institute of Solar-Terrestrial Physics);
- 67 Analytic MTF Expression for a Turbid Medium  
Ruizhong Rao (Anhui Institute of Optics and Fine Mechanics, The Chinese Academy of Sciences);
- 68 Dielectric Relaxation in Wet Soils at Frequencies from 10 kHz to 10 MHz  
Pavel Petrovich Bobrov (Omsk State Pedagogical University); T. A. Belyaeva (Omsk State Pedagogical University); E. S. Kroshka (Omsk State University); O. V. Rodionova (Omsk State Pedagogical University);
- 69 Dielectric Relaxation in Clays in a Wide Range of Frequencies at Temperatures from  $-15^{\circ}\text{C}$  to  $25^{\circ}\text{C}$   
E. S. Kroshka (Omsk State University); Andrey V. Repin (Omsk State Pedagogical University); O. V. Rodionova (Omsk State Pedagogical University);
- 70 An Optimized Calibration Method for Integrated Nephelometer: A Case Study in Winter Shanghai  
Yingying Du (University of Shanghai for Science and Technology); Jun Chen (University of Shanghai for Science and Technology); Arun Ramachandran (National Institute of Technology Calicut); Ravi Varma (National Institute of Technology Calicut);
- 71 Relation of Traveling Ionospheric Disturbances Characteristics with Planetary Waves in the Middle Atmosphere  
Maxim V. Tolstikov (Institute of Solar-Terrestrial Physics); Alexey V. Oinats (Institute of Solar-Terrestrial Physics, SB RAS); Irina V. Medvedeva (Institute of Solar-Terrestrial Physics); Andrey V. Medvedev (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); Konstantin G. Ratovsky (Institute of Solar-Terrestrial Physics, SB RAS); Nozomu Nishitani (Nagoya University);
- 72  $^{14}\text{N}$  NQR Study of Tetrazole Derivatives for Potential Applications in Security, Detection of Counterfeit Drugs and Pharmaceuticals  
Sultonazar Mamadazizov (Gebze Technical University); Galina S. Kupriyanova (I. Kant Baltic Federal University); Marina Shelyapina (Saint-Petersburg State University); Georgy Mozhukhin (Gebze Technical University); Bulat Rameev (Gebze Technical University);
- 73 Experimental Demonstration of a Horseshoe-shaped 16-channel Arrayed Waveguide Grating (De)multiplexer  
Xin Fu (Institute of Semiconductors, Chinese Academy of Sciences); Lei Zhang (Institute of Semiconductors, Chinese Academy of Sciences); Lin Yang (Institute of Semiconductors, Chinese Academy of Sciences);

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**Session 3P1**
**Remote Sensing of the Earth, Ocean, and  
Atmosphere 2**


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**Wednesday PM, June 19, 2019**
**Room 1 - 1st Floor**

Organized by Liang Mei

 Chaired by Liang Mei
 

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14:30 Remote Sensing of Coastal Water-quality Parameters from Sentinel-2 Satellite Data in the Tyrrhenian and Adriatic Seas  
*Michele Iacobelli (Sapienza Università di Roma); Massimo Orlandi (Sapienza Università di Roma); Domenico Cimini (CNR-IMAA — Potenza); Frank Silvio Marzano (Sapienza Università di Roma);*

14:50 Underwater Suspended Particle Monitoring by Hyperspectral Lidar  
*Guangyu Zhao (South China Normal University); Zheng Duan (South China Normal University); Ying Li (South China Normal University); Jinlei Wang (South China Normal University); Sune Svanberg (Lund University);*

15:10 Skew Detection and Ortho-rectification for System Corrected Landsat TM Images  
*Hiroyuki Saito (Hirotsaki University); Yuta Miura (Hirotsaki University);*

15:30 Three-dimensional Micro-motion Feature Extraction for Rotation-symmetric Space Targets  
*Ying Luo (Air Force Engineering University); Le Kang (Air Force Engineering University); Jian Hu (Air Force Engineering University); Jia-Cheng Ni (Air Force Engineering University); Qun Zhang (Air Force Engineering University);*

15:50 Improving Land Surface Temperature Retrieval from FengYun-3 Data for Agro-drought Monitoring in China  
*Zhihao Qin (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Jianlong Fan (National Satellite Meteorological Center (NSMC)); Wenhui Du (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Shifeng Li (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Shuhe Zhao (Nanjing University); Offer Rozenstein (Institute of Soil, Water and Environmental Sciences, Agricultural Research Organization);*

16:30 **Coffee Break**

17:00 Game Model in Multi-target Imaging Task Allocation  
*Xiao-Wen Liu (Air Force Engineering University); Qun Zhang (Air Force Engineering University); Bi-Shuai Liang (Army Academy of Border and Coastal Defence); Jia Liang (Air Force Engineering University); Hui-Wei Zhang (No. 93534, Unit of PLA);*

17:20 A Ship Detection Algorithm Based on K-distribution  
*Corrado Avolio (E-GEOS — An Italian Space Agency/Telespazio Company); Carmine Frascella (E-GEOS — An Italian Space Agency/Telespazio Company); Flavia Macina (E-GEOS — An Italian Space Agency/Telespazio Company); Massimo Zavagli (E-GEOS — An Italian Space Agency/Telespazio Company); Mario Costantini (E-GEOS — An Italian Space Agency/Telespazio Company);*

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**Session 3P2a**
**SC1&SC5: Direct and Inverse Scattering  
Methods in Complex Environments 2**


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**Wednesday PM, June 19, 2019**
**Room 5 - 1st Floor**

Organized by Matteo Pastorino, Giuseppe Schettini

 Chaired by Matteo Pastorino, Giuseppe Schettini
 

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14:30 Effect of Finite Terms on the Truncation Error of Addition Theorems for Spherical Vector Wave Function  
*Sidra Batool (“La Sapienza” University of Rome); Alessio Benedetti (“La Sapienza” University of Rome); Fabrizio Frezza (“La Sapienza” University of Rome); F. Mangini (Santa Lucia Foundation); Yu-Lin Xu (Jacobs, NASA Johnson Space Center);*

14:50 Amplitude-only Microwave Imaging in Banach  
Invited Spaces: Numerical and Experimental Results  
*C. Estatico (University of Genoa); Alessandro Fedeli (University of Genoa); Matteo Pastorino (University of Genoa); Andrea Randazzo (University of Genoa); E. Tavanti (University of Genoa);*

15:10 On Simulation of Electromagnetic Scattering in a  
Invited Through-wall Environment  
*Cristina Ponti (“Roma Tre” University); Giuseppe Schettini (“Roma Tre” University);*

15:30 Numerical Results in Subsurface Near Zone Inverse  
Invited Source  
*Maria Antonia Maisto (Università degli Studi della Campania “Luigi Vanvitelli”); Raffaele Solimene (Università degli Studi della Campania “Luigi Vanvitelli”); Rocco Pierrì (Università degli Studi della Campania “Luigi Vanvitelli”);*

15:50 Electromagnetic Analysis for Multi-constellation GNSS Satellite Visibility Determination in Urban Areas  
*Wei-Jiang Zhao (A\*STAR Institute of High Performance Computing); Binfang Wang (Institute of High Performance Computing); En-Xiao Liu (Institute of High Performance Computing);*

16:30 **Coffee Break**

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**Session 3P2b**

**SC3: Holographic Technologies in Sensing and Light Redirection and Shaping**

**Wednesday PM, June 19, 2019**

**Room 5 - 1st Floor**

Organized by Izabela Naydenova, Suzanne Martin

Chaired by Izabela Naydenova, Suzanne Martin

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17:00 Fabrication of Holographic Sensors by Optical Force Induced Interference Pattern

*Ali K. Yetisen (Imperial College London); Yunuen Montelongo (Universidad De La Salle Bajío); Haider Butt (University of Birmingham);*

17:20 Investigation of Reversibility of Temperature Responsive Diffractive Structures

*Muhammad Irfan (Technological University Dublin); Suzanne Martin (Technological University Dublin); Izabela Naydenova (Technological University Dublin);*

17:40 Investigation of Sensing Responses of Holographic Structures in Volatile Organic Compounds

*Graceson Antony (Technological University Dublin); Dervil Cody (Technological University Dublin Institute of Technology); Izabela Naydenova (Technological University Dublin);*

18:00 Investigation of Hologram Recording Capability of Magnetic Photopolymer Nanocomposite for Holographic Sensor/Actuator

*Muhammad Irfan (Technological University Dublin); Suzanne Martin (Technological University Dublin); Izabela Naydenova (Technological University Dublin);*

18:40 Theoretical Analysis of a Volume Holographic Lens Using Matlab

*Sanjay Kumar Keshri (Technological University Dublin); Kevin Murphy (Technological University Dublin); Izabela Naydenova (Technological University Dublin); Suzanne Martin (Technological University Dublin);*

19:00 Development of Holographic Solar Concentrator in Photopolymer with High Dynamic Range and Improved Photosensitivity

*Brian Rogers (Technological University Dublin); Suzanne Martin (Technological University Dublin); Izabela Naydenova (Technological University Dublin);*

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**Session 3P3**

**SC1&SC2: Computational Bioelectromagnetics: from Single Molecule to Human Body**

**Wednesday PM, June 19, 2019**

**Room 7 - 1st Floor**

Organized by Francesca Apollonio, Caterina Merla

Chaired by Francesca Apollonio, Caterina Merla

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14:30 Nanoscale and Macroscale Transport Across Electrically Stressed Cell Membranes — Beyond Multiscale to Multidimensional Models

*P. Thomas Vernier (Old Dominion University);*

14:50 A 2D FEM Model to Reproduce Local Stimulation of Excitable Cell

*Patrizia Lamberti (University of Salerno); S. Elia (University of Salerno);*

15:10 In Silico Electrical Modeling of Cell Aggregates

*Pouria Mistani (University of California); Damien Voyer (EIGSI La Rochelle); Frederic G. Gibou (University of California); Clair Poignard (Univ. Bordeaux);*

15:30 A Novel Compact Circuit Model for Dielectric Parameters Extraction of Cell Suspensions

*Nissar Karim (Bangor University); Caterina Merla (ENEA, Division of Health Protection Technologies); Cristiano Palego (Bangor University);*

15:50 Cell Cluster Modeling to Assist Electropulsation Experiments Using Optical Microspectroscopy

*Caterina Merla (ENEA, Division of Health Protection Technologies); Agnese Denzi (Sapienza University of Rome); Francesca Apollonio (Sapienza University of Rome); Lluis M. Mir (University Paris-Sud, Université Paris-Saclay); Micaela Liberti (Sapienza University of Rome);*

16:10 Ultra-wideband Impedance Spectroscopy of a Live Biological Cell

*Xiao Ma (Lehigh University); Xiaotian Du (Lehigh University); Hang Li (Lehigh University); Xuanhong Cheng (Lehigh University); James C. M. Hwang (Lehigh University);*

16:30 **Coffee Break**

- 17:00 A Multiscale Model of Skin Electroporation  
*Janja Dermol-Cerne (University of Ljubljana); Damijan Miklavcic (University of Ljubljana);*
- 17:20 Toward the Determination of Molecular Mechanisms of Anti-tumor Action of TTFields Using Measurements and Computational Modeling of Electroconductive Properties of Microtubules  
*Iara B. Santelices (University of Alberta); Aarat Kalra (University of Alberta); Clayton Bell (University of Alberta); Cameron M. Hough (University of Alberta); Piyush Kar (University of Alberta); Vahid Rezania (MacEwan University); John D. Lewis (University of Alberta); Karthik Shankar (University of Alberta); Jack A. Tuszynski (University of Alberta);*
- 17:40 Electrode Montage Optimization for Modulating Interoception by Insula Stimulation  
*Parazzini Marta (Politecn Milan); Serena Fiocchi (Politecn Milan, Dept Bioengn); Chiaramello Emma (Istituto di Elettronica e di Ingegneria dell'Informazione e delle Telecomunicazioni IEIIT CNR); Bonato Marta (Istituto di Elettronica e di Ingegneria dell'Informazione e delle Telecomunicazioni IEIIT CNR); Tognola Gabriella (Istituto di Elettronica e di Ingegneria dell'Informazione e delle Telecomunicazioni IEIIT CNR); Sagliano Laura (University of Campania 'Luigi Vanvitelli'); Dario Grossi (University of Campania 'Luigi Vanvitelli');*
- 18:00 Non-invasive Magnetic Stimulation with a Microtms System: A Computational Study  
*Micol Colella (Università di Roma, La Sapienza); Rebecca M. Laher (Harvard Medical School); Daniel Z. Press (Harvard Medical School); Courtney E. McIlduff (Harvard Medical School); Seward B. Rutkove (Harvard Medical School); Alvaro Pascual-Leone (Harvard Medical School); Francesca Apollonio (Sapienza University of Rome); Giorgio Bonmassar (Massachusetts General Hospital); Micaela Liberti ("Sapienza" University of Rome);*
- 18:40 On the Applicability of Homogenization in Composite Material Models for Tissue Analysis in the mm-wave Range  
*Kevin Jerbic (University of Duisburg-Essen); Benedikt Sievert (University of Duisburg-Essen); Jan Taro Svejda (University of Duisburg-Essen); Andreas Rennings (University of Duisburg-Essen); Daniel Erni (University of Duisburg-Essen, Campus Duisburg);*

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**Session 3P4**
**Novel Mathematical Methods in Electromagnetics: Part 2**


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**Wednesday PM, June 19, 2019**
**Room 8 - 1st Floor**

Organized by Yury V. Shestopalov, Kazuya Kobayashi, Mario Lucido

 Chaired by Yury V. Shestopalov, Mario Lucido
 

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- 14:30 Improved Design Techniques for High Performance Planar Waveguide Slot Arrays  
*Giovanni Andrea Casula (University di Cagliari); Giuseppe Mazzarella (University of Cagliari); G. Montisci (University di Cagliari);*
- 14:50 Excitation of Layered Slab Structures by Complex-source-point Beams  
*Nikolaos L. Tsitsas (Aristotle University of Thessaloniki);*
- 15:10 A New Method of Dielectric Characterization Using a Genetic Algorithm and a Coplanar Waveguide on Bilayer Films  
*Pierre-Vincent Dugue (University Brittany Loire, University of Nantes, Institute of Electronics and Telecommunications of Rennes, UMR CNRS 6164); Mohammed El-Gibari (University Brittany Loire, University of Nantes, Institute of Electronics and Telecommunications of Rennes, UMR CNRS 6164); Mathieu Halbwax (University of Lille); Massinissa Hadjloum (ERTE-ETSA (BOWEN Group)); Jean-Pierre Vilcot (Institute of Electronics, Microelectronics and Nanotechnologies, UMR CNRS 8520, University of Lille); Hongwu Li (University of Nantes, UBL);*
- 15:30 The Scattering Characteristics of the Dual-element Vivaldi Antenna Arrays, Which Located on the Cylindrical Surface  
*A. V. Gevorkyan (Southern Federal University); Tatyana Yurievna Privalova (Southern Federal University);*
- 15:50 Regularization Techniques for the Evaluation of the Induced Currents on a Thin Disk  
*Amedeo Andreotti (University of Naples "Federico II"); Rodolfo Araneo (University of Rome "La Sapienza"); Dario Assante (Universita Telematica Internazionale Uninettuno); Paolo Burghignoli (Sapienza University of Rome); Salvatore Celozzi (Sapienza University of Rome); Giampiero Lovat (University of Roma "La Sapienza"); Luigi Verolino (University of Naples "Federico II");*

- 16:10 On the Efficient Evaluation of Improper Integrals Involving Oscillating and Slowly Decaying Functions  
*Fulvio Schettino (Università degli Studi di Cassino);*
- 16:30 **Coffee Break**
- 17:00 Plane Wave Scattering by a Moving PEC Half-plane in Hertzian Electrodynamics  
*Burak Polat (Yildiz Technical University);*
- 17:20 Complex Resonances of a Circular Patch in a Multi-layered Medium: A Regularized Analysis  
*Fulvio Schettino (Università degli Studi di Cassino);*
- 17:40 Singular and Nonsingular Boundary Integral Formulations for Scattering by Perfect Electric Conductors  
*Alex J. Yuffa (National Institute of Standards and Technology); Johannes Markkanen (Max Planck Institute for Solar System); Qiang Sun (University of Melbourne); Evert Klaseboer (Institute of High Performance Computing); Derek Y. C. Chan (University of Melbourne);*
- 18:00 Validation of Hertzian Electromagnetism in a Rectangular Waveguide with Rotating PEC Termination  
*Burak Polat (Yildiz Technical University); Ramazan Dasbasi (Yildiz Technical University);*
- 18:20 Tensor-Newton Reconstruction Scheme for Fluorescence Optical Tomography  
*Nishgandha Patil (Indian Institute of Technology); Naren Naik (Indian Institute of Technology);*
- 18:40 Mathematical Foundations of a Geometric Theory of Diffraction for Light Scattering from a 3D Topographic Photomask  
*David H. Wei (ASML US, Inc.); Rafael Howell (ASML US, Inc.); Yen-Wen Lu (ASML US, Inc.); Yu Cao (ASML US, Inc.);*
- 19:00 Numerical Analysis on for Quantum Beam Splitter via Computational Electromagnetic Methods  
*Dong-Yeop Na (Purdue University); Jie Zhu (Purdue University); Weng Cho Chew (Purdue University);*
- 14:30 Disruption Prediction Approaches Using Machine Learning Tools in Tokamaks  
*Giuliana Sias (University of Cagliari); Barbara Canas (University of Cagliari); Sara Carcangiu (University of Cagliari); A. Fanni (University of Cagliari); A. Murari (Consorzio RFX (CNR, ENEA, INFN, Università di Padova, Acciaierie Venete SpA)); A. Pau (EUROfusion Consortium); JET Contributors (EUROfusion Consortium, JET, Culham Science Centre);*
- 14:50 A Machine-learning and Compressive-sensing Inspired Approach to the Optimal Array Pattern Synthesis  
*Andrea Francesco Morabito (University 'Mediterranea' of Reggio Calabria); Cosimo Ieracitano (University 'Mediterranea' of Reggio Calabria); Francesco Carlo Morabito (University Mediterranea of Reggio Calabria);*
- 15:10 RGBW Joint Demosaicking and Denoising Using a CNN  
*Fatemeh Fathollahi (University of New Brunswick); Mohammad Rezaee (University of New Brunswick); Yun Zhang (University of New Brunswick);*
- 15:30 Decentralized Prediction of Electrical Time Series in Smart Grids Using Long Short-Term Memory Neural Networks  
*Antonello Rosato (University of Rome "La Sapienza"); Rodolfo Araneo (University of Rome "La Sapienza"); Massimo Panella (University of Rome "La Sapienza");*
- 15:50 Deep Learning Based Image Reconstruction and Tumor Detection in Multimodal Microwave-ultrasound Breast Images  
*Vahab Khoshdel (University of Manitoba); Ahmed Ashraf (University of Manitoba); Joe LoVetri (University of Manitoba);*
- 16:10 Smart Distributed Sensing for Photovoltaic Applications  
*Antonino Laudani (Università degli Studi Roma Tre); Gabriele Maria Lozito (Università degli Studi Roma Tre);*

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**Session 3P5**

**SC1&SC5: Machine Learning Techniques for Remote Sensing and Electromagnetic Applications 2**

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**Wednesday PM, June 19, 2019**

**Room Hall of Frescoes - 1st Floor**

Organized by Massimo Panella

Chaired by Massimo Panella

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16:30 **Coffee Break**

- 17:00 Application of Machine Learning to Synthesis of Maximally Sparse Linear Arrays  
*Xiaowen Zhao (Center for Space Science and Applied Research, Chinese Academy of Sciences); Qingshan Yang (Center for Space Science and Applied Research, Chinese Academy of Sciences); Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences);*

- 17:20 Performance Estimate of Range Profile Feature Extraction for the Case of Defined Viewing Aspect by Means of Fisher Score  
*Fedor Borisovich Baulin (Bauman Moscow State Technical University); Evgeny Vladlenovich Buryi (Bauman Moscow State Technical University);*
- 17:40 A Fuzzy Neural Network Approach to Quality Assessment of Water Reservoirs  
*Hieda Adriana Nascimento Silva (Federal University of Para); Antonello Rosato (University of Rome "La Sapienza"); Massimo Panella (University of Rome "La Sapienza");*
- 18:20 A Methodology to Enforce Local Passivity in Generative Models for Linear Time-invariant Electromagnetic Systems  
*Xiao Ma (University of Illinois at Urbana-Champaign); Maxim Raginsky (University of Illinois at Urbana-Champaign); Andreas C. Cangellaris (University of Illinois at Urbana-Champaign);*
- 18:00 Performance Estimate of Range Profile Feature Extraction by Means of Interclass Metric Histograms Analysis  
*Fedor Borisovich Baulin (Bauman Moscow State Technical University); Evgeny Vladlenovich Buryi (Bauman Moscow State Technical University);*
- 15:10 Bandwidth Enhancement of 2D Circularly-polarized Leaky-wave Antennas  
*Antoine Calteau (Université de Rennes 1); Maria Garcia-Vigueras (Université de Rennes 1); Herve Legay (Thales Alenia Space); Ronan Sauleau (Université de Rennes 1); Mauro Ettorre (Université de Rennes 1);*
- 15:30 Millimeter-wave 2-D Leaky Wave Antennas: Design, Considerations and Measurements  
*Raheel M. Hashmi (Macquarie University); A. A. Baba (Macquarie University); Karu P. Esselle (Macquarie University);*
- 15:50 Surface Impedance on a Corrugated or Perforated Dielectric on a Ground Plane  
*Bakhtiar Ali Khan (Concordia University Montreal); Robert Paknys (Concordia University Montreal);*
- 16:10 60 GHz Low-dispersive Leaky-wave Antenna Integrated in Glide-symmetric Full-hole Structures  
*Qiao Chen (KTH Royal Institute of Technology); O. Dahlberg (KTH Royal Institute of Technology); Oscar Quevedo-Teruel (KTH Royal Institute of Technology);*
- 16:30 **Coffee Break**
- 17:00 Metal-only Modulated Metasurface Antennas with Polarization and Amplitude Control  
*David Gonzalez-Ovejero (University of Rennes 1); N. Chahat (Jet Propulsion Laboratory, California Institute of Technology); Mauro Ettorre (University of Rennes 1); Ronan Sauleau (University of Rennes 1); Goutam Chattopadhyay (California Institute of Technology); Stefano Maci (University of Siena);*

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**Session 3P6**

**SC1&SC4: Recent Advances in 2-D Leaky-wave Antennas**

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**Wednesday PM, June 19, 2019**

**Room Cloister Hall - 1st Floor**

Organized by Davide Comitè, Symon K. Podilchak

Chaired by Davide Comitè

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- 14:30 Beam Control Using Fixed and Mechanically-reconfigurable Surface Patterns  
*Timothy D. Drysdale (University of Edinburgh);*
- 14:50 Polarization-reconfigurable Omnidirectional Conical Leaky Wave Antenna  
*Yahong Liu (Northwestern Polytechnical University); Meize Li (Northwestern Polytechnical University); Kun Song (Northwestern Polytechnical University); Dingshan Hu (Northwestern Polytechnical University); Hongchao Liu (University of Birmingham); Xiao-Peng Zhao (Northwestern Polytechnical University); Shuang Zhang (University of Birmingham); Miguel Navarro-Cia (Imperial College London);*
- 17:20 Recent Advances in Modulated Metasurface Antennas  
*G. Minatti (Wave Up Srl); Francesco Caminita (Wave Up Srl); Enrica Martini (University of Siena); C. Della Giovampaola (Wave Up Srl); Stefano Maci (University of Siena);*
- 17:40 Radially Periodic 2-D Leaky-wave Antenna with Wideband Broadside Radiation  
*Dejian Zhang (Tsinghua University); Davide Comitè ("Sapienza" University of Rome); Hua Geng (Tsinghua University); Paolo Baccarelli (Roma Tre University); Paolo Burghignoli (Sapienza University of Rome); Symon K. Podilchak (Heriot-Watt University); Xiaoping Zheng (Tsinghua University);*

- 18:00 Multi-fed 2-D Leaky-wave Antennas: Beam Steering and Polarization Reconfigurability  
*Davide Comite* (“Sapienza” University of Rome); *V. Gomez-Guillamon Buendia* (Heriot-Watt University); *Paolo Burghignoli* (Sapienza University of Rome); *Paolo Baccarelli* (Roma Tre University); *Symon K. Podilchak* (Heriot-Watt University); *Alessandro Galli* (Sapienza University of Rome);
- 18:20 A Near-field Focusing System by Using Two Double-sided Leaky-wave Antennas in Substrate Integrated Waveguide Technology  
*Alejandro Javier Martinez Ros* (Universidad de Sevilla); *Jose Luis Gomez Tornero* (Technical University of Cartagena); *Francisco L. Mesa* (Universidad de Sevilla);
- 18:40 Leaky Wave Analysis of Wideband Planar Fabry-Pérot Cavity Antennas  
*Ahmad T. Almutawa* (University of California); *Filippo Capolino* (University of California-Irvine); *David Richard Jackson* (University of Houston);

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**Session 3P7a**

**SC3: Ultrafast Nonlinear Optics: Ultrafast Fiber Lasers and Nonlinear Applications 2**

Wednesday PM, June 19, 2019

Room 17 - 1st Floor

Organized by Zhiwen Liu, Michelle Y. Sander

Chaired by Michelle Y. Sander

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- 14:30 Recent Developments in Ultrashort-laser-pulse Measurement, Including a 100% Reliable FROG Algorithm  
*Rana Jafari* (Georgia Institute of Technology); *Travis Jones* (Georgia Institute of Technology); *Zhe Guang* (Georgia Institute of Technology); *Ping Zhu* (Georgia Institute of Technology); *Rick Trebino* (Georgia Institute of Technology);
- 15:00 Complex Ultrafast Fiber Laser Dynamics in Real Time  
Invited *Philippe Grellu* (Université de Bourgogne); *Z. Wang* (Université de Bourgogne); *S. Hamdi* (Université de Bourgogne); *K. Nithyanandan* (Université de Bourgogne); *A. Coillet* (Université de Bourgogne); *Patrice Tchofo-Dinda* (Université de Bourgogne);
- 15:20 Advanced Temporal Imaging Systems for Ultrafast Applications  
Invited *Bowen Li* (The University of Hong Kong); *Wei Yuan* (The University of Hong Kong); *Kenneth Kin-Yip Wong* (The University of Hong Kong);

- 16:00 Spatially Modulated Nonlinear Optical Microscopy  
Invited *Randy A. Bartels* (Colorado State University); *Keith Wernsing* (University of Colorado at Boulder); *Patrick Stockton* (Colorado State University); *Dave Smith* (Colorado State University); *Jeff Field* (Colorado State University); *Jeff A. Squier* (Colorado School of Mines);
- 16:30 **Coffee Break**
- 17:00 Unveiling the Microscopic Structure at Graphene/Water Interface  
Invited *Chuanshan Tian* (Fudan University);
- 17:20 High-field Terahertz Generation by Novel Cascaded Interactions  
Invited *Koustuban Ravi* (Deutsches Elektronen Synchrotron); *Franz X. Kartner* (Deutsches Elektronen-Synchrotron DESY);
- 17:40 Ablation-cooled Laser-material Processing at GHz Repetition Rates  
Invited *F. Oemer Ilday* (Bilkent Univ);

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**Session 3P7b**

**SC3: Liquid Crystal Devices and Applications 2**

Wednesday PM, June 19, 2019

Room 17 - 1st Floor

Organized by Yi-Hsin Lin, Wei Hu

Chaired by Yi-Hsin Lin, Wei Hu

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- 18:00 Water Condensation on a Liquid Crystal and Polymer Film  
Invited *Yi-Hsin Lin* (National Chiao Tung University); *Manjunath Somarapalli* (National Chiao Tung University); *Chia-Hao Kuo* (National Chiao Tung University);
- 18:20 Optical Wave Propagation through a Curved Birefringent Medium with Anisotropic Absorption  
Invited *Yu-Jen Wang* (National Chiao Tung University); *Ming-Long Lee* (National Chiao Tung University); *Po-Lun Chen* (General Interface Solution Holding Ltd.); *Yi-Hsin Lin* (National Chiao Tung University);
- 18:40 Enhanced Pancharatnam-Berry Phase in Double-layered Liquid Crystal Structures  
Invited *Hiroyuki Yoshida* (Osaka University); *S. Cho* (Osaka University); *M. Ono* (Osaka University); *Y. Tsuboi* (Osaka University); *Z. Fan* (Osaka University); *Masanori Ozaki* (Osaka University);

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**Session 3P8**
**SC1&SC3: Quantum Information Processing  
and Devices 1**


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**Wednesday PM, June 19, 2019**
**Room 6 - Mezzanine**

Organized by Hai-Zhi Song, Guangwei Deng

 Chaired by Mo Li, Dawei Lu
 

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- 14:30 Experimental Identification of Non-Abelian Topological Orders on a Quantum Simulator  
Invited  
*Dawei Lu (Southern University of Science and Technology);*
- 14:50 Improving Quantum State Tomography with Collective Measurements  
Invited  
*Zhibo Hou (University of Science and Technology of China, CAS); Jun-Feng Tang (University of Science and Technology of China, CAS); Jiangwei Shang (Universität Siegen); Huangjun Zhu (University of Cologne); Jian Li (Nanjing University of Posts and Telecommunications); Yuan Yuan (University of Science and Technology of China, CAS); Kang-Da Wu (University of Science and Technology of China, CAS); Guo-Yong Xiang (University of Science and Technology of China, CAS); Chuanfeng Li (University of Science and Technology of China, CAS); Guangcan Guo (University of Science and Technology of China, CAS);*
- 15:10 Phonon-polaritons for Low-loss Confinement of Electromagnetic Waves in the Mid-infrared  
Invited  
*Stefan Maier (LMU Munich);*
- 15:30 Magnon Kerr Effect in a Cavity QED System  
Invited  
*Tiefu Li (Tsinghua University);*
- 15:50 Superconducting Single-photon Detectors and Semiconductor Photon-pair Sources for Quantum Information Processing  
Invited  
*Xiaolong Hu (Tianjin University); Nan Hu (Tianjin University); Yun Meng (Tianjin University); Kai Zou (Tianjin University); Liang Xu (Tianjin University); Zhao Wang (Tianjin University); Xiaojian Lan (Tianjin University); Xiaoming Chi (Tianjin University); Xiaoya Xie (Tianjin University); Chao Gu (Tianjin University); Yuhao Cheng (Tianjin University); Xiaotian Zhu (Tianjin University); Haiyi Liu (Tianjin University); Hao Wu (Tianjin University); Julien Zichi (Royal Institute of Technology (KTH)); Val Zwiller (Royal Institute of Technology (KTH));*
- 16:10 Temporal Quantum Ghost Imaging and Its Application on Quantum Digital Signature  
Invited  
*Wei Zhang (Tsinghua University);*
- 16:30 **Coffee Break**
- 17:00 Proof-of-principle Demonstration of Passive Decoy-state Quantum Digital Signatures over 200 km  
Invited  
*Qin Wang (University of Posts and Telecommunications); Chun-Hui Zhang (University of Posts and Telecommunications); Guang-Can Guo (University of Posts and Telecommunications);*
- 17:20 Strong Coupling of a Cavity and a Transmission Line with an Artificial Atom  
Invited  
*Zhihui Peng (Hunan Normal University);*
- 17:40 Positioning Colloidal Nanocrystals in Optical Cavities for Single Photon Emission  
Invited  
*Yang Song (University of Science and Technology of China); Fengjia Fan (University of Science and Technology of China);*
- 18:00 Epsilon-near-zero-based On-chip Light Source  
Invited  
*Cuicui Lu (Beijing Institute of Technology); You Wu (Peking University); Xiaoyong Hu (Peking University);*
- 18:20 Nanostructured Key: Quantum Authentication System Based on Physical Unclonable Functions  
Invited  
*Mo Li (Microsystem & Terahertz Research Center of CAEP); Feiliang Chen (Microsystem & Terahertz Research Center of CAEP); Pidong Wang (Microsystem & Terahertz Research Center of CAEP); Feng Huang (Microsystem & Terahertz Research Center of CAEP); Lijun Zhang (Microsystem & Terahertz Research Center of CAEP); Yao Yao (Microsystem & Terahertz Research Center of CAEP); Dong Li (Microsystem & Terahertz Research Center of CAEP); Jian Zhang (Institute of Electronic Engineering of CAEP);*
- 18:40 Gain Lifetime Characterization in Whispering-gallery Mode Microcavities  
Invited  
*Chuan Wang (Beijing University of Posts and Telecommunications); Xiao-Fei Liu (University of electronic Science and Technology of China);*
- 19:00 Experimental State Control in Multi-level Transmon Devices  
Invited  
*Gheorghe Sorin Paraoanu (Aalto University);*

**Session 3P9a****FocusSession.SC3: Multimode Nonlinear  
Optical Fibers 2****Wednesday PM, June 19, 2019****Room 4 - Mezzanine**

Organized by Stefan Wabnitz, Demetri Psaltis

Chaired by Stefan Wabnitz, Demetri Psaltis

- 14:30 Dramatic Acceleration of Wave Condensation Mediated by Disorder in Multimode Fibers  
Invited  
*Adrien Fusaro (Université Bourgogne Franche-Comte); Josselin Garnier (Centre de Mathématiques Appliquées, Ecole Polytechnique); Katarzyna Krupa (Université Bourgogne Franche-Comte, ICB, UMR CNRS 6303); Guy Millot (Université de Bourgogne); Antonio Picozzi (Université de Bourgogne);*
- 14:50 Optical Thermodynamics of Highly Multimoded Non-linear Optical Systems  
Invited  
*Demetrios N. Christodoulides (University of Central Florida);*
- 15:10 Depletion Effects in Few-mode Fibers Parametric Amplification  
*A. Trichili (King Abdullah University of Science and Technology); Mourad Zghal (University of Carthage); Marco Santagiustina (Università di Padova);*
- 15:30 Spatiotemporal Mode-locking in Multimode Fiber Lasers  
Invited  
*Frank Wise (Cornell University);*
- 15:50 Random Lasing in Multicore and Multimode Fibers  
Invited  
*Sergey A. Babin (Institute of Automation and Electrometry SB RAS); Mikhail I. Skvortsov (Institute of Automation and Electroetry, SB, RAS); A. A. Wolf (Institute of Automation and Electroetry SB RAS); Alexandr V. Dostovalov (Novosibirsk National Research State University); Ekaterina A. Zlobina (Institute of Automation and Electroetry, SB, RAS); S. I. Kablukov (Institute of Automation and Electroetry, SB, RAS); Evgeny V. Podivilov (Institute of Automation and Electrometry, Siberian Branch, Russian Academy of Sciences); Stefan Wabnitz (Sapienza University of Rome);*

**Session 3P9b****Optical Fibers and Sensors for Biochemistry,  
Medical Diagnostics and Imaging****Wednesday PM, June 19, 2019****Room 4 - Mezzanine**

Organized by Annamaria Cucinotta, Stavros

Pissadakis

Chaired by Annamaria Cucinotta, Stavros Pissadakis

- 16:10 Cloud-based Sensors for Microbiological Analysis of Agri-food Products  
Invited  
*Gabriella Cincotti (University Roma Tre); G. Caramitti (University Roma Tre); M. Di Paolo (Axit Srl); M. Munalli (Axit Srl); Alessandro Candiani (DNAPhone S.r.l.); Alessandro Tonelli (DNA-Phone S.r.l.); A. Mari (M.B.S. Srl); G. Antonini (University Roma Tre);*
- 16:30 **Coffee Break**
- 17:00 Biosensing with Hollow Core Inhibited Coupling Fibers  
Invited  
*Fabio Giovanardi (University of Modena and Reggio Emilia); Fetah Benabid (University of Limoges); Annamaria Cucinotta (Università di Parma); Luca Vincetti (University of Modena and Reggio Emilia);*
- 17:20 Design and Implementation of Fiber-embedded Plasmonic Structures in Microwires  
Invited  
*Afroditi Petropoulou (Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation); Grigoris Antonopoulos (Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation); Paul Bastock (University of Southampton); George Kakarantzas (Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation); Christopher Craig (University of Southampton); Dimitris Drikakis (University of Nicosia); Daniel W. Hewak (University of Southampton); Michalis N. Zervas (University of Southampton); Christos Riziotis (Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation);*
- 17:40 Brillouin Optical Time Domain Analysis with Wavelength-locked Low-noise Pump-probe Laser Scheme  
*Leonardo Rossi (IMM Institute); Diego Marini (IMM Institute); Filippo Bastianini (Sestosensor S.r.l.); Gabriele Bolognini (IMM Institute);*

- 18:00 **Narrow Linewidth Fiber Brillouin Ring Laser for Sensing Applications**  
*Diego Marini (IMM Institute); Leonardo Rossi (IMM Institute); Filippo Bastianini (Sestosensor S.r.l.); Gabriele Bolognini (IMM Institute);*
- 18:20 **Fiber-based Michelson Interference Array for Ultrasonic Vibration Sensing**  
*Xiangdong Ma (Beihang University); Jianguo Ma (Beihang University); Lijun Xu (Beihang University);*
- 18:40 **Silk Fibroin Infiltrated Photonic Crystal Fibers**  
*Davide Vurro (IMEM-CNR); Georgios Violakis (Foundation for Research and Technology — Hellas (FORTH)); Dimitra Skiani (Foundation for Research and Technology — Hellas (FORTH)); Maria Konstantaki (Institute of Electronic Structure and Laser, Foundation for Research and Technology); Annamaria Cucinotta (Università di Parma); Stefano Scleri (Università di Parma); Salvatore Iannotta (IMEM-CNR); Stavros Pissadakis (Institute of Electronic Structure and Laser (IESL));*
- 19:00 **Conical Cross-section Nanohole Array Localized Surface Plasmon Resonance Optical Fiber Tip Sensor**  
*Hong Guo (University of Alabama in Huntsville); Junpeng Guo (University of Alabama in Huntsville);*
- 15:00 **Plasmonic Metamaterials with Readily Accessible Surfaces for Biosensing**  
*Invited M. Miscuglio (Istituto Italiano di Tecnologia); N. J. Borys (Lawrence Berkeley National Lab); P. J. Schuck (Lawrence Berkeley National Lab); Alexander Weber-Bargioni (Molecular Foundry, LBNL); V. Caligiuri (Istituto Italiano di Tecnologia); G. Biffi (Istituto Italiano di Tecnologia); M. Palei (Istituto Italiano di Tecnologia); D. Spirito (Istituto Italiano di Tecnologia); Remo Proietti Zaccaria (Cixi Institute of Biomedical Engineering, Ningbo Institute of Materials and Technology Engineering, Chinese Academy of Sciences); Roman Krahné (Istituto Italiano di Tecnologia);*
- 15:20 **Metallic Nanoparticles for Quadratic Nonlinear Optics: Size and Shape Effects**  
*Invited Hoang Minh Ngo (Institut d'Alembert, Ecole Normale Supérieure de Cachan); Joseph Zyss (LPQM-Ecole Normale Supérieure de Cachan); Ledoux-Rak Isabelle (ENS Paris Saclay);*
- 15:40 **Cross-shaped Plasmonic Nanoantennas for Surface-enhanced InfraRed Absorption Spectroscopy**  
*Invited Emanuela Esposito (Institute for Microelectronics and Microsystems, National Research Council); Valentina Di Meo (Institute for Microelectronics and Microsystems, National Research Council); Andrea Caporale (Institute of Biostructure and Bioimaging, National Research Council); Alessio Crescitelli (Institute for Microelectronics and Microsystems, National Research Council); Mohammed Janneh (University of L'Aquila); Elia Palange (Univ Aquila); Andrea De Marcellis (University of L'Aquila); Marianna Portaccio (University of Campania "L. Vanvitelli"); Maria Lepore (University of Campania "L. Vanvitelli"); Ivo Rendina (CNR-IMM — Unità di Napoli); Menotti Ruvo (Institute of Biostructure and Bioimaging, National Research Council);*

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### Session 3P10

#### SC3: Label-free Optical Nanobiosensors for Bio-diagnostics, Environmental Monitoring and Food Safety

Wednesday PM, June 19, 2019

Room 12 - Mezzanine

Organized by Lucia Petti

Chaired by Lucia Petti, Riccardo Castagna

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- 14:30 **Raman Nanosensors by Design: Photonic-plasmonic Enhanced Ultra-sensitivity, Tunable Biorelease, and Accelerated Detection via Motorization**  
*Keynote Donglei (Emma) Fan (University of Texas at Austin);*
- 16:00 **Optical Force Positioning and Aggregation of Nanoparticles**  
*Invited Maria Grazia Donato (CNR-IPCF); Antonino Foti (CNR IPCF, Istituto per i Processi Chimico-Fisici); Silvie Bernatova (Institute of Scientific Instruments of the CAS); Ota Samek (Institute of Scientific Instruments of the CAS); Pavel Zemanek (Institute of Scientific Instruments of the CAS); Raymond Gillibert (CNR-IPCF, Istituto per i Processi Chimico-Fisici); Pietro G. Gucciardi (CNR IPCF, Istituto per i Processi Chimico-Fisici); Onofrio M. Marago (CNR-IPCF, Istituto per i Processi Chimico-Fisici);*

16:30 **Coffee Break**

17:00 Nanophotonic Metasurfaces for Label-free Biosensing  
Keynote

*Hatice Altug (Institute of Bioengineering, Ecole Polytechnique Federale de Lausanne);*

17:30 Probing Interactions Relevant for Food Science and  
Invited Eco/Nanotoxicology with Plasmonic Structures

*Duncan S. Sutherland (Aarhus University);*

17:50 Analysis of Cancer Cell Membrane by Surface En-  
Invited hanced Raman Spectroscopy

*Angela Capaccio (Università di Napoli “Federico II”);  
Giulia Rusciano (Università di Napoli “Federico II”);  
Emanuele Sasso (Università di Napoli “Federico II”);  
Antonio Sasso (University of Naples); Nicola Zambrano (Università di Napoli “Federico II”);*

18:10 An Optical-oscillator Scheme for the Interrogation  
Invited and Readout of SPR Sensors

*Antonio Giorgini (Istituto Nazionale di Ottica (INO));  
Saverio Avino (Istituto Nazionale di Ottica (INO));  
Pietro Malara (Istituto Nazionale di Ottica (INO));  
Paolo De Natale (CNR-INO, Istituto Nazionale di Ottica (INO));  
Gianluca Gagliardi (CNR, Istituto Nazionale di Ottica (INO));*

18:30 Highly Photo-emissive Semiconductor Nanoparticles  
Invited for Optical Imaging and Sensing

*I. Rea (CNR-IMM); M. Terracciano (CNR-IMM);  
R. Moretta (CNR-IMM); C. Schiattarella (CNR-IMM);  
P. Dardano (CNR-IMM — Unita di Napoli);  
Luca De Stefano (Univ. Naples);*

18:50 Functionalized Plasmonic Nanosensors for a Sensitive  
Invited Detection of Rotavirus

*Massimo Rippa (Institute of Applied Sciences and Intelligent Systems “E. Caianiello”, CNR); R. Castagna (Institute of Applied Sciences and Intelligent Systems “E. Caianiello”, CNR); G. Fusco (Istituto Zooprofilattico Sperimentale del Mezzogiorno); M. Monini (Istituto Superiore di Sanita); Lucia Petti (Institute of Applied Sciences and Intelligent Systems — ISASI, CNR);*

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### Session 3P11a

#### SC2: Analytical Methods for Metamaterials, Metasurfaces, and 2D Materials from Microwaves to Optics 2

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Wednesday PM, June 19, 2019

Room 11 - Mezzanine

Organized by Alexander B. Yakovlev, Juan Sebastian Gomez-Diaz

Chaired by Alexander B. Yakovlev, Juan Sebastian Gomez-Diaz

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14:30 2D Non-radiating Sources in Mie Scattering and Inverse Problems

*Giuseppe Labate (Politecnico di Torino); Andrea Alu (City University of New York); Tommaso Isernia (University “Mediterranea” of Reggio Calabria);*

14:50 Design Tool for Wideband Transmission Polarization Converters

*Filippo Costa (University of Pisa — CNIT); Michele Borgese (University of Pisa);*

15:10 Gradient Chiral Metasurfaces as Perfect Polarization  
Invited Converter

*Hamidreza Kazemi (University of California); Mohammad Albooyeh (University of California); Filippo Capolino (University of California-Irvine);*

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### Session 3P11b

#### SC1: Short and Ultrashort Pulsed Electric Fields for Biomedical and Industrial Applications

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Wednesday PM, June 19, 2019

Room 11 - Mezzanine

Organized by Olga Zeni, Stefania Romeo

Chaired by Olga Zeni, Stefania Romeo

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15:30 Nanoscale Electrical Stress and the Molecular Land-  
Invited scape of the Cell Membrane

*Thomas Vernier (Old Dominion University);*

15:50 Numerical Workflow for Percutaneous Electroporation Ablation of Deep-seated Tumors

*Olivier Gallinato (Univ. Bordeaux, IMB, UMR 5251); B. Denis De Senneville (Univ. Bordeaux, IMB, UMR 5251); Olivier Seror (Hopitaux Universitaires Paris-Seine-Saint-Denis); Clair Poignard (Univ. Bordeaux);*

- 16:10 Calcium Electroporation: An Overview of an Innovative Cancer Treatment Approach  
*Stefania Romeo (CNR — National Research Council of Italy, IREA); Stine Krog Frandsen (Zealand University Hospital); Julie Gehl (Zealand University Hospital); Olga Zeni (CNR — National Research Council of Italy);*
- 16:30 **Coffee Break**
- 17:00 Dynamics of Ionic Channel Currents in a Circuital, Hodgkin-Huxley Model of an Axon under ns Pulsed Electric Field Stimulation  
*Patrizia Lamberti (University of Salerno); Michele Compitello (University of Salerno); Stefania Romeo (CNR — National Research Council of Italy, IREA);*
- 17:20 Microsecond Kinetics of Ion Transport and Interface Binding in Electrically Stressed Phospholipid Bilayers  
*Federica Castellani (Old Dominion University); Esin B. Sozer (Old Dominion University); P. Thomas Vernier (Old Dominion University);*
- 17:40 Relevance of the Cell Membrane Modelling for Accurate Analysis of the Pulsed Electric Field-induced Electroporation  
*Luciano Mescia (Politecnico di Bari); Michele A. Chiapperino (Politecnico di Bari); Pietro Bia (Elettronica S.p.A.); C. M. Lamacchia (Politecnico di Bari); J. Gielis (University of Antwerp); Diego Caratelli (The Antenna Company Nederland B.V.);*
- 18:00 Multiphysics Modelling of Membrane Electroporation in Irregularly Shaped Cells  
*Luciano Mescia (Politecnico di Bari); Michele A. Chiapperino (Politecnico di Bari); Pietro Bia (Elettronica S.p.A.); C. M. Lamacchia (Politecnico di Bari); Johan Gielis (The Antenna Company); Diego Caratelli (The Antenna Company Nederland B.V.);*
- 18:20 Effect of Single nsPEF Stimuli Characteristics on a Neuronal Cell Model  
*Patrizia Lamberti (University of Salerno); S. Elia (University of Salerno); F. D'Onofrio (University of Salerno);*
- 18:40 Modeling of a Platform to Test Innovative Electrodes for EP Application  
*Patrizia Lamberti (University of Salerno); Elia Sieni (University of Salerno); Vincenzo Tucci (University of Salerno);*
- 19:00 Bacterial inactivation of E. Coli and S. Aureus by ZnO Nanoparticle Treatment Assisted with Femtosecond Laser Light  
*Crysthal Alvarez (University of California); Alma Hernandez (University of California); Natanael Cuando-Espitia (Universidad de Guanajuato); Guillermo Aguilar (University of California);*

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**Session 3P12**
**FocusSession.SC2: Advanced Metasurface Designs and Devices 2**


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**Wednesday PM, June 19, 2019**
**Room 21 - 2nd Floor**

Organized by Tao Li, Yun Lai

 Chaired by Tao Li, Yun Lai
 

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- 14:30 Diatomic Metagratings for Simultaneous Manipulation of Multiple Degrees of Freedom of Light  
Invited *Zi-Lan Deng (Jinan University); Guixin Li (Southern University of Science and Technology); Xiangping Li (Jinan University);*
- 14:50 Metasurface Coupler for Guided SHG in LN Nanowaveguides  
*Bin Fang (Nanjing University); Shi-Ning Zhu (Nanjing University); Tao Li (Nanjing University);*
- 15:10 Non-Huygens Invisible Metasurfaces  
*Hadi K. Shamkhi (ITMO University); Kseniia V. Baryshnikova (ITMO University); Andrey Sayanskiy1 (ITMO University); Pavel D. Terekhov (ITMO University); Egor A. Gurvitz (ITMO University); Adria Canos Valero (ITMO University); Alina Karabchevsky (Ben-Gurion University of the Negev); Polina Kapitanova (ITMO University); Andrey B. Evlyukhin (Laser Zentrum Hannover e.V.); Pavel A. Belov (ITMO University); Yuri S. Kivshar (Australian National University); Alexander Sergeevich Shalin (ITMO University);*
- 15:30 Gradient Anti-reflecting Metasurfaces  
Invited *Hongchen Chu (Nanjing University); Haoyang Zhang (Queen Mary University of London); Yang Hao (Queen Mary University of London); Yun Lai (Soochow University);*
- 15:50 Metasurfaces for Controlling Terahertz Waves  
Keynote *Lei Zhou (Fudan University);*

 16:30 **Coffee Break**


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- 17:00 Clusters of Nanoparticles as Isotropic Huygens Sources for Metasurfaces Applications  
*R. Dezert (CNRS, Université de Bordeaux); R. Elanchelian (CNRS, Université de Bordeaux); V. Ponsinet (CNRS, Université de Bordeaux); O. Mondain-Monval (Université de Bordeaux); Philippe Barois (CNRS, Université de Bordeaux); P. Richetti (CNRS, Université de Bordeaux); A. Baron (CNRS, Université de Bordeaux);*
- 17:20 Generation and Manipulation of Superoscillating Light Beams via Geometric Metasurface  
*Yanwen Hu (Jinan University); Shenhe Fu (Jinan University); Hao Yin (Guangdong Higher Educ. Inst.); Zhen Li (Jinan University); Zhenqiang Chen (Jinan University);*
- 17:40 Optical Needle with Ultra-small Resolution Enabled by Integrated Metalens  
*Haowen Liang (Sun Yat-sen University); Qian Sun (Sun Yat-sen University); Yuhao Ren (Sun Yat-sen University); Juntao Li (Sun Yat-sen University);*
- 18:00 A Novel and Fast Method to Design Metamaterial Absorbers Based on RBF-PSO Algorithm  
*Lin Song (Northwestern Polytechnical University); Huiling Zhao (Northwestern Polytechnical University); Junjie Tang (Northwestern Polytechnical University);*
- 18:20 Electromagnetic Frequency Characteristics of Periodically Graded Wires  
*Ayşe Nihan Basmacı Filiz (Tekirdag Namik Kemal University);*
- 15:00 Thermocavitation and Its Application for Liquid Microjets Generation  
 Invited *Juan Pablo Padilla-Martinez (Benemerita Universidad Autonoma de Puebla); R. Zaca-Moran (Benemerita Universidad Autonoma de Puebla); Juan Castillo-Mixcoatl (Benemerita Universidad Autonoma de Puebla); P. Zaca-Moran (Benemerita Universidad Autonoma de Puebla); Julio C. Ramirez-San-Juan (Instituto Nacional de Astrofisica, Optica y Electronica); Ruben Ramos-Garcia (Instituto Nacional de Astrofisica, Optica y Electronica);*
- 15:20 Femtosecond Laser Fabrication of Monolithic Low Loss High Quality Optical Waveguides and Microfluidic Channels for Optical Sensing Applications  
 Invited *Paulo V. S. Marques (Unidade de Optoelectronica e Sistemas Electronicos); Joao M. Maia (University of Porto); Vitor A. Amorim (University of Porto); Duarte Viveiros (University of Porto);*
- 15:40 Laser Fabrication of Microfluidic Devices in Glass for Applications in Chemistry  
 Invited *Argyro N. Giakoumaki (Politecnico di Milano); Vibhav Bharadwaj (Istituto di Fotonica e Nanotecnologie — Consiglio Nazionale delle Ricerche (IFN-CNR)); Luigino Criante (Istituto Italiano di Tecnologia); Roberta Ramponi (Institute of Photonics and Nanotechnology (IFN) — CNR); Giacomo Bergamini (University of Bologna); Shane Michael Eaton (Politecnico di Milano);*
- 16:00 Narrow Emission Line by Flexible-design Optofluidic Laser Based on Fabry-Perot Resonator  
 Invited *Silvio Bonfadini (Istituto Italiano di Tecnologia); Francesco Simoni (Università Politecnica delle Marche); Luigino Criante (Istituto Italiano di Tecnologia);*
- 16:30 **Coffee Break**
- 17:00 Optofluidic Microscope On-chip: 3D Imaging of Cells and Tissues  
 Invited *Francesca Bragheri (Istituto di Fotonica e Nanotecnologie, CNR); F. Sala (Istituto di Fotonica e Nanotecnologie, CNR); A. Farina (Istituto di Fotonica e Nanotecnologie, CNR); P. Paie (Istituto di Fotonica e Nanotecnologie, CNR); Roberto Osellame (Consiglio Nazl Ric IFN CNR, Ist Foton & Nanotecnol); A. Bassi (Politecnico di Milano);*
- 17:20 Soft Micro-actuators Fabricated by Direct Laser Writing and Their Potential in Microfluidic Devices  
 Invited *Larisa Florea (Trinity College Dublin); Colm Delaney (University College Dublin); Dermot Diamond (Dublin City University);*

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**Session 3P13**

**FocusSession.SC3: Advanced Optofluidics:  
Where Photonics Meets Microfluidics and Life  
Science 2**

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**Wednesday PM, June 19, 2019**

**Room 22 - 2nd Floor**

Organized by Francesco Simoni, Luigino Criante

Chaired by Francesco Simoni, Luigino Criante

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14:30 Femtosecond Laser 3D Processing for Functional Keynote: Biochip Fabrication  
*Koji Sugioka (RIKEN Advanced Science Institute);*

## 17:40 Surface Patterning for Photoresponsive Platforms

Invited

A. Roche (Universidad de Zaragoza-CSIC); H. Garcia-Juan (Universidad de Zaragoza-CSIC); J. Royes (Universidad de Zaragoza-CSIC); Luis Oriol (Universidad de Zaragoza-CSIC); M. Pinol (Universidad de Zaragoza-CSIC); Biagio Audia (University of Calabria); Pasquale Pagliusi (University of Calabria); Clementina Provenzano (University of Calabria); Gabriella Cipparrone (University of Calabria);

## 17:55 Deformation of Single Cells from Blood

Kirstine Sandager Nielsen (Technical University of Denmark); Freja Hoier (Technical University of Denmark); Anders Nymark Christensen (Technical University of Denmark); Morten Hanefeld Dziegiel (University Hospital Copenhagen); Rodolphe Marie (Technical University of Denmark); Kirstine Berg-Sorensen (Technical University of Denmark);

## 18:10 Conical Interfaces Induced by Optical Radiation Pressure: An Analogue of Taylor Cones

Ulysse Delabre (Université of Bordeaux); A. Girot (Université of Bordeaux); J. Petit (Université of Bordeaux); Raphael Saiseau (Université of Bordeaux); Thomas Guerin (Université of Bordeaux); Hamza Charaibi (Université of Bordeaux); Jean-Pierre Delville (Université of Bordeaux);

## 18:30 Interfacial Tension and Size-based Passive Droplet Sorting on Laser-patterned Surfaces

Invited

Z. Rashid (Koc University); A. Rehman (Koc University); A. Erten (Istanbul Technical University); B. Morova (Koc University); M. Muradoglu (Koc University); A. Jonas (Institute of Scientific Instruments, Czech Academy of Sciences); Alper Kiraz (Koc University);

## 14:30 Recent Advances in Mid-IR Trace Gas Sensing Based on Photoacoustic and Photothermal Spectroscopy

Invited

Jakob Hayden (Technische Universität Wien); Johannes Paul Waclawek (Technische Universität Wien); Stefan Lindner (Technische Universität Wien); Harald Moser (Technische Universität Wien); Bernhard Lendl (Technische Universität Wien);

## 14:50 Tracking Molecules from the Ground to the Sky. Multi-wavelength QCLs in Mobile Analyzers

Invited

Bela Tuzson (Laboratory for Air Pollution/Environmental Technology); Manuel Graf (Laboratory for Air Pollution/Environmental Technology); Herbert Looser (Laboratory for Air Pollution/Environmental Technology); Morten Hundt (Laboratory for Air Pollution/Environmental Technology); Philipp Scheidegger (Laboratory for Air Pollution/Environmental Technology); Lukas Emmenegger1 (Laboratory for Air Pollution/Environmental Technology);

## 15:10 Opto-acoustics in Optical Fibres for Sensing Applications

Invited

Luc Thevenaz (EPFL Ecole Polytechnique Federale de Lausanne); Zhisheng Yang (EPFL Ecole Polytechnique Federale de Lausanne); Desmond Chow (EPFL Ecole Polytechnique Federale de Lausanne);

## 15:30 Open-path Cavity Ring-down Sensor for Mobile Detection of Methane Emissions

Invited

Laurie McHale (Colorado State University); Benjamin Martinez (Colorado State University); Thomas Miller (TCB Engineering); Azer P. Yalin (Colorado State University);

15:50 Laser Heterodyne Radiometry for Ground-based Measurement of CH<sub>4</sub> in the Atmospheric Column

Invited

Fengjiao Shen (Université du Littoral Cote d'Opale); Pascal Jeseck (Université Pierre et Marie-Curie (Paris 6)); Yao-Veng Te (Université Pierre et Marie-Curie (Paris 6)); Tu Tan (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Xiaoming Gao (Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Eric Fertein (Université du Littoral Cote d'Opale); Wei Dong Chen (Université du Littoral Cote d'Opale);

## 16:10 A Small Photoacoustic Ethane Sensor Based on Low Power Consumption Laser and Digital Lock-in Technology

Chun Guang Li (Jilin University); Lei Dong (Shanxi University); Yiding Wang (Jilin University);

## 16:30 Coffee Break

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**Session 3P14a**  
**FocusSession.SC3: Advanced Photonic Technologies for Spectroscopic Applications 3**

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**Wednesday PM, June 19, 2019**

**Room 24 - 2nd Floor**

Organized by Wei Dong Chen, Vincenzo Spagnolo, Ulrike Willer

Chaired by Wei Dong Chen, Vincenzo Spagnolo, Ulrike Willer

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**Session 3P14b**  
**Radio Astronomy Instrumentation**

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**Wednesday PM, June 19, 2019**

**Room 24 - 2nd Floor**

Organized by Nima Razavi-Ghods

Chaired by Nima Razavi-Ghods

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- 17:00 The PHAROS2 Project  
*Keith Grainge (The University of Manchester); Alessandro Navarrini (National Institute for Astrophysics);*
- 17:20 Polarimetric Performance of the Interconnected Crossed Ring Antenna Array  
*Yongwei Zhang (The University of Manchester); Dong Chen (East China Normal University); Ahmed El-Makadema (The University of Manchester); Laith Danoon (The University of Manchester); Anthony Brown (The University of Manchester);*
- 17:40 Receiver Design for Low Frequency Radio Astronomy  
*Nima Razavi-Ghods (University of Cambridge);*
- 18:00 Drone Characterization Approach for Radio Telescopes  
*Iman O. Farhat (University of Malta); Denis Cutajar (University of Malta); Mark Bezzina (University of Malta); Kristian Zarb Adami (University of Oxford);*
- 18:20 Bayesian Techniques for Evaluating Noise Wave Parameters of Radiometer Systems  
*Ian L. V. Roque (University of Cambridge); W. Handley (University of Cambridge); Nima Razavi-Ghods (University of Cambridge);*
- 18:40 Applying Simple Foreground Filters to Study the Spectral Smoothness of the HERA Signal Chain  
*Aaron Ewall-Wice (McGill University); Adrian Liu (McGill University); Nicholas Kern (UC Berkeley); Aaron Parsons (UC Berkeley); Tzu-Ching Chang (Jet Propulsion Laboratory); Joseph Lazio (Jet Propulsion Laboratory);*
- 19:00 New Evidence for an Absorption Feature in the Radio Spectrum from EDGES Mid-band  
*Raul Monsalve (McGill University);*

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**Session 3P15**  
**SC3: Laser, Spectroscopy and Imaging for Functionalised Photonic Devices**

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**Wednesday PM, June 19, 2019**

**Room 25 - 2nd Floor**

Organized by Rosa Maria Montereali, Roberto Francini

Chaired by Rosa Maria Montereali, Roberto Francini

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- 14:30 Raman Spectroscopy of Polymeric Microstructures Invited with High Spatial Resolution  
*Tommaso Baldacchini (Chapman University);*
- 14:50 Luminescent Silver Nanoclusters and Their Applications  
*Luca Burratti (University of Rome Tor Vergata); Erica Ciotta (University of Rome Tor Vergata); Fabio De Matteis (University of Rome Tor Vergata); Stefano Casciardi (National Institute for Insurance against Accidents at Work (INAIL)); Roberto Pizzoferrato (University of Rome Tor Vergata); Paolo Proposito (University of Rome Tor Vergata);*
- 15:10 Functionalized Materials for Integrated Photonics: Invited Hybrid Integration of Organic Materials in Silicon-based Photonic Integrated Circuits for Advanced Optical Modulators and Light-sources  
*Patrick Steglich (IHP — Leibniz-Institut für Innovative Mikroelektronik); Christian Mai (IHP); Siegfried Bondarenko (Technical University of Applied Sciences Wildau); Claus Vilringer (Technical University of Applied Sciences Wildau); Silvio Pulwer (Technical University of Applied Sciences Wildau); Christoph Zesch (Technical University of Applied Sciences Wildau); Birgit Dietzel (Technical University of Applied Sciences Wildau); Sigurd Schrader (Technical University of Applied Sciences Wildau); Francesco Vitale (University of Rome 'Tor Vergata'); Fabio De Matteis (University of Rome 'Tor Vergata'); Mauro Casalboni (University of Rome 'Tor Vergata'); Andreas Mai (IHP — Leibniz-Institut für Innovative Mikroelektronik);*

- 15:30 CdSe Nanoplatelets: A New Generation of Fluorescent Colloidal Nanocrystals with Tunable Color, Narrow Emission Band and Fast Lifetime  
Invited  
*Sotirios Christodoulou (Istituto Italiano di Tecnologia); Anatolii Polovitsyn (Istituto Italiano di Tecnologia); Juan I. Climente (Universitat Jaume I); Josep Planelles (Universitat Jaume I); Jose L. Movilla (Universitat Jaume I); Zhiya Dang (Istituto Italiano di Tecnologia); Rosaria Brescia (Istituto Italiano di Tecnologia); Mirko Prato (Istituto Italiano di Tecnologia); Beatriz Martin-Garcia (Istituto Italiano di Tecnologia); Guillaume H. V. Bertrand (Istituto Italiano di Tecnologia); Ali Hossain Khan (Istituto Italiano di Tecnologia); Iwan Moreels (Istituto Italiano di Tecnologia);*
- 15:50 Application of LiF Crystal Detector for High-performance Imaging and Radiography with XFEL Beam  
Invited  
*Tatiana Pikuz (Osaka University; Joint Institute for High Temperatures RAS); Anatoly Faenov (Osaka University; Joint Institute for High Temperatures RAS); Norimasa Ozaki (Osaka University); Takeshi Matsuoka (Osaka University); Kento Katagiri (Osaka University); Daisuke Sagae (Osaka University); Sergey Makarov (Joint Institute for High Temperatures RAS); Michel Koenig (LULI, Ecole Polytechnique, CNRS, CEA, UPMC); Osaka University); Paul Mabey (LULI, Ecole Polytechnique, CNRS, CEA, UPMC); Bruno Albertazzi (LULI, Ecole Polytechnique, CNRS, CEA, UPMC); Gabriel Rigon (LULI, Ecole Polytechnique, CNRS, CEA, UPMC); Thibault Michel (LULI, Ecole Polytechnique, CNRS, CEA, UPMC); Alexis Casner (Universite de Bordeaux-CNRS-CEA, CELIA); Nickolas Hartley (Helmholtz-Zentrum Dresden-Rossendorf; Osaka University); Toshinori Yabuuchi (RIKEN SPring-8 Center); Yuichi Inubushi (JASRI/SPring-8); Makina Yabashi (RIKEN SPring-8 Center; JASRI/SPring-8); Alexei Buzmakov (FSRC “Crystallography and Photonics” RAS); Alexei N. Grum-Grzhimailo (Lomonosov Moscow State University); Francesca Bonfigli (ENEA C.R. Frascati); Maria Aurora Vincenti (ENEA C.R. Frascati); Massimo Piccinini (ENEA C.R. Frascati); Rosa Maria Montekali (ENEA C.R. Frascati); Enrico Nichelatti (ENEA C.R. Casaccia); Kohei Miyanishi (Osaka University); Sergey Pikuz (Joint Institute for High Temperatures RAS); Ryosuke Kodama (Osaka University);*
- 16:10 Frequency Conversion of Multi-line CO Laser Radiation into THz Range by Nonlinear Crystal ZnGeP<sub>2</sub>  
*Andrey A. Ionin (P. N. Lebedev Physical Institute, Russian Academy of Sciences); Igor O. Kinyavskiy (P. N. Lebedev Physical Institute, Russian Academy of Sciences); Yury M. Klimachev (P. N. Lebedev Physical Institute, Russian Academy of Sciences); Yury A. Mityagin (P. N. Lebedev Physical Institute, Russian Academy of Sciences); Adilya M. Sagitova (P. N. Lebedev Physical Institute, Russian Academy of Sciences); Sergey A. Savinov (P. N. Lebedev Physical Institute, Russian Academy of Sciences); Dmitriy V. Sinitsyn (P. N. Lebedev Physical Institute, Russian Academy of Sciences);*
- 16:30 **Coffee Break**
- 17:00 Investigating the Beneficial Role of MXenes and 2D Materials in Perovskite Solar Cells  
*Antonio Agresti (University of Rome Tor Vergata); Sara Pescetelli (University of Rome Tor Vergata); Anna Pazniak (National University of Science and Technology NUST-MISIS); Danila Saranin (National University of Science and Technology NUST-MISIS); Di Carlo Aldo (Universita degli Studi di Roma “Tor Vergata”);*
- 17:20 Quantum Dots Synthesis through Direct Laser Patterning  
Invited  
*Francesco Antolini (Fusion and Nuclear Security Department, ENEA); L. Orazi (University of Modena and Reggio Emilia); J. Harwell (University of St Andrews); I. D. W. Samuel (University of St Andrews);*
- 17:40 Bragg Curve Imaging and Dose Mapping by Photoluminescence of Color Centers in Lithium Fluoride Detectors for Proton Beam Diagnostics  
Invited  
*Rosa Maria Montekali (ENEA C.R. Frascati); M. Piccinini (ENEA C.R. Frascati, Fusion and Technologies for Nuclear Safety and Security Department); Luigi Picardi (ENEA C.R. Frascati); Concetta Ronzivalle (ENEA C.R. Frascati, Fusion and Technologies for Nuclear Safety and Security Department); Francesca Bonfigli (ENEA C.R. Frascati, Fusion and Technologies for Nuclear Safety and Security Department); Enrico Nichelatti (ENEA C.R. Casaccia, Fusion and Technologies for Nuclear Safety and Security Department); Maria Aurora Vincenti (ENEA C.R. Frascati, Fusion and Technologies for Nuclear Safety and Security Department);*

- 18:00 All-fiber Orbital Angular Momentum Mode Oscillator Based on Mode-selective Coupler  
*Runxia Tao (University of Science and Technology of China); Hongxun Li (University of Science and Technology of China); Peijun Yao (University of Science and Technology of China); Lixin Xu (University of Science and Technology of China); Chun Gu (University of Science and Technology of China);*
- 18:20 All-fiber Cylindrical Vector Beam Laser Based on Ring-core Yb-doped Fiber  
*Hongxun Li (University of Science and Technology of China); Peijun Yao (University of Science and Technology of China); Chun Gu (University of Science and Technology of China); Lixin Xu (University of Science and Technology of China); Rui Zhang (Research Center of Laser Fusion, China Academy of Engineering Physics); Jingqin Su (Research Center of Laser Fusion, China Academy of Engineering Physics);*
- 18:40 Near-infrared OLEDs and All-organic Optical Upconversion Devices  
 Invited *Marco Cremona (Pontifical Catholic University of Rio de Janeiro); Rian Aderne (Pontifical Catholic University of Rio de Janeiro); Zubair Ahmed (Pontifical Catholic University of Rio de Janeiro); Cristiano Legnani (Federal University of Juiz de Fora); Sandra Jenatsch (Fluxim AG); Karen Strassel (Laboratory for Functional Polymers); Roland Hany (Laboratory for Functional Polymers); Frank Nuesch (Laboratory for Functional Polymers);*
- 14:30 Recent Advances on Nanostructured Metamaterial Silicon Photonics  
 Invited *Carlos Alonso-Ramos (Université Paris 11); D. Pavel Cheben (National Research Council of Canada); Robert Halir (Universidad de Malaga); Jens H. Schmid (National Research Council); Jiri Ctyroky (Institute of Photonics and Electronics AS CR, v.v.i.); Daniel Benedikovic (Université Paris-Saclay); Alejandro Ortega-Monux (Universidad de Malaga, ETSI Telecomunicacion, Campus de Teatinos); A. Sanchez-Postigo (Universidad de Malaga, ETSI Telecomunicacion, Campus de Teatinos); David Gonzalez-Andrade (Instituto de Optica Daza de Valdes); J. G. Wanguemert-Perez (Universidad de Malaga); Inigo Molina-Fernandez (Malaga University); Aitor V. Velasco (Consejo Superior de Investigaciones Cientificas); Elaine Herrero-Bermello (Optics Institute "Daza de Valdes", Consejo Superior de Investigaciones Cientificas); J. M. Luque-Gonzalez (University Malaga); D. Pereira-Martin (University Malaga); Jean Lapointe (Information and Communication Technologies, National Research Council Canada); Siegfried Janz (Institute for Microstructural Sciences, National Research Council Canada (NRC)); Dan-Xia Xu (National Research Council Canada (NRC)); Daniele Melati (National Research Council of Canada); Yuri Grinberg (National Research Council of Canada); Shurui Wang (Information and Communication Technologies, National Research Council Canada); Martin Vachon (Information and Communication Technologies, National Research Council Canada); Mohsen Kamandar Dezfouli (Advanced Electronics and Photonics Research Centre, National Research Council Canada); R. Cheriton (Information and Communication Technologies, National Research Council Canada); V. Vakarín (Centre de Nanosciences et de Nanotechnologies, CNRS); M. Dado (University of Zilina); D. Oser (Centre de Nanosciences et de Nanotechnologies, CNRS); F. Mazeas (Université Côte d'Azur, CNRS, Institut de Physique de Nice); D. Perez-Galacho (Centre de Nanosciences et de Nanotechnologies, CNRS); Xavier Le Roux (Université Paris-Sud); Elena Duran-Valdeiglesias (Université Paris 11); L. Labonte (Université Côte d'Azur, CNRS, Institut de Physique de Nice); S. Tanzilli (Université Côte d'Azur, CNRS, Institut de Physique de Nice); Eric Cassan (Université Paris-Sud); Delphine Marris-Morini (Université Paris 11); Laurent Vivien (Université Paris-Sud);*

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**Session 3P16**

**SC3: Visible, Near-infrared and Beyond:  
Materials and Devices 2**

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**Wednesday PM, June 19, 2019**

**Room 15 - 2nd Floor**

Organized by Silvia Maria Pietralunga, Jonathan D. B. Bradley

Chaired by Silvia Maria Pietralunga, Jonathan D. B. Bradley

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- 14:50 Coherent Mid-infrared Super-continuum Generation  
Invited in Tapered Chalcogenide Fiber Pumped by Femtosecond Cr:ZnSe Laser  
*Gianluca Galzerano (Istituto di Fotonica e Nanotecnologie — CNR);*
- 15:10 Silicon Nitride for CMOS Photonics Systems  
Invited  
*Frederic Y. Gardes (University of Southampton); Thalia Dominguez Bucio (University of Southampton); Lorenzo Mastronardi (University of Southampton); Mehdi Banakar (University of Southampton); Alexandre Bazin (University of Southampton); Ali Z. Khokhar (University of Southampton); Cosimo Lacava (University of Southampton); Periklis Petropoulos (University of Southampton); Moïse Sotto (University of Southampton); Shinichi Saito (University of Southampton); Inigo Molina-Fernandez (Malaga University); Robert Halir (Universidad de Malaga); Alejandro Ortega-Monux (University Malaga); J. G. Wanguemert-Perez (Universidad de Malaga); Chen Yang (Zhejiang University); Jian-Jun He (Zhejiang University); Pavel Cheben (National Research Council of Canada); Jens H. Schmid (National Research Council); Callum G. Littlejohns (Nanyang Technological University); Kapil Debnath (University of St Andrews); Marco Clementi (Università di Pavia); Marco Liscidini (Università di Pavia); Daniele Bajoni (Università di Pavia); Matteo Galli (Università di Pavia);*
- 15:30 ALD Assisted 2D Monolayer Transition Metal  
Invited Dichalcogenides and Their Applications in Optoelectronics  
*Mustafa Demirtas (Eskisehir Technical University); Cem Odaci (Eskisehir Technical University); Yahaya Shehu (Eskisehir Technical University); Nihan Kosku Perkgoz (Eskisehir Technical University); Feridun Ay (Eskisehir Technical University);*
- 15:50 VIS-NIR GeSi Photodetector with Voltage Tunable Spectral Response  
*Enrico Talamas Simola (Politecnico di Milano); Andrea De Iacovo (University Roma Tre); Jacopo Frigerio (Politecnico di Milano and L-NESS); Andrea Ballabio (Politecnico di Milano and L-NESS); Andrea Fabbri (Universita degli Studi di Roma Tre); Giovanni Isella (Politecnico di Milano); Lorenzo Colace (University Roma Tre);*
- 16:10 Multispectral Photodetectors Based on PbS Colloidal Quantum Dots  
*Carlo Venettacci (University Roma Tre); Andrea De Iacovo (University Roma Tre); Carlo Giansante (University Roma Tre); Lorenzo Colace (University Roma Tre);*
- 16:30 **Coffee Break**
- 17:00 On-chip Amplifiers and Lasers in the Al<sub>2</sub>O<sub>3</sub> Oxide  
Invited Platform  
*Jinfeng Mu (University of Twente); Michiel De Goede (University of Twente); Carlijn Van Emmerik (University of Twente); Lantian Chang (University of Twente); Meindert Dijkstra (University of Twente); Sonia M. Garcia-Blanco (University of Twente);*
- 17:20 Extending into the IR with Reflective Semiconductor Composite Films  
*Kevin Conley (Aalto University); Vaibhav Thakore (University of Western Ontario); Mikko Karttunen (University of Western Ontario); Tapio Ala-Nissila (Aalto University);*
- 17:40 Silicon and Germanium-based Mid-infrared Platforms  
Invited  
*Goran Z. Mashanovich (University of Southampton); J. Soler Penades (University of Southampton); A. Osman (University of Southampton); A. Sanchez-Postigo (Universidad de Malaga, ETSI Telecomunicacion, Campus de Teatinos,); Z. Qu (Universidad de Malaga, ETSI Telecomunicacion, Campus de Teatinos,); Y. Wu (University of Southampton); C. J. Stirling (University of Southampton); D. P. Cheben (National Research Council Canada); A. Ortega-Monux (Universidad de Malaga, ETSI Telecomunicacion, Campus de Teatinos,); J. G. Wanguemert-Perez (Universidad de Malaga, ETSI Telecomunicacion, Campus de Teatinos,); I. Molina-Fernandez (Universidad de Malaga, ETSI Telecomunicacion, Campus de Teatinos,); M. Nedeljkovic (University of Southampton);*
- 18:00 Photodoping of Transparent Conducting Oxide  
Invited Nanocrystals  
*Ilka Kriegel (IIT Central Research Lab Genova); Carmine Urso (Italian Institute of Technology); Daniele Viola (Politecnico di Milano); Luca De Trizio (Italian Institute of Technology); Francesco Scotognella (Politecnico di Milano); Giulio Cerullo (Politecnico di Milano); Liberato Manna (Italian Institute of Technology);*

18:20 Thulium-doped Tellurium Oxide Amplifier for Optical Communication in the 2- $\mu\text{m}$  Window on a Silicon Nitride Integrated Optics Platform  
*Khadijeh Mirabbas Kiani (McMaster University); Henry C. Frankis (McMaster University); Richard Mateman (LioniX International BV); Arne Leinse (LioniX International BV); Andrew P. Knights (McMaster University); Jonathan D. B. Bradley (McMaster University);*

15:50 Nonreciprocity-induced Quantum Optical Torque

Invited

*Seyyed Ali Hassani Gangaraj (Cornell University); Mario G. Silveirinha (University of Lisbon); George W. Hanson (University of Wisconsin-Milwaukee); Mauro Antezza (Université de Montpellier); Francesco Monticone (Cornell University);*

16:10 Dispersion Interaction between Two Hydrogen Atoms in a Static External Electric Field

Invited

*Giuseppe Fiscelli (Università degli Studi di Palermo); Lucia Rizzuto (Università degli Studi di Palermo and CNISM); Roberto Passante (Università degli Studi di Palermo);*

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### Session 3P17

#### FocusSession.SC1: Casimir Effect and Forces at the Nanoscale 2

Wednesday PM, June 19, 2019

Room 33 - Bank Building

Organized by Mauro Antezza, Brahim Guizal

Chaired by Mauro Antezza, Brahim Guizal

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16:30 Coffee Break

17:00 Spontaneous Emission and Atom-surface Interaction of One Atom Nearby an Oscillating Conducting Plate

Invited

*Alessandro Ferreri (University of Paderborn); Michelangelo Domina (Università degli Studi di Palermo); Antonio Noto (Università degli Studi di Palermo and CNISM); Lucia Rizzuto (Università degli Studi di Palermo and CNISM); Roberto Passante (Università degli Studi di Palermo);*

14:30 Forces at the Nanoscale for Trapping Gas Bubbles in Water at a Finite Distance below a Water-solid Interface

Invited

*Sol Carretero-Palacios (Consejo Superior de Investigaciones Científicas — University of Seville); Victoria Esteso Carrizo (Consejo Superior de Investigaciones Científicas — University of Seville); Priyadarshini Thiyam (Lund University); Hernan Miguez Garcia (Spanish National Research Council); Drew F. Parsons (Murdoch University); Iver Brevik (Norwegian University of Science and Technology); Mathias Bostrom (Norwegian University of Science and Technology);*

17:20 Semiclassical Mie Scattering and the Casimir Effect: Contributions from Geometrical Optics and Diffraction for Large Aspect Ratios

Invited

*Vinicius Henning (Universidade Federal do Rio de Janeiro); Benjamin Spreng (Universität Augsburg); Michael Hartmann (Universität Augsburg); Gert-Ludwig Ingold (Universität Augsburg); Paulo A. Maia Neto (Universidade Federal do Rio de Janeiro);*

14:50 Dispersion Forces in Inhomogeneous Planarly Layered Media

*Johannes Fiedler (University of Oslo); C. Persson (University of Oslo); S. Y. Buhmann (University of Freiburg);*

17:40 Impact of Continuum Electronic States on Dispersion Interactions within Atomistic and Macroscopic Pictures

*Mohammad Reza Karimpour (University of Luxembourg); Dmitry Fedorov (University of Luxembourg); Alexandre Tkatchenko (University of Luxembourg);*

15:10 Casimir Interaction for Spherical Geometries in the Plane-wave Basis

Invited

*Benjamin Spreng (Universität Augsburg); Paulo A. Maia Neto (Universidade Federal do Rio de Janeiro); Gert-Ludwig Ingold (Universität Augsburg);*

18:00 The Auger Effect in Dispersing and Absorbing Environments

*Janine Franz (University of Freiburg); R. Bennett (University of Freiburg); Stefan Yoshi Buhmann (University of Freiburg);*

15:30 Recent Measurements of Casimir Forces and Torques

Invited

*Jeremy N. Munday (University of Maryland);*

18:20 Nonperturbative Dynamical Casimir Effect in Optomechanical Systems

Invited

*Salvatore Savasta (University of Messina); Omar Di Stefano (RIKEN Cluster for Pioneering Research);*

18:40 Interaction of Mechanical Oscillators Mediated by the Exchange of Virtual Photon Pairs

Invited

*Omar Di Stefano (RIKEN Cluster for Pioneering Research); Salvatore Savasta (University of Messina);*

- 19:00 Controlling the Casimir-Lifshitz Force between Plane Parallel Systems with Multi-layered Dielectric Nanostructures  
*Victoria Esteso Carrizo (Consejo Superior de Investigaciones Científicas — University of Seville); Sol Carretero-Palacios (Consejo Superior de Investigaciones Científicas — University of Seville); Hernan Miguez Garcia (Spanish National Research Council);*

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**Session 3P18a**

**Terahertz Radiation: From Generation to Applications in Condensed Matter, Biomedicine and Particle Physics 2**

**Wednesday PM, June 19, 2019**

**Room 38 - Chemistry Building**

Organized by Stefano Lupi, Augusto Marcelli

Chaired by Augusto Marcelli, Massimo Petrarca

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- 14:30 Terahertz-driven Ultrafast Insulator-to-metal Transition in Vanadium Oxides VO<sub>2</sub> and V<sub>2</sub>O<sub>3</sub>  
 Invited *Flavio Giorgianni (Laboratory for Nonlinear Optics (LNO), PSI); Joe Sakai (Université Francois Rabelais de Tours); Stefano Lupi (Università La Sapienza);*
- 14:50 Terahertz Free-electron-laser and Its Applications  
 Invited *Akinori Irizawa (Osaka University);*
- 15:10 Surface Damage Angular Dependence of Metallic Systems by High Gradient THz Radiation  
 Invited *Salvatore Macis (Università di Roma Tor Vergata); Stefano Lupi (Università La Sapienza); Akinori Irizawa (Osaka University); J. Rezvani (INFN — Istituto Nazionale di Fisica Nucleare); Augusto Marcelli (LNF-INFN);*
- 15:30 Nonlinear THz Spectroscopy in Low-dimensional Semiconductors Using a Free-electron Laser  
 Invited *Stephan Winnerl (Helmholtz-Zentrum Dresden-Rossendorf); Johannes Schmidt (Helmholtz-Zentrum Dresden-Rossendorf); Jacob C. König-Otto (Helmholtz-Zentrum Dresden-Rossendorf); Martin Mittendorff (Universitat Duisburg-Essen); Harald Schneider (Helmholtz-Zentrum Dresden-Rossendorf); Manfred Helm (Helmholtz-Zentrum Dresden-Rossendorf);*

- 15:50 Measurement and Research of Liquid Transmission Spectrum Based on Continuous-wave Terahertz Spectroscopy  
 Invited *Sujie Guo (Beihang University); De-Yin Kong (Beihang University); Cun-Jun Ruan (Beihang University); Yan Zhang (Beihang University);*

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**Session 3P18b**

**Millimeter Wave and Terahertz Source Devices**

**Wednesday PM, June 19, 2019**

**Room 38 - Chemistry Building**

Organized by Cun-Jun Ruan

Chaired by Cun-Jun Ruan

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- 16:10 High Power Terahertz Source Based on Planar Antenna Integrated Vacuum Photodiode  
*Jun Dai (Beihang University); Cun-Jun Ruan (Beihang University); Yikun Ding (Beihang University); Xing-Yun Zhang (Beihang University);*
- 16:30 **Coffee Break**
- 17:00 Theory and Simulations of Drifting Plasmons for Terahertz Generation in Two-dimensional Devices  
*Simone Zonetti (Imperial College London); O. Sydoruk (Imperial College London);*
- 17:20 Improvement of Output Performance in G-band Extended Interaction Klystron with Narrow Coupling Cavity  
*Shasha Li (Beihang University); Renjie Li (Beihang University); Cun-Jun Ruan (Beihang University);*
- 17:40 A Novel High Power Millimeter Microwave Transit Time Oscillator  
*Weibing Tan (Northwest Institute of Nuclear Technology); Xiaoze Li (Northwest Institute of Nuclear Technology); Xiaoxin Zhu (Northwest Institute of Nuclear Technology); Ligang Zhang (Northwest Institute of Nuclear Technology);*
- 18:00 Elimination of Mode Competition in TE<sub>0n</sub> Mode Gyrotron  
*Narugopal Nayek (SAMEER Centre for High Power Microwave Tube and Component Technology); Ramesh Kumar Sonkar (Indian Institute of Technology Guwahati); Ratnajit Bhattacharjee (Indian Institute of Technology Guwahati);*

- 18:20 Nonlinear Echelon Slab Based Terahertz Pulse Sources  
*Gyorgy Toth (University of Pécs); Priyo Syamsul Nugraha (MTA-PTE High-Field Terahertz Research Group); Laszlo Palfalvi (University of Pécs); Jozsef Andras Fulop (MTA-PTE High-Field Terahertz Research Group); Gergo Krizsan (University of Pécs); Levente Tokodi (University of Pécs); Zoltan Tibai (University of Pécs); Gabor Almasi (University of Pécs); Janos Hebling (University of Pécs);*
- 18:40 A Dual-frequency High Power Microwave Generator with Low Guiding Magnetic Field  
*Huida Wang (Tsinghua University); Wei Song (Northwest Institute of Nuclear Technology); Renzhen Xiao (Northwest Institute of Nuclear Technology); Chenchen Tong (Northwest Institute of Nuclear Technology); Xiaoze Li (Northwest Institute of Nuclear Technology);*
- 19:00 Role of Explosive Electron Emission Threshold and Plasma Formation Rate in the Start Oscillation and Phase Synchronization of Relativistic Backward Wave Oscillators  
*Renzhen Xiao (Northwest Institute of Nuclear Technology); Yuqun Deng (Northwest Institute of Nuclear Technology); Yanchao Shi (Northwest Institute of Nuclear Technology); Dewen Yang (Northwest Institute of Nuclear Technology);*
- 15:30 Wired Network Distributed Diagnosis and Sensors Fusion by Multi-carrier Time Domain Reflectometry and Graph Theory  
*Ousama Osman (WIN MS); Soumaya Sallem (CEA, LIST, GIF-SUR-YVETTE); Marc Olivas Carrion (CEA LIST); Laurent Sommervogel (CEA LIST); Pierre Bonnet (Clermont University, Blaise Pascal University); Françoise Paladian (Institut Pascal);*
- 15:50 Shielding Damage Characterization in Twisted Pair Cables Using OMTDR-based Reflectometry and Inverse Problems  
*Wafa Ben Hassen (CEA, LIST, Laboratoire de Fiabilité et Integration Capteurs); Moussa Kafal (CEA, LIST);*
- 16:10 Software Correction of Defective Lossy Transmission Line Networks  
*Ali Al Ibrahim (Universite Clermont Auvergne); C. Chauviere (Universite Blaise Pascal); Pierre Bonnet (Clermont University, Blaise Pascal University);*
- 16:30 **Coffee Break**

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**Session 3P19b**
**Wireless Power Transfer for Biomedicine and IoTs**


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**Wednesday PM, June 19, 2019**
**Room 39 - Electrical Building**

Organized by Yongxin Guo

 Chaired by Yongxin Guo, Shao Ying Huang

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**Session 3P19a**
**Health Monitoring of Structures and Electrical Wire Interconnect Systems**


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**Wednesday PM, June 19, 2019**
**Room 39 - Electrical Building**

Organized by Fabrice Auzanneau, Moussa Kafal

 Chaired by Fabrice Auzanneau, Moussa Kafal

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- 14:30 Development of the Adaptive Fault Detection Method for Cable Considering the Wave Dispersion  
*Seung Jin Chang (Hankyong National University);*
- 14:50 A Heuristic Approach Applied to Time Reversal MUSIC Method for Soft Fault Location in Noisy Transmission Line Networks  
*Moussa Kafal (CEA, LIST); Andrea Cozza (SUP-ELEC);*
- 15:10 Electrical Tagging Devices of Complex Electrical Networks for Fault Location Diagnosis  
*Florent Loete (CentraleSupélec); Michel Sorine (INRIA-IRISA);*
- 17:00 Wireless Power Transmission with Harmonics-enabled Antenna Alignment  
*Yongxin Guo (National University of Singapore); Hao Zhang (National University of Singapore);*
- 17:20 Modularized Transmitter Design for Dynamic Wireless Power Transfer  
*Chen Xu (University of Liverpool); Yuan Zhuang (University of Liverpool); Chaoyun Song (University of Liverpool); Yi Huang (University of Liverpool); Jiafeng Zhou (University of Liverpool);*
- 17:40 Effect of Biological Properties on Parasitic Capacitance Variation of Wireless Power Transfer Coil  
*Dongwook Kim (Korea Advanced Institute of Science and Technology (KAIST)); Jongwook Kim (Korea Advanced Institute of Science and Technology (KAIST)); Haerim Kim (Korea Advanced Institute of Science and Technology (KAIST)); Seungyoung Ahn (Korea Advanced Institute of Science and Technology (KAIST));*

- 18:00 Towards Wireless Power Transfer in Human-involved Environment  
*Wenshen Zhou (Singapore University of Technology and Design); Shao Ying Huang (Singapore University of Technology and Design);*
- 18:20 Electromagnetic Evaluation for RFID Localization System in Smart Healthcare Environments  
*Jose A. Hernandez (Canary University Hospital Consortium); Angeles M. Trillo (University Hospital Ramon y Cajal-IRYCIS); Silvia De Miguel (Health Institute Carlos III, Telemedicine and eHealth Research Unit); Oscar J. Suarez (Direccion General de Telecomunicaciones y Tecnologias de la Informacion); Francisco J. Falcone (Universidad Pública de Navarra); Victoria Ramos (Health Institute Carlos III);*
- 18:40 Vertically Stacked Binomial-arrays of Resonant Dipoles for Mobile Wireless Communication and Scavenging Applications  
*Tolulope Christiana Erinoshio (D.S. Adegbenro ICT Polytechnic); Sulaiman Adeniyi Adekola (University of Lagos);*
- 15:50 Electromagnetic Compatibility of LED Lamps  
*Marek Bugaj (Military University of Technology); Rafal Przesmycki (Military University of Technology); Jaroslaw Bugaj (Military University of Technology);*
- 16:10 Immunity of LED Lamps to HPM Pulses  
*Marek Bugaj (Military University of Technology); Rafal Przesmycki (Military University of Technology);*
- 16:30 **Coffee Break**
- 17:00 Logo Spiral Microstrip Antenna with Rotating Polarity to the Pulsar Clock  
*Rafal Przesmycki (Military University of Technology); Marek Bugaj (Military University of Technology); Marian Tadeusz Wnuk (Military University of Technology);*
- 17:20 Application of Microstrip Antennas in Energy Harvesting Systems  
*Marian Tadeusz Wnuk (Military University of Technology); Marek Bugaj (Military University of Technology); Rafal Przesmycki (Military University of Technology);*
- 17:40 Co-channel Interference in Multi-beam Receiving Antenna for 28 GHz  
*Cezary Ziolkowski (Military University of Technology); Jan M. Kelner (Military University of Technology);*

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**Session 3P20**

**EMC Problems with Antennas & Wave Propagation**

**Wednesday PM, June 19, 2019**

**Room 40 - Electrical Building**

Organized by Rafal Przesmycki

Chaired by Marian Tadeusz Wnuk, Leszek Nowosielski

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- 14:30 The Software Concept Used to HPM Pulse Measure  
*Rafal Przesmycki (Military University of Technology);*
- 14:50 D-dot Probes Used in HPM Pulse Measurements  
*Rafal Przesmycki (Military University of Technology); Marek Bugaj (Military University of Technology);*
- 15:10 The Configuration of Laboratory Stands for Shielding Effectiveness Measurements  
*Leszek Nowosielski (Military University of Technology); Michal Nowosielski (Medical University of Warsaw);*
- 15:30 Multimedia Projector in the Process of Electromagnetic Infiltration  
*Rafal Przesmycki (Military University of Technology); Marek Bugaj (Military University of Technology); Marian Tadeusz Wnuk (Military University of Technology);*
- 18:00 The Dynamic Range Maximisation of Shielding Effectiveness Measurements  
*Leszek Nowosielski (Military University of Technology); Marian Tadeusz Wnuk (Military University of Technology); Joanna Kuzba (Military University of Technology);*
- 18:20 Method of Transmitter and Electric Field Strength Meter Synchronization during Shielding Effectiveness Measurement  
*Leszek Nowosielski (Military University of Technology); Jacek Rychlica (Military University of Technology);*
- 18:40 Spatial Multiplexing of Channels by Using Multi-beam Antenna System for 60 GHz  
*Jan M. Kelner (Military University of Technology); Cezary Ziolkowski (Military University of Technology);*
- 19:00 Influence of Spatial Selection of Antennas on Radio Link Attenuation in Multipath Propagation Environment for 73 GHz  
*Jan M. Kelner (Military University of Technology); Cezary Ziolkowski (Military University of Technology);*

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**Session 3P0**  
**Poster Session 4**

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**Wednesday PM, June 19, 2019**

**15:00 PM - 18:00 PM**

**Room Corridor**

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|---|--|----|---|
| 1 | <p>Comparison between EOT Properties of Metal and PEC Plates with Subwavelength Periodic Slits<br/><i>J. Yamauchi (Hosei University); Masato Oishi (Hosei University); R. Nakada (Hosei University); H. Nakano (Hosei University);</i></p>   | 8  | <p>Properties of Axial Caustic under Autofocusing of Airy-like and Chirped Beams<br/><i>Andrey V. Ustinov (Image Processing Systems Institute of RAS — Branch of the FSRC “Crystallography and Photonics” RAS); Dmitry A. Savelyev (Samara National Research University);</i></p>   |
| 2 | <p>Measurement Validation of Hybrid Electromagnetic Field Analysis Method for Airport Surface including Slope Ground in VHF Band<br/><i>Satoshi Kuroda (Aoyama Gakuin University); Ryosuke Suga (Aoyama Gakuin University); Atsushi Kezuka (National Institute of Maritime, Port and Aviation Technology); Osamu Hashimoto (Aoyama Gakuin University);</i></p>   | 9  | <p>Design and Implementation of a Real-time Smart Home Automation System Based on Arduino Microcontroller Kit and LabVIEW Platform<br/><i>Abdulwadoud A. Maash (Taif University); Mohamed O. Elhabib (Taif University); Ahmad A. Alahmadi (Taif University); Farhan Atallah Salem (Taif University); Mohamed S. Soliman (Taif University);</i></p>  |
| 3 | <p>Visualization of Polarization Conversion Characteristics of Periodically Perforated Metal Plates<br/><i>J. Yamauchi (Hosei University); Hiroya Ishihara (Hosei University); Shunsuke Yoshino (Hosei University); H. Nakano (Hosei University);</i></p>  | 10 | <p>Periodic Rogue Waves of the Extended Nonlinear Schrödinger Equation<br/><i>Stanko N. Nikolic (Texas A&amp;M University at Qatar); Najdan B. Aleksic (Institute of Physics Belgrade); Omar A. Ashour (University of California); Ali Ali (Texas A&amp;M University at Qatar); Milivoj R. Belic (Texas A&amp;M University at Qatar); Siu A. Chin (Texas A&amp;M University);</i></p>                             |
| 4 | <p>Research of Time-domain Model of HPM Radiation Field Measurement System Based on Scatter Parameters Transient Analysis<br/><i>Zhen-Bo Cheng (Northwest Institute of Nuclear Technology); Tingyong Jiang (Northwest Institute of Nuclear Technology); Jiawei Yao (Northwest Institute of Nuclear Technology); Youjie Yan (Northwest Institute of Nuclear Technology); Zhanjun Liu (Northwest Institute of Nuclear Technology);</i></p> | 11 | <p>A Plasma Chamber: Electromagnetic Modeling and Experiments<br/><i>Petr Drexler (Brno University of Technology); Pavel Fiala (Brno University of Technology); M. Klima (Brno University of Technology); Eva Gescheidtova (Brno University of Technology); L. Zajickova (Brno University of Technology);</i></p>   |
| 5 | <p>MHD Analysis of Large Induction Electromagnetic Pumps<br/><i>Jacob Eapen (North Carolina State University); Anant Raj (North Carolina State University);</i></p>  | 12 | <p>Numeric Simulations on the Choice of Curve Parameters for ED and SVD Analysis of Radiating Sources<br/><i>Fortuna Munno (Universita della Campania Luigi Vanvitelli); Giovanni Leone (Universita della Campania Luigi Vanvitelli); Rocco Pierrri (Universita degli Studi della Campania “Luigi Vanvitelli”);</i></p>   |
| 6 | <p>The Progress of Mark6 Usage in Chinese Radio Astronomy Observatory<br/><i>Shaoguang Guo (Shanghai Astronomical Observatory, Chinese Academy of Science); Jiyun Li (Shanghai Astronomical Observatory, Chinese Academy of Science); Renjie Zhu (Shanghai Astronomical Observatory, Chinese Academy of Science);</i></p>  | 13 | <p>Shape Identification of Extended Dielectric Inhomogeneities in Inhomogeneous Medium via Factorization Method<br/><i>Chi Young Ahn (National Institute for Mathematical Sciences); Taeyoung Ha (National Institute for Mathematical Sciences); Won-Kwang Park (Kookmin University);</i></p>   |
| 7 | <p>Tow-tone Radar Sensor Based Target Detection and Classification Scheme<br/><i>Eugin Hyun (DGIST); Young-Seok Jin (DGIST (Daegu Geongbuk Institute of Science &amp; Technology));</i></p>  | 14 | <p>Synthesis of Microwave Concave Semitransparent Screen for Reduction of Radiation in the Shadow Domain<br/><i>Dmitry V. Tatarnikov (Topcon Positioning Systems, Moscow Aviation Institute (Technical University)); Alexey A. Generalov (Topcon Positioning Systems, Moscow Aviation Institute (Technical University)); Dmitry Voskresenskiy (Moscow Aviation Institute (National Research University));</i></p> |

- 15 Magnetoelectric Current Sensor Based on MEMS Technology  
*Viktor Sergeevich Leontiev (Novgorod State University); O. V. Sokolov (Novgorod State University); Alexander Sergeevich Tatarenko (Novgorod State University); Roman Valerevich Petrov (Novgorod State University); Mirza Imamovich Bichurin (Novgorod State University);*
- 16 Interpretation on Electromagnetic Interference between Open Cable Trays  
*Jaeyul Choo (Korea Institute of Nuclear Safety (KINS)); Dong Jin Lee (Korea Institute of Nuclear Safety);*
- 17 Calculation of Electron Beam Properties under the Presence of an Axially Varying Magnetostatic Field by Using the FDTD Code COCHLEA  
*Dimitrios V. Peponis (National and Kapodistrian University of Athens); George P. Latsas (National and Kapodistrian University of Athens); Ioannis G. Chelis (National and Kapodistrian University of Athens); Ioannis G. Tigelis (University of Athens);*
- 18 Ultra-thin Absorptive Films Turn Perfect Reflector to Perfect Absorber  
*Wenyu Tong (Soochow University); Jie Luo (Soochow University); Yun Lai (Nanjing University);*
- 19 Performance Analysis of High- $k$  Dielectric Based Double-gate Carbon Nanotube MOSFET  
*Shashi K. Dargar (University of KwaZulu-Natal); Vivanjay M. Srivastava (University of KwaZulu-Natal);*
- 20 Photonic Jets Arrays Produced by Triangular Dielectric Prisms for Mid-IR Imaging  
*Vladislav D. Zaitsev (Samara National Research University); Sergey S. Stafeev (Image Processing Systems Institute — Branch of the Federal Scientific Research Centre “Crystallography and Photonics” of RAS);*
- 21 Realization of Moiré Pattern Photonic Crystal for Electromagnetic Wave Propagation Applications  
*R. Rachel Darchy (University of Madras (Guindy campus)); C. Venkateswaran (University of Madras (Guindy Campus)); Natesan Yogesh (University of Madras (Guindy Campus));*
- 22 High Refractive Index Dielectric Nanoparticles for Sensing, Sizing and Building Switching Devices  
*Angela I. Barreda (University of Cantabria); Fernando Moreno (University of Cantabria); Francisco Gonzalez (University of Cantabria);*
- 23 Controlling Non-steady-state Upconversion Pathways for Synergetic Anti-counterfeiting  
*Yingdong Han (Tianjin University); Fan Li (Tianjin University); Tiegen Liu (Tianjin University); Zhenzhou Cheng (Tianjin University);*
- 24 Analysis of the Errors in Polarimetry with Full Poincaré Beams  
*Juan C. Suarez-Bermejo (Universidad Politécnica de Madrid); J. C. G. De Sande (Universidad Politécnica de Madrid); M. Santarsiero (Università Roma Tre); G. Piquero (Universidad Complutense de Madrid);*
- 25 Ppb-level TDLAS Sensor for CO Detection of SF<sub>6</sub> Decomposition by Use of a 2.33  $\mu\text{m}$  Diode Laser and Wavelength Modulation Spectroscopy  
*Hongpeng Wu (Shanxi University); Lei Dong (Shanxi University); Shangzhi Li (Shanxi University); Ruyue Cui (Shanxi University); Frank K. Tittel (Rice University);*
- 26 Measuring the Orbital Angular Momentum of Asymmetric Light Beams by Two Cylindrical Lenses  
*Victor V. Kotlyar (Image Processing Systems Institute of the Russian Academy of Sciences); Alexey A. Kovalev (Samara State Aerospace University, Image Processing Systems Institute of the Russian Academy of Science); Alexey P. Porfirev (Image Processing Systems Institute of the Russian Academy of Sciences);*
- 27 The Influence of the Refractive Index Contrast on the Transmission Characteristics of a Structure Consisting of Two Identical Optical Microwaveguides of Rectangular Cross-section  
*Galina Zaretskaya (Saint Petersburg Electrotechnical University “LETI”); Andrey Drozdovskii (Saint Petersburg Electrotechnical University “LETI”); Boris Kalinikos (Saint Petersburg Electrotechnical University “LETI”);*
- 28 High Cyclotron Harmonics Excitation in Multi-beam Terahertz Range Gyrotrons  
*Andrey P. Fokin (Federal State Budgetary Scientific Institution “Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences”); I. V. Bandurkin (Institute of Applied Physics RAS); Mikhail Yu. Glyavin (Federal State Budgetary Scientific Institution “Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences”); Vladimir N. Manuilov (Institute of Applied Physics RAS); Anton S. Sedov (Federal State Budgetary Scientific Institution “Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences”); A. I. Tsvetkov (Institute of Applied Physics RAS); I. V. Zotova (Institute of Applied Physics RAS); A. E. Fedotov (Institute of Applied Physics RAS); Toshitaka Idehara (University of Fukui); O. Dumbrajs (University of Latvia);*

- 29 Frequency Doubling of Gyrotron Radiation at 263 GHz in A3B5 Semiconductors  
*Andrey P. Fokin (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"); V. V. Rumyantsev (Institute for Physics of Microstructures RAS); A. A. Dubinov (Institute for Physics of Microstructures RAS); V. V. Utochkin (Institute for Physics of Microstructures RAS); Mikhail Yu. Glyavin (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"); S. V. Morozov (Institute for Physics of Microstructures);*
- 30 Theoretical Analysis of Sub-THz Gyro-Klystrons for Spectroscopic Applications  
*Andrey P. Fokin (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"); R. M. Rozental (Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)); N. S. Ginzburg (Institute of Applied Physics RAS); M. Yu. Glyavin (Institute of Applied Physics RAS); I. V. Zotova (Institute of Applied Physics RAS); A. S. Sergeev (Institute of Applied Physics RAS); T. Idehara (University of Fukui (FIR FU));*
- 31 Modeling Multilayered Samples of Inorganic and Organic Speckle Structures  
*Pavel Fiala (Brno University of Technology); Radim Kadlec (Brno University of Technology); Petr Drexler (Brno University of Technology);*
- 32 A Striking Coupling between Graphene and Black Phosphorus in Near-field Radiative Heat Transfer  
*Lei Qu (Harbin Institute of Technology); Hong-Liang Yi (Harbin Institute of Technology); Yong Zhang (Harbin Institute of Technology);*
- 33 Radiation-based Near-field Thermal Rectification via Asymmetric Nanostructures of the Single Material  
*Cheng-Long Zhou (Harbin Institute of Technology); Yong Zhang (Harbin Institute of Technology); Hongliang Yi (Harbin Institute of Technology); Lei Qu (Harbin Institute of Technology);*
- 34 Graphene-like  $\text{Si}_3\text{N}_3$  and  $\text{Si}_3\text{N}_4$  Nanolayers on Silicon Surface  
*Alena A. Razumets (SSPA "Optics, optoelectronics and Laser Technology"); Yahor V. Lebiadok (SSPA "Optics, Optoelectronics and Laser Technology"); Mikalai Rzhutski (B. I. Stepanov Institute of Physics);*
- 35 Degenerate Energy Exchange between Optical  $\text{TE}_2$ -modes of the Planar Waveguide Based on a Thin Left-handed Film and a Nonlinear Substrate  
*Rudolf V. Litvinov (Tomsk Polytechnic University); Albert S. Buller (Tomsk State University of Control Systems and Radioelectronics); Danil A. Maurer (Tomsk State University of Control Systems and Radioelectronics); Natalia Rudolfovna Litvinova (Tomsk State University of Control Systems and Radioelectronics);*
- 36 Performance Analysis of Cost-efficient High-speed up to 32 Gbit/s WDM-PON Next-generation Access Network with Dispersion Compensation  
*Ambra Korra (Polytechnic University of Tirana); Toms Salgals (Riga Technical University); Jurgis Porins (Riga Technical University); Edgars Kazoks (Riga Technical University); Rozeta Miho (Polytechnic University of Tirana); Sandis Spolitis (Riga Technical University);*
- 37 Analog Radio-over-fiber WDM-PON Architecture for 5G Millimeter-wave Interface  
*Toms Salgals (Riga Technical University); Laura Skladova (Riga Technical University); Jurgis Porins (Riga Technical University); Vjaceslavs Bobrov (Riga Technical University); Sandis Spolitis (Riga Technical University);*
- 38 Evaluation of Waveguide Crossings for Polarization Independent Optical Triplexer with Cascaded Multimode-interference Couplers  
*Hideki Yokoi (Shibaura Institute of Technology);*
- 39 A Rotating Mechanical Magnetic Antenna for SLF Transmission  
*Qiang Zhou (National University of Defense Technology); Wei Shi (National University of Defense Technology); Zhenyang Hao (Nanjing University of Aeronautics and Astronautics); Bin Liu (National University of Defense Technology);*
- 40 Gradient Metamaterial Design for Substrate-free Lens  
*Lingyun Li (Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences); Tianyu Pen (Shanghai Institute of Microsystem and Information Technology, CAS); Rui Luo (Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences); Hao Sun (Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences); Yuanyue Guo (University of Science and Technology of China);*

- 41 Enhancement of Monopole Antenna Gain with Additional Vertical Wire Medium Structure  
*Saran Kampeephat (Rajamangala University of Technology Isan); Paowphattra Kamphikul (Chiang Mai University); Rangsana Wongsan (Suranaree University of Technology);*
- 42 A Design of a 1 to 10 GHz Ultrawide Band Antenna  
*Fabiola Martinez-Zuniga (Instituto Politecnico Nacional); Jorge R. Sosa-Pedroza (Instituto Politecnico Nacional); Jair De Jesus Sebastian Villa (Instituto Politécnico Nacional);*
- 43 Reconstruction of Equivalent Human Heart Dipole Parameters for the Torso Model Represented by Elliptical Conducting Cylinder of a Finite Length  
*Nikolay Olegovich Strelkov (National Research University "Moscow Power Engineering Institute"); M. N. Kramm (National Research University "Moscow Power Engineering Institute");*
- 44 Calculation and Physical Modeling of Electric Potentials Generated by a Dipole Source in the Conducting Cylinder of a Finite Length  
*Nikolay Olegovich Strelkov (National Research University "Moscow Power Engineering Institute"); M. N. Kramm (National Research University "Moscow Power Engineering Institute"); K. Y. Kozhevnikov (National Research University "Moscow Power Engineering Institute");*
- 45 Towards a Biophysical Treatment of Leaky Gut Syndrome  
*Alberto Foletti (Clinical Biophysics International Research Group); Paolo Baron (Clinical Biophysics International Research Group);*
- 46 Digital Beam Forming System in Low Frequency Radio Array  
*Jiyun Li (Shanghai Astronomical Observatory, Chinese Academy of Science); Baoqiang Lao (Shanghai Astronomical Observatory, Chinese Academy of Sciences);*
- 47 A Compact Octa-band Antenna for Handsets Application  
*Peng Wang (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University); Yongwei Li (Southwest Jiaotong University);*
- 48 Bias Analysis and Correction for Wideband Polarimetric Phased Array Radar  
*Zhanling Wang (National University of Defense Technology); Chen Pang (National University of Defense Technology); Yongzhen Li (National University of Defense Technology); Xuesong Wang (National University of Defense Technology); Dou Sun (National University of Defense Technology);*
- 49 A Compact HAT Shaped Uniplanar Printed Antenna for Portable Wireless Systems  
*Praveen Vummadisetty Naidu (JNT University Kakinada — Velagapudi Ramakrishna Siddhartha Engineering College); Arvind Kumar (Kautilya Institute of Technology and Engineering); G. Harika (Velagapudi Ramakrishna Siddhartha Engineering College); Vege Priyanka (Velagapudi Ramakrishna Siddhartha Engineering College); Md. Arsha (Velagapudi Ramakrishna Siddhartha Engineering College);*
- 50 MIMO Performance Evaluation of 5G Antennas for Virtual Reality Applications  
*T. Frangieh (Antonine University); N. Musilmani (Antonine University); Remi M. Sarkis (TICKET Laboratory);*
- 51 Study of Resistive Thin-film Coatings for Application in Millimeter-band Vacuum Power Amplifiers  
*Andrei Victorovich Starodubov (Saratov State University); Stanislav Andreevich Makarkin (Saratov State University); Alexey Alexandrovich Serdobintsev (Saratov State University); Anton Mikhailovich Pavlov (Saratov State University); Victor Vladimirovich Galushka (Saratov State University); Ilya Olegovich Kozhevnikov (Saratov State University);*
- 52 Characterization of Wideband Gain RF Amplifier for L-Band Frequency Application  
*Eki Ahmad Zaki Hamidi (UIN Sunan Gunung Djati Bandung); Annisa Fitri (Institut Teknologi Bandung); Azwar Mudzakkir Ridwan (UIN Sunan Gunung Djati Bandung); Achmad Munir (Institut Teknologi Bandung);*
- 53 Photo-definable Low Loss Dielectric Material for mm Wave Packaging  
*Se-Hoon Park (Korea Electronics Technology Institute); Ji Yeon Park (Korea Electronics Technology Institute); Jong-In Ryu (Korea Electronics Technology Institute);*
- 54 Compact Band-pass Filter with 2nd and 3rd Harmonic Rejection by Using Low Temperature Co-fired Ceramic  
*Jong-In Ryu (Korea Electronics Technology Institute); Dongsu Kim (Korea Electronics Technology Institute);*
- 55 A Highly Integrated LTCC-based Triplexer Using SAW Resonators  
*Dongsu Kim (Korea Electronics Technology Institute); Jin-Young Jeong (Korea Electronics Technology Institute); Jong-In Ryu (Korea Electronics Technology Institute); Jun-Chul Kim (Korea Electronics Technology Institute); Seongwook Kim (SAWNICS);*

- 56 Non-signaling MIMO OTA Platform for Antenna Testing with More Discerning Performance Indices  
*Jeng-Kuang Hwang (Yuan Ze University); Chien-Min Chen (Yuan-Ze University); Tzung-Wern Chiou (BWant Co. Ltd.);*
- 57 The Thermal Effect on RF Amplifiers Using Quarter Micron Gate Length GaN on SiC HEMT Technology  
*Yi-Jie Kang (Chang Gung University); Chia-Han Lin (Chang Gung University); Hsiang-Chun Wang (Chang Gung University); Chia-Hao Yu (Chang Gung University); Hsien-Chin Chiu (Chang Gung University); Hsuan-Ling Kao (Chang Gung University);*
- 58 Coupling Effects Cancellation on the Channel Capacity of MIMO Systems Operating at 2.4 GHz  
*Intissar Adouni (University of Tunis EL Manar); Mourad Aidi (University of Tunis El Manar); T. Aguli (University of Tunis EL Manar);*
- 59 Performances Evaluation of an Enhanced Modulation Technique for UWB Direct Chaotic Communication  
*M. Messaadi (Ecole Militaire Polytechnique); Said Sadoudi (Ecole Militaire Polytechnique); Djamel Teguiq (Ecole Militaire Polytechnique); A. Boukhelifa (Ecole Militaire Polytechnique); A. Boukhelifa (Ecole Militaire Polytechnique); A. Mesloub (Ecole Militaire Polytechnique);*
- 60 Contact Device with Tunable Strip Matching Circuits for Measuring Parameters of Microwave Transistors  
*Vladimir Ivanovich Evseev (LLC "Arzamas Instrument-making Design Bureau"); Elena Alexandrovna Lupanova (Nizhniy Novgorod State Technical University n.a. R. E. Alekseev); Sergey Michailovich Nikulin (Alekseev's Nizhny Novgorod State Technical University); Vitaliy Vladimirovich Petrov (Nizhniy Novgorod State Technical University n.a. R. E. Alekseev);*
- 61 A Tunable Terahertz Phase Shifter Based on Liquid Crystal Material  
*Jun Qing Wang (University of Electronic Science and Technology of China); Zongjun Shi (University of Electronic Science and Technology of China); Ziqiang Yang (University of Electronic Science and Technology of China); Jin Xin Shi (University of Electronic Science and Technology of China);*
- 62 Design and Optimization of Multi-coil Wireless Charging System for Charging Area Expansion  
*Sang-Won Kim (Electronics and Telecommunications Research Institute (ETRI)); Jung-Ick Moon (Electronics and Telecommunications Research Institute); In-Kui Cho (Electronics and Telecommunications Research Institute); Soo-Ho Shon (Electronics and Telecommunications Research Institute (ETRI));*
- 63 Enhancement in a Multi-coil Wireless Power Transfer System  
*Samuel Afoakwa (Hambat National University); Young-Bae Jung (Hambat National University);*
- 64 A Convolution Neural Network based Non-destructive Optical Inspection of High Volume Parts  
*Reinhold Ludwig (Worcester Polytechnic Institute);*
- 65 Detection and Tracking of Moving UAVs  
*Jiri Janousek (Brno University of Technology); Petr Marcon (Brno University of Technology); Josef Pokorny (Brno University of Technology); Jan Mikulka (Brno University of Technology);*
- 66 90 GHz-band Foreign Object Debris Detection System and Electromagnetic Radar Cross Section Simulation for Runway Surveillance  
*Nobuhiko Shibagaki (Hitachi Kokusai Electric Inc.); Yousuke Sato (Hitachi Kokusai Electric Inc.); Ken-nich Kashima (Hitachi Kokusai Electric Inc.);*
- 67 Modification of the IRI Electron Density Profile from an Observation Ionogram Using the Full Wave Method in the Lower Ionosphere  
*Tetsuo Fukami (National Institute of Technology, Ishikawa College); Isamu Nagano (Kanazawa University); Ryoichi Higashi (National Institute of Technology);*
- 68 3-D ISAR Image Reconstruction Based on Distribution Optimization of Radar Network  
*Le Kang (Air Force Engineering University); Ying Luo (Air Force Engineering University); Xiao-Wen Liu (Air Force Engineering University); Jia-Cheng Ni (Air Force Engineering University); Qun Zhang (Air Force Engineering University);*
- 69 Performance Evaluation of 24 GHz High-resolution Electromagnetic Wave Rain Gauge (EWRG)  
*Jeongho Choi (Chosun College of Science & Technology); Sanghun Lim (Korea Institute of Civil Engineering and Building Technology); Myoungsun Han (Korea Institute of Civil Engineering and Building Technology);*
- 70 Data Assimilation and Application Based on MWHTS for Typical Tropical Cyclone  
*Jieying He (National Space Science Center, Chinese Academy of Sciences); Shengwei Zhang (National Space Science Center, Chinese Academy of Sciences); Yao Chen (National Space Science Center, Chinese Academy of Sciences);*

- 71 Differential Phase Processing and Data Quality Control for Polarimetric Weather Radar in Southern China  
*Qiulei Xia (Chengdu University of Information Technology); Haonan Chen (Colorado State University); Jieying He (National Space Science Center, Chinese Academy of Sciences); Wenjuan Zhang (State Key Laboratory of Severe Weather, Chinese Academy of Meteorological Sciences); Zhendong Yao (Chengdu University of Information Technology);*
- 72 Advanced Metal Detection Technique Based on Synchronized Chaotic Oscillators  
*Timur I. Karimov (Saint Petersburg Electrotechnical University "LETI"); Denis N. Butusov (Saint Petersburg Electrotechnical University "LETI" (SPbETU "LETI")); Vyacheslav G. Rybin (Saint Petersburg Electrotechnical University "LETI" (SPbETU "LETI")); Olga S. Druzhina (Saint Petersburg Electrotechnical University "LETI"); Ekaterina P. Solomevich (Saint Petersburg Electrotechnical University "LETI"); Dmitrii I. Kaplun (SPbETU "LETI"); Alexander S. Voznesenskiy (Saint Petersburg Electrotechnical University "LETI");*
- 73 Optimization of a Frequency Comb-based Calibration of a Tunable Laser  
*Ramzil R. Galiev (Russian Quantum Center); N. M. Kondratiev (Russian Quantum Center); V. E. Lobanov (Russian Quantum Center); A. S. Voloshin (Russian Quantum Center); I. A. Bilenko (Russian Quantum Center);*
- 74 Near-surface Plasma Formation in Air under Action of Two Laser Pulses at Two Wavelengths on Titanium in the Air  
*A. N. Chumakov (B. I. Stepanov Institute of Physics); N. A. Bosak (B. I. Stepanov Institute of Physics); Aliaxey A. Ivanov (B. I. Stepanov Institute of Physics);*
- 09:30 Results from Four Years of Experimental Characterization of the Ka-/Q-band Earth-space Propagation Channel Using the Alphasat Receiver in Milan  
*Lorenzo Luini (DEIB — Dipartimento di Elettronica, Informazione e Bioingegneria); C. Riva (Politecnico di Milano); James A. Nessel (NASA Glenn Research Center); M. Zemba (NASA Glenn Research Center);*
- Invited 09:50 Microwave Tropospheric Scintillation and Excess Attenuation Prediction for Satellite to Earth Links Using 3D High-resolution Meteorological Forecast Models: Data Validation and Case Study  
*A. M. Marziani (DIET, Sapienza Università di Roma, Istituto Superiore C.T.I., Ministero dello Sviluppo Economico); F. Consalvi (Fondazione Ugo Bordonì); G. Fusco (Istituto Superiore C.T.I., Ministero dello Sviluppo Economico); C. Riva (Politecnico di Milano); L. Luini (Politecnico di Milano); A. Parodi (CIMA Foundation); Luca Pulvirenti (CIMA Research Foundation); M. Lagasio (CIMA Research Foundation); M. Biscarini (Sapienza Università di Roma); N. Pierdicca (Sapienza Università di Roma); Frank Silvio Marzano (Sapienza Università di Roma);*
- 10:10 Modeling and Predicting Down-link Tropospheric Channel above Ku Band for Interplanetary Exploration  
*Marianna Biscarini (Sapienza University of Rome); A. Vittimberga (Sapienza University of Rome); S. Di Fabio (University of L'Aquila); K. De Sanctis (HIMET); L. Milani (Sapienza University of Rome); M. Montagna (ESOC); Frank Silvio Marzano (Sapienza University of Rome);*
- Invited 10:30 Ground-based Measurements of Slant-path Attenuation  
*George Brost (Air Force Research Laboratory);*
- 11:00 **Coffee Break**
- 11:30 Web Portal for a Databank of Microwave Radiometric Measurements of the Atmosphere in Resonant Band of Water Vapor 18–27 GHz  
*Dobroslav P. Egorov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); Boris Georgievich Kutuza (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences); M. T. Smirnov (Kotel'nikov Institute of Radioengineering and Electronics, RAS);*
- 11:50 Cloud Attenuation Stochastic Characterization from Ground-based Microwave Radiometric Data at Ka-band  
*Luca Milani (Sapienza University of Rome); M. Biscarini (Sapienza Università di Roma); Frank Silvio Marzano (Sapienza University of Rome);*

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### Session 4A1

#### FocusSession.SC5: Atmospheric Remote Sensing and Propagation 1

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Thursday AM, June 20, 2019

Room 1 - 1st Floor

Organized by Frank Silvio Marzano, Domenico Cimini

Chaired by Frank Silvio Marzano, Domenico Cimini

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09:00 ESA Activities on Modelling and Analyses of the Atmospheric Radio Channel for Space Systems  
*Antonio Martellucci (European Space Agency);*

- 12:10 Practical Relationships between Propagation and Meteorological Variables Derived from Videodistrometer Measurement and Its Ambiguity Discussion — Examples from Prague (CZ)  
*Karel Pitas (University of Pardubice); Ondrej Fiser (University of Pardubice);*
- 12:30 Evaluation of FSO-technology as a Candidate for Reliable Long-distance Communication Links for Deep Space Applications  
*Hristo Ivanov (Graz University of Technology); Erich Leitgeb (Graz University of Technology); Thomas Plank (Graz University of Technology); Daniel Kraus (Graz University of Technology);*
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- Session 4A2**  
**Remote Sensing of the Earth and Atmosphere**  
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- Thursday AM, June 20, 2019**  
**Room 5 - 1st Floor**  
Chaired by Bo O. Zhu, Jieying He
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- 09:00 Performance and Application of the MWHTS on Chinese FY-3C Meteorological Satellite  
*Na Li (National Space Science Center, Chinese Academy of Sciences); Shengwei Zhang (National Space Science Center, Chinese Academy of Sciences); Jieying He (National Space Science Center, Chinese Academy of Sciences);*
- 09:20 Sun-induced Chlorophyll Fluorescence Retrieval from Chinese TanSat in Southeast China  
*Shilei Li (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Maofang Gao (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Ya Gao (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Si-Bo Duan (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Xiao-Jing Han (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Zhao-Liang Li (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences);*
- 09:40 The Application of Layered Medium Theories to the Electromagnetic Problem of a Moving Charge between the Earth and the Ionosphere  
*Bo O. Zhu (Nanjing University);*
- 10:00 Study of Phase Calibration for GEOSAR Based on Chinese Area Positioning System  
*Liang Li (Institute of Electronics, Chinese Academy of Science); Jun Hong (Institute of Electronics, Chinese Academy of Science); Feng Ming (Institute of Electronics, University of Chinese Academy of Sciences); Liangjiang Zhou (Institute of Electronics, Chinese of Sciences);*
- 10:20 Preliminary Study on Remote Sensing the Relationship between the Brightness Temperature Pulses Observed with a Ground-based Microwave Radiometer and the Lightning Action Integral  
*Sulin Jiang (Nanjing University of Information Science & Technology); Yun Pan (Nanjing University of Information Science & Technology); Qing Li (Nanjing University of Information Science & Technology); Lianfa Lei (Nanjing University of Information Science & Technology); Weitao Lyu (Chinese Academy of Meteorological Sciences); Yang Zhang (Chinese Academy of Meteorological Sciences); Zhenhui Wang (Nanjing University of Information Science & Technology);*
- 10:40 Solar Influence to Ground-based Microwave Remote Sensing of the Atmosphere  
*Zhenhui Wang (Nanjing University of Information Science & Technology); Yun Pan (Nanjing University of Information Science & Technology); Qing Li (Nanjing University of Information Science & Technology); Sulin Jiang (Nanjing University of Information Science & Technology); Lianfa Lei (Nanjing University of Information Science & Technology);*
- 11:00 **Coffee Break**
- 11:30 Effect of Internal Pore Sizes of the Silica Gel on the Dielectric Permittivity in the Frequency Range from 100 Hz to 8 GHz  
*E. S. Kroshka (Omsk State University); Pavel Petrovich Bobrov (Omsk State Pedagogical University);*
- 11:50 Influence of Solar Rotation Influence on Ionospheric/Thermospheric Parameters: Modeling and Observations for Case Studies  
*Maxim V. Klímenko (Immanuel Kant Baltic Federal University); Konstantin G. Ratovsky (Institute of Solar-Terrestrial Physics, SB RAS); D. Themens (University of New Brunswick); Anna S. Yasyukevich (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); Vladimir V. Klímenko (West Department of Pushkov Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation RAS);*

- 12:10 Dynamical Effects in the Middle Atmosphere Energy Balance  
*Boris G. Shpynev (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); Denis S. Khabituiev (Institute of Solar Terrestrial Physics); Marina A. Chernigovskaya (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences);*

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**Session 4A3a**

**SC4&SC5: Mobile and Satellite Parameters Estimations with Electromagnetic/Optical Technologies**

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**Thursday AM, June 20, 2019**

**Room 7 - 1st Floor**

Organized by Vincenzo Ferrara, Elena Pettinelli

Chaired by Vincenzo Ferrara

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- 09:00 Comparison of Optical Quality of Some Passive Laser Ranged Satellites  
 Invited

*Claudio Paris (Centro Fermi — Enrico Fermi Historical Museum of Physics and Study and Research Centre); Giampiero Sindoni (Centro Fermi — Enrico Fermi Historical Museum of Physics and Study and Research Centre);*

- 09:20 Telecommunication Satellite Technical Solutions for Geo-localisation of Interfering Sources: An Innovative Approach  
 Invited

*Vincenzo Schena (Thales Alenia Space Italia); Guglielmo Lulli (Thales Alenia Space Italia); Luca Zuccaro (“Sapienza” Università di Roma); Vincenzo Ferrara (Sapienza University of Rome);*

- 09:40 Low-cost Stellar Sensor for Attitude Control of Small Satellites  
 Invited

*Sara Scibelli (Sapienza University of Rome); Vincenzo Ferrara (Sapienza University of Rome); Fabrizio Bernardini (Sapienza University of Rome);*

- 10:00 Tunable Defected Ground Structure Band Pass Filter for Cognitive Radio Applications

*Ahmed A. Ibrahim (El-Minia University); Mohamed K. Rashad (MSA University); Mostafa Ashraf (MSA University); Hassan Aboushady (University Pierre and Marie Curie, Sorbonne University);*

- 10:20 Quadband Microstrip Slot Antenna Combined with U- and L-shape Strips for Multiband Body-centric Wireless Applications

*Basari (Universitas Indonesia);*

- 10:40 Design of a Novel Microwave Antenna  
*Vandana (Amity University); Mukul Varshney (Amity University); Sujata Pandey (Amity University); Arun Sanjeev (Amity University);*

**11:00 Coffee Break**

- 11:30 Design of Coplanar Waveguide Fed Semi-compound Reconfigurable Slot Antenna for Wireless Applications

*Yagateela Pandu Rangaiah (Vardhaman College of Engineering); R. V. S. Satyanarayana (S.V. University);*

- 11:50 Compressive Sensing in Direction of Arrival (DOA) Applications. A Comparative Study on Different Acquisition Systems

*Marco Muzi (“La Sapienza” University of Rome); Nicola Tedeschi (“La Sapienza” University of Rome); Luca Scorrano (Elettronica SpA); Vincenzo Ferrara (Sapienza University of Rome); Fabrizio Frezza (“La Sapienza” University of Rome);*

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**Session 4A3b**

**Microwave and Millimeter Wave Circuits and Devices 1**

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**Thursday AM, June 20, 2019**

**Room 7 - 1st Floor**

Chaired by Vincenzo Ferrara

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- 12:10 A Sub-2 dB NF and 5–5.8 GHz CMOS Low Noise Amplifier with Bandwidth Extension for WiFi Applications

*Dongmyeong Kim (Chonbuk National University); Donggu Im (Chonbuk National University);*

- 12:30 A Wideband Low Noise Flat Gain Amplifier for Interferometric Passive Microwave Imaging System

*Chen Chen (Beihang University); Umar Dilshad (Beihang University); Anyong Hu (Beihang University); Jungang Miao (Beihang University);*

- 12:50 94-GHz Millimeter-wave CMOS Low-LO-power Ring Mixer by Weak Inversion Biasing Technique

*Chia-Yu Liu (National Cheng Kung University); Huey-Ru Chuang (National Cheng Kung University);*

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**Session 4A4**
**SC1: Computational Techniques in Electromagnetics and Applications 2**


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**Thursday AM, June 20, 2019**
**Room 8 - 1st Floor**

Organized by Tsuneki Yamasaki, Yoichi Okuno

 Chaired by Tsuneki Yamasaki, Andrey S. Andrenko

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- 09:00 Scattering of Electromagnetic Wave by a Rectangular Cylinder with Conducting Strips  
*Tsuneki Yamasaki (Nihon University); Toshiki Shibayama (Nihon University); Ryosuke Ozaki (Nihon University);*
- 09:20 Electromagnetic Interactions of Dye Molecules Surrounding a Nanosphere  
*Baptiste Auguie (Victoria University of Wellington); Eric C. Le Ru (Victoria Univ Wellington);*
- 09:40 A Tool: Coverage Mapping with Direct and Reflected Rays from Lossy and Lossless Surfaces  
*Eray Arik (Valeo EMC Division); Mehmet Baris Tabakcioglu (Bursa Technical University);*
- 10:00 A Tool: Finding Optimum Base Station Location with S-UTD Model  
*Alp Eren Aydin (Bursa Technical University); Mehmet Baris Tabakcioglu (Bursa Technical University);*
- 10:20 Simulation of the Forest Environment Using the Model of Individual Trees for Real-time Prediction of Radio Wave Propagation  
*Elena Sergeevna Malevich (National Research University "Moscow Power Engineering Institute"); Mikhail Sergeevich Mikhailov (National Research University "Moscow Power Engineering Institute"); A. A. Volkova (National Research University "Moscow Power Engineering Institute");*
- 10:40 Study on Tracking of On-road Vehicles by Using Fractal Image Analysis  
*Takashi Kuroiwa (Nihon University); Syota Yazawa (Nihon University); Kiyozumi Niizuma (Nihon University);*
- 11:00 **Coffee Break**
- 11:30 Flexible Tunable Silicon on Insulator Multimode Interference Coupler Using Multi-heater Design  
*Ukrit Mankong (Chiang Mai University); Nattapol Ittipratheep (Chiang Mai University); Suruk Udomsom (Chiang Mai University);*

- 12:10 Broadband Green's Function and Radiation for Irregularly Shaped Waveguide  
*Tien-Hao Liao (California Institute of Technology); Kung-Hau Ding (Air Force Research Laboratory, Wright-Patterson AFB); Leung Tsang (University of Michigan);*

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**Session 4A5**
**SC5: Medical Applications of Radars**


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**Thursday AM, June 20, 2019**
**Room Hall of Frescoes - 1st Floor**

Organized by Stefano Pisa, Emanuele Piuzzi

 Chaired by Stefano Pisa

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- 09:00 Recent Trends in Medical Radar  
*Stefano Pisa (Sapienza University of Rome); Emanuele Piuzzi (Sapienza University of Rome); Erika Pittella (Sapienza University of Rome); Giulia Sacco (Sapienza University of Rome);*
- 09:20 Non-contact Sleep Disorders Detection Framework for Smart Home  
*Lesya N. Anishchenko (Bauman Moscow State Technical University); Andrey V. Zhuravlev (Bauman Moscow State Technical University); Vladimir V. Razevig (Bauman Moscow State Technical University); Margarita A. Chizh (Bauman Moscow State Technical University); Kseniya Evteeva (Bauman Moscow State Technical University); Lyudmila Korostovtseva (Almazov National Medical Research Center); Mikhail Bochkarev (Almazov National Medical Research Center); Yurii Sviryaev (Almazov National Medical Research Center);*
- 09:40 Real-time Operating UWB Sensor System for Static Person Localization  
*Maria Svecova (Technical University); Tamas Porteleky (Technical University of Kosice); Dusan Kocur (Technical University of Kosice);*
- 10:00 Low-cost Portable Bioradar System for Fall Detection  
*Lesya N. Anishchenko (Bauman Moscow State Technical University); Andrey V. Zhuravlev (Bauman Moscow State Technical University); Vladimir V. Razevig (Bauman Moscow State Technical University); Margarita A. Chizh (Bauman Moscow State Technical University);*
- 10:20 Evaluation of Radar Doppler for Remote Heart Rate Monitoring  
*Paola Russo (Università Politecnica delle Marche); Alfredo De Leo (Università Politecnica delle Marche); Graziano Cerri (Università Politecnica delle Marche);*

- 11:00 **Coffee Break**
- 11:30 Numerical and Experimental Validation of a Brain Stroke Microwave Imaging Technique  
*Igor Bisio (University of Genoa); C. Estatico (University of Genoa); Alessandro Fedeli (University of Genoa); Fabio Lavagetto (University of Genoa); G. L. Mancardi (University of Genoa); Matteo Pastorino (University of Genoa); A. Randazzo (University of Genoa); Andrea Sciarrone (University of Genoa);*
- 11:50 Ultra-wideband Featuring Enhanced Delay and Sum Algorithm and Oriented for Detecting Early Stage Breast Cancer  
*Mohammed Sadoon Hathal (University of Baghdad); S. S. Salih (AL-Farabi University College); A. H. Hasan (AL-Farabi University College);*
- 12:10 A Novel Lotus Shaped Multiband Patch Antenna with Improved Performance  
*Akshaj Arora (Amity University); Sahitya Singh (Amity University); Vandana (Amity University); Mukul Varshney (Amity University); Manoj Kumar Pandey (Amity University); Sujata Pandey (Amity University);*
- 10:00 Multi-standard Reader Antenna for Active and Passive RFID Applications  
*Khodor Jebbawi (Aix-Marseille Université); Matthieu Egels (Aix-Marseille Université); Philippe Pannier (Aix-Marseille Université);*
- 10:20 Dual-band Quasi-Yagi Antenna Gain Enhancement by Using a Reflector Plate  
*Ferda Cansu Gul (Istanbul Technical University); Kamil Karacuha (Information Institute of Istanbul Technical University); Sebahattin Eker (Istanbul Technical University);*
- 10:40 Mitigation of RF Radiation and Electromagnetic Interference from a Lithium-ion Battery Pack Used in Wearable Safety and Health Devices in the Mining Industry  
*Jingcheng Li (National Institute for Occupational Safety and Health (NIOSH)); Jacob L. Carr (National Institute for Occupational Safety and Health (NIOSH)); Bruce G. Whisner (National Institute for Occupational Safety and Health); Patrick McElhinney (National Institute for Occupational Safety and Health); Miguel A. Reyes (National Institute for Occupational Safety and Health (NIOSH)); Christopher Jobes (National Institute for Occupational Safety and Health (NIOSH));*

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**Session 4A6**

**Microstrip Antennas, Array Antennas, Theory and Radiation 1**

**Thursday AM, June 20, 2019**

**Room Cloister Hall - 1st Floor**

Chaired by Jean Marc Laheurte, Jingcheng Li

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- 09:00 SIW-fed Multilayer High-gain Antenna for Q-band Applications  
*Arash Masrouri (South Tehran Branch, Azad University); Nasrin Amiri (Tarbiat Modares University);*
- 09:20 Statistical Study of the Matching Properties of a Set of Dipoles  
*Imad Adjali (Université Paris-Est, ESYCOM (EA2552), UPEMLV); Aycha Gueye (Université Paris-Est); Shermila Mostarshedi (Université Paris-Est, ESYCOM (EA2552), UPEMLV); Benoit Poussot (Université Paris-Est Marne-la-Vallée); Jean Marc Laheurte (Université Paris-Est Marne-La-Vallée);*
- 09:40 Quasi-isotropic Radiation by Coupling Loop and Dipole Antennas  
*Jaechun Lee (Samsung Advanced Institute of Technology); Sang Joon Kim (Samsung Advanced Institute of Technology);*
- 11:00 **Coffee Break**
- 11:30 Efficiency Improvement of Patch Antenna with Metamaterial Technique for Modern Wireless Communication Applications  
*Paowphattra Kamphikul (Chiang Mai University); Saran Kampeephat (Rajamangala University of Technology Isan); Rangsan Wongsan (Suranaree University of Technology);*
- 11:50 A Low Profile Pentagonal Shape Zeroth Order Resonator Antenna for  $K_a$  Band Applications  
*Chetan Barde (National Institute of Technology); Arvind Choubey (National Institute of Technology); Rashmi Sinha (National Institute of Technology); Santosh Kumar Mahto (National Institute of Technology); Prakash Ranjan (National Institute of Technology);*
- 12:10 Integrated Filtering-balun Planar Dipole Antenna  
*Amira Eltokhy (University of Greenwich); Peter Callaghan (University of Kent); Yi Wang (University of Birmingham);*
- 12:30 Beam-switched ESPAR Antenna with Embedded Matching Network for V2X Communications  
*Anastasios Paraskevopoulos (University of Piraeus); Dimitris Rongas (National Technical University of Athens); Leonidas Marantis (University of Piraeus); Athanasios G. Kanatas (University of Piraeus);*

12:50 Multi-band Miniaturized Fractal Patch Antenna for Wireless Communication  
*Sohaïl Imran Saeed (Iqra National University Peshawar); Ahsan Altaf (Istanbul Medipol University); Mehre Munir (Iqra National University Peshawar); Saad Hassan Kiani (Iqra National University Peshawar);*

10:40 Peculiarities of Photon Emission of Whole Non-diluted Human Blood from Healthy Donors and Patients with Different Diseases  
*Kirill N. Novikov (M. V. Lomonosov Moscow State University); Vladimir L. Voelikov (Lomonosov Moscow State University); Ekaterina V. Buravleva (M. V. Lomonosov Moscow State University); Nadezhda G. Berdnikova (I. M. Sechenov First Moscow Medical State University);*

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**Session 4A7**

**Optical Sensor, Photonics, Nano Optics, Biophotonics**

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**Thursday AM, June 20, 2019**

**Room 17 - 1st Floor**

Chaired by Wojciech Nasalski, Francesco Prudenzano

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09:00 Ultrafast Charge Transfer Dynamics in 2D Heterostructures

*Stefano Dal Conte (Politecnico di Milano); Z. Wang (Politecnico di Milano); C. Trovatiello (Politecnico di Milano); G. Piccini (Center for Nanotechnology Innovation @ NEST); S. Forti (Center for Nanotechnology Innovation @ NEST); F. Fabbri (Center for Nanotechnology Innovation @ NEST); W. Li (The University of Texas at Austin); C. Coletti (Center for Nanotechnology Innovation @ NEST); Deji Akinwande (The University of Texas at Austin); Giulio Cerullo (Politecnico di Milano);*

09:20 Mapping the Evolution of the Coherent Vibrational Wavepacket of Molecules

*Bing Zhang (Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences);*

09:40 Computational Design of Nano-optical Tags for Reliable Identification Systems

*Sadri Guler (Middle East Technical University); Gokhan Karaova (Middle East Technical University); Ali Samet Ayik (Middle East Technical University); Ozgur Ergul (Middle East Technical University);*

10:00 Room-temperature 1 to 7.5 THz Metrological Grade Terahertz Spectrometer

*Michele De Regis (INO, Istituto Nazionale di Ottica — CNR); Luigi Consolino (INO, Istituto Nazionale di Ottica — CNR); Saverio Bartalini (CNR — INO, Istituto Nazionale di Ottica); Paolo De Natale (CNR — INO, Istituto Nazionale di Ottica);*

10:20 Exact Description of Vector Beam Interactions with Planar Photonic Structures

*Wojciech Nasalski (Institute of Fundamental Technological Research, Polish Academy of Sciences);*

11:00 **Coffee Break**

11:30 Current Issues of Chlorophyll Spectroscopy, Free and Encapsulated into Proteins

*Margus Ratsep (University of Tartu); Juha Matti Linanto (University of Tartu); Kristjan Leiger (University of Tartu); Arvi Freiberg (University of Tartu);*

11:50 Improved Nano-optical Traps for Single-particle Sensing Applications

*Goktug Isiklar (Middle East Technical University); Mustafa Algun (Middle East Technical University); Ozgur Ergul (Middle East Technical University);*

12:10 Optical Microcavities Resonances: Chemical and Biological Sensing Applications

*Dario Laneve (Polytechnic University of Bari); Mario Christian Falconi (Polytechnic University of Bari); Francesco Chiavaioli (“Nello Carrara” Institute of Applied Physics (IFAC-CNR)); Daniele Farnesi (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Gualtiero Nunzi Conti (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Silvia Soria (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Francesco Baldini (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Francesco Prudenzano (Politecnico di Bari);*

12:30 Micro and Nanocavity Perturbation Theory for Biosensing

*Philippe Lalanne (Institut d’Optique-LP2N/CNRS);*

12:50 Pd Stripes on Elastomeric Substrates for Low-cost, Quick-response and High-contrast Optical Hydrogen Sensor

*Xiaoyi She (Sun Yat-Sen University); Yang Shen (Sun Yat-Sen University); Chongjun Jin (Sun Yat-sen University);*

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**Session 4A8**
**SC1&SC3: Quantum Information Processing  
and Devices 2**


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**Thursday AM, June 20, 2019**
**Room 6 - Mezzanine**

Organized by Hai-Zhi Song, Guangwei Deng

 Chaired by Salvatore Savasta, Tongcang Li
 

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 09:00 Single Rare-earth Ions as Atomic-scale Probes in  
Invited Ultra-scaled Transistors

*Qi Zhang (University of Science and Technology of China); Guangchong Hu (University of New South Wales); Gabriele G. De Boo (University of New South Wales); Milos Rancic (Australian National University); Brett C. Johnson (University of Melbourne); Jeffrey C. McCallum (University of Melbourne); Jiangfeng Du (University of Science and Technology of China); Matthew J. Sellars (Australian National University); Chunming Yin (University of New South Wales); Sven Rogge (University of New South Wales);*

 09:20 III-nitride Quantum Dots for Single-photon Sources:  
Invited Epitaxial Growth and Optical Characteristics

*Munetaka Arita (The University of Tokyo); Mark J. Holmes (The University of Tokyo); Yasuhiko Arakawa (The University of Tokyo);*

 09:40 Plasmonic Waveguides Coupled to Single Photon  
Invited Sources for Integrated Quantum Optics

*Shailesh Kumar (University of Southern Denmark); Sergey I. Bozhevolnyi (University of Southern Denmark);*

 10:00 Ultrafast Optomechanical Rotation and Its Effects on  
Invited Electron Spin Qubits

*Tongcang Li (Purdue University);*

 10:20 Scalable Interfacing of Quantum Photonic Platforms:  
Invited Solid-state Single-photon Sources and Reconfigurable  
Photonic Circuits

*Carlos Anton (Université Paris Saclay); J. C. Loredó (Université Paris Saclay); G. Coppola (Université Paris Saclay); N. Viggianello (Sapienza Università di Roma); H. Ollivier (Université Paris Saclay); A. Harouri (Université Paris Saclay); N. Somaschi (Quandela, SAS); A. Crespi (Istituto di Fotonica e Nanotecnologie, CNR); I. Sagnes (Université Paris Saclay); Aristide Lemaitre (LPN/CNRS); Loic Lanco (Université Paris-Saclay); R. Osellame (Politecn Milan); Fabio Sciarrino (Sapienza Università di Roma); Pascale Senellart (LPN/CNRS);*

 10:40 First Order Optical Interference between Distinguish-  
Invited able Photon Paths

*Manuel Fernandez-Guasti (Universidad Autonoma Metropolitana Iztapalapa); C. Garcia-Guerrero (Universidad Autonoma Metropolitana Iztapalapa);*

 11:00 **Coffee Break**

 11:30 Non Classical Effects in the Ultrastrong Coupling  
Invited Regime of Light-matter Interaction

*Luigi Garziano (RIKEN Cluster for Pioneering Research); Salvatore Savasta (University of Messina);*

 11:50 Light-matter Interaction in the Ultra-strong Coupling  
Invited Regime

*Salvatore Savasta (University of Messina); Omar Di Stefano (RIKEN Cluster for Pioneering Research);*

 12:10 Engineering Single-photon Emission Using Plasmonic  
Invited Nanostructures

*Klas Lindfors (University of Cologne);*

 12:30 Study of the Dynamics of the Nuclear Spin Bath in  
Invited Europium-doped Yttrium Orthosilicate

*Manjin Zhong (Southern University of Science and Technology); Rose L. Ahlefeldt (The Australian National University); Matthew J. Sellars (Australian National University);*

 12:50 Spectral Multiplexed Light-matter Interface Based on  
Invited Erbium Doped Fibre

*Qiang Zhou (University of Electronic Science and Technology of China); E. Saglamyurek (University of Alberta Edmonton); Daniel Oblak (University of Calgary); Wolfgang Tittel (University of Calgary);*

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**Session 4A9**
**SC3: Label-based and Label-free Optical  
Biosensors 1**


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**Thursday AM, June 20, 2019**
**Room 4 - Mezzanine**

Organized by Ambra Giannetti

 Chaired by Ambra Giannetti, Cosimo Trono
 

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 09:00 Surface Plasmon Resonance versus Surface Plasmon-  
Invited enhanced Fluorescence for Label-free Biosensors

*Jakub Dostalek (AIT Austrian Institute of Technology GmbH);*

- 09:20 Single Molecule Detection for Efficient Fluorescence-based Diagnostics  
Invited  
*M. Agio (University of Siegen); P. Cecchi (Cecchi Srl); F. Chiavaioli (Cecchi Srl); M. Colautti (National Institute of Optics, CNR-INO); A. Giannetti (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); S. Howitz (Gesellschaft für Silizium-Mikrosysteme (GeSiM) mbH); P. Lombardi (European Lab Nonlinear Spect LENS); N. Soltani (University of Siegen); F. Sonntag (Fraunhofer IWS); Costanza Toninelli (National Institute of Optics, CNR-INO);*
- 09:40 Site-encoded DNA Strategies for Optical Multiplexed Platforms  
Invited  
*Nuria Tort (Biokit S.A.); J.-Pablo Salvador (CIBER-BBN/IQAC-CSIC); M.-Pilar Marco (Nanobiotechnology for Diagnostics Group (Nb4Dg), IQAC-CSIC);*
- 10:00 Design of a Paper-based Platform for the Detection of DNA with Plasmonic Particles  
Invited  
*Sonia Centi (Institute of Applied Physics, National Research Council of Italy); Claudia Borri (Institute of Applied Physics, National Research Council of Italy); Patrizia Bogani (Department of Biology); Simona Scarano (Department of Chemistry); Maria Minunni (Department of Chemistry); Roberto Pini (Institute of Applied Physics, National Research Council of Italy); Fulvio Ratto (Institute of Applied Physics, National Research Council of Italy);*
- 10:20 Nanoparticle-enhanced SPR Imaging for Molecular Diagnostics  
Invited  
*Giuseppe Spoto (Università degli Studi di Catania);*
- 10:40 Prêt-à-porter Bioluminescent Cell Biosensors for Ultrarapid and Sensitive Screening of Chemicals  
Invited  
*Elisa Michelini (University of Bologna); Maria Madalena Calabretta (University of Bologna); Antonia Lopreside (University of Bologna); Laura Montali (University of Bologna); Aldo Roda (University of Bologna);*
- 11:00 **Coffee Break**
- 11:30 Long Period Gratings and Microbubble Resonators as Suitable Label-free Optical Platforms for Biosensing  
Invited  
*Francesco Baldini (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); S. Berneschi (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Francesco Chiavaioli (“Nello Carrara” Institute of Applied Physics (IFAC-CNR)); Daniele Farnesi (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Ambra Giannetti (CNR, Istituto di Fisica Applicata “Nello Carrara” (IFAC)); Gualtiero Nunzi Conti (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Stefano Pelli (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); S. Tombelli (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Cosimo Trono (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.);*
- 11:50 Whispering Gallery Mode Resonators for Label-free and Nanoparticle Sensing  
Invited  
*Gabriele Frigenti (Institute of Applied Physics, National Research Council of Italy); F. Baldini (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); S. Berneschi (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Ambra Giannetti (CNR, Istituto di Fisica Applicata “Nello Carrara” (IFAC)); L. Lunelli (FBK-CMM); L. Pasquardini (FBK-CMM); M.-Pilar Marco (Nanobiotechnology for Diagnostics group (Nb4Dg), IQAC-CSIC); C. Pederzoli (FBK-CMM); Giancarlo C. Righini (Piazza del Viminale 1); Gualtiero Nunzi Conti (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Silvia Soria (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.);*
- 12:10 Biosensors Based on New Selective Recognition Elements Produced by Phage Display Technology  
Invited  
*Riikka Peltomaa (Complutense University); Bettina Glahn-Martinez (Complutense University); Lidia N. Gomez-Arribas (Complutense University); A. Luque-Uria (Complutense University); Vicente Mas-Lloret (National Institute of Health Carlos III); Rodrigo Barderas (National Institute of Health Carlos III); S. Morais (Universitat de València); Augusto Juste-Dolz (Universitat de València); Angel Maquieira (Universitat de València); Elena Benito-Pena (Complutense University); María Cruz Moreno-Bondi (Complutense University);*

12:30 Strategies Based on Surface-enhanced Raman Spectroscopy for Label-free Detection of Biomarkers in Neurodegenerative Disorders

Invited *Paolo Matteini (Institute of Applied Physics, National Research Council of Italy); Martina Banchelli (IFAC-CNR, Institute of Applied Physics "Nello Carrara", National Research Council); Cristiano D'Andrea (CNR-IPCF, Istituto per i Processi Chimico-Fisici); Chiara Amicucci (IFAC-CNR, Institute of Applied Physics "Nello Carrara", National Research Council); Marella De Angelis (IFAC-CNR, Institute of Applied Physics "Nello Carrara", National Research Council); Roberto Pini (Institute of Applied Physics, National Research Council of Italy);*

12:50 Ultrasensitive Force Measurements with Optically Trapped Plasmonic Nanoparticles

Invited *Theobald Lohmueller (LMU Munich);*

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### Session 4A10

#### SC3: Glass Photonics: Novel Systems and Ongoing Applications 1

Thursday AM, June 20, 2019

Room 12 - Mezzanine

Organized by Anna Lukowiak, Maurizio Ferrari

Chaired by Anna Lukowiak, Maurizio Ferrari

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09:00 Thermal Poling: An Old Idea for a New Perspective on All-fibre Quadratic Photonic Devices

Invited *Francesco De Lucia (University of Southampton); Costantino Corbari (Renishaw Plc); Derek W. Keefer (The Pennsylvania State University); Yun Wang (University of Southampton); Muhammad Imran Mustafa Abdul Khudus (University of Malaya); Gilberto Brambilla (University of Southampton); Pier J. Sazio (University of Southampton);*

09:20 The Interplay between Radiation-induced Attenuation, Photodarkening and Photobleaching at Pump Wavelength in Er- and Yb-doped Silica Optical Fibers

Invited *Franck Mady (Université Côte d'Azur); Mourad Benabdesselam (Université Côte d'Azur); Wilfried Blanc (Université Côte d'Azur);*

09:40 All-optical Ultrasound Transducers Based on Microbubble Resonators

Invited *Fulvio Ratto (Institute of Applied Physics, National Research Council of Italy); Gabriele Frigenti (Institute of Applied Physics, National Research Council of Italy); Lucia Cavigli (Institute of Applied Physics, National Research Council of Italy); Alberto Fernandez-Bienes (Universidad Nacional Autonoma de Mexico); Sonia Centi (Institute of Applied Physics, National Research Council of Italy); Andrea Barucci (Istituto di Fisica Applicata "Nello Carrara", C.N.R.); Roberto Pini (Institute of Applied Physics, National Research Council of Italy); Tupak Garcia-Fernandez (Universidad Autonoma de la Ciudad de Mexico (UACM)); Gualtiero Nunzi Conti (Istituto di Fisica Applicata "Nello Carrara", C.N.R.); Silvia Soria (Istituto di Fisica Applicata "Nello Carrara", C.N.R.);*

10:00 Er<sup>3+</sup>-doped Ga-Ge-Sb-S Thin Films: A Comparative Study of Sputtering and Pulsed Laser Deposition Techniques

*Simone Normani (University of Pardubice); E. Baudet (University of Pardubice); G. Louwet (Université de Rennes 1); F. Starecki (UMR 6252 CEA-CNRS-ENSICAEN, Université de Caen); P. Camy (UMR 6252 CEA-CNRS-ENSICAEN, Université de Caen); M. Bouska (University of Pardubice); J. Gutwirth (University of Pardubice); P. Nemeč (University of Pardubice); C. Cardinaud (Université de Nantes); A. Girard (Université de Nantes); L. Bodiou (Université de Rennes 1); J. Charrier (Université de Rennes 1); Jean-Luc Adam (Université de Rennes 1); V. Nazabal (Université de Rennes 1);*

10:20 Longwave Infrared Sources and Photon Conversion in Rare-earth Doped Selenide Fibers

Invited *Alain Braud (UMR 6252 CEA-CNRS-ENSICAEN, Université de Caen); F. Starecki (UMR 6252 CEA-CNRS-ENSICAEN, Université de Caen); J. L. Doualan (UMR 6252 CEA-CNRS-ENSICAEN, Université de Caen); C. Boussard-Pledel (UMR 6226, Institut Sciences Chimiques de Rennes); V. Nazabal (UMR 6226, Institut Sciences Chimiques de Rennes); P. Camy (UMR 6252 CEA-CNRS-ENSICAEN, Université de Caen);*

10:40 Experimental Studies on Modal-coupling in Erbium-doped Whispering Gallery Mode Micro-laser

Invited *Patrice Feron (FOTON CNRS UMR 6082, Université de Rennes); Jean-Baptiste Ceppe (FOTON CNRS UMR 6082, Université de Rennes); Christelle Pareige (FOTON CNRS UMR 6082, Université de Rennes); Yannick Dumeige (Université de Rennes 1);*

11:00 Coffee Break

- 11:30 Amorphous Ga-Sb-Se Thin Films Fabricated by Co-sputtering Technique  
Invited  
*Tomas Halenkovic (University of Pardubice); Virginie Nazabal (Université de Rennes 1); Jan Gutwirth (University of Pardubice); Marek Bouska (University of Pardubice); Laurent Calvez (UMR CNRS 6226, Université de Rennes 1); Petr Nemeč (University of Pardubice);*
- 11:50 Glass Integrated Photonics for Quantum Technology  
Invited  
*James C. Gates (ORC, University of Southampton);*
- 12:10 Tellurite Glass Devices for Silicon-based Photonic Integrated Circuits  
Invited  
*Jonathan D. B. Bradley (McMaster University); Henry C. Frankis (McMaster University); Khadijeh Miarabbas Kiani (McMaster University); Dawson B. Bonneville (McMaster University); Daniel Su (McMaster University); Richard Mateman (LioniX International BV); Arne Leinse (LioniX International BV); Andrew P. Knights (McMaster University);*
- 12:30 Silica-based Scintillating Fibers for Ionizing Radiation Sensing  
Invited  
*Anna Vedda (University of Milano-Bicocca);*
- 12:50 Integrated Photonics for Biomedical Spectroscopy  
Invited  
*James S. Wilkinson (University of Southampton);*
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- Session 4A11**  
**SC2: THz Metamaterials, Devices and Systems 1**
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- Thursday AM, June 20, 2019**  
**Room 11 - Mezzanine**  
Organized by Romeo Beccherelli, Dimitris C. Zografopoulos  
Chaired by Romeo Beccherelli
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- 09:00 Wide Band Gap Semiconductors for THz Quantum Cascade Lasers and Detectors  
Invited  
*Jean-Michel Chauveau (Université Côte d'Azur); N. Le Biauan (Université Côte d'Azur); M. Hugues (Université Côte d'Azur); D. Lefebvre (Université Côte d'Azur); E. Frayssinet (Université Côte d'Azur); P. de Mierry (Université Côte d'Azur); Y. Cordier (Université Côte d'Azur); M. Montes Bajo (Universidad Politecnica de Madrid); J. Tamayo-Arriola (Universidad Politecnica de Madrid); A. Hierro (Universidad Politecnica de Madrid); A. Jollivet (Université Paris-Sud); M. Tchernycheva (Université Paris-Sud XI); F. H. Julien (Université Paris-Sud XI); B. Hinkov (Institute of Solid State Electronics); G. Strasser (Institute of Solid State Electronics); B. Meng (Institute for Quantum Electronics); Jerome Faist (ETH Zurich);*
- 09:20 THz Polarization Control with Chiral Metamaterials  
Invited  
*Maria Kafesaki (Institute of Electronic Structure and Laser (IESL)); G. Kenanakis (Institute of Electronic Structure and Laser (IESL)); Eleftherios N. Economou (Institute of Electronic Structure and Laser (IESL)); Costas M. Soukoulis (Iowa State University);*
- 09:40 Graphene Tunability for Transmission Type Terahertz Chiral Metamaterial  
*M. Pavithra (Department of Nuclear Physics, University of Madras (Guindy Campus)); K. Ravichandran (Department of Nuclear Physics, University of Madras (Guindy Campus)); Natesan Yogesh (University of Madras (Guindy Campus));*
- 10:00 Time-resolved Nonlinear Ghost Imaging  
*L. Olivieri (University of Sussex); J. S. Toterogongora (University of Sussex); V. Cecconi (University of Sussex); R. Tucker (University of Sussex); L. Peters (University of Sussex); J. Tunesi (University of Sussex); A. Pasquazi (University of Sussex); Marco Peccianti (University of Sussex);*
- 10:20 Photo-excited Switchable Terahertz Multi-band-pass Filter  
*Shan Yin (Guilin University of Electronic Technology); X. Shi (Guilin University of Electronic Technology); L. Guo (Guilin University of Electronic Technology); W. Huang (Guilin University of Electronic Technology);*

- 10:40 Quasi-2D Terahertz Surface Science  
Invited  
*Luke Peters (University of Sussex); Jacob Tunesi (University of Sussex); Juan S. Toterogongora (University of Sussex); Alessia Pasquazi (University of Sussex); Marco Peccianti (University of Sussex);*
- 11:00 **Coffee Break**
- 11:30 Frequency Selective Surfaces for Terahertz Filtering  
Invited  
*Guillaume Ducournau (Institute of Electronics, Microelectronics and Nanotechnology (IEMN), CNRS/University of Lille); A. Ferraro (CNR, IMM); Dimitris C. Zografopoulos (Istituto per la Microelettronica e Microsistemi (CNR-IMM)); Romeo Beccherelli (Istituto per la Microelettronica e Microsistemi (CNR-IMM));*
- 11:50 Design of a Simple Inter-connected U-shaped Circular Polarized Monopole Antenna for THz Communication Applications  
*Shahid Ullah (Beihang University); Cun-Jun Ruan (Beihang University); Muhammad Shahzad Sadiq (Beihang); Tanveer Ul Haq (Beihang University); Ayesha Kosar Fahad (Beihang University);*
- 12:10 Multi-band Terahertz Transmission Using Frequency-selective Surfaces Based on ‘F’ Shapes Arranged in Odd-symmetry  
*Ayesha Kosar Fahad (Beihang University); Cun-Jun Ruan (Beihang University); Tanveer Ul Haq (Beihang University); Sujie Guo (Beihang University);*
- 12:30 Design of Arm Asymmetry Structure Based on Metamaterial for THz Sensor  
*Kanglong Chen (Beihang University); Cun-Jun Ruan (Beihang University); Sujie Guo (Beihang University);*

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**Session 4A12**  
**SC3: Nonlinear, Active, and Quantum Metaphotonics**

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**Thursday AM, June 20, 2019**

**Room 21 - 2nd Floor**

Organized by Xingjie Ni, Wenshan Cai

Chaired by Xingjie Ni, Wenshan Cai

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- 09:00 Dielectric Metasurfaces for Holography, Color Printing and Crypto-display  
Invited  
*Junsuk Rho (Pohang University of Science and Technology (POSTECH)); Jaehyuck Jang (Pohang University of Science and Technology (POSTECH));*

- 09:20 Giant Second Harmonic Generation on a Dynamic Metasurface  
Invited  
*Xingjie Ni (Pennsylvania State University); Xuexue Guo (Pennsylvania State University); Yimin Ding (Pennsylvania State University);*
- 09:40 Versatile Nonlinear Optics in Near-zero-index Materials  
Invited  
*Nathaniel Kinsey (Virginia Commonwealth University);*
- 10:00 Data Storage with Information-multiplexing Metapixels  
Invited  
*Zhaxylyk A. Kudyshev (Purdue University); Sajid Choudhury (Purdue University); Di Wang (Purdue University); Alexander V. Kildishev (Purdue University);*
- 10:20 Ultrafast Near-field Spectroscopy and Imaging  
Invited  
*Haim Suchowski (Tel Aviv University);*
- 10:40 Expanding the Functionalities of Metaphotonics: From Visible to UV, from Static to Dynamic  
Invited  
*Jie Yao (University of California);*
- 11:00 **Coffee Break**
- 11:30 Hot-electron Plasmonics for All-optical Control of Light  
Invited  
*Wenshan Cai (Georgia Institute of Technology);*
- 11:50 Exceptional Points in Plasmonics  
Invited  
*Boubacar Kante (University of California San Diego);*

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**Session 4A13**  
**SC3: Group IV Photonics for Sensing and Signal Processing**

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**Thursday AM, June 20, 2019**

**Room 22 - 2nd Floor**

Organized by Vittorio M. N. Passaro, Goran Z. Mashanovich

Chaired by Vittorio M. N. Passaro, Goran Z. Mashanovich

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- 09:00 Ge-on-insulator Platform for Communication and Sensing  
Invited  
*Mitsuru Takenaka (The University of Tokyo); Shinichi Takagi (The University of Tokyo);*
- 09:20 Subwavelength Structured Fully Suspended Waveguide Platform  
Invited  
*Wen Zhou (The Chinese University of Hong Kong); Hon Ki Tsang (The Chinese University of Hong Kong);*

- 09:40 Rare Earth Doped Integrated Microcavities for Active Sensing Applications  
Invited  
*Dario Laneve (Polytechnic University of Bari); Mario Christian Falconi (Polytechnic University of Bari); Giuseppe Palma (Polytechnic University of Bari); Virginie Nazabal (Université de Rennes 1); Florent Starecki (Université de Rennes 1); Loic Bodiou (Université de Rennes 1); Joel Charrier (Université de Rennes 1); Francesco Prudeniano (Politecnico di Bari);*
- 10:00 Silicon Nitride Microresonator-based Sensors  
Invited  
*Andrew Wing On Poon (The Hong Kong University of Science and Technology); Ching Chi Kwan (The Hong Kong University of Science and Technology); Kaiyi Wu (The Hong Kong University of Science and Technology); Zhanshi Yao (The Hong Kong University of Science and Technology);*
- 10:20 High-performance Fiber-chip Grating Couplers and Wavelength Filters Based on Subwavelength Engineering in Silicon  
Invited  
*Carlos Alonso-Ramos (Université Paris 11); Pavel Cheben (National Research Council of Canada); Jens H. Schmid (National Research Council); D. Oser (Centre de Nanosciences et de Nanotechnologies, CNRS); Xavier Le Roux (Université Paris-Sud); F. Mazeas (Université Côte d'Azur, CNRS, Institut de Physique de Nice); D. Perez-Galacho (Centre de Nanosciences et de Nanotechnologies, CNRS); D. Benedikovic (University of Paris Sud and CNRS); Elena Duran-Valdeiglesias (Université Paris 11); V. Vakarín (Centre de Nanosciences et de Nanotechnologies, CNRS); O. Alibart (Université Côte Azur); S. Tanzilli (Université Côte Azur); L. Labonte (Université Côte d'Azur, CNRS, Institut de Physique de Nice); Delphine Marris-Morini (Université Paris 11); Jiri Ctyroky (Institute of Photonics and Electronics AS CR, v.v.i.); J. G. Wanguemert-Perez (Universidad de Malaga); Inigo Molina-Fernandez (Malaga University); Alejandro Ortega-Monux (University Malaga); Robert Halir (Universidad de Malaga); M. Dado (University of Zilina); Eric Cassan (Université Paris-Sud); F. Boeuf (STMICROELECTRONICS); C. Baudot (STMICROELECTRONICS); Laurent Vivien (Université Paris-Sud);*
- 10:40 Design of Subwavelength Grating Metamaterial Waveguides for Communications and Sensing Applications  
Invited  
*Alejandro Ortega-Monux (University Malaga); J. M. Luque-Gonzalez (University Malaga); D. Pereira-Martin (University Malaga); A. Sanchez-Postigo (University Malaga); A. Hadij-ElHouati (University Malaga); J. Leuermann (University Malaga); Jose de-Oliva-Rubio (Univ Malaga); R. Halir (University Malaga); J. G. Wanguemert-Perez (Univ Malaga); Inigo Molina-Fernandez (Malaga University); Jiri Ctyroky (Institute of Photonics and Electronics AS CR, v.v.i.); Jens H. Schmid (National Research Council); Pavel Cheben (National Research Council of Canada);*
- 11:00 **Coffee Break**
- 11:30 Absorption Spectroscopy in the Mid-infrared Using Silicon and Germanium Waveguides  
Invited  
*Milos Nedeljkovic (University of Southampton); Y. Qi (University of Southampton); V. Mittal (University of Southampton); D. J. Rowe (University of Southampton); Z. Qu (University of Southampton); Y. Wu (University of Southampton); A. Osman (University of Southampton); Z. Zheng (University of Southampton); C. Wei (University of Southampton); James S. Wilkinson (University of Southampton); Goran Z. Mashanovich (University of Southampton);*
- 11:50 Dispersion-engineered Nanostructured Silicon Membrane Waveguides for Nonlinear Applications  
*Thi Thuy Duong Dinh (Université Paris-Sud); J. Zhang (Université Paris-Sud); M. Montesinos (Université Paris-Sud); Xavier Le Roux (Université Paris-Sud); Christian Lafforgue (Université Paris-Saclay); Daniel Benedikovic (Université Paris-Saclay); D. Pavel Cheben (National Research Council of Canada); Eric Cassan (Université Paris-Sud); Delphine Marris-Morini (Université Paris 11); Laurent Vivien (Université Paris-Sud); Carlos Alonso-Ramos (Université Paris 11);*
- 12:10 Recent Advances in Microwave Optical Signal Processing by Silicon Integrated Structures  
*Vittorio M. N. Passaro (Politecnico di Bari); Francesco De Leonardis (Politecnico di Bari); Richard Soref (University of Massachusetts Boston);*

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**Session 4A14**
**FocusSession.SC2&SC3: Graphene 2D  
Materials for Photonics, Plasmonics and  
Metamaterials 1**


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**Thursday AM, June 20, 2019**
**Room 24 - 2nd Floor**

Organized by Aldo Di Carlo, Emmanuel Kymakis

 Chaired by Aldo Di Carlo
 

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- 09:00 Graphene-based Layered Meta-lenses  
*Nantakan Wongkasem (University of Texas Rio Grande Valley);*
- 09:20 Technological Features of Graphene-based RF NEMS Capacitive Switches on a Semi-insulating Substrate  
*Yana Litun (National Research Nuclear University MEPhI); Vladimir Litun (Bauman Moscow State Technical University); Oleg Kononenko (Institute of Microelectronics Technology and High Purity Materials); Maxim Chichkov (National University of Science and Technology MISiS); Denis Borisenko (National Research Nuclear University MEPhI);*
- 09:40 Momentum Alignment of Photoexcited Carriers in Two-dimensional Dirac Materials  
Invited  
*Richard R. Hartmann (De La Salle University); Vasil A. Saroka (Belarusian State University); Mikhail E. Portnoi (University of Exeter);*
- 10:00 Terahertz Absorption in Graphene Nanoplatelets/Polylactic Acid Composites Suitable for 3D Printing  
*Dzmitry Bychanok (Research Institute for Nuclear Problems Belarusian State University); P. Angelova (OLEM, Institute of Mechanics Bulgarian Academy of Sciences); A. Paddubskaya (Research Institute for Nuclear Problems Belarusian State University); D. Meisak (Research Institute for Nuclear Problems Belarusian State University); L. Shashkova (Research Institute for Nuclear Problems Belarusian State University); M. Demidenko (Research Institute for Nuclear Problems Belarusian State University); A. Plyushch (Research Institute for Nuclear Problems Belarusian State University); E. Ivanov (OLEM, Institute of Mechanics Bulgarian Academy of Sciences); R. Krastev (OLEM, Institute of Mechanics Bulgarian Academy of Sciences); R. Kotsilkova (OLEM, Institute of Mechanics Bulgarian Academy of Sciences); F. Y. Ogrin (University of Exeter); P. Kuzhir (Research Institute for Nuclear Problems Belarusian State University);*
- 11:00 **Coffee Break**

- 11:30 Terahertz Metamaterials in Graphene and Transition Metal Dichalcogenides  
Invited  
*Berardi Sensale-Rodriguez (University of Utah);*
- 11:50 Synthesis, Characterization and Surface Engineering of Two-dimensional Transition Metal Carbides (MXenes)  
Invited  
*Anna Pazniak (National University of Science and Technology "MISiS"); P. Bazhin (National University of Science and Technology "MISiS"); N. Shplis (National University of Science and Technology "MISiS"); E. Kolesnikov (National University of Science and Technology "MISiS"); D. Kuznetsov (National University of Science and Technology "MISiS");*
- 12:10 High Sensitivity Quadrupole Fano Resonances Using Terahertz Metamaterials with Its Application as Biosensor  
*Ruochoen Wang (Beihang University); Kanglong Chen (Beihang University); Cun-Jun Ruan (Beihang University);*
- 12:30 2D Materials Exploitation for Efficient and Scalable Perovskite Photovoltaics  
Invited  
*Sara Pescetelli (University of Rome Tor Vergata); Antonio Agresti (University of Rome Tor Vergata); Francesco Bonaccorso (Istituto Italiano di Tecnologia); Emmanuel Kymakis (TEI of Crete); Aldo Di Carlo (University of Rome Tor Vergata);*

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**Session 4A15**
**SC3: Silicon Photonics 1**


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**Thursday AM, June 20, 2019**
**Room 25 - 2nd Floor**

Organized by Lin Yang

 Chaired by Lin Yang
 

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- 09:00 Ultra-broadband Dual-polarization Beam Splitter Based on Modal Engineered Slot Waveguides  
*David Gonzalez-Andrade (Instituto de Óptica Daza de Valdés); Christian Lafforgue (Université Paris-Saclay); Elena Duran-Valdeiglesias (Université Paris 11); Xavier Le Roux (Université Paris-Sud); Mathias Berciano (Université Paris-Saclay); Eric Casan (Université Paris-Sud); Delphine Marris-Morini (Université Paris 11); Aitor V. Velasco (Consejo Superior de Investigaciones Científicas); Pavel Cheben (National Research Council of Canada); Laurent Vivien (Université Paris-Sud); Carlos Alonso-Ramos (Université Paris 11);*

- 09:20 Long-range LiDAR and Free-space Data Communication with High-performance Optical Phased Arrays  
Invited *Diedrik Vermeulen (Analog Photonics LLC); Christopher V. Poulton (Analog Photonics LLC); Peter Russo (Analog Photonics LLC); Matthew J. Byrd (Analog Photonics LLC); Erman Timurdogan (Analog Photonics LLC); Murshed Khandaker (Analog Photonics LLC); Michael R. Watts (Analog Photonics LLC);*
- 09:40 Recent Progress in Applications Utilizing Germanium Ion Implantation in Silicon Photonics Circuits  
Invited *Xia Chen (University of Southampton); Milan M. Milosevic (University of Southampton); Xingshi Yu (University of Southampton); Bigeng Chen (University of Southampton); Ali Z. Khokhar (University of Southampton); Ozan Aktas (University of Southampton); Swe Zin Oo (University of Southampton); David J. Thomson (University of Southampton); Harold M. H. Chong (University of Southampton); Anna C. Peacock (University of Southampton); Shinichi Saito (University of Southampton); Otto L. Muskens (University of Southampton); Graham T. Reed (University of Southampton);*
- 10:00 Design and Optimization of pn Junctions in Silicon Microdisk Modulators  
Invited *Dusan Gostimirovic (Carleton University); Winnie N. Ye (Carleton University);*
- 10:20 Generic Platform for Silicon Photonics Based on MEMS Reconfigurable Photonic Integrated Circuits  
Invited *Muhammad Umar Khan (Ghent University IMEC); Banafsheh Abasahl (Ghent University IMEC); I. Zand (Ghent University IMEC); N. Quack (Ecole Polytechnique Federale de Lausanne (EPFL)); Kristinn B. Gylfason (KTH Royal Institute of Technology); Moises A. Jezzini (Tyndall National Institute); How Yuan Hwang (Tyndall National Institute); M. A. G. Porcel (VLC Photonics Connectivity); Cristina Lerma-Arce (Ghent University-IMEC); S. Kumar (Ghent University-IMEC); Wim Bogaerts (Ghent University-IMEC);*
- 10:40 Non-volatile Active Silicon Photonic Devices Integrated with GST Phase Change Material  
Invited *Linjie Zhou (Shanghai Jiao Tong University); Hanyu Zhang (Shanghai Jiao Tong University); Hao Hu (Shanghai Jiao Tong University); Ningning Wang (Shanghai Jiao Tong University); Liangjun Lu (Shanghai Jiao Tong University); B. M. A. Rahman (University of London); Jianping Chen (Shanghai Jiao Tong University);*
- 11:00 **Coffee Break**
- 11:30 Effect of Germanium Doping on the Performance of a Silicon Optical Modulator  
*Darpan Mishra (Indian Institute of Technology Guwahati); Manoranjan Minz (Indian Institute of Technology Guwahati); Ramesh Kumar Sonkar (Indian Institute of Technology Guwahati);*
- 11:50 Design of Subwavelength Vertical Grating Couplers Using Machine Learning Pattern Recognition  
Invited *Mohsen Kamandar Dezfouli (Advanced Electronics and Photonics Research Centre, National Research Council Canada); Yuri Grinberg (National Research Council of Canada); Daniele Melati (National Research Council of Canada); Pavel Cheben (National Research Council of Canada); Jens H. Schmid (National Research Council); Siegfried Janz (Institute for Microstructural Sciences, National Research Council Canada (NRC)); Dan-Xia Xu (National Research Council Canada (NRC));*
- 12:10 Design of a 3-channel Mode-division Multiplexer Based on Grating Assisted Couplers  
*Manoranjan Minz (Indian Institute of Technology Guwahati); Darpan Mishra (Indian Institute of Technology Guwahati); Ramesh Kumar Sonkar (Indian Institute of Technology Guwahati);*
- 12:30 Chirped Microwave Waveform Generation with High Spectral Purity  
Invited *Caterina Ciminelli (Politecnico di Bari); F. Dell'Olio (Politecnico di Bari); G. Brunetti (Politecnico di Bari); N. Sasanelli (Politecnico di Bari); Mario Nicola Armenise (Politecnico di Bari);*

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**Session 4A16**
**Optomechanics, Microfluidics, and Spectroscopy in Microcavities 1**


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**Thursday AM, June 20, 2019**
**Room 15 - 2nd Floor**

Organized by Gianluca Gagliardi, Sahin Kaya Ozdemir

 Chaired by Sahin Kaya Ozdemir
 

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- 09:00 Applications of Hollow, Thin-walled Microresonators  
Invited *Sile Nic Chormaic (Okinawa Institute of Science and Technology Graduate University);*

- 09:20 Detection of Lead, Pb(II), in Water Using Silicon  
Invited Nanowire Ring-resonators  
*Hao Chen (Queen's University); John E. Saunders (Queen's University); Sogol Borjian (Queen's University); Xiaowei Wu (Queen's University); Cathleen M. Crudden (Queen's University); Dan-Xia Xu (National Research Council Canada (NRC)); Hans-Peter Look (National Research Council of Canada);*
- 09:40 Differential Tuning and Coupling of Whispering  
Invited Gallery Modes  
*Matthew R. Foreman (Imperial College London); Florian Sedlmeir (Max Planck Institute for the Science of Light); Harald G. L. Schwefel (University of Otago);*
- 10:00 Quantum Nondemolition Measurement of Light Inten-  
Invited sity Fluctuations in Cavity Optomechanics  
*Antonio Pontin (University College London); Michele Bonaldi (Institute of Materials for Electronics and Magnetism, FBK Division, and INFN TIFPA); Antonio Borrielli (Institute of Materials for Electronics and Magnetism, FBK Division, and INFN TIFPA); Lorenzo Marconi (CNR, Istituto Nazionale di Ottica); Francesco Marino (CNR, Istituto Nazionale di Ottica); Gregory Pandraud (Delft University of Technology); Giovanni A. Prodi (Università di Trento); Pasqualina M. Sarro (Delft University of Technology); Enrico Serra (Italy and Delft University of Technology); Francesco Marin (Università di Firenze and INFN);*
- 10:20 Coupling of Mechanical Motion with Frequency Comb  
Invited and Brillouin Lasing in Whispering Gallery Modes  
*Takasumi Tanabe (Keio University); Ryo Suzuki (Keio University); Yoshihiro Honda (Keio University);*
- 10:40 Managing Coupled Wavelengths and Modes in  
Invited Waveguide-microresonator Systems  
*S. Berneschi (Istituto di Fisica Applicata "Nello Carrara", C.N.R.); Andrea Barucci (Istituto di Fisica Applicata "Nello Carrara", C.N.R.); Francesco Chiavaioli ("Nello Carrara" Institute of Applied Physics (IFAC-CNR)); Mario Christian Falconi (Polytechnic University of Bari); Daniele Farnesi (Istituto di Fisica Applicata "Nello Carrara", C.N.R.); Gabriele Frigenti (Institute of Applied Physics, National Research Council of Italy); Immacolata Angelica Grimaldi (Consiglio Nazionale delle Ricerche (IREA-CNR)); Dario Laneve (Polytechnic University of Bari); Stefano Pelli (Istituto di Fisica Applicata "Nello Carrara", C.N.R.); Gianluca Persichetti (Consiglio Nazionale delle Ricerche (IREA-CNR)); Silvia Soria (Istituto di Fisica Applicata "Nello Carrara", C.N.R.); Genni Testa (Consiglio Nazionale delle Ricerche (IREA-CNR)); C. Trono (Istituto di Fisica Applicata "Nello Carrara", C.N.R.); Francesco Pruden- zano (Politecnico di Bari); Romeo Bernini (Consiglio Nazionale delle Ricerche (IREA-CNR)); Gualtiero Nunzi Conti (Istituto di Fisica Applicata "Nello Carrara", C.N.R.);*
- 11:00 **Coffee Break**
- 11:30 Opto-mechanical Effects in High-**Q** Liquid Droplet  
Microresonators  
*Antonio Giorgini (Consiglio Nazionale delle Ricerche, Istituto Nazionale di Ottica); Saverio Avino (Istituto Nazionale di Ottica (INO)); Pietro Malara (Istituto Nazionale di Ottica (INO)); Paolo De Natale (CNR-INO, Istituto Nazionale di Ottica); Gianluca Gagliardi (CNR, Istituto Nazionale di Ottica (INO));*
- 11:50 Structural Protein-based Whispering Gallery Mode  
Invited Resonators  
*Melik C. Demirel (Pennsylvania State University);*
- 12:10 Single-particle Spectroscopy and Microscopy with Op-  
Invited tical Microresonators  
*Cecilia H. Vollbrecht (University of Wisconsin-Madison); Levi Hogan (University of Wisconsin-Madison); Erik H. Horak (University of Wisconsin-Madison); Cassandra A. Knapper (University of Wisconsin-Madison); Feng Pan (University of Wisconsin-Madison); Morgan T. Rea (University of Wisconsin-Madison); Randall H. Goldsmith (University of Wisconsin-Madison);*

- 12:30 Using  $d_{33}$  in Lithium Niobate Microdisk Resonators  
Invited  
*Fang Bo (Nankai University); Zhenzhong Hao (Nankai University); Li Zhang (Nankai University); Wenbo Mao (Nankai University); Ang Gao (Nankai University); Guoquan Zhang (Nankai University); Jingjun Xu (Nankai University);*
- 12:50 Enhanced Sagnac Sensitivity at Exceptional Point  
*Mercedeh Khajavikhan (University of Central Florida); Mohammad P. Hokmabadi (University of Central Florida); Alex Schumer (University of Central Florida); Demetrios N. Christodoulides (University of Central Florida);*
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- Session 4A17**  
**FocusSession.SC1: Fluctuational  
Electrodynamics and Heat Transfer 1**
- 
- Thursday AM, June 20, 2019**  
**Room 33 - Bank Building**  
Organized by Mauro Antezza, Marco Centini  
Chaired by Mauro Antezza
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- 09:00 Super-Planckian Far-field Radiative Heat Transfer  
Invited  
*Juan Carlos Cuevas (Universidad Autonoma de Madrid); Victor Fernandez-Hurtado (Universidad Autonoma de Madrid); Antonio I. Fernandez-Dominguez (Universidad Autonoma de Madrid); Johannes Feist (Universidad Autonoma de Madrid); Francisco J. Garcia-Vidal (Universidad Autonoma de Madrid);*
- 09:20 Radiative Heat Transfer in Micro/nano Particle Sus-  
Invited pensions: A First Principle Approach  
*Junming Zhao (Harbin Institute of Technology); Jian Dong (Shandong University); Linhua Liu (Harbin Institute of Technology);*
- 09:40 Near Field Thermal Radiation in Confinement  
Invited  
*Matthias Kruger (Georg-August-Universität Göttingen); Kiryl Asheichyk (University of Stuttgart);*
- 10:00 Heat Transfer in the Extreme Near Field: Insights  
Invited from Atomistic Calculations  
*Samy Merabia (Université de Lyon); Ali Alkurdi (Université de Lyon); C. Adessi (Université de Lyon); Konstantinos Termentzidis (Université Lyon 1);*
- 10:20 Near-field and Far-field Thermal Radiation from Sub-  
Invited wavelength Resonators  
*Claire Li (Institut Langevin); H. Kallel (Université de Poitiers); J. Doumouro (Institut Langevin); V. Krachmalnicoff (Institut Langevin, ESPCI Paris-Tech, CNRS); Patrick Bouchon (ONERA); J. Jaeck (ONERA); Nathalie Bardou (C2N); Karl Joulain (Université de Poitiers); Riad Haidar (ONERA); Yannick De Wilde (Institut Langevin);*
- 10:40 New Thermomagnetic Effects in Magneto-optical Net-  
Invited works  
*Annika Ott (Carl von Ossietzky Universität); Ivan Latella (Université Paris-Saclay); R. Messina (Université Paris-Saclay); Svend-Age Biehs (Carl von Ossietzky Universität); Philippe Ben-Abdallah (Université Paris-Sud 11);*
- 11:00 **Coffee Break**
- 11:30 Control of Near-field Radiative Heat Transfer Using  
Invited Coupled Surface Plasmons  
*Bong Jae Lee (Korea Advanced Institute of Science and Technology);*
- 11:50 Long-range Heat and Energy Transfer through Hyper-  
Invited bolic Materials  
*Svend-Age Biehs (Carl von Ossietzky Universität); R. Messina (Institut d'Optique, CNRS, Université Paris-Saclay); Brahim Guizal (Université de Montpellier); Mauro Antezza (Université de Montpellier); Philippe Ben-Abdallah (Université Paris-Sud 11); R. Deshmukh (City College of New York); Emaad Khwaja (The City University of New York); Tal Galfsky (City College of New York); V. Menon (City College of New York); G. S. Agarwal (Texas A&M University);*
- 12:10 Heat Transfer between Two Metals through Subnano-  
Invited metric Vacuum Gaps  
*Riccardo Messina (Institut d'Optique, CNRS, Université Paris-Sud 11); Svend-Age Biehs (Carl von Ossietzky Universität); T. Ziehm (Carl von Ossietzky Universität); A. Kittel (Carl von Ossietzky Universität); Philippe Ben-Abdallah (Université Paris-Sud 11);*
- 12:30 Novel Heat Transport Regimes in Quantum Corre-  
Invited lated Metamaterials  
*Marco Gandolfi (KU Leuven); Giacomo Mazza (Université Paris-Saclay); Massimo Capone (CNR-IOM Democritos National Simulation Center and Scuola Internazionale Superiore di Studi Avanzati (SISSA)); Claudio Giannetti (Università Cattolica del Sacro Cuore); Francesco Banfi (Université de Lyon, Institut Lumière Matière (iLM), Université Lyon 1 and CNRS);*

- 12:50 Lifetime of Ultracold Atom Clouds Near 2D Materials  
*R. Crawford (University of Nottingham); K. Wongcharoenbhorn (University of Nottingham); N. Welch (University of Nottingham); F. Wang (University of Nottingham); G. Sinuco-Leon (University of Nottingham); P. Kruger (University of Sussex); F. Intravaia (Max-Born Institut); C. Koller (University of Applied Sciences Wiener Neustadt); T. Mark Fromhold (University of Nottingham);*

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**Session 4A18**
**Wireless Communication**


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**Thursday AM, June 20, 2019**
**Room 38 - Chemistry Building**

 Chaired by Ozlem Feyza Erkan, Riccardo Colella
 

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- 09:00 10.525 GHz Backscattering RFID System Based on Doppler Radar Technology for 5G Applications and Telemedicine  
*Riccardo Colella (University of Salento); Luca Catarinucci (University of Salento);*
- 09:20 A Design and Implementation of Butler Matrix with Phase Slope Compensation  
*Jiwon Kim (Soonchunhyang University); Youna Jang (Soonchunhyang University); Daeung Lee (Soonchunhyang University); Seo Koo (Soonchunhyang University); Tae Hoon Kang (Soonchunhyang University); Maaz Salman (Soonchunhyang University); Jongsik Lim (Soonchunhyang University); Sang-Min Han (Soonchunhyang University); Dal Ahn (Soonchunhyang University);*
- 09:40 A Digitally Tunable PVT Compensated Negative Resistance Circuit for  $Q$ -factor Enhancement of Passive Circuits in CMOS  
*Dongmin Kim (CHONBUK National University); Donggu Im (Chonbuk National University);*
- 10:00 New Hardware Components for M-sequence UWB Channel Sounder  
*Martin Pecovsky (Technical University of Kosice); Martin Kmec (Imsens GmbH); Miroslav Sokol (Technical University of Kosice); Pavol Galajda (Technical University of Kosice); Stanislav Slovak (Technical University of Kosice);*
- 10:20 Minimization of Four-wave Mixing Effect in WDM Optical Networks Using an Efficient Lightpath Establishment Method  
*Ozlem Feyza Erkan (Beykoz University); Onur Erkan (Istanbul Technical University);*

- 10:40 Data Transfer in Long Distance Space Communication  
*Andrea Farkasvolgyi (Budapest University of Technology and Economics); Istvan Frigyas (Budapest University of Technology and Economics);*

**11:00 Coffee Break**

- 11:30 Investigation of Noise Characteristics for SBS-Based Optical Spectrum Analysis  
*Yibo Zhong (Huazhong University of Science and Technology); Changjian Ke (Huazhong University of Science and Technology); Chen Xing (Huazhong University of Science and Technology); Haoyu Wang (Huazhong University of Science and Technology); Yue Deng (Huazhong University of Science and Technology); Sheng Cui (Huazhong University of Science and Technology); Deming Liu (Huazhong University of Science and Technology);*

- 11:50 Light Attenuation by Sand/Dust Storms  
*Li Xie (Lanzhou University); Jun Zhou (Lanzhou University); H. Zhong (Lanzhou University); Z. Du (Lanzhou University);*

- 12:10 On Channel Estimation in Universal Filtered Multi-Carrier (UFMC) System  
*Vijaya Durga (National Institute of Technology); S. Anuradha (National Institute of Technology);*

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**Session 4A19**
**SC2: Nonreciprocal and Topological Electromagnetics 2**


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**Thursday AM, June 20, 2019**
**Room 39 - Electrical Building**

Organized by Mário G. Silveirinha, Tiago Andre Nogueira Morgado

 Chaired by Mário G. Silveirinha, Tiago Andre Nogueira Morgado
 

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- 09:00 Backscattering-protected Edge Modes in PTD-Invited symmetric Parallel-plate Waveguides  
*Enrica Martini (University of Siena); Mario G. Silveirinha (University of Lisbon); Stefano Maci (University of Siena);*
- 09:20 Huygens'shells for Non-reciprocal Communication  
 Invited  
*Choonlae Cho (Seoul National University); Namkyoo Park (Seoul National University); Jensen Li (Hong Kong University of Science and Technology);*

- 09:40 Non-reciprocity and Doppler Effect Control by Using Time-varying Metamaterials and Metasurfaces  
Invited Davide Ramaccia (*“Roma Tre” University*); Alessandro Toscano (*“Roma Tre” University*); Filiberto Bilotti (*University “Roma Tre”*);
- 10:00 Giant Interatomic Energy-transport Amplification with Nonreciprocal Photonic Topological Insulators  
Invited Pierre Doyeux (*UMR 5221 CNRS-Université de Montpellier*); Seyyed Ali Hassani Gangaraj (*Cornell University*); George W. Hanson (*University of Wisconsin-Milwaukee*); Mauro Antezza (*Université de Montpellier*);
- 10:20 Topological Light-trapping on a Dislocation  
Fei-Fei Li (*Nanjing University*); Hai-Xiao Wang (*Soochow University*); Zhan Xiong (*Soochow University*); Qun Lou (*Nanjing University*); Ping Chen (*Nanjing University*); Rui-Xin Wu (*Nanjing University*); Yin Poo (*Nanjing University*); Jian-Hua Jiang (*Soochow University*); Sajeev John (*University of Toronto*);
- 10:40 Topological Edge and Higher Order States in Photonic Metasurfaces  
Invited M. Li (*City College of New York*); X. Ni (*City College of New York*); Alexander B. Khanikaev (*Graduate Center of City University of New York*);
- 11:00 **Coffee Break**
- 11:30 Three-dimensional Photonic Dirac Points and Spin-polarized Surface Arcs  
Invited Qing-Hua Guo (*University of Birmingham*); Oubo You (*University of Birmingham*); Biao Yang (*University of Birmingham*); James B. Sellman (*University of Birmingham*); Edward Blythe (*University of Birmingham*); Hongchao Liu (*University of Birmingham*); Yuanjiang Xiang (*Shenzhen University*); Jensen Li (*University of Birmingham*); Dianyuan Fan (*Shenzhen University*); Jing Chen (*Nankai University*); Che Ting Chan (*The Hong Kong University of Science and Technology*); Shuang Zhang (*University of Birmingham*);
- 11:50 Floquet Edge States in Coupled Photonic Waveguides  
Jiri Petracek (*Brno University of Technology*); Vladimir Kuzmiak (*Institute of Photonics and Electronics, Czech Academy of Sciences*);
- 12:10 Brightness Theorems for Waves, without Reciprocity  
Invited Owen D. Miller (*Yale University*); Hanwen Zhang (*Yale University*); Chia Wei Hsu (*Yale University*);
- 12:30 Topological Photonics: Mistaken Paradigms and New Opportunities  
Invited Aitzol Garcia-Etxarri (*Donostia International Physics Center (DIPC) and Centro Mixto de Fisica de Materiales*); M. Blanco De Paz (*Donostia International Physics Center (DIPC)*); Maia Garcia-Vergniory (*Donostia International Physics Center*); D. Bercioux (*Donostia International Physics Center*); B. Bradlyn (*University of Illinois at Urbana-Champaign*);

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**Session 4A20**
**Extended/Unconventional Electromagnetic Theory, EHD(Electrohydrodynamics)/EMHD(Electromagnetohydrodynamics), and Electro-biology**


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**Thursday AM, June 20, 2019**
**Room 40 - Electrical Building**

Organized by Eva Gescheidtova

 Chaired by Jan Mikulka, Jiri Misurec
 

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- 09:00 Stress Tester and Network Emulator in Apache JMeter  
Petr Cika (*Brno University of Technology*); V. Clupek (*Brno University of Technology*);
- 09:20 Parallel Processing of Genetic Algorithms in Python Language  
Vladislav Skorpil (*Brno University of Technology*); Vaclav Oujezsky (*Brno University of Technology*); Petr Cika (*Brno University of Technology*); Martin Tuleja (*Brno University of Technology*);
- 09:40 The Smart Home — PLC High Speed Communication  
Jiri Misurec (*Brno University of Technology*); Milos Orgon (*Slovak University of Technology*);
- 10:00 Speed of Light in Vacuum in the Case of Various Linear and Nonlinear Systems  
Namik Yener (*Kocaeli University*);
- 10:20 Electric Fields/Currents at Wounds: The Biological Significance, their Origin and Nature  
Min Zhao (*University of California Davis*); Brian Reid (*University of California Davis*); Guillaume Luxardi (*University of California Davis*); Fernando Ferreira (*University of California Davis*);

<p>10:40 A Non-destructive Impedance Method to Measure Semi-periodic Structures <i>P. Fiala (SIX Research Center); Zoltan Szabo (Brno University of Technology); P. Londak (Brno University of Technology); Eva Gescheidtova (Brno University of Technology); Premysl Dohnal (Brno University of Technology);</i></p> <p>11:00 <b>Coffee Break</b></p> <p>11:30 A Fast and Low-cost Measuring System for Electrical Impedance Tomography <i>Jan Mikulka (Brno University of Technology); Jan Dusek (Brno University of Technology); Jarmila Dedkova (Brno University of Technology); Jana Parilkova (Brno University of Technology); Zuzana Munsterova (Brno University of Technology);</i></p> <p>11:50 A Numerical Analysis of a Planar Inverse Nano-resonant Structure <i>Tomas Kriz (Brno University of Technology); Petr Drexler (Brno University of Technology);</i></p> <p>12:10 Comparison of Different Methods for Determining the Air Ion Mobility Spectrum <i>Zdenek Roubal (Brno University of Technology); Zoltan Szabo (Brno University of Technology); Miloslav Steinbauer (Brno University of Technology); Karel Bartusek (Institute of Scientific Instruments of the ASCR);</i></p> <p>12:30 Using an Electromagnetic Flowmeter for Ultra-low Velocity Measurement <i>Pavel Fiala (Brno University of Technology); Miloslav Steinbauer (Brno University of Technology); Zoltan Szabo (Brno University of Technology);</i></p> <p>12:50 Simulation of an Instability in Two-fluid Plasma Model <i>Oleg V. Kravchenko (Bauman Moscow State Technical University); Dobroslav P. Egorov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); Dmitry V. Churikov (Science Scientific and Technological Center of Unique Instrumentation of the RAS); E. A. Vorob'eva (Bauman Moscow State Technical University);</i></p>	<p>1 Rectenna Modeling Based on Hybrid MoM-GEC and the Auxiliary Sources Method for Wireless Power Transmission <i>Soulayma Smirani (University of Tunis El Manar); Mourad Aidi (University of Tunis El Manar); Taoufik Aguli (University of Tunis El Manar (UTM));</i></p> <p>2 Investigation of Biophysical Parameters of Forests Using Experimental Data and Results of Forest Environment Simulation <i>Elena Sergeevna Malevich (National Research University "Moscow Power Engineering Institute"); Mikhail Sergeevich Mikhailov (National Research University "Moscow Power Engineering Institute"); Valery A. Permyakov (Moscow Power Engineering Institute (Technical University));</i></p> <p>3 Semantic Web-based System for Light Scattering Using the Generalized Lorenz-Mie Theory <i>Paulo Henrique Vieira Candido (Federal Institute of Education, Science and Technology of Sao Paulo); Carlos Henrique Da Silva Santos (Federal Institute of Education, Science and Technology of Sao Paulo); Luiz Felipe Machado Votto (University of Sao Paulo); Leonardo Andre Ambrosio (University of Sao Paulo);</i></p> <p>4 Coherent Coupling Type Spot-size Converter Using a Straight Waveguide Termination <i>J. Yamauchi (Hosei University); Katsuyoshi Kojima (Hosei University); K. Shimada (Hosei University); H. Nakano (Hosei University);</i></p> <p>5 Normalization Reading and Writing for Radio Base-band Data <i>Shaoguang Guo (Shanghai Astronomical Observatory, Chinese Academy of Science); Jiyun Li (Shanghai Astronomical Observatory, Chinese Academy of Science); Renjie Zhu (Shanghai Astronomical Observatory, Chinese Academy of Science);</i></p> <p>6 Multi-channel Complex for Non-contact Aggressive Movement Detection <i>Lesya N. Anishchenko (Bauman Moscow State Technical University); Andrey V. Zhuravlev (Bauman Moscow State Technical University); Vladimir V. Razevig (Bauman Moscow State Technical University); Margarita A. Chizh (Bauman Moscow State Technical University); Viktor Alekseev (Russian University of Transport); Alexey Skrebkov (Russian University of Transport);</i></p> <p>7 The Fine Structure Constant and Graphene <i>Sara Liyuba Vesely (I.T.B. — C.N.R.); Alessandro Alberto Vesely (Via L. Anelli 13); S. R. Dolci (VESPA-UNIMI);</i></p>
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**Session 4A0  
Poster Session 5**

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**Thursday AM, June 20, 2019  
9:30 AM - 12:30 AM  
Room Corridor**

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- 8 Computation of Forces Exerted by Plain Magnetic Stray Fields  
*Eckhard Baum (University of Applied Sciences Fulda);*
- 9 Modeling of the Broadband Frequency Electrodynamic Response of Water  
*A. A. Volkov (A.M. Prokhorov General Physics Institute, Russian Academy of Sciences); Alexander A. Vasin (A.M. Prokhorov General Physics Institute, Russian Academy of Sciences);*
- 10 Electrodynamic Response of Water as a Basis for Transport Coefficient Modeling  
*Alexander A. Vasin (A. M. Prokhorov General Physics Institute, Russian Academy of Sciences); A. A. Volkov (A. M. Prokhorov General Physics Institute, Russian Academy of Sciences);*
- 11 Tight Focusing of a Second-order Cylindrical Vector Beam  
*Sergey S. Stafeev (Image Processing Systems Institute — Branch of the Federal Scientific Research Centre “Crystallography and Photonics” of Russian Academy of Sciences); Anton G. Nalimov (Image Processing Systems Institute — Branch of the Federal Scientific Research Centre “Crystallography and Photonics” of Russian Academy of Sciences); Victor V. Kotlyar (Image Processing Systems Institute of the Russian Academy of Sciences);*
- 12 Filter Application of Layered Anisotropic Media  
*Abdullah Eroglu (North Carolina A&T State University); Brinta Chowdhury (North Carolina A&T State University);*
- 13 The Local Weighting Algorithm Is Used to Model and Predict the Pressure Change of the Train Air Chamber  
*Lan Chen (Shanghai Institute of Technology); Zhiyuan Jiang (Shanghai Institute of Technology); Jiixin Wan (Fudan University);*
- 14 Broadband Generation of Second, Third and High Order Harmonics from Quadratic Nonlinear Photonic Crystals  
*Bao-Qin Chen (South China University of Technology);*
- 15 Measurement of Optical Absorption Coefficients of Nonlinear-optical Materials Using Piezoelectric Crystal Oscillator Circuits  
*Kirill V. Zotov (Moscow Institute of Physics and Technology); Georgii A. Aloian (Moscow Institute of Physics and Technology); A. E. Korolkov (Moscow Institute of Physics and Technology); D. M. Mukhankov (Kotelnikov Institute of Radioengineering and Electronics); A. V. Konyashkin (Moscow Institute of Physics and Technology); O. A. Ryabushkin (Moscow Institute of Physics and Technology);*
- 16 An Analog of Optical Rabi Oscillation in Superconducting Josephson Circuits  
*Zhuoyuan Wang (Ningbo University of Technology); Shi Yao Chong (Zhejiang University); Peng An (Ningbo University of Technology); Peihong Cheng (Ningbo University of Technology); Jian Qi Shen (Zhejiang University);*
- 17 Light Propagation in Layered Media: Spectroscopy and Colorimetry Analysis Based on Monte-Carlo Flux Simulations  
*Rodrigo Alcaraz De La Osa (Universidad de Cantabria); Dolores Ortiz Marquez (University of Cantabria); Jose Maria Saiz Vega (Universidad de Cantabria);*
- 18 Measuring Information Content on Radar Scattering of Random Rough Surface by Multiscale Entropy  
*Rui Jiang (Xuchang University); Kun-Shan Chen (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Gen-Yuan Du (Xuchang University);*
- 19 Thermochemical High-ordered Surface Structure Formation with an Astigmatic Gaussian Beam on Metal Thin Films  
*Alexandr V. Dostovalov (Novosibirsk National Research State University); V. P. Korolkov (Institute of Automation and Electrometry, Siberian Branch, Russian Academy of Sciences); V. S. Terentyev (Institute of Automation and Electrometry, SB, RAS); K. A. Bronnikov (Novosibirsk National Research State University); S. A. Babin (Institute of Automation and Electrometry, SB, RAS);*
- 20 The UAPO Diffraction Contribution in the IPO Method for RCS Evaluations  
*Gianluca Gennarelli (National Research Council); Giovanni Riccio (University of Salerno);*

- 21 Computer Simulation of Magnetolectric Microwave Isolator  
*V. N. Lobekin (Novgorod State University); Alexander Sergeevich Tatarenko (Novgorod State University); Roman Valerevich Petrov (Novgorod State University); Mirza Imamovich Bichurin (Novgorod State University);*
- 22 Input Impedance Design of a Circular Patch Array Absorber Considering Perturbation Elements Position  
*Hayato Sakamoto (Aoyama Gakuin University); Ryosuke Suga (Aoyama Gakuin University); Kiyomichi Araki (Tokyo Institute of Technology); Osamu Hashimoto (Aoyama Gakuin University);*
- 23 Study on Fabrication and Evaluation of Multilayered Composite Electromagnetic Wave Absorber Using Frequency Selective Surface  
*Fumiya Osame (Doshisha University); Keita Kunda (Doshisha University); Yuuki Sato (Doshisha University); Shinzo Yoshikado (Doshisha University);*
- 24 Long-path Faraday Rotation Spectrometer for OH Radical Measurement  
*Tong Nguyen Ba (Université du Littoral Côte d'Opale); Eric Fertein (University of the Littoral Opal Coast); Weixiong Zhao (Hefei Institutes of Physical Science, Chinese Academy Sciences); Xiaoming Gao (Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Wei Dong Chen (Université du Littoral Côte d'Opale);*
- 25 A Design of the Silicon-based Race Track Microcavity Resonator with Defined HPBW and FSR Using FDTD Method  
*Chariya Wongtaycham (King Mongkut's Institute of Technology); Suripon Somkuarnpanit (King Mongkut's Institute of Technology);*
- 26 Delay Time Characteristics of a Three-dimensional Terahertz Chiral Metamaterial for Asymmetric Transmission of Circularly Polarized Electromagnetic Waves  
*C. K. Amaljith (University of Madras (Guindy Campus)); M. Pavithra (Department of Nuclear Physics, University of Madras (Guindy Campus)); Natesan Yogesh (University of Madras (Guindy Campus));*
- 27 The Backflow of Energy in a Optical Vortex Formed by Silver Spiral Zone Plate  
*Elena Sergeevna Kozlova (Samara National Research University); Victor V. Kotlyar (Image Processing Systems Institute of the Russian Academy of Sciences);*
- 28 Coded Metasurface with Optical Activity Based on Broadband Asymmetric Transmission of Linearly Polarized Electromagnetic Waves  
*Ravishankar Varsha (University of Madras (Guindy Campus)); M. Pavithra (Department of Nuclear Physics, University of Madras (Guindy Campus)); Natesan Yogesh (University of Madras (Guindy Campus));*
- 29 Plasmonic Coupling of Dissimilar Nano-metals  
*Cheng Ka Ying (Hong Kong Baptist University);*
- 30 Plasmonic Characterization of Titanium Nitride Films under Low Temperatures  
*Larissa Vertchenko (Technical University of Denmark); L. Leandro (Technical University of Denmark); E. Shkondin (Technical University of Denmark); O. Takayama (Technical University of Denmark); N. Akopian (Technical University of Denmark); A. V. Lavrinenko (Technical University of Denmark);*
- 31 Transmission Properties of TE Surface Wave Mode in Asymmetric Metal Stripe Arrays on Low-index Substrate Coating with High-index Dielectric Layers  
*Ling Guo (Guilin University of Electronic Technology); Jun Ma (Guilin University of Electronic Technology); Shan Yin (Guilin University of Electronic Technology);*
- 32 Peculiarities of the Faraday Effect in Gold Nanoantenna Gratings in Iron-garnet Films  
*Alexei N. Kuzmichev (Russian Quantum Center); Andrey N. Kalish (Russian Quantum Center); D. M. Krichevsky (Lomonosov Moscow State University); Vladimir I. Belotelov (Russian Quantum Center);*
- 33 Kirkendall Assisted SnO<sub>2</sub>-Ag Nano-composite for Plasmonic Gas Sensor  
*Peter I. Gaiduk (Belarusian State University);*
- 34 High Sensitivity Optical Detectors Using SnS<sub>2</sub> Nanoflakes  
*Hak Dong Cho (Dongguk University); Im Taek Yoon (Dongguk University); G. Mohan Kumar (Dongguk University); Fu Xiao (Dongguk University); P. Ilanchezhian (Dongguk University); Sh. U. Yuldashev (Dongguk University); A. Madhan Kumar (King Fahd University of Petroleum & Minerals); Dong Jin Lee (Dongguk University); Tae Won Kang (Dongguk University); Juwon Lee (Dongguk University); Deuk Young Kim (Dongguk University);*

- 35 Elliptical Form-invariant Gaussian Beams with a Phase Singularity  
Victor V. Kotlyar (*Image Processing Systems Institute of the Russian Academy of Sciences*); Alexey A. Kovalev (*Samara State Aerospace University, Image Processing Systems Institute of the Russian Academy of Science*); Alexey P. Porfirev (*Image Processing Systems Institute of the Russian Academy of Sciences*);
- 36 Non-iterative Spatially Partially Coherent Diffractive Imaging  
Xingyuan Lu (*Soochow University*); Yangjian Cai (*Soochow University*); Chengliang Zhao (*Soochow University*); Jun Zeng (*Soochow University*); Xinlei Zhu (*Soochow University*); Leixin Liu (*Soochow University*);
- 37 Multi-frequency Laser Diode Stabilization by Lithium Niobate WGM Microresonator  
Alexander S. Gorodnitskiy (*Russian Quantum Center*); A. S. Voloshin (*Russian Quantum Center*); G. V. Lihachev (*Russian Quantum Center*); V. E. Lobanov (*Russian Quantum Center*);
- 38 Maximal Temperature of Spectral Selective Metamaterial Perfect Light Absorbers under Solar Radiation  
Jinnan Chen (*University of Alabama in Huntsville*); Junpeng Guo (*University of Alabama in Huntsville*); Liangyao Chen (*Fudan University*);
- 39 The Losses in the Optical Microwaveguides of Rectangular Cross Section  
Galina Zaretskaya (*Saint Petersburg Electrotechnical University "LETI"*); Andrey Drozdovskii (*Saint Petersburg Electrotechnical University "LETI"*); Boris Kalinikos (*Saint Petersburg Electrotechnical University "LETI"*);
- 40 Diffusive Electron-phonon Interaction for Terahertz Radiation  
Sang-Hyuk Park (*GIST*); Hun Lee (*Gwangju Institute of Science and Technology (GIST)*); Kunie Ishioka (*National Institute for Materials Science*); Kerstin Volz (*Philipps-University*); Christopher J. Stanton (*University of Florida*); Young-Dahl Jho (*Gwangju Institute of Science and Technology*);
- 41 Curvature Sensor Based on Novel All-fiber Mach-Zehnder Interferometer  
Guan-Jie Chen (*National United University*); Zheng-Wei Huang (*National United University*); Huey-Jiuan Lin (*National United University*); Shug-June Hwang (*National United University*);
- 42 Kagome Fiber for Optical Probe in Laser Wakefield Electron Acceleration  
Masruri Masruri (*Extreme Light Infrastructure Nuclear Physics (ELI-NP)*); I. Dancus (*Extreme Light Infrastructure Nuclear Physics (ELI-NP)*); R. Secareanu (*Extreme Light Infrastructure Nuclear Physics (ELI-NP)*); Daniel Ursescu (*Extreme Light Infrastructure Nuclear Physics (ELI-NP)*);
- 43 Investigation of Stimulated Raman Scattering Impact on Dual-pump FOPA Performance in WDM Transmission Systems  
Sergejs Olonkins (*Riga Technical University*); Julija Putrina (*Riga Technical University*); Jurgis Porins (*Riga Technical University*); Rolands Parts (*Riga Technical University*); Vjaceslavs Bobrovs (*Riga Technical University*);
- 44 Unified Multi-channel Spectrum-sliced WDM-PON Transmission System with Embedded FBG Sensors Network  
Janis Braunfelds (*Riga Technical University*); Ugis Senkans (*Riga Technical University*); Ilya Lyashuk (*Riga Technical University*); Jurgis Porins (*Riga Technical University*); Sandis Spolitits (*Riga Technical University*); Vjaceslavs Bobrovs (*Riga Technical University*);
- 45 Ramsey-CPT Spectrum with Elliptically Polarized Light  
Yuan Tian (*Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences*); Yi Zhang (*Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences*); Jiehua Chen (*Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences*); Sihong Gu (*Huazhong University of Science and Technology*);
- 46 InP Based Long Wavelength Transistor Lasers  
Song Liang (*Institute of Semiconductors, Chinese Academy of Sciences*); Lijun Qiao (*Institute of Semiconductors, Chinese Academy of Sciences*);
- 47 Simulation Study of Released Silicon-on-insulator Slot Waveguides in a Photonic Integrated Circuit Technology  
Siegfried Bondarenko (*Technical University of Applied Sciences Wildau*); Patrick Steglich (*IHP — Leibniz-Institut für Innovative Mikroelektronik*); Sigurd Schrader (*Technical University of Applied Sciences Wildau*); Andreas Mai (*IHP — Leibniz-Institut für Innovative Mikroelektronik*);
- 48 Beam Splitting Properties of the Two-dimensional Photonic Crystals Based on Directional Band Gap  
Honglian Guo (*Minzu University of China*);

- 49 Integrated Localized Surface Plasmon Resonance Sensing with Super-period Fine Structure Nano-gratings  
*Junpeng Guo (University of Alabama in Huntsville); Hong Guo (University of Alabama in Huntsville); Haisheng Leong (University of Alabama in Huntsville);*
- 50 The Performance Analysis of a Spinning Magnet as a Mechanical Antenna  
*Wei Shi (National University of Defense Technology); Qiang Zhou (National University of Defense Technology); Bin Liu (National University of Defense Technology);*
- 51 Compression and Analysis of Ultrasonic Doppler Blood Flow Meter Data by the Discrete Chebyshev Transform  
*Mikhail A. Basarab (Bauman Moscow State Technical University); Natalia S. Konnova (Bauman Moscow State Technical University); Dmitrii A. Basarab (St. Ioasaf's Belgorod Regional Hospital);*
- 52 A Design of Geometry and Antennas Layout of 3D Microwave Imaging System for Brain Stroke Monitoring  
*Jan Tesarik (Czech Technical University in Prague); Josef Hrnecir (Czech Technical University in Prague); Tomas Pokorny (Czech Technical University in Prague);*
- 53 Evaluation on Compressive Sensing-based Image Reconstruction Method for Microwave Imaging  
*Basari (Universitas Indonesia); Syahrul Ramdani (Universitas Indonesia);*
- 54 Design, Fabrication and Measurement of Multiband Rectangular Slot ACS Fed Uiplanar Antenna for 2.4/2.5/5.5 GHz Wireless Applications  
*Praveen Vummadisetty Naidu (JNT University Kakina — Velagapudi Ramakrishna Siddhartha Engineering College); Arvind Kumar (Kautilya Institute of Technology and Engineering); Vege Priyanka (Velagapudi Ramakrishna Siddhartha Engineering College); G. Harika (Velagapudi Ramakrishna Siddhartha Engineering College); Rengasamy Rajkumar (VIT University); Khalim Amjad Meerja (Velagapudi Ramakrishna Siddhartha Engineering College);*
- 55 Compact Millimeter-wave Triband Quasi-Yagi Antenna for 5G and WiGig Applications  
*Meng-Jie Chen (National Chiao Tung University); Nai-Chen Liu (National Chiao Tung University); Wei-Ren Xue (National Chiao Tung University); Jenn-Hwen Tarnq (National Chiao Tung University);*
- 56 A Microstrip Antenna with Frequency and Polarization Reconfigurability  
*Ting-Yi Huang (Feng Chia University); Wei-Hung Hsiao (Feng Chia University); Hong-Wei Chou (Feng Chia University);*
- 57 Substrate Integrated Circularly Polarized Horn Antenna Based on LTCC Technology  
*Yanting Lv (Shanghai Aerospace Electronics Co.,Ltd); Xudong Bai (Shanghai Scientific Instrument Factory); Yuntao Sun (Shanghai Scientific Instrument Factory); Weizhong Yan (Shanghai Scientific Instrument Factory); Fanwei Kong (Shanghai Scientific Instrument Factory); Mengmeng Sun (Shanghai Scientific Instrument Factory);*
- 58 Differentially Proximity-coupled Circular Ring-shaped Array Antenna with Improved Radiation Characteristic  
*Rheyuniarto Sahlendar Asthan (Institut Teknologi Sumatera); Hartuti Mistialustina (Institut Teknologi Bandung); Achmad Munir (Institut Teknologi Bandung);*
- 59 An Indirect  $S$ -parameters Measurement Method of Chips in a Multi-chip Module through External Terminals  
*Toshikazu Sekine (Gifu University); Yasuhiro Takahashi (Gifu University);*
- 60 Simulation of a Ku-band Oversized Coaxial Relativistic Cerenkov Generator with Periodic Permanent Magnet  
*Xiaoling Wu (Tsinghua University); Changhua Chen (Northwest Institute of Nuclear Technology); Yan Teng (Northwest Institute of Nuclear Technology); Yanchao Shi (Northwest Institute of Nuclear Technology); Renzhen Xiao (Northwest Institute of Nuclear Technology); Ping Wu (Northwest Institute of Nuclear Technology); Zhimin Song (Northwest Institute of Nuclear Technology); Jun Sun (Northwest Institute of Nuclear Technology);*
- 61 The Influence of Base Width on Breakdown Voltage in Transistors  
*Lin Yu (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University); Hongjin Yang (Southwest Jiaotong University);*
- 62 Influence of Different Ion Implantation and Diffusion Models on UMOS Threshold Voltage  
*Yong Feng Liu (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University); Hongjin Yang (Southwest Jiaotong University); Tao Jin (Xipu Campus of Southwest Jiaotong University);*

- 63 High Gain 2-stage Class-E RF Power Amplifier for Wireless Power Transfer  
*Azwar Mudzakkir Ridwan (UIN Sunan Gunung Djati Bandung); Eki Ahmad Zaki Hamidi (UIN Sunan Gunung Djati Bandung); Budi Syihabuddin (Institut Teknologi Bandung); Achmad Munir (Institut Teknologi Bandung);*
- 64 A Frequency Reconfigurable Rat-race Coupler with Filtering Responses Using Varactor-tuned Coupled Resonators  
*Ting-Yi Huang (Feng Chia University); Cheng-Hsien Wu (Feng Chia University); Szu-Cheng Lin (Feng Chia University);*
- 65 Design of Compact Ka-band Microstrip BPF Using Mode Exciting Technology  
*Amjad Altaf (Beihang University); Xi Chen (Beihang University); Umar Dilshad (Beihang University); Chen Chen (Beihang University); Jungang Miao (Beihang University);*
- 66 Encryption Device Leveraging Wave Chaos for Enhanced Physical Security of Wireless Wave Transmission  
*Hong Soo Park (Soongsil University); Sun K. Hong (Soongsil University);*
- 67 Common-mode Suppression Using Quarter Wavelength Resonant Structures in Broadside-coupled Coplanar Waveguides  
*Yujie He (Rose-Hulman Institute of Technology); Alex Hobbie (Rose-Hulman Institute of Technology); Anita Hsu (Rose-Hulman Institute of Technology); Charles Lynch (Rose-Hulman Institute of Technology); Michael Rosier (Rose-Hulman Institute of Technology); Edward Wheeler (Rose-Hulman Institute of Technology); Michael Cracraft (IBM Systems and Technology Group);*
- 68 A High-speed Transition between a Co-planar Waveguide and a Co-planar Stripline  
*Moises A. Jezzini (Tyndall National Institute); F. H. Peters (Tyndall National Institute);*
- 69 Investigation of the Continuous Wavelet Transform Method for Use with Late Time Response Analysis of Concealed on Body Threat Objects  
*Ali Saied Atiah (Manchester Metropolitan University);*
- 70 Tropospheric Ducts Measurement with Using Weather Sensors  
*Mikhail Sergeyevich Mikhailov (National Research University "Moscow Power Engineering Institute"); Elena Sergeevna Malevich (National Research University "Moscow Power Engineering Institute"); N. O. Strelkov (National Research University "Moscow Power Engineering Institute");*
- 71 Measurement of Yangtze River's Water Level by Tiangong-2 Interferometric Imaging Radar Altimeter  
*Xueyan Kang (National Space Science Center, Chinese Academy of Sciences); Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences); Xiao Dong (Center for Space Science and Applied Research, Chinese Academy of Sciences); Wenshuai Zhai (Center for Space Science and Applied Research, Chinese Academy of Sciences); Shuangbao Yang (National Space Science Center, Chinese Academy of Sciences); Xiyu Xu (National Space Science Center, Chinese Academy of Sciences);*
- 72 About Capabilities of GIMS-technology to the Study of the Marine Ecosystems  
*Ferdinant A. Mkrtchyan (V. A. Kotelnikov's Institute of Radioengineering and Electronics, Russian Academy of Sciences); V. F. Krapivin (V. A. Kotelnikov's Institute of Radioengineering and Electronics, Russian Academy of Sciences); Sergey M. Shapovalov (Shirshov's Institute of Oceanology, RAS);*
- 73 About Optimal Algorithms for Making Statistical Decisions for Small Volume Samples and with Apriori Parametric Uncertainty  
*Ferdinant A. Mkrtchyan (V. A. Kotelnikov's Institute of Radioengineering and Electronics, Russian Academy of Sciences);*
- 74 A Volterra-series Based Time-frequency Fusion Strategy for Sea-surface Weak Target Detection  
*Min Zhang (Xidian University); Zhaohui Cai (Xidian University);*
- 75 The Effects of Hole-burning in ODMR Spectra of Spin Centers in Silicon Carbide  
*Andrei N. Anisimov (Ioffe Institute); I. D. Breev (Ioffe Institute); Pavel G. Baranov (Ioffe Institute);*

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**Session 4P1**
**FocusSession.SC5: Atmospheric Remote Sensing and Propagation 2**


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**Thursday PM, June 20, 2019**
**Room 1 - 1st Floor**

Organized by Frank Silvio Marzano, Domenico Cimini

Chaired by Frank Silvio Marzano, Domenico Cimini

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- 14:30 Global Observations from a Well-calibrated Passive Microwave Atmospheric Sounding Radiometer on a CubeSat: Temporal Experiment for Storms and Tropical Systems Technology Demonstration (TEMPEST-D) 6U CubeSat Mission  
*Steven C. Reising (Colorado State University); Todd C. Gaier (California Institute of Technology); Shannon T. Brown (California Institute of Technology); Sharmila Padmanabhan (California Institute of Technology); Boon H. Lim (California Institute of Technology); Cate Heneghan (California Institute of Technology); Christian D. Kummerow (Colorado State University); V. Chandrasekar (Colorado State University); Wesley K. Berg (Colorado State University); Richard Schulte (Colorado State University); Chandrasekar Radhakrishnan (Colorado State University); Matthew Pallas (Blue Canyon Technologies); Doug Laczkowski (Blue Canyon Technologies); Austin Bullard (Blue Canyon Technologies);*
- 15:00 The ROHP-PAZ Experiment: Sensing Heavy Rain from Space Using L-band Signals of Opportunity at Limb-looking forward Scattering Geometry  
*Invited Estel Cardellach (Institute of Space Studies (ICE, CSIC)); S. Tomas (Institute of Space Studies (ICE, CSIC)); Santi Oliveras (Institute of Space Studies (ICE, CSIC)); Antonio Rius (Institute of Space Studies (ICE, CSIC)); Chi On Ao (California Institute of Technology (JPL)); F. J. Turk (California Institute of Technology); M. De la Torre-Juarez (California Institute of Technology); R. Padulles (California Institute of Technology); B. A. Iijima (California Institute of Technology (JPL)); G. W. Franklin (California Institute of Technology (JPL)); T. K. Meehan (California Institute of Technology (JPL)); D. Kuang (California Institute of Technology (JPL)); K.-N. Wang (California Institute of Technology (JPL));*
- 15:20 The EUMETSAT Polar System — Second Generation (EPS-SG) Passive Microwave and Sub-mm Wave Missions  
*Invited Vinia Mattioli (European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)); Christophe Accadia (EUMETSAT); Jorg Ackermann (EUMETSAT); Sabatino Di Michele (EUMETSAT); Imke Hans (European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)); Peter Schlüssel (EUMETSAT); Paolo Colucci (EUMETSAT); Alessio Canestri (EUMETSAT);*
- 15:40 Pioneer Research of the FY-4 GIIRS Utilization for Extreme Weather in China  
*Xin Wang (National Satellite Meteorological Center, China Meteorological Administration); Qiang Guo (National Satellite Meteorological Center);*
- 16:00 Enhancement of Temperature-humidity Retrieval Algorithms of Satellite MW Data Processing  
*Victor Petrovich Savorskiy (Kotel'nikov Institute of Radioengineering and Electronics, RAS); Dmitry Mikhailovich Ermakov (Kotel'nikov Institute of Radioengineering and Electronics of RAS); Boris Georgievich Kutuza (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences); Andrey Petrovich Chernushich (Fryazino branch of IRE RAS); Mikhail Timofeevich Smirnov (Kotel'nikov Institute of Radioengineering and Electronics, RAS); Olga Yurievna Panova (Fryazino branch of IRE RAS); Mikhail Vasilievich Danilychev (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences);*
- 16:30 **Coffee Break**
- 17:00 High-resolution Satellite Image Based Aerosol Optical Depth Retrieval Method: Validation through EARLINET and NASA MPLNET Lidar Measurements and NASA AERONET Sunphotometer Data  
*Invited Simone Lolli (Institute of Methodologies for Environmental Analysis, CNR); Gemine Vivone (University of Salerno); Luciano Alparone (University of Florence); Andrea Garzelli (University of Siena); Muhammad Bilal (Nanjing University of Information Science and Technology); N. Cimini (CNR, Institute of Methodologies for Environmental Analysis); James R. Campbell (Naval Research Laboratory); Ellsworth J. Welton (NASA GSFC); G. Pappalardo (Institute of Methodologies for Environmental Analysis, CNR);*
- 17:20 Scintillation Effects in the Ionosphere  
*George Jandieri (VSB — Technical University of Ostrava); Akira Ishimaru (University of Washington); Jaromir Pistora (VSB — Technical University of Ostrava); Michal Lesnak (VSB — Technical University of Ostrava); Natalia Natasha Zhukova (M. Nodia Institute of Geophysics);*

- 17:40 Upper Atmosphere Wind Pattern during St. Patrick's Day Geomagnetic Storm: Fabry-Perot Interferometer Measurements and Modeling  
*Konstantin G. Ratovsky (Institute of Solar-Terrestrial Physics, SB RAS); Maxim V. Klimenko (Immanuel Kant Baltic Federal University); Roman V. Vasilyev (Institute of Solar-Terrestrial Physics, Siberian Branch of Russian Academy of Science); Vladimir V. Klimenko (West Department of Pushkov Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation RAS);*
- 18:00 Solar Activity Influence on the Mesopause Temperature and F2 Peak Electron Density  
*Irina Medvedeva (Institute of Solar-Terrestrial Physics); Konstantin G. Ratovsky (Institute of Solar-Terrestrial Physics, SB RAS);*
- 15:10 Multi-sensor Fusion Applied to the Detection of Person-Borne Improvised Explosive Devices (PB-IEDs)  
*Daniela Deiana (Electronic Defence, TNO Defence, Safety and Security); Patrick Hanckmann (Intelligent Autonomous Systems, TNO Defence, Safety and Security);*
- 15:30 Electromagnetic Induction Imaging with Atomic Magnetometers: Surveillance and Security Applications  
*Cameron Deans (University College London); Luca Marmugi (University College London); Ferruccio Renzoni (University College London);*
- 15:50 Design of Small Sized SFCW Radar for Landmine Detection  
*D. Sipos (University of Maribor); Dusan Gleich (University of Maribor);*
- 16:10 Smart Radar Sensors for Critical Sites Protection  
*Simone Ledda (University of Florence); Guido Biffi Gentili (University of Florence);*

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**Session 4P2**

**Electromagnetic Methods and Electronic Devices for Security**

**Thursday PM, June 20, 2019**

**Room 5 - 1st Floor**

Organized by Lorenzo Capineri

Chaired by Pierluigi Falorni, Daniela Deiana

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- 14:30 Background Removal for the Processing of Scans Acquired with the "UGO-1<sup>st</sup>" Landmine Detection Platform  
*Lorenzo Capineri (Universita di Firenze); Pierluigi Falorni (Universita di Firenze); G. Borgioli (Universita degli Studi di Firenze); Luca Bossi (University of Florence); Gennadiy Pochanin (O. Ya. Usikov Institute for Radiophysics and Electronics of the National Academy of Sciences of Ukraine); V. Ruban (O. Ya. Usikov Institute for Radiophysics and Electronics of the NAS of Ukraine); O. Pochanin (O. Ya. Usikov Institute for Radiophysics and Electronics of the NAS of Ukraine); T. Ogurtsova (O. Ya. Usikov Institute for Radiophysics and Electronics of the NAS of Ukraine); Fronefield Crawford (Franklin & Marshall College); Timothy D. Bechtel (Franklin & Marshall College);*
- 14:50 Development of Multifrequency MW Detection Device to Scan Liquids in Security Checkpoints  
*M. Vafadar Yengejeh (Gebze Technical University); Sultonazar Mamadazizov (Gebze Technical University); B. Colak (Alanya Alaaddin Keykubat University); Bulat Rameev (Gebze Technical University);*
- 17:00 Magnetic Resonance and Microwave Techniques for Security Applications  
*Bulat Rameev (Gebze Technical University);*
- 17:20 Remote Sensing for the Detection of Explosives and Energetic Materials by <sup>14</sup>N NQR and <sup>14</sup>N NMR  
*Georgy Mozhukhin (Gebze Technical University); A. Marasli (Gebze Technical University); S. Mamadazizov (Gebze Technical University); B. Colak (Alanya Alaaddin Keykubat University); Bulat Rameev (Gebze Technical University);*
- 17:40 Compressed Sensing Stepped Frequency Ground Penetrating Radar Using Structure  
*Venceslav Kafedziski (University Ss Cyril and Methodius);*
- 18:00 Some Opinion and Estimation about Possibility to See Stealth by Microwave Radiometer  
*Hao Liu (Harbin Institute of Technology); Chao Wu (Harbin Institute of Technology); Dajing Wang (Harbin Institute of Technology); Jing-Hui Qiu (Harbin Institute of Technology); Oleksandr Denisov (Harbin Institute of Technology);*

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**Session 4P3a**

**Transmission Line, Waveguide & Filter**

**Thursday PM, June 20, 2019**

**Room 7 - 1st Floor**

Chaired by Shinichi Tanaka, Yongchae Jeong

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- 14:30 Development of Inkjet-printed Microwave Filters for 1–6 GHz Band Communications Applications  
*Hüseyin Sinan Aksimsek (Istanbul Kultur University); E. A. Ozek (Istanbul Kultur University);*
- 14:50 A Compact Harmonic Filter Using CRLH Transmission Line Stubs for Class-E Power Amplifiers  
*H. Asami (Shibaura Institute of Technology); Shinichi Tanaka (Shibaura Institute of Technology);*
- 15:10 CMOS Microwave Bandpass Filter Using High Q Active Inductor  
*Qi Wang (Chonbuk National University); Phirun Kim (Chonbuk National University); Girdhari Chaudhary (Chonbuk National University); Jongsik Lim (Soonchunhyang University); Yongchae Jeong (Chonbuk National University);*
- 15:30 Compact Wide-stopband Quarter-mode SIW Bandpass Filter with Triangle Cavity  
*Phirun Kim (Chonbuk National University); Phanam Pech (Chonbuk National University); Jongsik Lim (Soonchunhyang University); Dal Ahn (Soonchunhyang University); Yongchae Jeong (Chonbuk National University);*
- 15:50 Transmission Lines Modeling Approach Based on the Approximation of Pade  
*Zahra Bouzidi (Cadi Ayyad University); Abdelaziz El Idrissi (Cadi Ayyad University); Hicham Rouijaa (Hassan University 1); Mohamed Saih (University of Sultan Moulay Slimane);*
- 16:10 Measurement of Parameters of Objects in Non-standard Guiding Systems and in Free Space  
*Vladimir Ivanovich Evseev (LLC “Arzamas Instrument-making Design Bureau”); Oleg Veniaminovich Lavrichev (JSC “Arsamassky Priborostroitelny Zavod imeni Plandina”); Elena Alexandrovna Lupanova (Nizhniy Novgorod State Technical University n.a. R. E. Alekseev); Sergey Michailovich Nikulin (Alekseev’s Nizhny Novgorod State Technical University);*
- 16:30 **Coffee Break**
- 17:00 Comparative Study of Multipactor Effect in Rectangular and Parallel-plate Waveguides Partially Loaded with Dielectric  
*A. Berenguer (Universidad Miguel Hernandez de Elche); Angela Coves Soler (Universidad Miguel Hernandez de Elche); E. Bronchalo (Universidad Miguel Hernandez de Elche);*

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**Session 4P3b**  
**Microwave and Millimeter Wave Circuits and Devices 2**

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**Thursday PM, June 20, 2019**

**Room 7 - 1st Floor**

Chaired by Yongchae Jeong, Shinichi Tanaka

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- 17:20 A CMOS Single Stage Sub-harmonic Mixer with Two Conversion Modes for Fast Spectrum Sensing Functionality  
*Seongjin Bae (Chonbuk National University); Donggu Im (Chonbuk National University);*
- 17:40 Wideband Phase Shifter Using 3 Types of LC Resonant Circuits for Phase Slope Alignment  
*Youna Jang (Soonchunhyang University); Maaz Salman (Soonchunhyang University); Yongchae Jeong (Chonbuk National University); Kwansun Choi (Soonchunhyang University); Sang-Min Han (Soonchunhyang University); Dal Ahn (Soonchunhyang University);*
- 18:00 A High-efficiency DC-to-RF/RF-to-DC Conversion Module with Zero-threshold FET for Bidirectional Wireless Power Transfer  
*Takaharu Kume (The University of Electro-Communications); Ryo Ishikawa (The University of Electro-Communications); Kazuhiko Honjo (The University of Electro-Communications);*
- 18:20 Bandwidth Broadening of a Waveguide Circulator for Industrial Dual-band Magnetrons  
*Kaviya Aranganadin (Hanyang University); Hua-Yi Hsu (National Taipei University of Technology); Ming-Chieh Lin (Hanyang University);*
- 18:40 Modeling a Gyrotron Mode Converter Using 3-D CFDTD Simulation  
*Ming-Chieh Lin (Hanyang University); Jianbo Jin (Forschungszentrum Karlsruhe); Stefan Illy (Karlsruhe Institute of Technology (KIT)); Konstantinos A. Avramidis (Karlsruhe Institute of Technology (KIT)); Manfred Thumm (Karlsruhe Institute of Technology); John Jelonnek (Institute for Pulsed Power and Microwave Technology, Karlsruhe Institute of Technology);*

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**Session 4P4**
**Computational Electromagnetics, Hybrid Methods**


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**Thursday PM, June 20, 2019**
**Room 8 - 1st Floor**

 Chaired by Vladimir Okhmatovski, Mikhail  
Sergeyevich Mikhailov
 

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- 14:30 Dispersive Equation of Tellegen Complex Medium-based Waveguides  
*Samia Aib (University Mentouri Constantine); Chemseddine Zebiri (Université Ferhat Abbas); Djamel Sayad (University of Skikda); Toufik Aib (Université 20 Août 1955-Skikda); Fatiha Benabdellaziz (University of Mentouri);*
- 14:50 Acceleration of Method of Moments on Structured and Unstructured Meshes via Tensor Train Decomposition  
*Z. Chen (University of Manitoba); S. Zheng (University of Manitoba); Vladimir Okhmatovski (University of Manitoba);*
- 15:10 A Hybrid Implicit-explicit FDTD Method for Simulation of Ultra-wideband Bandpass Filter  
*Li Li (Xi'an University of Science and Technology); Hui Zhang (Xi'an University of Science and Technology); Xiaobing Han (Xi'an University of Science and Technology); Noman Hafiz Muhammad (Xi'an University of Science and Technology); Yuan Guo Zhou (Xi'an University of Science and Technology);*
- 15:30 Uncertainty Analysis of a Microstripline Based Dielectric Resonator Filter Using Finite Element Method with Polynomial Chaos  
*B. N. Abhijith (Indian Institute of Science Bangalore); K. J. Vinoy (Indian Institute of Science Bangalore);*
- 15:50 Proposal on Propagation Prediction Method Based on Dynamic Channel Properties for High Frequency Bands in Urban NLOS Environment  
*Minoru Inomata (NTT DOCOMO Inc.); Tetsuro Imai (NTT DOCOMO Inc.); Koshiro Kitao (NTT DOCOMO Inc.); Takahiro Asai (NTT DOCOMO Inc.);*
- 16:10 Phased Array Antenna Adaptation in Tropospheric Duct above Sea Surface  
*Mikhail Sergeyevich Mikhailov (National Research University "Moscow Power Engineering Institute"); Valery A. Permyakov (Moscow Power Engineering Institute (Technical University)); A. I. Baskakov (National Research University "Moscow Power Engineering Institute");*
- 16:30 **Coffee Break**
- 17:00 Applicability of the Geometrical Optics Approximation in Radio Occultation Experiments: Numerical Simulations  
*Yaroslav A. Ilyushin (Moscow State University); A. L. Gavrik (Kotelnikov Institute of Radio Electronics and Engineering, Fryazino Branch);*
- 17:20 Time-domain Coupled Full Maxwell- and Drift-diffusion-solver for Simulating Scanning Microwave Microscopy of Semiconductors  
*Arif Can Gungor (Institute of Electromagnetic Fields (IEF), ETH Zurich); Jasmin Smajic (Institute of Electromagnetic Fields (IEF), ETH Zurich); Federico Moro (Università di Padova); Juerg Leuthold (Institute of Electromagnetic Fields (IEF), ETH Zurich);*
- 17:40 Resonance-free Magnetic-field Integral Equation with Double-layer Modeling: Further Improvements  
*Sadri Guler (Middle East Technical University); Hande Ibili (Middle East Technical University); Ozgur Ergul (Middle East Technical University);*
- 18:00 Fast Characterization and Modeling of Arbitrary Cross Section 2D Photonic Bandgap Structures Using AFGSM Method  
*Onur Erkan (Istanbul Technical University); Serkan Simsek (Istanbul Technical University);*
- 18:20 Open Area Concealed Weapon Detection (CWD) Sensor System and Algorithm Development  
*Yuxiang Huang (University of Huddersfield); Peter Mather (University of Huddersfield); Martin James Norbury Sibley (University of Huddersfield);*
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- Session 4P5a**  
**SC5: SAR for Agriculture**
- 
- Thursday PM, June 20, 2019**  
**Room Hall of Frescoes - 1st Floor**  
Organized by Anna Balenzano, Leila Guerriero  
Chaired by Anna Balenzano, Leila Guerriero
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- 14:30 An Operational High Resolution Soil Moisture Retrieval Algorithm Using Sentinel-1 Images  
*Nicolas Baghdadi (University of Montpellier); Mohammad El Hajj (University of Montpellier); Mehrez Zribi (CESBIO (CNRS/IRD/CNES/UPS));*

- 14:50 Improvement of Soil Moisture Retrieval through an Integration of SMAP and S-1 Data: A Case Study in Central Italy  
*Simonetta Paloscia (CNR-IFAC); E. Santi (CNR-IFAC); Simone Pettinato (Consiglio Nazionale delle Ricerche); Luca Brocca (National Research Council of Italy); L. Ciabatta (CNR-IRPI); C. Massari (CNR-IRPI); S. Modanesi (CNR-IRPI);*
- 15:10 Field Scale Soil Moisture Retrieval and Soil Tillage Change Detection from Sentinel-1 for Agricultural Monitoring  
*Anna Balenzano (Istituto per il Rilevamento Elettromagnetico dell'Ambiente (IREA)); Giuseppe Satalino (Istituto di Studi sui Sistemi Intelligenti per l'Automazione (ISSIA)); Francesco Mattia (Istituto di Studi sui Sistemi Intelligenti per l'Automazione (ISSIA)); F. P. Lovergine (Consiglio Nazionale delle Ricerche, Istituto per il Rilevamento Elettromagnetico dell'Ambiente (CNR-IREA)); A. D'Addabbo (Consiglio Nazionale delle Ricerche, Istituto per il Rilevamento Elettromagnetico dell'Ambiente (CNR-IREA)); D. Palmisano (Consiglio Nazionale delle Ricerche, Istituto per il Rilevamento Elettromagnetico dell'Ambiente (CNR-IREA));*
- 15:30 A Time Series Change Detection Algorithm for Spaceborne GNSS-R Soil Moisture Retrievals over Complex Terrain  
*Mohammad Al-Khaldi (The Ohio State University); Shanka N. Wijesundara (The Ohio State University); Joel T. Johnson (The Ohio State University); Anna Balenzano (Istituto per il Rilevamento Elettromagnetico dell'Ambiente (IREA)); Francesco Mattia (Istituto di Studi sui Sistemi Intelligenti per l'Automazione (ISSIA));*
- 15:50 Agricultural Monitoring in the Netherlands Using SAR Data from Sentinel-1  
*Susan Steele-Dunne (Delft University of Technology); Saeed Khabbazan (Delft University of Technology); Paul C. Vermunt (Delft University of Technology); Dirk Van der Valk (Delft University of Technology);*
- 16:10 Modeling Backscattering of Crops of Pampas Region  
*Mario Alberto Acuna (Università di Roma Tor Vergata); Paolo Ferrazzoli (Università di Roma Tor Vergata); Leila Guerriero (Università di Roma Tor Vergata);*
- 16:30 **Coffee Break**

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**Session 4P5b**  
**Microwave Remote Sensing, Polarimetry**  
**SAR, and Radar Imaging 2**

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**Thursday PM, June 20, 2019**

**Room Hall of Frescoes - 1st Floor**  
Chaired by Anna Balenzano, Leila Guerriero

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- 17:00 About the Image Feature of Parabolic Antennas in High-resolution SAR Image  
*Shaoyan Du (Institute of Electronics, Chinese Academy of Sciences); Jun Hong (Institute of Electronics, Chinese Academy of Science); Yu Wang (Institute of Electronics, Chinese Academy of Sciences); Qiaona Zheng (Institute of Electronics, Chinese Academy of Sciences);*
- 17:20 Chiba University Small Circularly-polarized-SAR Satellite Remote Sensing  
*Nobuyoshi Imura (Chiba University); Josephat Tetuko Sri Sumantyo (Chiba University);*
- 18:00 A Singular Value Decomposition Based Approach for Classifying Concealed Objects in Short Range Polarimetric Radar Imaging  
*Vipin Choudhary (University of Gävle); Daniel Rönnow (University of Gävle); Magnus Jansson (KTH Royal Institute of Technology);*

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**Session 4P6**  
**Microstrip Antennas, Array Antennas, Theory**  
**and Radiation 2**

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**Thursday PM, June 20, 2019**

**Room Cloister Hall - 1st Floor**  
Chaired by Peter Stoyanov Apostolov, Yahya Salamrh Hassan Khraisat

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- 14:30 Study of Original Approach to Fabrication of Flexible Planar Antennas with Coplanar Feeding Structure  
*Andrei Victorovich Starodubov (Saratov State University); Alexey Alexandrovich Serdobintsev (Saratov State University); Victor Vladimirovich Galushka (Saratov State University); Peter V. Ryabukho (Saratov State University); Ilya Olegovich Kozhevnikov (Saratov State University); Galina Alexandrovna Korshunova (Saratov State University); Sergey Yurevich Gorodkov (Saratov State University); Anton Mikhailovich Pavlov (Saratov State University);*

- 14:50 Analysis of Parasitic Patch for Axial Ratio Bandwidth Enhancement in Circularly-polarized-slotted Microstrip Antenna  
*Peberlin Parulian Sitompul (Chiba University); Josaphat Tetuko Sri Sumantyo (Chiba University); Timbul Manik (National Institute of Aeronautics and Space); Adi Poerwono (National Institute of Aeronautics and Space); Farohaji Kurniawan (Chiba University); Mohammad Nasucha (Universitas Pembangunan Jaya);*
- 15:10 Design Method for Bi-band Circularly Polarized Antenna. Application to GNSS Antenna  
*Matthieu Egels (Aix-Marseille University); Philippe Pannier (Aix-Marseille University);*
- 15:30 Efficient Three-element Binomial Array Antenna  
*Peter Stoyanov Apostolov (High School "College of Telecommunications and Post"); Borislav Yurukov (South-West University-Blagoevgrad); Alexey Stefanov (South-West University-Blagoevgrad);*
- 15:50 Performance Analysis of Power Weighted Linear Array Antennas Based on Blackman Function  
*Hartuti Mistialustina (Institut Teknologi Bandung); Chairunnisa (Institut Teknologi Bandung); Achmad Munir (Institut Teknologi Bandung);*
- 16:10 Multi-antenna Array Topologies Optimization for Future Wireless Networks by Employing Particle Swarm Optimization  
*Yingke Huang (University of Glasgow); Petros Karadimas (University of Glasgow); Abed Pour Sohrab (University of Glasgow);*
- 16:30 **Coffee Break**
- 17:00 Synthesis of Linear Array Antenna Using Hybrid IWO/WDO Algorithm  
*Rashmi Sinha (National Institute of Technology); Arvind Choubey (National Institute of Technology); Santosh Kumar Mahto (National Institute of Technology); Prakash Ranjan (National Institute of Technology); Chetan Barde (National Institute of Technology);*
- 17:20 Design Microstrip Patch Antenna Using Ground Slots  
*Yahya Salamrh Hassan Khraisat (Taif University); Ahmad A. Alahmadi (Taif University); Mohammed Abdul Rahman Zamil Al-Sharef (Taif University);*
- 17:40 Programmable Miniaturized Multiband Antenna System and Applications for Smart Industry  
*Brahim Fady (INPT); Jaouad Terhzaz (EMI); Abdelwahed Tribak (Institut National de Poste et Telecommunications (INPT)); Fatima Riouch (INPT); Angel Mediavilla Sanchez (University of Cantabria);*
- 18:00 An Inverted F with Dual Frequency for Radar & 5G Applications above 85 GHz  
*Mohamed Fathy Abo Sree (Arab Academy for Science & Technology and Maritime Transport); Wael Swelam (Arab Academy for Science and Technology Maritime Transport (AASTMT)); Mohamed Hassan Abd El-Azeem (Arab Academy for Science and Technology Maritime Transport (AASTMT)); Hadia M. El-Hennawy (Ain Shams University);*
- 18:20 A Multi Band Dual Loop Antenna in Millimetric Wave Implementation for 5G Applications  
*Muhammad Aly Ibrahim (Ain Sham University (ASU)); Hadia M. El-Hennawy (Ain Shams University); Mohamed Hassan Abd El-Azeem (MTC University); Wael Swelam (Egyptian Armed Forces); Mohamed Fathy Abo Sree (Arab Academy for Science & Technology and Maritime Transport);*
- 18:40 A Compact 3 Port Integrated Wide Band Sensing Antenna and Narrow Band Antennas for Cognitive Radio Applications  
*D. Srikar (National Institute of Technology); S. Anuradha (National Institute of Technology);*
- 19:00 Exponential Companding Transform to Mitigate PAPR in SC-FDMA Systems  
*Kondamuri Shri Ramtej (National Institute of Technology); S. Anuradha (National Institute of Technology);*

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**Session 4P7a**
**SC3: Photonics for Lab-on-Chip**


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**Thursday PM, June 20, 2019**
**Room 17 - 1st Floor**

Organized by Giampiero De Cesare, Domenico Caputo

Chaired by Giampiero De Cesare, Domenico Caputo

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- 14:30 **Monitoring of Immunosuppressive Drugs and Sepsis Biomarkers in POCT Devices: The Photonics Approach**  
Invited  
*Francesco Baldini (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); B. Adinolfi (CNR-IFAC “Nello Carrara” Institute of Applied Physics); S. Berneschi (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Romeo Bernini (Consiglio Nazionale delle Ricerche (IREA-CNR)); Francesco Chiavaioli (“Nello Carrara” Institute of Applied Physics (IFAC-CNR)); A. Giannetti (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Immacolata Angelica Grimaldii (Consiglio Nazionale delle Ricerche (IREA-CNR)); Gianluca Persichetti (Consiglio Nazionale delle Ricerche (IREA-CNR)); G. Porro (Datamed S.r.l.); G. Quarto (Datamed S.r.l.); Genni Testa (Consiglio Nazionale delle Ricerche (IREA-CNR)); S. Tombelli (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Cosimo Trono (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.);*
- 14:50 **Characterization of Plasmonic Effects in AuNP+rGO Composite as a Sensing Layer for a Low-cost Lab-on-chip Biosensor**  
Invited  
*Alessandro Fantoni (ADEETC-ISEL-Instituto Politecnico de Lisboa); Vladan Stojkovic (ADEETC-ISEL-Instituto Politecnico de Lisboa); Miguel Fernandes (ADEETC-ISEL-Instituto Politecnico de Lisboa); Paula Louro (ISEL); Manuela Vieira (ADEETC-ISEL-Instituto Politecnico de Lisboa); Elisabete C. B. A. Alegria (ADEQ-ISEL-Instituto Politecnico de Lisboa); Ana P. C. Ribeiro (Universidade de Lisboa); Ana Carvalho (ADEQ-ISEL-Instituto Politecnico de Lisboa); M. Gabriela Almeida (UCIBIO-REQUIMTE);*
- 15:10 **Design and Fabrication of Lab-on-chip for Fluorescence Detection of Ruthenium Complex**  
*Francesca Costantini (Sapienza University of Rome); Nicola Lovecchio (Sapienza University of Rome); Augusto Nascetti (Sapienza University of Rome); Giampaolo De Cesare (Università degli Studi di Roma “La Sapienza”); Domenico Caputo (Università degli Studi di Roma “La Sapienza”);*
- 15:30 **Optofluidics for Lab-on-chip Applications**  
Invited  
*Genni Testa (Consiglio Nazionale delle Ricerche (IREA-CNR)); Gianluca Persichetti (Consiglio Nazionale delle Ricerche (IREA-CNR)); Romeo Bernini (Consiglio Nazionale delle Ricerche (IREA-CNR));*
- 15:50 **Filtering Issues in Fluorescence Detection: An Approach Based on High Numerical Aperture Waveguide Absorption Filters**  
Invited  
*Cosimo Trono (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); S. Berneschi (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Romeo Bernini (Consiglio Nazionale delle Ricerche (IREA-CNR)); S. Tombelli (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Ambra Giannetti (CNR, Istituto di Fisica Applicata “Nello Carrara” (IFAC)); Francesco Chiavaioli (“Nello Carrara” Institute of Applied Physics (IFAC-CNR)); Immacolata Angelica Grimaldii (Consiglio Nazionale delle Ricerche (IREA-CNR)); Gianluca Persichetti (Consiglio Nazionale delle Ricerche (IREA-CNR)); Genni Testa (Consiglio Nazionale delle Ricerche (IREA-CNR)); G. Porro (Datamed S.r.l.); Francesco Baldini (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.);*
- 16:10 **A Laser Bonding Technique to Instrument Tissue-compatible, Optically Transparent Synthetic Diamond Substrate with CMOS Devices**  
Invited  
*Leonello Servoli (Istituto Nazionale di Fisica Nucleare); K. Kantheri (Istituto Nazionale di Fisica Nucleare); S. Lagomarsino (Istituto Nazionale di Fisica Nucleare); A. Morozzi (Università degli Studi di Perugia); D. Passeri (Università degli Studi di Perugia); S. Sciortino (Università di Firenze); Andrea Scorzoni (Università degli Studi di Perugia);*
- 16:30 **Coffee Break**
- 17:00 **A Configurable Microwave Microfluidic Sensor for Medical Diagnosis and Chemical Analysis**  
*Emidio Di Giampaolo (Università degli Studi dell’Aquila); Antonio Di Natale (Università degli Studi dell’Aquila);*
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- Session 4P7b**  
**Remote Sensing of the Earth and Atmosphere**  
**2**
- 
- Thursday PM, June 20, 2019**  
**Room 17 - 1st Floor**  
Chaired by Zhao-Liang Li, Zhihao Qin
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- 17:40 An Approach for Cloud Removal to the VNIR Bands of Multi-temporal FY-3C Images  
*Wenhui Du (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Zhihao Qin (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Jinlong Fan (National Satellite Meteorological Center); Fei Wang (East China Sea Fishery Research Institute, Chinese Academy of Fishery Sciences); Bilawal Abbasi (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences);*
- 18:00 Simultaneous Inversion of Surface Temperature and Humidity from Passive Microwave Observations  
*Xiao-Jing Han (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Si-Bo Duan (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Maofang Gao (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Pei Leng (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Zhao-Liang Li (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences);*
- 18:20 An Improved Method for Correcting the Instantaneous Energy Imbalance of the EC Measurements  
*Meng Liu (Institute of Geographic Science and Natural Resources Research, Chinese Academy of Sciences); Ronglin Tang (Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences); Zhao-Liang Li (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Guangjian Yan (Beijing Normal University);*
- 18:40 A Method for Obtaining the Equivalent Land Surface Temperature at Pixel Scale over Heterogeneous Land Surfaces  
*Jing Li (Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences); Hua Wu (Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences); Zhao-Liang Li (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences);*
- 19:00 An Approach for Pixel Decomposition to Increase Spatial Resolution of Land Surface Temperature Images from FengYun-3C Data  
*Zhihao Qin (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Fei Wang (East China Sea Fishery Research Institute, Chinese Academy of Fishery Sciences); Wenhui Du (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Jianlong Fan (National Satellite Meteorological Center (NSMC)); Shuhe Zhao (Nanjing University);*
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- Session 4P8a**  
**Quantum Electrodynamics, Computing and Information**
- 
- Thursday PM, June 20, 2019**  
**Room 6 - Mezzanine**  
 Chaired by Stefan Scheel, Sergei P. Roshchupkin
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- 14:30 Photon Correlations in PT-symmetric Waveguide Systems  
*Friederike Klauck (Institut für Physik, Universität Rostock); Lucas Teuber (Universität Rostock); Marco Ornigotti (Institut für Physik, Universität Rostock); Matthias Heinrich (Institut für Physik, Universität Rostock); Stefan Scheel (University of Rostock);*
- 14:50 Quantum Simulation of a New Class of Dynamical Phase Transitions  
*Jiangbin Gong (National University of Singapore (NUS));*
- 15:10 Modelling Time Translational Symmetry Breaking of Photons upon Mirror Reflection  
*Almut Beige (University of Leeds); J. Southall (University of Leeds); R. Purdy (University of Leeds);*
- 15:30 Resonant Production of an Ultrarelativistic Electron-positron Pair by a Gamma Quantum in the Field of a Nucleus and a Laser Wave  
*Sergei P. Roshchupkin (Peter the Great St. Petersburg Polytechnic University); Viktor V. Dubov (Peter the Great St. Petersburg Polytechnic University); Nikita R. Larin (Peter the Great St. Petersburg Polytechnic University);*
- 15:50 Resonance of the Annihilation Channel of a Laser-assisted Electron-positron Scattering  
*Sergei P. Roshchupkin (Peter the Great St. Petersburg Polytechnic University); Viktor V. Dubov (Peter the Great St. Petersburg Polytechnic University); Dmitriy V. Doroshenko (Peter the Great St. Petersburg Polytechnic University);*

16:10 Resonant Spontaneous Bremsstrahlung of Ultrarelativistic Electrons in the Field of a Nucleus and a Laser Wave  
*Alexander V. Dubov (Peter the Great St. Petersburg Polytechnic University); Sergei P. Roshchupkin (Peter the Great St. Petersburg Polytechnic University);*

16:30 **Coffee Break**

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**Session 4P8b**

**SC1&SC3: Quantum Information Processing and Devices 3**

**Thursday PM, June 20, 2019**

**Room 6 - Mezzanine**

Organized by Hai-Zhi Song, Guangwei Deng

Chaired by Qiang Zhou, Julien Claudon

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17:00 Nanowire Antennas for Quantum Optics: Recent Developments  
 Invited

*Julien Claudon (CEA/INAC/SP2M); Romain Fons (CEA/INAC/SP2M); Alberto Artioli (CEA/INAC/SP2M); Saptarshi Kotal (CEA/INAC/SP2M); Petr Stepanov (CEA/INAC/SP2M); Eric Gautier (CEA/INAC/SP2M); Joel Bleuse (CEA/INAC/SP2M); Jean-Michel Gerard (CEA/INAC/SP2M); Pierre Verlot (University of Nottingham); Andreas D. Osterkryger (DTU Fotonik); Niels Gregersen (Technical University of Denmark); Mathieu Munsch (University of Basel); Martino Poggio (University of Basel); Richard W. Warburton (University of Basel);*

17:20 Quantum State Transfer and Storage with Local Symmetry Induced Compact Localized States  
 Invited

*Malte Rontgen (University of Hamburg); Christian Morfonios (Hamburg University); Ioannis Brouzos (University of Athens); Fotios K. Diakonos (Athens University); Peter Schmelcher (University of Hamburg);*

17:40 Dissipative Phonon Fock State Production in Strong Nonlinear Optomechanics  
 Invited

*Gentil Dias De Moraes Neto (University of Electronic Science and Technology of China (UESTC)); V. Montenegro (University of Electronic Science and Technology of China (UESTC)); V. F. Teizen (Universidade de Sao Paulo); E. Vernek (Universidade Federal de Uberlandia);*

18:00 Entanglement Distillation in Optomechanics via Unsharp Measurements  
 Invited

*Victor Montenegro (University of Electronic Science and Technology of China (UESTC)); Alessandro Ferraro (Queen's University Belfast); Sougato Bose (University College London);*

18:20 Continuous Variable Quantum Teleportation through Six-kilometer Fiber-channel  
 Invited

*Xiaojun Jia (Shanxi University);*

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**Session 4P9a**

**SC3: Label-based and Label-free Optical Biosensors 2**

**Thursday PM, June 20, 2019**

**Room 4 - Mezzanine**

Organized by Ambra Giannetti

Chaired by Ambra Giannetti, Cosimo Trono

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14:30 Smartphone-based Approach for Colorimetric Dipstick Analysis  
 Invited

*Annamaria Cucinotta (Università di Parma); Francesco Pasquali (DNAPhone S.r.l.); Matteo Barozzi (Università di Parma); Alessandro Tonelli (DNAPhone S.r.l.); Alessandro Candiani (DNAPhone S.r.l.); Luca Vicetti (DNAPhone S.r.l.); Stefano Selleri (Università di Parma);*

14:50 Labelling of Bacteria: Strategies for Imaging and Sensing  
 Invited

*Lorena Tedeschi (Institute of Clinical Physiology (IFC), National Research Council (CNR)); Laura Polisenio (Institute of Clinical Physiology (IFC), National Research Council (CNR)); Irene Lepori (Institute of Clinical Physiology (IFC), National Research Council (CNR)); Lorenzo Germelli (Institute of Clinical Physiology (IFC), National Research Council (CNR)); Monica Evangelista (Institute of Clinical Physiology (IFC), National Research Council (CNR)); Marianna Vitiello (Institute of Clinical Physiology (IFC), National Research Council (CNR));*

15:10 Layer-by-layer Nano-assembly as a Biofunctionalization Route for High-sensitivity and High-selectivity Label-free Optical Biosensing  
 Invited

*Stefano Mariani (Università di Pisa); Valentina Robbiano (Università di Pisa); Lucanos M. Strambini (Consiglio Nazionale delle Ricerche); Aline Debrassy (Surflay Nanotec GmbH); Gabriela Egri (Surflay Nanotec GmbH); Lars Dahne (Surflay Nanotec GmbH); Giuseppe Barillaro (Università di Pisa);*

15:30 Tunable Nanoplasmonic Transducers: Functional Materials for Optical Biosensing  
Invited

*Adriano Colombelli (Institute for Microelectronic and Microsystems); Daniela Lospinoso (Institute for Microelectronic and Microsystems); M. Cesaria (Institute for Microelectronic and Microsystems); A. Taurino (Institute for Microelectronic and Microsystems); Roberto Rella (Institute for Microelectronic and Microsystems); Maria Grazia Manera (Institute for Microelectronic and Microsystems);*

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**Session 4P9b**

**SC4: Reconfigurable and Programmable Photonic Integrated Circuits**

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**Thursday PM, June 20, 2019**

**Room 4 - Mezzanine**

Organized by Jian Wang

Chaired by Jian Wang

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15:50 Silicon Optical Space and Mode Switches

Invited

*Lin Yang (Institute of Semiconductors, Chinese Academy of Sciences); Ting Zhou (Institute of Semiconductors, Chinese Academy of Sciences); Hao Jia (Institute of Semiconductors, Chinese Academy of Sciences); Lei Zhang (Institute of Semiconductors, Chinese Academy of Sciences); Xin Fu (Institute of Semiconductors, Chinese Academy of Sciences);*

16:10 Programmable Silicon Photonic Processor Based on a SCOW Resonant Structure

Invited

*Liangjun Lu (Shanghai Jiao Tong University); Lin Shen (Shanghai Jiao Tong University); Wei Gao (Shanghai Jiao Tong University); Linjie Zhou (Shanghai Jiao Tong University); Jianping Chen (Shanghai Jiao Tong University);*

16:30 **Coffee Break**

17:00 Silicon Mode- and Polarization-selective Switch

Invited

*Yong Zhang (Shanghai Jiao Tong University); Yu He (Shanghai Jiao Tong University); Qingming Zhu (Shanghai Jiao Tong University); Ciyuan Qiu (Shanghai Jiao Tong University); Yikai Su (Shanghai Jiao Tong University);*

17:20 Towards Reconfigurable Multi-functional Photonic Integrated Signal Processor

Invited

*Jian Wang (Huazhong University of Science and Technology);*

17:40 SOI-based Photonic Integrated Circuits for Tunable OAM Generation

Invited

*Muhammad N. Malik (CNIT); Ning Zhang (University of Glasgow); Charles Caer (Université Paris-Sud 11); Mirco Scaffardi (CNIT); Veronica Toccafondo (CNIT); Charalambos Klitis (University of Glasgow); Jiangbo Zhu (University of Bristol); Xinlun Cai (Sun Yat-Sen University); Siyuan Yu (University of Bristol); Martin Lavery (University of Glasgow); Gianni Preve (CNIT); Marc Sorel (University of Glasgow); Bert Jan Offrein (IBM Research — Zurich); Antonella Bogoni (Scuola Superiore Sant'Anna);*

18:00 Processing of Optical Data Signals Using Integrated Devices

Invited

*Michael Galili (Technical University of Denmark); L. K. Oxenlowe (Technical University of Denmark);*

18:20 Driving and Control Techniques for Large Scale Programmable Photonics Circuits

Invited

*Antonio Ribeiro (Ghent University); Muhammad Umar Khan (Ghent University IMEC); L. Van Iseghem (Ghent University); M. Wang (Ghent University); S. Declercq (Ghent University); Wim Bogaerts (Ghent University-IMEC);*

18:40 Manipulating Optical Beams with a Programmable Silicon Photonic Mesh

Invited

*Maziyar Milanizadeh (Informazione e Bioingegneria — Politecnico di Milano); Piero Borga (Informazione e Bioingegneria — Politecnico di Milano); David A. B. Miller (Stanford University); Andrea Melloni (Politecnico di Milano); Francesco Morichetti (Informazione e Bioingegneria — Politecnico di Milano);*

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**Session 4P10a**

**SC3: Glass Photonics: Novel Systems and Ongoing Applications 2**

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**Thursday PM, June 20, 2019**

**Room 12 - Mezzanine**

Organized by Anna Lukowiak, Maurizio Ferrari

Chaired by Anna Lukowiak, Maurizio Ferrari

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14:30 Luminescent Hafnia Nanoparticles by Non-aqueous Sol-gel: Toward Particle-based Optical Materials

Invited

*Alessandro Lauria (Swiss Federal Institute of Technology (ETH-Zurich));*

- 14:50 Extraction and Separation of Rare Earths from Phosphate Mineral: Development of New Technologies  
*Adel Bouajaj (University Abdelmalek Essaadi); Saloua Belmokhtar (University Abdelmalek Essaadi); Mohammed Reda Britel (University Abdelmalek Essaadi); Mohammed Mezroui (OCP Group Morocco); Lidia Zur (Enrico Fermi Historical Museum of Physics and Study & Research Centre); Anna Lukowiak (Institute of Low Temperature and Structure Research, PAS); Roberta Ramponi (Institute of Photonics and Nanotechnology (IFN) — CNR); Giancarlo C. Righini (Piazza del Viminale 1); Maurizio Ferrari (CNR-IFN, Istituto di Fotonica e Nanotecnologie);*
- 15:10 Towards Mid-Infrared Fibre Lasing: Update on Rare Earth Ion Doped Chalcogenide Glass Fibres  
 Invited *Richard Crane (University of Nottingham); Z. Q. Tang (University of Nottingham); David Furniss (The University of Nottingham); M. Shen (University of Nottingham); M. Farries (University of Nottingham); E. Barney (University of Nottingham); Trevor Mark Benson (The University of Nottingham); L. Sojka (Wroclaw University of Science and Technology); Slawomir Sujecki (Wroclaw University of Science and Technology); Angela Beth Seddon (University of Nottingham);*
- 15:30 Luminescent and Mechanical Properties of Transparent YSZ, MgAl<sub>2</sub>O<sub>4</sub> Ceramics Doped with Rare Earth Ions  
 Invited *Oleg Khasanov (Tomsk Polytechnic University); E. Dvilis (Tomsk Polytechnic University); D. Valiev (Tomsk Polytechnic University); S. Stepanov (Tomsk Polytechnic University); E. Polisdova (Tomsk Polytechnic University); V. Paygin (Tomsk Polytechnic University);*
- 15:50 Towards Mode-locking of an Active Whispering-gallery-mode Microresonator  
*Tomoki Samuel Lidsanel Prugger Suzuki (Keio University); Shun Fujii (Keio University); Rammaru Ishida (Keio University); Riku Imamura (Keio University); Mizuki Ito (Keio University); Hideyuki Maki (Keio University); Lan Yang (Washington University); Sze Yun Set (The University of Tokyo); Takasumi Tanabe (Keio University);*
- 16:10 First Estimates of the Most Important Properties of the Electromagnetic Field Produced by a 980-nm Laser with a Flat-top Handpiece in Mitochondria Distributed on the Bottom of a Petri Dish  
*Andrea Amaroli (University of Genoa); Stefano Benedicenti (University of Genoa); Bruno Bianco (University of Genoa); Mario Rene Clemente Vargas (University of Genoa); Reem Hanna (University of Genoa); Praveen Kalarickel Ramakrishnan (University of Genoa); Mirco Raffetto (University of Genoa);*
- 16:30 **Coffee Break**
- 17:00 Optical Diagnostics of Swirling Flame by Simultaneous Planar Laser-induced Fluorescence and High-speed Chemiluminescence Imaging of OH Radical  
*Hao Yan (Institute of Mechanics, Chinese Academy of Sciences); Shaohua Zhang (Institute of Mechanics, Chinese Academy of Sciences); Fangyi Wang (Institute of Mechanics, Chinese Academy of Sciences); Xilong Yu (Institute of Mechanics, Chinese Academy of Sciences);*
- 17:20 High-enthalpy Flow Investigations by UV Laser-induced Fluorescence  
*Hao Yan (Institute of Mechanics, Chinese Academy of Sciences); Shaohua Zhang (Institute of Mechanics, Chinese Academy of Sciences); Fangyi Wang (Institute of Mechanics, Chinese Academy of Sciences); Xilong Yu (Institute of Mechanics, Chinese Academy of Sciences);*
- 17:40 Supercontinuum Generation and Pulse Compression from a Passively Mode-locked Ultrafast Ring Fibre Laser  
*Francesca Gallazzi (Istituto de Optica “Daza de Valdes”); Pedro Corredera (Istituto de Optica “Daza de Valdes”); Fernando B. Naranjo (Universidad de Alcalá); Miguel Gonzalez-Herraez (Universidad de Alcalá); Juan Diego Ania Castanon (Consejo Superior de Investigaciones Científicas);*

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**Session 4P10b**  
**Optics and Fiber Laser**

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**Thursday PM, June 20, 2019**

**Room 12 - Mezzanine**

Chaired by Takasumi Tanabe, Mirco Raffetto

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18:00 Sector Metalens for Sharp Focusing of Laser Light  
*Sergey S. Stafeev (Image Processing Systems Institute — Branch of the Federal Scientific Research Centre “Crystallography and Photonics” of RAS); Anton G. Nalimov (Image Processing Systems Institute — Branch of the Federal Scientific Research Centre “Crystallography and Photonics” of RAS); L. O’Faolain (Cork Institute of Technology); Victor V. Kotlyar (Image Processing Systems Institute of the Russian Academy of Sciences);*

18:20 Diagnosis of Flame by Planar Laser Induced Fluorescence in a Swirl Combustor  
*Hao Yan (Institute of Mechanics, Chinese Academy of Sciences); Shaohua Zhang (Institute of Mechanics, Chinese Academy of Sciences); Xilong Yu (Institute of Mechanics, Chinese Academy of Sciences);*

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**Session 4P11a**

**SC2: THz Metamaterials, Devices and Systems 2**

**Thursday PM, June 20, 2019**

**Room 11 - Mezzanine**

Organized by Romeo Beccherelli, Dimitris C. Zografopoulos

Chaired by Romeo Beccherelli

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14:30 Efficient Manipulations of Circularly Polarized Terahertz Waves with Transmissive Metasurfaces  
*Min Jia (Fudan University); Zhuo Wang (Fudan University); Heting Li (Capital Normal University); Xinke Wang (Capital Normal University); Weijie Luo (Fudan University); Shulin Sun (Fudan University); Yan Zhang (Capital Normal University); Qiong He (Fudan University); Lei Zhou (Fudan University);*

14:50 A Switchable Terahertz Reflectarray Based on Graphene Radiating Patches  
*Jingwei Zhang (Lanzhou University); Tiaoming Niu (Lanzhou University); Zhong-Lei Mei (Lanzhou University);*

15:10 Optical Phase Transition in Semiconductor Quantum Metamaterials  
*Jean-Michel Chauveau (Université Côte d’Azur); Mario Ferraro (Université Côte d’Azur); Miguel Montes Bajo (Universidad Politécnica de Madrid); Julen Tamayo-Arriola (Universidad Politécnica de Madrid); Nolwenn Le Biavan (Université Côte d’Azur); Maxime Hugues (Université Côte d’Azur); Massimo Giudici (Université Côte d’Azur); Patrice Genevet (CNRS, CRHEA, Université Côte d’Azur); Adrian Hierro (Universidad Politecnica de Madrid);*

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**Session 4P11b**

**Metamaterials and Plasmonics**

**Thursday PM, June 20, 2019**

**Room 11 - Mezzanine**

Chaired by F. Javier Garcia De Abajo, Guido G. Gentili

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15:30 Tunable SRR Metamaterials Using Low Pressure Plasma  
*Rafael Navarro (Université de Toulouse); Jerome Sokoloff (Université de Toulouse — UPS); Laurent Liard (Université de Toulouse);*

15:50 Design of a Printed Launcher for Topologically Protected Metawaveguides  
*Guido G. Gentili (Politecnico di Milano); N. Guarducci (University of Florence); Giuseppe Pelosi (University of Florence); F. Piccioli (University of Rostock); Stefano Selleri (University of Florence);*

16:10 Analysis of Coupler in Topologically Protected Metawaveguide by 2.5D FEM  
*Guido G. Gentili (Politecnico di Milano); Giuseppe Pelosi (University of Florence); F. Piccioli (University of Rostock); Stefano Selleri (University of Florence);*

**16:30 Coffee Break**

17:00 Peculiarities of Protein Biosensing by Utilizing the Fano Interference-modified Surface Plasmon Resonance and the Bloch Surface Wave  
*Vladimir V. Korniienko (Dukhov All-Russian Research Institute of Automatics (VNIIA)); Alexey N. Shaymanov (Lomonosov Moscow State University); Georgiy M. Yankovskii (All-Russian Research Institute of Automatics); Alexander V. Baryshev (All-Russian Research Institute of Automatics);*

- 17:20 Highly Doped Silicon-based Hyperbolic Metamaterials for Mid-infrared Bio-chemo Sensing Applications  
*S. Shkondin (Technical University of Denmark); Sarah Elisabeth Hussein El Dib (Technical University of Denmark); Larissa Vertchenko (Technical University of Denmark); Andrei V. Lavrinenko (Technical University of Denmark); Osamu Takayama (Technical University of Denmark);*
- 17:40 Investigation of Magnetically Near-field Metamaterials in Wireless Power Transfer System  
*Xiutao Huang (Huazhong University of Science and Technology); Conghui Lu (Huazhong University of Science and Technology); Xiong Tao (Huazhong University of Science and Technology); Cancan Rong (Huazhong University of Science and Technology); Minghai Liu (Huazhong University of Science and Technology);*
- 18:00 Gauge-field Description of Sagnac Frequency Shift in Rotating Cavity  
*Hongkang Shi (Huazhong University of Science and Technology); Zhongfei Xiong (Huazhong University of Science and Technology); Weijin Chen (Huazhong University of Science and Technology); Jing Xu (Huazhong University of Science and Technology); Shubo Wang (City University of Hong Kong); Yuntian Chen (Huazhong University of Science and Technology);*
- 18:20 Boosting Nonlinear Optical Phenomena in 2D Systems with Mie and Plasmon Resonances  
*Alvaro Rodriguez Echarrri (ICFO — Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); Joel Douglas Cox (ICFO — Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); Renwen Yu (The Barcelona Institute of Science and Technology); F. Javier Garcia De Abajo (ICFO Institut de Ciències Fotoniques, Mediterranean Technology Park);*
- 15:00 Realization of Second-order Photonic Topological Insulator  
*Biye Xie (Nanjing University); Hong-Fei Wang (Nanjing University); Guang-Xu Su (Nanjing University); Hai-Xiao Wang (Soochow University); Hai Su (Nanjing University); Xue-Yi Zhu (Nanjing University); Xiaopeng Shen (China University of Mining and Technology); Peng Zhan (Nanjing University); Jian-Hua Jiang (Soochow University); Ming-Hui Lu (Nanjing University); Zhenlin Wang (Nanjing University); Yan-Feng Chen (Nanjing University);*
- 15:20 Topological Transition in Graphene-like Photonic Crystals  
*Fei Gao (Zhejiang University); Haoran Xue (Nanyang Technological University); Gennady Shvets (Cornell University); Yidong Chong (Nanyang Technological University); Baile Zhang (Nanyang Technological University);*
- 15:40 Angular Momentum-dependent Topological Transport  
*Meng Xiao (Wuhan University); Tianshu Jiang (The Hong Kong University of Science and Technology); Che Ting Chan (The Hong Kong University of Science and Technology);*
- 16:00 Direct Observation of Electromagnetic Modes with Orbital Angular Momentum in Topological Photonic Metamaterials  
*Yuan Li (Tongji University); Yong Sun (Tongji University); Hong Chen (Tongji University); Xiao Hu (National Institute for Materials Science);*
- 16:20 Topologically Protected Edge States for Robust Integrated Photonic Devices  
*Wange Song (Nanjing University); Wenzhao Sun (Harbin Institute of Technology); Shumin Xiao (Harbin Institute of Technology); Shi-Ning Zhu (Nanjing University); Tao Li (Nanjing University);*

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### Session 4P12

#### SC2: Topological Features of Metamaterials and Non-Hermitian Systems: From Microwave to NIR

Thursday PM, June 20, 2019

Room 21 - 2nd Floor

Organized by Jian-Wen Dong, Wenjie Chen

Chaired by Wenjie Chen

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14:30 Topological LC Circuit

Keynote

*Xiao Hu (National Institute for Materials Science);*

16:40 **Coffee Break**

17:00 Topological Negative Refraction of Sound

*Chunying Qiu (Wuhan University); Hailong He (Wuhan University); Zhengyou Liu (Wuhan University);*

17:20 Exciton-polariton Based Topological Photonics and Topological Lasers

*Guillaume Malpuech (Université Clermont-Auvergne, CNRS); Olivier Bleu (Université Clermont-Auvergne, CNRS); Dmitry Solnyshkov (Université Clermont-Auvergne, CNRS);*

- 17:40 Valley Topology in Phononic Crystals  
*Jiuyang Lu (South China University of Technology); Chunyin Qiu (Wuhan University); Weiyin Deng (South China University of Technology); Xueqin Huang (South China University of Technology); Feng Li (South China University of Technology); Zhengyou Liu (Wuhan University);*
- 18:00 Studies of Topological Photonics in a Synthetic Space Including the Frequency Axis of Light  
*Luqi Yuan (Shanghai Jiao Tong University); Meng Xiao (Wuhan University); Shanhui Fan (Stanford University);*
- 18:20 Band Touching and Real Space Topology in Flat-band Photonic Lattices  
*Daohong Song (Nankai University); Jingjun Xu (Nankai University); Zhigang Chen (Nankai University);*
- 18:40 Analysis of the Topological Photonic Crystals Using Finite-difference Supercell Approach  
*Menglin L. N. Chen (The University of Hong Kong); Li Jun Jiang (University of Hong Kong); Zhihao Lan (University College London); Wei E. I. Sha (The University of Hong Kong);*
- 15:00 Glass-based Optical Metasurfaces and Multi-material Fibers for Sensing and Monitoring  
*Bastien Schyrr (Ecole Polytechnique Federale de Lausanne); Tapajyoti Das Gupta (Ecole Polytechnique Federale de Lausanne); Louis Martin-Monier (Ecole Polytechnique Federale de Lausanne); Wei Yan (Ecole Polytechnique Federale de Lausanne); Dang Tung Nguyen (Ecole Polytechnique Federale de Lausanne); Alexis Gerald Page (Ecole Polytechnique Federale de Lausanne); Yunpeng Qu (Ecole Polytechnique Federale de Lausanne); Fabien Sorin (Ecole Polytechnique Federale de Lausanne);*
- 15:30 Low-cost Medical Diagnostics Exploiting Different Kinds of Receptors on Plasmonic Plastic Optical Fiber Sensors  
*Nunzio Cennamo (University of Campania Luigi Vanvitelli); Luigi Zeni (University of Campania "Luigi Vanvitelli"); Sabato D'Auria (Institute of Food Science, ISA-CNR); Antonio Varriale (Institute of Food Science, ISA-CNR); Maria Pesavento (University of Pavia); Giancarla Alberta (University of Pavia); Antonella Profumo (University of Pavia); Laura Pasquardini (FBK-CMM);*
- 15:50 Coherent Phase-OTDR Operating at 850 nm Wavelength for Enhancing SNR  
*Aldo Minardo (Università della Campania "Luigi Vanvitelli"); Ester Catalano (Università della Campania "Luigi Vanvitelli"); Agnese Coscetta (University of Sannio); Enis Cerri (Università della Campania "Luigi Vanvitelli"); Luigi Zeni (Università della Campania "Luigi Vanvitelli");*
- 16:10 Stimuli-responsive Microgels for Advanced Lab-On-Fiber Optrodes  
*Martino Giaquinto (University of Sannio); Armando Ricciardi (University of Sannio); Anna Aliberti (University of Sannio); Alberto Micco (University of Sannio); Eugenia Bobeico (University of Sannio); Menotti Ruvo (Institute of Biostructure and Bioimaging, National Research Council); Andrea Cusano (University of Sannio);*

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**Session 4P13**

**SC3: Photonic Sensing in Health Science and Environmental Monitoring**

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**Thursday PM, June 20, 2019**

**Room 22 - 2nd Floor**

Organized by Luigi Zeni, Andrea Cusano

Chaired by Luigi Zeni, Andrea Cusano

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- 14:20 Optical Fiber Bragg Grating Sensors for Medical Applications  
*Invited Maria Konstantaki (Institute of Electronic Structure and Laser, Foundation for Research and Technology); D. Pugliese (Politecnico di Torino); D. Milanese (Politecnico di Torino); A. Candiani (DNAphonesrl); Stavros Pissadakis (Institute of Electronic Structure and Laser (IESL));*
- 14:40 Porous Silicon-based Hybrid Devices for Multiparametric Photonic Biosensors  
*Invited C. Schiattarella (CNR-IMM); Ilaria Rea (Inst Microelect & Microsyst); Principia Dardano (Institute for Microelectronics and Microsystems, Italian National Research Council); R. Moretta (CNR-IMM); M. Terracciano (CNR-IMM); Luca De Stefano (Univ. Naples);*

- 17:00 Bloch Surface Wave Biosensors for Real-time Study of  
Invited Fibronectin-phosphorylcholine Coatings for Biomedical Applications  
*Alberto Sinibaldi (Sapienza University of Rome); Vanessa Montano-Machado (Laval University); Norbert Danz (Fraunhofer Institute for Applied Optics and Precision Engineering); Peter Munzert (Fraunhofer Institute for Applied Optics and Precision Engineering IOF); Francesco Chiavaioli (“Nello Carrara” Institute of Applied Physics (IFAC-CNR)); Diego Mantovani (Laval University); Francesco Michelotti (Sapienza University of Rome);*
- 17:20 Fiber Optic Pressure Sensor for Underground Water  
Invited Level Monitoring  
*Luca Palmieri (University of Padua); Luca Schenato (National Research Council, Research Institute for Hydrogeological Protection); Alessandro Pasuto (National Research Council, Research Institute for Hydrogeological Protection); Andrea Galtarossa (Università di Padova);*
- 17:40 Fiber Bragg Grating Sensors for Temperature Mea-  
Invited surements during Radiofrequency Ablation of Solid Tumors  
*Elena De Vita (University of Naples “Parthenope”); Giovanna Palumbo (University of Naples “Parthenope”); Emiliano Schena (Università Campus Bio-Medico di Roma); Carlo Massaroni (Università Campus Bio-Medico di Roma); Paolo Verze (University of Naples “Federico II”); Nicola Carlomagno (University of Naples “Federico II”); Vincenzo Tammaro (University of Naples “Federico II”); Roberto La Rocca (University of Naples “Federico II”); Juliet Ippolito (University of Naples “Federico II”); Daniele Tosi (Nazarbayev University); Paola Saccomandi (Politecnico di Milano); Michele Arturo Caponero (Research Center of Frascati — ENEA); Agostino Iadicicco (University of Naples “Parthenope”); Stefania Campopiano (Univ Sannio);*
- 18:00 Fiber Optic Sensors for Radiation Hard Environments  
*Patrizio Vaiano (University of Sannio); Giuseppe Quero (University of Sannio); Marco Consales (University of Sannio); Salvatore Buontempo (Istituto Nazionale di Fisica Nucleare (INFN) — Sezione di Napoli); Federico Ravotti (University of Sannio); Paolo Petagna (European Organization for Nuclear Research (CERN)); Antonello Cutolo (University of Sannio); Andrea Cusano (University of Sannio);*
- 18:20 Spectral and Angular Responses of High Sensitivity  
Refractive Index Sensors Based on Titanium Nitride  
*Junior Asencios (Universidad Nacional de Ingeniería); Arturo Talledo (Universidad Nacional de Ingeniería); Brayan Atocsa (Universidad Nacional de Ingeniería); Ruben Puga (Universidad Nacional de Ingeniería); Hector Loro (Universidad Nacional de Ingeniería); Ramiro Moro (Tianjin University);*
- 18:40 A Fluorescence-based POCT Device for  
Invited Immunosuppressant-drug Monitoring in Transplanted Patients  
*Ambra Giannetti (CNR, Istituto di Fisica Applicata “Nello Carrara” (IFAC)); S. Berneschi (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Romeo Bernini (Consiglio Nazionale delle Ricerche (IREA-CNR)); C. Berrettoni (CNR-IFAC “Nello Carrara” Institute of Applied Physics); Immacolata Angelica Grimaldi (Consiglio Nazionale delle Ricerche (IREA-CNR)); Gianluca Persichetti (Consiglio Nazionale delle Ricerche (IREA-CNR)); G. Porro (Datamed S.r.l.); G. Quarto (Datamed S.r.l.); Genni Testa (Consiglio Nazionale delle Ricerche (IREA-CNR)); S. Tombelli (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Cosimo Trono (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.); Francesco Baldini (Istituto di Fisica Applicata “Nello Carrara”, C.N.R.);*

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**Session 4P14**
**FocusSession.SC2&SC3: Graphene 2D  
Materials for Photonics, Plasmonics and  
Metamaterials 2**


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**Thursday PM, June 20, 2019**
**Room 24 - 2nd Floor**

Organized by Aldo Di Carlo, Emmanuel Kymakis

 Chaired by Aldo Di Carlo
 

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- 14:30 Nonlocal and Quantum Finite-size Effects in the  
Acoustic Plasmons of 2D Heterostructures  
*Alvaro Rodriguez Echarri (ICFO — Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); Joel Douglas Cox (ICFO-Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); F. Javier Garcia De Abajo (ICFO Institut de Ciències Fotoniques, Mediterranean Technology Park);*

- 14:50 The Advantage of Using Graphene for Printable Organic Photovoltaic and Thermoelectric Devices  
Invited  
*Andrea Reale (University of Rome Tor Vergata); Luca La Notte (University of Rome Tor Vergata); Alessandro Lorenzo Palma (University of Rome Tor Vergata); Aldo Di Carlo (University of Rome Tor Vergata); Saeed Mardi (University of Rome Tor Vergata); Giovanni Bruno (University of Bari); Giuseppe Valerio Bianco (Istituto di Nanotecnologia, CNR-NANOTEC);*
- 15:10 Graphene Hybrid Metamaterial Mid-IR and THz Devices  
Invited  
*Isaac J. Luxmoore (University of Exeter); P. Q. Liu (ETH Zurich); Sergey A. Mikhailov (University of Augsburg); N. A. Savostiyanova (University of Augsburg); F. Valmorra (ETH Zurich); P. Li (University of Exeter); J. Faist (ETH Zurich); Geoffrey Richard Nash (University of Exeter);*
- 15:30 Graphene Likes Metasurface for Transports of Electromagnetic Waves  
*Pengfei Qin (Zhejiang University); Er Ping Li (Zhejiang University — UIUC Institute); Yi Hao Yang (Zhejiang University); Ran Hao (Zhejiang University); Hongsheng Chen (Zhejiang University); Yee Sin Ang (Singapore University of Technology and Design (SUTD)); Lay Kee Ang (Singapore University of Technology and Design (SUTD)); A. Cangellaris (University of Illinois at Urbana-Champaign);*
- 15:50 Inkjet Printed Passive Wireless Sensors  
*Filippo Costa (University of Pisa — CNIT); Simone Genovesi (University of Pisa — CNIT); Sergio Terranova (University of Pisa — CNIT); Giuliano Manara (University of Pisa);*
- 16:10 Nano-antennas Using Single and Double Isolated Graphene for Mid-infrared Applications  
*Jyotirmaya Mohanta (International Institute of Information Technology Bhubaneswar); Priya Ranjan Meher (International Institute of Information Technology Bhubaneswar); Sanjeev Kumar Mishra (International Institute of Information Technology Bhubaneswar);*
- 16:30 **Coffee Break**
- 17:00 Self-consistent Modeling of a Plasmonic Graphene-based pn-junction midIR Photodetector  
Invited  
*Eleftherios Lidorikis (University of Ioannina);*
- 17:20 Thermal Generation and Manipulation of Graphene Plasmons  
*Eduardo J. C. Dias (ICFO — Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); Renwen Yu (The Barcelona Institute of Science and Technology); F. Javier Garcia De Abajo (ICFO Institut de Ciències Fotoniques, Mediterranean Technology Park);*
- 17:40 Analytical Modeling of Graphene Plasmons  
*Renwen Yu (The Barcelona Institute of Science and Technology); Joel D. Cox (The Barcelona Institute of Science and Technology); Jose Ramon Martinez Saavedra (ICFO Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); F. Javier Garcia De Abajo (ICFO Institut de Ciències Fotoniques, Mediterranean Technology Park);*
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- Session 4P15**  
**SC3: Silicon Photonics 2**
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- Thursday PM, June 20, 2019**  
**Room 25 - 2nd Floor**  
Organized by Lin Yang  
Chaired by Lin Yang
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- 14:30 Recent Advances in Strained Silicon Photonics  
Invited  
*Mathias Berciano (Université Paris-Saclay); Guillaume Marcaud (Université Paris-Saclay); Christian Lafforgue (Université Paris-Saclay); Alicia Ruiz-Caridad (Université Paris-Saclay); Xavier Le Roux (Université Paris-Sud); Carlos Alonso-Ramos (Université Paris 11); Pedro Damas (Université Paris-Sud, Université Paris Saclay CNRS UMR 9001); Diego Perez-Galacho (Université Paris-Saclay); Daniel Benedikovic (Université Paris-Saclay); Vladyslav Vakarin (Université Paris-Sud, Université Paris Saclay); Paul Crozat (Université Paris-Saclay); Delphine Marris-Morini (Université Paris 11); Eric Cassan (Université Paris-Sud); Laurent Vivien (Université Paris-Sud);*
- 14:50 Efficient Octave Spanning Supercontinuum Generation from Tantalum Pentoxide Based Nonlinear Waveguide  
Invited  
*Chao-Kuei Lee (National Sun-Yat-Sen University); Te-Keng Wang (National Sun-Yat-Sen University); Chao-Hong Lin (National Sun-Yat-Sen University); Ranran Fan (National Sun-Yat-Sen University);*

- 15:10 Shape Optimization for Nanophotonic Polarization Rotator  
*Lebbe Nicolas (Université Grenoble Alpes, CEA, LETI); C. Dapogny (Université Grenoble Alpes, CNRS, Inria, Grenoble INP); K. Hassan (Université Grenoble Alpes, CEA, LETI); E. Oudet (Université Grenoble Alpes, CNRS, Inria, Grenoble INP); Alain Gliere (Université Grenoble Alpes);*
- 15:30 Remote Optical Testing and Reconfiguration of Silicon Photonic Circuits with Ultrafast Photomodulation Spectroscopy  
*Kevin Vynck (CNRS-IOGS-University Bordeaux); Nicholas J. Dinsdale (University of Southampton); Roman Bruck (University of Southampton); Bigeng Chen (University of Southampton); Graham T. Reed (University of Southampton); Philippe Lalanne (Institut d'Optique-LP2N/CNRS); Otto L. Muskens (University of Southampton);*
- 16:30 **Coffee Break**
- 15:50 Scully-lamb Quantum Laser Model for Parity-time-symmetric Whispering-gallery Microcavities: Gain Saturation Effects and Non-reciprocity  
*Invited Omar Di Stefano (RIKEN Cluster for Pioneering Research); Salvatore Savasta (University of Messina);*
- 16:10 Using of Optical Microresonators Based on Micro-particle-coating as an Active Material for Hydrogen Gas Concentration Detection  
*N. Bavili (Koc University); Mustafa Eryurek (Koc University); B. Morova (Koc University); Alper Kiraz (Koc University); Ateeq Ur Rehman (Koc University);*
- 16:30 **Coffee Break**
- 17:00 PhoXonic Microbubbles as Efficient Optomechanical Oscillators  
*Xavier Rosello-Mecho (University of Valencia); Daniele Farnesi (Istituto di Fisica Applicata "Nello Carrara", C.N.R.); Gabriele Frigenti (Institute of Applied Physics, National Research Council of Italy); Martina Delgado-Pinar (University of Valencia); Miguel Vicente Andres (Universidad de Valencia); Giancarlo C. Righini (Piazza del Viminale 1); Gualtiero Nunzi Conti (Istituto di Fisica Applicata "Nello Carrara", C.N.R.); Silvia Soria (Istituto di Fisica Applicata "Nello Carrara", C.N.R.);*

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**Session 4P16**

**Optomechanics, Microfluidics, and Spectroscopy in Microcavities 2**

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**Thursday PM, June 20, 2019**

**Room 15 - 2nd Floor**

Organized by Gianluca Gagliardi, Sahin Kaya Ozdemir

Chaired by Gianluca Gagliardi

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- 14:30 High-Q Integrated Nanophotonic Resonators for Lab-on-chip Sensing and Spectroscopy  
*Invited Ali A. Eftekhar (Georgia Institute of Technology); Zhixuam Xia (Georgia Institute of Technology); Tianren Fan (Georgia Institute of Technology); Amir H. Hosseinnia (Georgia Institute of Technology); Ali Adibi (Georgia Institute of Technology);*
- 14:50 Optomechanical Properties in a Microbottle Resonator  
*Invited Takashi Yamamoto (Osaka University);*
- 15:10 Fluorescent Microresonator Biochemical Sensors: Applications, Limitations and Perspectives  
*Invited Alexandre Francois (University of South Australia); Nicolas Riesen (University of South Australia); Tanya M. Monro (University of South Australia);*
- 15:30 Water-wave Laser  
*Invited Tal Carmon (Technion — Israel Institute of Technology);*
- 17:20 Single-molecule Optoplasmonic Sensing of Enzyme Dynamics and Amino-acids  
*Invited Sivaraman Subramanian (University of Exeter); Serge Vincent (University of Exeter); Frank Vollmer (University of Exeter);*
- 17:40 Sensing by Radiation Pattern Engineering with ZnO Nanowires  
*Invited C. Baratto (CNR-INO); D. Rocco (University of Brescia); M. A. Vincenti (University of Brescia); M. Ferroni (DII-University of Brescia); G. Faglia (DII-University of Brescia); Costantino De Angelis (University of Brescia);*
- 18:00 Nonreciprocal Photon Blockade via Rotating Devices  
*Ran Huang (Hunan Normal University); Adam Miranowicz (RIKEN Cluster for Pioneering Research); Jie-Qiao Liao (Hunan Normal University); Franco Nori (RIKEN and University of Michigan); Hui Jing (Hunan Normal University);*
- 18:20 High-throughput Electro-opto-mechano-fluidic Sensors  
*Invited Jeewon Suh (University of Illinois); Kewen Han (University of Illinois); Gaurav Bahl (University of Illinois);*

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**Session 4P17**
**FocusSession.SC1: Fluctuational  
Electrodynamics and Heat Transfer 2**


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**Thursday PM, June 20, 2019**
**Room 33 - Bank Building**

Organized by Mauro Antezza, Marco Centini

 Chaired by Mauro Antezza
 

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 14:30 Near and Far Field Radiative Heat Transfer: Effect of  
Invited Superconductivity

*Vera Ludmila Musilova (Institute of Scientific Instruments of the CAS); Tomas Kralik (Institute of Scientific Instruments of the CAS); Michal Macek (Institute of Scientific Instruments of the CAS); Tomas Fort (Institute of Scientific Instruments of the CAS);*

 14:50 Proof of the Bulk-edge Correspondence through a  
Invited Link between Topological Photonics and Fluctuation  
Electrodynamics

*Mario G. Silveirinha (University of Lisbon);*

 15:10 The Influence of Retardation, Dielectric Environ-  
Invited ments and Mediating Atoms on Interatomic Coulombic  
Decay

*Stefan Yoshi Buhmann (University of Freiburg); S. Bang (University of Freiburg); Robert Bennett (Freiburg University);*

15:30 Radiative Heat Shuttling

Invited

*Ivan Latella (Université Paris-Saclay); Riccardo Messina (Institut d'Optique, CNRS, Université Paris-Sud 11); J. Miguel Rubi (University of Barcelona); Philippe Ben-Abdallah (Université Paris-Sud 11);*

 15:50 Low-temperature Near-field Thermal Radiation in  
Multilayer Concentric Cylindrical Geometry

*Ahmed D. Alwakil (Université de Lyon, CNRS, INSA-Lyon); Olivier Merchiers (Université de Lyon, CNRS, INSA-Lyon, Université Claude Bernard Lyon 1); M. Prunnila (VTT Technical Research of Finland); Pierre-Olivier Chapuis (CNRS, National Institute of Applied Physics (INSA) Lyon);*

 16:10 Plasmonic-cavity-modified Molecular Vibrations and  
Invited Optomechanical Heat Transfer

*Johannes Feist (Universidad Autonoma de Madrid);*

 16:30 **Coffee Break**

 17:00 Near-field Radiative Heat Transfer Experiments and  
Invited Thermophotovoltaic Conversion

*Christophe Lucchesi (INSA Lyon); D. Cakiroglu (IES, Univ. Montpellier, CNRS); J.-P. Perez (IES, Univ. Montpellier, CNRS); Thierry Taliercio (IES, Univ. Montpellier, CNRS); E. Tournie (IES, Univ. Montpellier, CNRS); R. Vaillon (IES, Univ. Montpellier, CNRS); P.-O. Chapuis (INSA Lyon);*

 17:20 Morphology, Electrical Conduction, and Thermal  
Invited Conduction of Single Layered Molecular Films Inves-  
tigated by Near Field Scanning Thermal Microscopy

*Achim Kittel (University of Oldenburg);*

 17:40 Thin Film Surface Phonon-polaritons More Efficient  
Invited in Carrying Heat than Phonons

*Sebastian Volz (The University of Tokyo);*

 18:00 Taming and Tuning Infrared Radiation Using Meta-  
Invited materials Approach in Ellipsoidal Inclusions Systems

*Maria Cristina Larciprete (Sapienza University of Rome); Marco Centini (Sapienza University of Rome); Roberto Li Voti (Sapienza University of Rome); Concita Sibilia (Sapienza University of Rome);*

 18:20 Spectral Thermal Band Gaps in the Near Field  
Invited

*Raul Esquivel-Sirvent (Universidad Nacional Autonoma de Mexico); Jaime Everardo Perez-Rodriguez (Benemerita Universidad Autonoma de Puebla); G. Pirruccio (Universidad Nacional Autonoma de Mexico);*

 18:40 Near-field Radiative Heat Transfer between Slabs of  
Invited Asymmetric Hyperbolic Materials

*Igor S. Nefedov (Helsinki University of Technology); J. Miguel Rubi (University of Barcelona);*

 19:00 Heat Transfer and Urban Climate: What Is the Tem-  
Invited perature of New York City?

*Thorsten Emig (Université Paris-Sud, Université Paris-Saclay); Masoud Ghandehari (New York University); Milad Aghamohamadnia (New York University);*

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**Session 4P18**
**SC3&4: Microwave Photonic Signal  
Processing**


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**Thursday PM, June 20, 2019**
**Room 38 - Chemistry Building**

Organized by Dan Zhu, Xiuyou Han

 Chaired by Dan Zhu, Xiuyou Han
 

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- 14:30 Frequency Conversion Filtering in OEO  
*Yitang Dai (Beijing University of Posts and Telecommunications); Shanhong Guan (Beijing University of Posts and Telecommunications); Feifei Yin (Beijing University of Posts and Telecommunications); Kun Xu (Beijing University of Posts and Telecommunications);*
- 14:50 Silicon Photonic Radio-over-fiber Transceivers and Microwave Photonic Up-converters  
*Kasper Van Gasse (Ghent University, IMEC); A. Abassi (Ghent University, IMEC); M. Mahmoud (Ghent University, IMEC); J. Verbist (Ghent University, IMEC); J. Kerrebrouck (Ghent University, IMEC); G. Torfs (Ghent University, IMEC); B. Moeneclaey (Ghent University, IMEC); J. Bauwelinck (Ghent University, IMEC); X. Yin (Ghent University, IMEC); G. Roelkens (Ghent University, IMEC); G. Morthier (Ghent University, IMEC);*
- 15:10 High Speed Optical Sensing Demodulation Systems Based on Frequency Swept Source  
*Xinhuan Feng (Jinan University); Yuan Cao (Jinan University); Lin Wang (Jinan University); Guangying Wang (Jinan University); Zhong Lu (Jinan University); Xudong Wang (Jinan University); Bai-Ou Guan (Jinan University);*
- 15:30 Microwave Photonic Systems with Parity-time Symmetry: Theory and Applications  
*Jiejun Zhang (Jinan University); Jianping Yao (University of Ottawa);*
- 15:50 Signal Processing and Sensing Based on Integrated Microwave Photonics  
*Liwei Li (University of Sydney); Xiaoke Yi (University of Sydney); Shijie Song (University of Sydney); Wenjian Yang (University of Sydney); Linh Nguyen (University of Sydney); Robert A. Minasian (University of Sydney);*
- 16:10 A Continuous Equalization Scheme for Photonic Assisted Analog-to-digital Converters Based on Frequency Comb Sources  
*Kentaro Furusawa (National Institute of Information and Communications Technology); Isao Morohashi (National Institute of Information and Communications Technology); N. Sekine (National Institute of Information and Communications Technology); Iwao Hosako (National Institute of Information and Communications Technology);*
- 16:30 **Coffee Break**
- 17:00 Multifunction LADAR System Incorporating Optical Multiplexing Technique  
*Zhongyang Xu (Nanjing University of Aeronautics and Astronautics); Shilong Pan (Nanjing University of Aeronautics and Astronautics);*
- 17:40 Integrated Photonics-based Radar  
*Simin Li (Nanjing University of Aeronautics and Astronautics); Zhengze Cui (Nanjing University of Aeronautics and Astronautics); Jing Feng (Nanjing University of Aeronautics and Astronautics); Xingwei Ye (Nanjing University of Aeronautics and Astronautics); Shilong Pan (Nanjing University of Aeronautics and Astronautics);*
- 18:00 RF Phase Noise Analyzer Based on Microwave Photonic I/Q Mixing  
*Fangzheng Zhang (Nanjing University of Aeronautics and Astronautics); Jingzhan Shi (Nanjing University of Aeronautics and Astronautics); Shilong Pan (Nanjing University of Aeronautics and Astronautics);*
- 18:20 RF Characterization of Self-interference Cancellation Using Phase Modulation and Optical Sideband Filtering  
*Xinxin Su (Dalian University of Technology); Shuo Wang (Dalian University of Technology); Hanqiao Wang (Dalian University of Technology); Yuchen Shao (Dalian University of Technology); Chao Wang (University of Kent); Pengyi Wang (CETC Key Laboratory of Aerospace Information Applications); Zhenlin Wu (Dalian University of Technology); Yiyi Gu (Dalian University of Technology); Mingshan Zhao (Dalian University of Technology); Xiuyou Han (Dalian University of Technology);*
- 18:40 Time Lens with Improved Aperture to Resolution Ratio Based on a Phase Modulator  
*Bowen Zhang (Nanjing University of Aeronautics and Astronautics); Dan Zhu (Nanjing University of Aeronautics and Astronautics); Yamei Zhang (Nanjing University of Aeronautics and Astronautics); Shilong Pan (Nanjing University of Aeronautics and Astronautics);*

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**Session 4P19a**
**Photovoltaics, Optoelectronic Devices and Integration**


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**Thursday PM, June 20, 2019**
**Room 39 - Electrical Building**

 Chaired by Min Xiao, Eleftherios Lidorikis
 

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- 14:30 Modeling Plasmonic Organic Photovoltaics: Optical Considerations  
*I. Vangelidis (University of Ioannina); A. Theodosi (University of Ioannina); M. J. Beliatis (University of Surrey); K. K. Gandhi (University of Surrey); A. Laskarakis (Aristotle University of Thessaloniki); P. Patsalas (Aristotle University of Thessaloniki); S. Logothetidis (Aristotle University of Thessaloniki); S. R. P. Silva (University of Surrey); Eleftherios Lidorikis (University of Ioannina);*
- 14:50 Topology Communication Photoconverters Matrix of High-power Coherent Monochromatic Radiation  
*Arkadiy Viktorovich Blank (Lomonosov Moscow State University (MSU)); Stanislav Dmitrievich Bogdanov (Moscow State M.V. Lomonosov University); Natalia Aleksandrovna Suhareva (Moscow State M.V. Lomonosov University); Gennady Grigorievich Untila (Moscow State M.V. Lomonosov University); Boris L. Eydelman (Telecom-STV Co., Ltd.);*
- 15:10 Laser Speckle Noise Reduction by Using Liquid Crystal Films without Alignment Layers  
*Yi Chen (National Chiao Tung University); Jui-Wen Pan (National Chiao Tung University); Shie-Chang Jeng (National Chiao Tung University);*
- 15:30 Realization of Opto-electronic Logic Gates Using Three-port Light-emitting Transistors  
*Chao-Hsin Wu (National Taiwan University); Hsuan-Han Chen (National Taiwan University); Chi-Wei Wang (National Taiwan University);*
- 15:50 Chip-based Optical Isolators and Nonreciprocal Parity-time Symmetry in High-Q Microresonator Systems  
*Min Xiao (Nanjing University); Xiaoshun Jiang (Nanjing University);*
- 16:10 Quantum Coherent Effect in Room Temperature QD Amplifiers  
*Igor Khanonkin (Technion — Israel Institute of Technology); Gadi Eisenstein (Technion — Israel Institute of Technology);*
- 16:30 **Coffee Break**
- 17:00 Fresnel Zone Plate in Thin Aluminum Film  
*Elena Sergeevna Kozlova (Samara National Research University); Victor V. Kotlyar (Image Processing Systems Institute of the Russian Academy of Sciences); Sergey S. Stafeev (Image Processing Systems Institute — Branch of the Federal Scientific Research Centre “Crystallography and Photonics” of RAS); Sergey A. Fomchenkov (Samara National Research University);*
- 17:20 Luminescence Property of  $Ce^{3+}/Yb^{3+}$  Co-doped Silica Material Prepared by Sol-gel Method  
*Pan Ke (Shanghai University); Zhou You (Shanghai University); Kun Yue (Joint International Research Laboratory of Specialty Fiber Optics and Advanced Communication, Shanghai Institute for Advanced Communication and Data); Wenyun Luo (Shanghai University); Qiang Guo (Joint International Research Laboratory of Specialty Fiber Optics and Advanced Communication, Shanghai Institute for Advanced Communication and Data);*
- 17:40 PT-symmetric Programmable Materials  
*Melik C. Demirel (Pennsylvania State University); Sahin Ozdemir (Pennsylvania State University);*
- 18:20 Investigation of Dielectric and Microwave Heating Properties of Bricks  
*Merve Sunel (Akdeniz University); Atalay Kocakusak (Akdeniz University); Selcuk Helhel (Akdeniz University);*

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**Session 4P20**
**Systems and Components, Electromagnetic Compatibility**


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**Thursday PM, June 20, 2019**
**Room 40 - Electrical Building**

 Chaired by Cynthia Ropiak, Francesco De Paulis
 

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- 14:30 Reduction of IC Heatsink Radiation by Optimization of Absorbing Material Geometry  
*Francesco De Paulis (University of L'Aquila); Stefano Piersanti (University of L'Aquila); Antonio Orlandi (University of L'Aquila); Samuel Connor (IBM Systems Group); Paul Dixon (LAIRD Technologies);*
- 14:50 Analysis and Measurement of the Electromagnetic Shielding Efficiency of the Multi-layered Carbon Fiber Composite Fabrics  
*Halil Ibrahim Keskin (Akdeniz University); Sukru Ozen (Akdeniz University); Kayhan Ates (Akdeniz University); Lutfiye Nurel Ozdinc Polat (Akdeniz University);*

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**Session 4P19b**
**Advanced Photonic Materials and Nanophotonics**


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**Thursday PM, June 20, 2019**
**Room 39 - Electrical Building**

 Chaired by Sahin Kaya Ozdemir
 

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15:10 Conducting EMI Vulnerability Testing in a Multipath Environment

*Cynthia Ropiak (SAQ Consulting, Ltd.);*

15:30 Graphene-paint for Electromagnetic Wave Absorption

*Fabrizio Marra (Sapienza University of Rome); Alessio Tamburrano (University of Roma La Sapienza); Alessandro Giuseppe D'Aloia (Sapienza University of Rome); Giovanni De Bellis (Sapienza University of Rome); Maria Sabrina Sarto (Sapienza University of Rome);*

15:50 Multilayer X-band Wave Absorber with Enhanced Absorption Bandwidth

*Budi Syihabuddin (Institut Teknologi Bandung); Mohammad Ridwan Effendi (Institut Teknologi Bandung); Achmad Munir (Institut Teknologi Bandung);*

16:30 **Coffee Break**

17:00 Electromagnetic Band-gap Structures for Frequency Tunable Filtering and Sensing Applications

*Alina Cismaru (IMT Bucharest); Martino Aldrigo (IMT Bucharest); Cosmin Obreja (IMT Bucharest); Mircea Dragoman (IMT Bucharest); Romolo Marcelli (Institute of Microelectronics and Microsystems); Giovanni Maria Sardi (Institute of Microelectronics and Microsystems); Emanuela Proietti (Institute for Microelectronics and Microsystems); Giovanni Capoccia (CNR-IMM Roma);*

17:20 A Miniaturized Low-profile Dual-polarization Frequency-selective Resonator with Swastika Structure and Interdigital Resonator

*Qiming Yu (Nanjing University of Aeronautics and Astronautics); Shaobin Liu (Nanjing University of Aeronautics and Astronautics); Xiang-Kun Kong (Nanjing University of Aeronautics and Astronautics); Zheng-Yu Huang (Nanjing University of Aeronautics and Astronautics); Xing Zhao (Nanjing University of Aeronautics and Astronautics); Yong-diao Wen (Nanjing University of Aeronautics and Astronautics);*

17:40 Improved PMC Packaging Design by Using Novel Pin Geometries

*Ahmet Yahya Tesneli (Sakarya University); N. B. Tesneli (Sakarya University); M. H. Nisanici (Sakarya University); T. Gozluk (Sakarya University);*

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**Session 4P0  
Poster Session 6**

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**Thursday PM, June 20, 2019**

**15:00 PM - 18:00 PM**

**Room Corridor**

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- 1 Imaging Polarimetry of Adherent Particles: Experimental Model Based on Fused Latex Spheres  
*Andrea Fernandez Perez (Universidad de Cantabria); Thomas Sang Hyuk Yoo (Institut Polytechnique de Paris); Jose Luis Fernandez-Luna (Unidad de Genetica HUMV); Fernando Moreno (University of Cantabria); Enric Garcia-Caurel (Institut Polytechnique de Paris); Jose Maria Saiz Vega (Universidad de Cantabria);*
- 2 Far Field Bio-evanescence, Causal Evidence of Extra Systemic Genomics  
*Karl F. Kaspareck (Energy & Engineering Consultant (CTE));*
- 3 Variational Method to Shape Analytical Expressions of Time Dependent Eigenvalue Equations: Slab Waveguides Families  
*L. Garnier (Université de Rennes 1); E. Gaviot (Université Le Mans); Bruno Beche (Université de Rennes 1);*
- 4 Realistic Ports in Integrating Spheres: Reflectance, Transmittance, and Angular Redirection  
*Chhayly Tang (Victoria University of Wellington); Matthias Meyer (MaramaLabs Ltd.); Brendan L. Darby (MaramaLabs Ltd.); Baptiste Auguie (Victoria University of Wellington); Eric C. Le Ru (Victoria University of Wellington);*
- 5 Novel SIE Implementations for Efficient and Accurate Electromagnetic Simulations of Zero-index Materials  
*Hande Ibili (Middle East Technical University); Yesim Koyaz (Middle East Technical University); Utku Ozmu (Middle East Technical University); Bariscan Karaosmanoglu (Middle East Technical University); Ozgur Ergul (Middle East Technical University);*

- 6 The Fourier Modal Method for Plasmonics  
*Fangcheng Huang (Cixi Institute of Biomedical Engineering, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Science); Tian-Long Guo (Cixi Institute of Biomedical Engineering, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Science); Joao Cunha (Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences); Remo Proietti Zaccaria (Cixi Institute of Biomedical Engineering, Ningbo Institute of Materials and Technology Engineering, Chinese Academy of Sciences);*
- 7 A New Class of Solutions to Laplace's Equation  
*Matt R. A. Majic (Victoria University of Wellington); Eric C. Le Ru (Victoria Univ Wellington);*
- 8 An Anti-fake Bitmap Graphic Encoding and Decoding Method for Commodity Packaging  
*J. X. Wan (Fudan University); Lan Chen (Shanghai Institute of Technology);*
- 9 The Research on PCB Circuit Test Methods for Vehicle Atmosphere Lamp  
*Wen Hao Kang (Tongji University); Chen Chen Chen (Tongji University); Guo Chun Wan (Tongji University); Meng Meng Li (Tongji University); Mei Song Tong (Tongji University);*
- 10 A Real-time Lossless Data Compression Method for Intelligent Train Monitoring System  
*Jian Zhou (Tongji University); Guo Chun Wan (Tongji University); M. M. Li (Tongji University);*
- 11 Interaction between Microwave and Mesoscopic Circuits in Cavity-circuit Quantum Electrodynamics  
*Shi Yao Chong (Zhejiang University); Zhuoyuan Wang (Ningbo University of Technology); Peng An (Ningbo University of Technology); Peihong Cheng (Ningbo University of Technology); Jian Qi Shen (Zhejiang University);*
- 12 Wavelength-tunable Passively Mode-locked Fiber Laser at 1.5  $\mu\text{m}$   
*Peng Wu (University of Electronic Science and Technology of China); Qiang Zhou (University of Electronic Science and Technology of China); Guangwei Deng (University of Electronic Science and Technology of China); Yueqi Wang (University of Electronic Science and Technology of China); Hai-Zhi Song (Southwest Institute of Technical Physics); You Wang (Southwest Institute of Technical Physics);*
- 13 The Meaning of Information  
*Alessandro Alberto Vesely (Via L. Anelli 13); Sara Liyuba Vesely (I.T.B. — C.N.R.);*
- 14 Hybrid TDPO and TDPTD for Near-field Scattering from PEC Target Illuminated by Far-field Sources  
*Guang Bin Guo (Xidian University); Li-Xin Guo (Xidian University); Rui Wang (Xidian University);*
- 15 Probing Out-of-equilibrium Optical Excitations with Fast Electrons  
*Valerio Di Giulio (ICFO-Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology); F. Javier Garcia De Abajo (ICFO Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology);*
- 16 Wavelet Codes and Their Implementation for Protection of NAND Flash Memory  
*A. B. Levina (University of Information Technologies, Mechanics and Optics (ITMO University)); S. V. Taranov (ITMO); Dmitrii I. Kaplun (SPbETU "LETI"); P. Boyvalenkov (Institute of Mathematics and Informatics, Bulgarian Academy of Sciences);*
- 17 Analysis of a 8-strap Plasma-facing Launcher with Load-tolerant External Matching Units for the ICRH System of DTT  
*Gian Luca Ravera (ENEA); Silvio Ceccuzzi ("Roma Tre" University); G. Granucci (Istituto di Fisica del Plasma); Alessandro Cardinali (Associazione Euratom-ENEA sulla Fusione); C. Castaldo (ENEA); V. P. Loschiavo (Consorzio CREATE); F. Mirizzi (Consorzio Create); Giuseppe Schettini ("Roma Tre" University); A. A. Tuccillo (ENEA); The ENEA DTT Task Force ();*
- 18 Optimization of Conducted Emission for Synchronous Buck Converter Module  
*Songlin Cheng (Southwest Jiaotong University); Qianyin Xiang (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University);*
- 19 Coherent Perfect Absorption of Quadrupolar Cylindrical Electromagnetic Waves by a Subwavelength Cylinder or Structure  
*Xiaoxi Zhou (Soochow University); Bo Hou (Soochow University); Jie Luo (Soochow University); Yun Lai (Nanjing University);*
- 20 A Gravity Tailored Metamaterial Absorber — Frequency Selective Surface  
*Xing-Liang Tian (Nanjing University of Posts and Telecommunications); Hai Feng Zhang (Nanjing University of Posts and Telecommunications); Xin-Ru Kong (Nanjing University of Posts and Telecommunications); Ri-Na Dao (Nanjing University of Posts and Telecommunications);*

- 21 On-chip Valley Topological Materials for Elastic Wave Manipulation  
*Feng Li (South China University of Technology); Mou Yan (South China University of Technology); Jiuyang Lu (South China University of Technology); Weiyin Deng (South China University of Technology); Xueqin Huang (South China University of Technology); Jiahong Ma (South China University of Technology); Zhengyou Liu (Wuhan University);*
- 22 Bimodal Operation of High-contrast Gratings: The Generalized Fabry-Pérot Perspective  
*Alberto Tibaldi (Politecnico di Torino); P. Debernardi (Nazionale delle Ricerche (CNR)); Renato Orta (Politecnico di Torino);*
- 23 Concepts for Nanoscale form Evaluation by Off-diagonal Mueller Matrix Element Interpretation  
*Tim Kaseberg (Physikalisch-Technische Bundesanstalt); Thomas Siefke (Friedrich-Schiller-Universität Jena); Bernd Bodermann (Physikalisch-Technische Bundesanstalt); Stefanie Kroker (Technische Universität Braunschweig);*
- 24 A Simple Method for Measuring Charge Carrier Mobilities Using Photocurrent Transient Response  
*Il-Ho Ahn (Dongguk University); Jihoon Kyhm (Dongguk University); Juwon Lee (Dongguk University); Sangeun Cho (Dongguk University); Yongcheol Jo (Dongguk University); Deuk Young Kim (Dongguk University); Soo Ho Choi (Dongguk University); Woochul Yang (Dongguk University);*
- 25 Enhanced Anti-stokes Luminescence via Acoustic to Optical Phonon Conversion in Pyramid Arrays  
*Raqibul Hossen (Gwangju Institute of Science and Technology (GIST)); Hyeongyoung Hwang (Gwangju Institute of Science and Technology (GIST)); In-hong Kim (Gwangju Institute of Science and Technology (GIST)); Seung-Hyuk Lim (Korea Advanced Institute of Science and Technology (KAIST)); Hyun Gyu Song (Korea Advanced Institute of Science and Technology (KAIST)); Kie Young Woo (Korea Advanced Institute of Science and Technology (KAIST)); Yong-Hoon Cho (Korea Advanced Institute of Science and Technology (KAIST)); Young-Dahl Jho (Gwangju Institute of Science and Technology);*
- 26 Photon Counting OTDR Based on Infinite Backscatter  
*Bin Li (University of Electronic Science and Technology of China); Ruiming Zhang (University of Electronic Science and Technology of China); Guangwei Deng (University of Electronic Science and Technology of China); Heng Zhou (University of Electronic Science and Technology of China); Yun Ling (University of Electronic Science and Technology of China); You Wang (Southwest Institute of Technical Physics); Hai-Zhi Song (Southwest Institute of Technical Physics); Kun Qiu (University of Electronic Science and Technology of China); Qiang Zhou (University of Electronic Science and Technology of China);*
- 27 Differentiation of Fungal Diseases on the Example of Sugar Beet with Infrared Spectroscopy  
*Janine Zahlbach (Clausthal University of Technology); Ulrike Willer (Clausthal University of Technology);*
- 28 Polymer Cholesteric Liquid Crystal Based Optical Sensor for Detection of Organic Vapors  
*Tsun-Han Wang (National United University); Huey-Jiuan Lin (National United University); Shug-June Hwang (National United University);*
- 29 Enhancing Infrared Gas Detection by Narrow-band Filtering  
*Yu-Chun Lin (National Chiao Tung University); Cheng-Chih Hung (National Chiao Tung University); Pei-Kang Chung (National Chiao Tung University); Shun-Tung Yen (National Chiao Tung University);*
- 30 Usefulness of New Lanthanide Source from e-waste to Fabricate Active Photonic Structures  
*Robert Tomala (Institute of Low Temperature and Structure Research, PAS); Agnieszka Hojenska (Institute of Low Temperature and Structure Research, PAS); Wieslaw Strek (Institute of Low Temperature and Structure Research, PAS); Sara Aldabe Bilmes (Universidad de Buenos Aires); Sidney J. L. Ribeiro (Sao Paulo State University); Juan Rodriguez (Universidad Nacional de Ingenieria); Adel Bouajaj (University Abdelmalek Essaadi); Lidia Zur (Centro di Studi e Ricerche "Enrico Fermi"); Alessandro Chiasera (IFN-CNR CSMFO Lab. and FBK CMM); Maurizio Ferrari (IFN-CNR CSMFO Lab.); Anna Lukowiak (Institute of Low Temperature and Structure Research, PAS);*
- 31 Nondestructive Evaluation in Current-mismatched Ratios of Multijunction Photovoltaic Cells  
*Hao Lo (National Taiwan University); Chieh Lo (National Taiwan University); Chia Chieh Hsu (National Taiwan Ocean University); Wen-Shiung Lour (National Taiwan Ocean University);*

- 32 Electrical Switching of Polarized Terahertz Waves in Nanowire-based Schottky Diode  
*J. H. Yim (GIST); S. H. Park (GIST); J. W. Hwang (Kyung Hee University); J. C. Shin (Yeungnam University); Young-Dahl Jho (Gwangju Institute of Science and Technology);*
- 33 Near-field Radiative Heat Transfer between Parallel Silicon Microstructures  
*Saeko Tachikawa (Institute of Industrial Science, The University of Tokyo); Sergei Gluchko (Institute of Industrial Science, The University of Tokyo); Laurent Jalabert (Institute of Industrial Science, The University of Tokyo); Hiroyuki Fujita (Tokyo City University); Sebastian Volz (Institute of Industrial Science, The University of Tokyo); Masahiro Nomura (Institute of Industrial Science, The University of Tokyo);*
- 34 Multi-parameter Sensor Based on Long Period Grating in Polarization-maintaining Panda Fiber  
*Flavio Esposito (University of Naples "Parthenope"); Anubhav Srivastava (University of Naples "Parthenope"); Stefania Campopiano (Università degli Studi di Napoli Parthenope); Agostino Iadicicco (University of Naples "Parthenope");*
- 35 A Fully Integrated Tapered Fiber Optrode for Simultaneous Multipoint Optical Control and Electrical Readout of Neural Activity  
*Antonio Balena (Center for Biomolecular Nanotechnologies); A. Rizzo (Center for Biomolecular Nanotechnologies); L. Sileo (Center for Biomolecular Nanotechnologies); B. Spagnolo (Center for Biomolecular Nanotechnologies); F. Pisano (Center for Biomolecular Nanotechnologies); M. Pisanello (Center for Biomolecular Nanotechnologies); F. De Nuccio (Università del Salento); D. Lofrumento (Università del Salento); E. D. Lemma (Center for Biomolecular Nanotechnologies); Massimo De Vittorio (Center for Biomolecular Nanotechnologies, Istituto Italiano di Tecnologia); Ferruccio Pisanello (Center for Biomolecular Nanotechnologies, Istituto Italiano di Tecnologia);*
- 36 Nematic Liquid Crystal Waveguides for Spatial Control of Linearly Polarized Light Waves  
*Volha S. Kabanava (Belarusian State University); Irina I. Rushnova (Belarusian State University); E. A. Melnikova (Belarusian State University); A. L. Tolstik (Belarusian State University);*
- 37 The Range-gate Vision System Based on a CO<sub>2</sub> Laser Tunable in the Middle Infrared Range  
*Yahor V. Lebiadok (SSPA "Optics, Optoelectronics and Laser Technology"); Vadim A. Gorobets (SSPA "Optics, Optoelectronics and Laser Technology"); S. S. Shavel (SSPA "Optics, Optoelectronics and Laser Technology"); Raman Y. Mikulich (SSPA "Optics, Optoelectronics and Laser Technology"); Dzmityr M. Kabanau (SSPA "Optics, Optoelectronics and Laser Technology");*
- 38 Filter-free Direct Measurement of Aerosol Particle Light Absorption by Photoacoustic Spectroscopy (PAS)  
*Gaoxuan Wang (Université du Littoral Côte d'Opale); Hongming Yi (Université du Littoral Côte d'Opale); Patrice Hubert (Université de Lille1); Alexandre Deguine (Université de Lille1); Denis Petitprez (Université de Lille1); Eric Fertein (University of the Littoral Opal Coast); Julien M. Rey (IQE-ETH Zurich); Markus W. Sigrist (ETH Zurich); Dean S. Venables (University College Cork); Wei Dong Chen (Université du Littoral Côte d'Opale);*
- 39 Holographic Artificial Impedance Surface Antenna Based on Circular Ring Patch  
*Shan Shan Gao (Chengdu University); Ling Long Gou (Chengdu University); Sheng Sun (University of Electronic Science and Technology of China); Hui Min Qiao (Chengdu University);*
- 40 Determination of IGRT Dose from Tomotherapy MVCT, and Elekta and Varian Pelvic CBCT  
*Dora Gibellieri (Sapienza University of Rome); R. Faccini (Sapienza University of Rome); J.-F. Germond (Lausanne University Hospital); G. Bolard (La Tour Hospital); M. Zeverino (Lausanne University Hospital); R. Jumeau (Lausanne University Hospital); J. Bourhis (Lausanne University Hospital); F. Bochud (Lausanne University Hospital); R. Moeckli (Lausanne University Hospital);*
- 41 Spatial CT/MRI of Children's Spine Processing and Modeling of Mechanical Forces  
*Jan Mikulka (Brno University of Technology); Daniel Chalupa (Brno University of Technology); Kamil Riha (Brno University of Technology); Milan Filipovic (The University Hospital in Brno); Marek Dostal (The University Hospital in Brno);*

- 42 Calculation of Electric Potentials Generated by a Dipole Source in an Elliptical Conducting Cylinder of a Finite Length  
*Nikolay Olegovich Strelkov (National Research University "Moscow Power Engineering Institute"); M. N. Kramm (National Research University "Moscow Power Engineering Institute"); Roberto Coisson (Università di Parma);*
- 43 Biophysical Aspects of Biological Organization in Health and Disease  
*Alberto Foletti (Clinical Biophysics International Research Group);*
- 44 Design of a 26 GHz FMCW Antenna  
*Hung-Jui Hsu (National Taipei University of Technology); Liang-Chi Chang (FineTek Co. Ltd.); Chi-Fan Liao (FineTek Co. Ltd.); Guan-Yu Chen (National Taipei University of Technology); Jwo-Shiun Sun (National Taipei University of Technology); Kwong-Kau Tiong (National Taiwan Ocean University);*
- 45 Omnidirectional Ultra-wideband Superellipse Patch Antenna for mm-Waves Applications  
*Renan Alves Dos Santos (Universidade Federal de Itajuba); Rafael Abrantes Penchel (Sao Paulo State University (UNESP), Campus of Sao Joao da Boa Vista); Gustavo Pamplona Rehder (University of Sao Paulo); Danilo H. Spadoti (Universidade Federal de Itajuba);*
- 46 Circular Polarized Refractive Array for Low Cross Polarization Constructed by Arbitrarily Elements  
*Kotaro Sakagawa (Doshisha University); Hiroyuki Deguchi (Doshisha University); Mikio Tsuji (Doshisha University);*
- 47 Design of a Microwave Cavity Resonator for Catalyzing Chemical Reactions Using Artificial Magnetic Conductors  
*Giovanni Andrea Casula (University di Cagliari); Giacomo Muntoni (University of Cagliari); Giorgio Montisci (University di Cagliari); Giuseppe Mazzarella (University of Cagliari);*
- 48 Low Phase Imbalance D-Band Balun Using 130-nm SiGe BiCMOS Process Suitable for Broadband Differential Circuits  
*Abdul Ali (University of Rome Tor Vergata); Jongwon Yun (IHP-Leibniz-Institut für innovative Mikroelektronik); H. J. Ng (IHP Leibniz — Institut für Innovative Mikroelektronik); Dietmar Kissinger (Ulm University); Franco Giannini (University of Rome Tor Vergata); Paolo Colantonio (University of Rome Tor Vergata);*
- 49 An Ultra-broadband K/Ka-band LNA MMIC on 0.15  $\mu\text{m}$  GaAs pHEMT  
*Umar Dilshad (Beihang University); Chen Chen (Beihang University); Amjad Altaf (Beihang University); Jungang Miao (Beihang University);*
- 50 A Reconfigurable RF Front-end System for GPS Anti-jamming  
*Ghoo Kim (Korea Advanced Institute of Science and Technology); Jin-Woo Kim (Korea Advanced Institute of Science and Technology); Sol Kim (Korea Advanced Institute of Science and Technology); Jeong-Wook Kim (Korea Advanced Institute of Science and Technology); Jong-Won Yu (Korea Advanced Institute of Science and Technology (KAIST));*
- 51 Compact Triple-band Microstrip BPF Utilizing Interdigital-coupled Lines Feeding Structure  
*Mahmoud Abdelaziz Hawazil (Banha University); Anwer S. Abd El-Hameed (Electronics Research Institute); Ashraf Shawky Mohra (Benha University); Amr Abd El-Hameed (Banha University);*
- 52 Multi-stage Ku-band Waveguide BPF Using CSRR-based Dielectric Frequency Selective Structure  
*Hardi Nusantara (Institut Teknologi Bandung); R. A. Rizka Qori Yuliani Putri (Institut Teknologi Bandung); Joko Widodo (Chiba University); Achmad Munir (Institut Teknologi Bandung);*
- 53 A Study on the Characteristics of High Frequency Cable Connector  
*Ho-Jun Lee (Korea Electronics Technology Institute); Wan-Yon Cho (AplusRF Co., Ltd.);*
- 54 Quality of Service and Signal Evaluation Parameter Comparison between Different Mobile Network Operators in Urban Area  
*Alina Stafecka (Riga Technical University); Andrejs Lizunovs (Riga Technical University); Vjaceslavs Bobrovs (Riga Technical University); Peteris Gavars (Riga Technical University); Zigmars Zarins (Riga Technical University);*
- 55 Efficient Algorithm for Reliable Routing of Wireless Sensor Networks Considering Propagation Losses  
*Romualds Belinskis (Riga Technical University); Nikolajs Bogdanovs (Riga Technical University); Ernests Petersons (Riga Technical University); Aleksandrs Ipatovs (Riga Technical University); Toms Salgals (Riga Technical University);*
- 56 Ray Tracing Simulation of Abnormal Propagation in Atmospheric Duct  
*Ryoichi Higashi (National Institute of Technology); Tetsuo Fukami (National Institute of Technology);*

- 57 Comparison Design of the Feeding Method of a  $4 \times 4$  Microstrip Array Antenna  
*Farohaji Kurniawan (Chiba University); Josaphat Tetuko Sri Sumantyo (Chiba University); Cahya Edi Santosa (Chiba University); Peberlin Parulian Sitompul (Chiba University); Pachrur Razi (Chiba University); Gunawan Setyo Prabowo (National Institute of Aeronautics and Space); Agus Bayu Utama (National Institute of Aeronautics and Space);*
- 58 Estimation of the Maximum Transmission Rate for the Silicon-based Racetrack MicroResonator  
*Suripon Somkuarnpanit (King Mongkut's Institute of Technology); Chariya Wongtaycham (King Mongkut's Institute of Technology);*
- 59 An Automatic Subaperture Partition Method in Wide-angle SAR Imaging  
*Dou Sun (National University of Defense Technology); Shiqi Xing (National University of Defense Technology); Bo Pang (National University of Defense Technology); Yongzhen Li (National University of Defense Technology); Xuesong Wang (National University of Defense Technology);*
- 60 Specular Reflection Point Estimation for GNSS-R Remote  
*Yuan Hu (Shanghai Ocean University); Wei Liu (Shanghai Maritime University); Xingyang Chen (Shanghai Ocean University); Zhengling Lei (Shanghai Ocean University); Yue Zhou (Shanghai Ocean University);*
- 61 Performance of Operational AMSR2 Based Sea Ice Concentration Retrieval Algorithms under Extreme Weather Conditions  
*Margarita Andreevna Zhivotovskaya (Russian State Hydrometeorological University (RSHU)); Elizaveta V. Zabolotskikh (Russian State Hydrometeorological University); Bertrand Chapron (Institut Francais de Recherche pour l'Exploitation de la Mer);*
- 62 Measurement of Nitrogen Oxides by Path Integrated Spectroscopy  
*Danna Wang (University of Shanghai for Science and Technology); Jun Chen (University of Shanghai for Science and Technology); M. K. Ravi Varma (National Institute of Technology Calicut); Dean S. Venables (University College Cork);*
- 63 Error Analysis of Effective Illuminated Area for Bistatic Scattering Coefficient of Rough Surface  
*Tingting Li (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Kun-Shan Chen (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences);*
- 64 Absorption Dependence on Scattering Media  
*Federico Tommasi (Università di Firenze); Lorenzo Fini (Università di Firenze); Fabrizio Martelli (Università di Firenze); Stefano Cavalieri (Università di Firenze);*
- 65 The Effects of Source Impedance on the Time-domain Performance of UWB Bowtie Antennas  
*Xianyang Gao (The University of Manchester); Wouter Van Verre (The University of Manchester); Frank J. W. Podd (The University of Manchester); David J. Daniels (The University of Manchester); Anthony J. Peyton (University of Manchester);*
- 66 Highly Sensitive THz-wave Transillumination Imaging with Heterodyne Detection Technique  
*Dai Aoki (Yamagata University); Yoshiaki Sasaki (RIKEN); Tetsuya Yuasa (Yamagata University); Chiko Otani (RIKEN);*
- 67 A Novel Parameter Estimation Method for MIMO-SAR Signal  
*Dongwei Lu (National University of Defense Technology); Shiqi Xing (National University of Defense Technology); Bo Pang (National University of Defense Technology); Dahai Dai (National University of Defense Technology); Xuesong Wang (National University of Defense Technology);*
- 68 Multi-target Tracking in Cluttered Environment Based on TO-MHT Algorithm  
*Panhe Hu (National University of Defense Technology); Shengsen Pan (National University of Defense Technology); Jiameng Pan (National University of Defense Technology); Qinglong Bao (National University of Defense Technology);*
- 69 Effect of Double-layer Coating on Microwave Absorbing Properties of Electromagnetic Shielding Fabric  
*Jiajia Duan (Zhongyuan University of Technology); Xiuchen Wang (Zhongyuan University of Technology); Yayun Li (Zhongyuan University of Technology); Zhe Liu (Zhongyuan University of Technology);*
- 70 Effect of Different Infiltration Methods of Micro-media on Shielding Effectiveness of Electromagnetic Shielding Fabrics  
*Jiajia Duan (Zhongyuan University of Technology); Xiuchen Wang (Zhongyuan University of Technology); Yayun Li (Zhongyuan University of Technology); Zhe Liu (Zhongyuan University of Technology);*

- 71 Study on Shielding Effectiveness of Multilayer Electromagnetic Shielding Fabrics Containing Multiple Wave-absorbing Fibers  
*Yayun Li (Zhongyuan University of Technology); Zhe Liu (Zhongyuan University of Technology); Jia-jia Duan (Zhongyuan University of Technology); Xi-uchen Wang (Zhongyuan University of Technology);*
- 72 Design and Experimental Validation of 240 GHz, 1 MW Power Gyrotron Cavity  
*Vivek Yadav (Central Electronics Engineering Research Institute, Council of Scientific and Industrial Research (CSIR)); Ramdev Choyal (BIET); Rajesh Kumar Bagri (BIET); Anil Kumar (Central Electronics Engineering Research Institute, Council of Scientific and Industrial Research (CSIR));*
- 73 Theoretical and Experimental Study of Gyrotron RF Window Coolants at High Frequency  
*Babu Lal Rahad (Bhartiya Institute of Engineering and Technology Sikar); Rakesh Kumar Prajapat (BIET); Sumer Singh (BIET); Vivek Yadav (Central Electronics Engineering Research Institute, Council of Scientific and Industrial Research (CSIR)); Anil Kumar (Central Electronics Engineering Research Institute, Council of Scientific and Industrial Research (CSIR));*
- 74 Variation in Performance of 240 GHz, 1 MW Power Gyrotron with Geometrical Parameters of Cylindrical Open-ended Cavity  
*Ramdev Choyal (BIET); Rajesh Kumar Bagri (BIET); Vivek Yadav (Central Electronics Engineering Research Institute, Council of Scientific and Industrial Research (CSIR)); Anil Kumar (Central Electronics Engineering Research Institute, Council of Scientific and Industrial Research (CSIR));*
- 75 Barium Strontium Titanite Coupled Surface Acoustic Wave Transmission Line  
*Ting Lu (University of California); Devin Schneider (University of California); Zhi Yao (University of California); Gregory P. Carman (University of California); Yuanxun Ethan Wang (University of California);*

	<b>MONDAY AM</b> <b>9:00 June 17</b>		<b>MONDAY PM</b> <b>14:30 June 17</b>		<b>TUESDAY AM</b> <b>9:00 June 18</b>		<b>TUESDAY PM</b> <b>14:30 June 18</b>	
<b>ROOM 1 - 1st Floor</b>	1A1 - Modeling in Remote Sensing 1		1P1a - Modeling in Remote Sensing 2	1P1b - Oral Presentations for Best Student Paper Awards -- Remote Sensing, etc.	2A1 - Applications of Microwave Remote Sensing in Terrestrial Hydrology		2P1 - Microwave Remote Sensing of Ocean	
<b>ROOM 5 - 1st Floor</b>	1A2 - Characterization Techniques: Novelty and Short-term Requirements 1		1P2a - Characterization Techniques: Novelty and Short-term Requirements 2	1P2b - Real Life Scene Modeling and Big Data Applications for Radar and Microwave Technology	2A2a - Radar Sounding Investigations of Terrestrial and Planetary Ices	2A2b - Microwave Remote Sensing, Polarimetry SAR, and Radar Imaging 1		2P2 - Light Scattering, Radiative Transfer, and Remote Sensing
<b>ROOM 7 - 1st Floor</b>	1A3 - Microwave Electronics for Space and Ground Segment Applications 1		1P3a - Microwave Electronics for Space and Ground Segment Applications 2	1P3b - RF MEMS for Antenna and Radar Application	2A3 - RF Energy Harvesting and Rectennas		2P3a - Oral Presentations for Best Student Paper Awards -- Optics and Photonics	2P3b - UWB Components for Defence Applications
<b>ROOM 8 - 1st Floor</b>	1A4a - Oral Presentations for Best Student Paper Awards -- CEM, EMC, Scattering & EM Theory	1A4b - Advanced Mathematical and Computational Methods in EM Theory and Their Applications 1	1P4 - Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications 2		2A4 - Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications 3		2P4 - Novel Mathematical Methods in Electromagnetics: Part 1	
<b>Hall of Frescoes - 1st Floor</b>	1A5 - Inverse Problems in Antennas, Scattering and Optics: Theory & Applications 1		1P5 - Inverse Problems in Antennas, Scattering and Optics: Theory & Applications 2		2A5 - Microwave Inverse Scattering Problems and Applications 1		2P5 - Microwave Inverse Scattering Problems and Applications 2	
<b>Cloister Hall - 1st Floor</b>	1A6 - Progress in Broadband and UWB Printed and Dielectric Antennas for Wireless Applications 1		1P6 - Progress in Broadband and UWB Printed and Dielectric Antennas for Wireless Applications 2		2A6 - Leaky Waves in Electromagnetics 1		2P6 - Leaky Waves in Electromagnetics 2	
<b>ROOM 17 - 1st Floor</b>	1A7 - Optical Sensors, Fundamentals and Applications		1P7 - Light Robotics: Harnessing the Forces of Light for Micro-robotic Actuation and Control		2A7 - Optical Management in Solar Cells		2P7 - Liquid Crystal Devices and Applications 1	
<b>ROOM 6 - Mezzanine</b>	1A8 - Photonics Packaging & Integration 1		1P8a - Photonics Packaging & Integration 2	1P8b - Mid-infrared Integrated Photonics and Applications	2A8 - Infrared Detectors		2P8 - Soft Matter Photonics: Photo-responsive Materials and Devices	
<b>ROOM 4 - Mezzanine</b>	1A9 - Integrated Nanophotonics, Plasmonics and Graphene-based Devices 1		1P9a - Integrated Nanophotonics, Plasmonics and Graphene-based Devices 2	1P9b - Nanophotonic Materials for Biomedical Imaging and Sensing	2A9 - Resonant Optics: Fundamentals and Applications 1		2P9 - Resonant Optics: Fundamentals and Applications 2	
<b>ROOM 12 - Mezzanine</b>	1A10 - Applications of Luminescence in Resonant Photonic Structures		1P10a - Photonic Quantum Metrology	1P10b - Wide Bandgap Semiconductors Photonics	2A10 - Nonlinear Optics at the Nanoscale 1		2P10 - Nonlinear Optics at the Nanoscale 2	

	<b>MONDAY AM</b> <b>9:00 June 17</b>	<b>MONDAY PM</b> <b>14:30 June 17</b>		<b>TUESDAY AM</b> <b>9:00 June 18</b>	<b>TUESDAY PM</b> <b>14:30 June 18</b>	
<b>ROOM 11 - Mezzanine</b>	1A11 - Modeling of Metamaterials and Metasurfaces 1	1P11a - Modeling of Metamaterials and Metasurfaces 2	1P11b - Optical Metamaterials: Applications, Materials and Fabrication Methods	2A11 - Recent Advances of Metamaterials for Novel Electromagnetic and Photonic Devices 1	2P11a - Quantum Sensing and Information Processing	2P11b - Recent Advances of Metamaterials for EM and Photonic Devices 2
<b>ROOM 21 - 2nd Floor</b>	1A12 - Hybrid and Plasmonic Metastructures 1	1P12 - Linear and Nonlinear Optics of Chiral Metasurfaces		2A12a - Hybrid and Plasmonic Metastructures 2	2A12b - Trends in Metasurfaces: New Materials and Applications	2P12 - Thermoplasmonics and Photo-thermal Applications 2
<b>ROOM 22 - 2nd Floor</b>	1A13 - Advances in Optical Sources: Materials, Devices, Applications 1	1P13a - Advances in Optical Sources: Materials, Devices, Applications 2	1P13b - Fiber Gratings and Optical Sensors	2A13 - Advanced Optofluidics: Where Photonics Meets Microfluidics and Life Science 1		2P13 - Optical Fibers for High Power Applications
<b>ROOM 24 - 2nd Floor</b>	1A14 - Nanophotonics 1	1P14 - Nanophotonics 2		2A14 - Advanced Photonic Technologies for Spectroscopic Applications 1	2P14 - Nanophotonics 3	
<b>ROOM 25 - 2nd Floor</b>	1A15 - Photosensitive Materials and Devices for Opto-mechanical Applications 1	1P15 - Photosensitive Materials and Devices for Opto-mechanical Applications 2		2A15 - Disordered Photonics 1	2P15a - Photonics for Microwave Systems	2P15b - Disordered Photonics 2
<b>ROOM 15 - 2nd Floor</b>	1A16 - 3_PIER_Special_Issue_Session: Organic and Perovskite Optoelectronics 1	1P16 - Thermoplasmonics and Photo-thermal Applications 1		2A16 - Organic and Perovskite Optoelectronics 2	2P16 - Organic Photonics for Optical Interconnections and Switching	
<b>ROOM 33 - Bank Building</b>	1A17 - Localized Waves: Science and Applications 1	1P17a - EM Radiation Applications for Materials Diagnostics and Modification	1P17b - Localized Waves: Science and Applications 2	2A17 - Electromagnetic Wave Propagation in Ionized and Complex Media 1	2P17 - Electromagnetic Wave Propagation in Ionized and Complex Media 2	
<b>ROOM 38 - Chemistry Building</b>	1A18 - Satellite Quantum and Optical Communication	1P18 - Integrated and Fiber-based Photonic Circuits and Devices		2A18 - Antenna and RCS Measurements 1	2P18 - Antenna and RCS Measurements 2	
<b>ROOM 39 - Electrical Building</b>	1A19 - Electromagnetic Theory	1P19a - Oral Presentations for Best Student Paper Awards - -- Metamaterials, Plasmonics, etc.	1P19b - Oral Presentations for Best Student Paper Awards - -- Antennas and Microwave Tech.	2A19 - Education in Electromagnetics	2P19 - Stochastic Methods in Electromagnetic Compatibility	
<b>ROOM 40 - Electrical Building</b>	1A20 - Topological Acoustics 1	1P20a - Novel Symmetry of Electromagnetic and Acoustic Metamaterials	1P20b - Topological Acoustics 2	2A20 - Biological Effects of EM Fields	2P20 - Recent Diagnostic and Therapeutic Applications of Microwaves	
<b>Corridor</b>				2A0 - Poster Session 1	2P0 - Poster Session 2	

	<b>WEDNESDAY AM</b> <b>9:00 June 19</b>		<b>WEDNESDAY PM</b> <b>14:30 June 19</b>		<b>THURSDAY AM</b> <b>9:00 June 20</b>		<b>THURSDAY PM</b> <b>14:30 June 20</b>	
<b>ROOM 1 - 1st Floor</b>	3A1 - Remote Sensing of the Earth, Ocean, and Atmosphere 1		3P1 - Remote Sensing of the Earth, Ocean, and Atmosphere 2		4A1 - Atmospheric Remote Sensing and Propagation 1		4P1 - Atmospheric Remote Sensing and Propagation 2	
<b>ROOM 5 - 1st Floor</b>	3A2 - Direct and Inverse Scattering Methods in Complex Environments 1		3P2a - Direct and Inverse Scattering Methods in Complex Environments 2	3P2b - Holographic Technologies in Sensing and Light Redirection and Shaping	4A2 - Remote Sensing of the Earth and Atmosphere 1		4P2 - Electromagnetic Methods and Electronic Devices for Security	
<b>ROOM 7 - 1st Floor</b>	3A3 - Millimetre-wave Components for Next-generation Communications		3P3 - Computational Bioelectromagnetics: from Single Molecule to Human Body		4A3a - Mobile and Satellite Parameters Estimations with EM/Optical Technologies	4A3b - Microwave and Millimeter Wave Circuits and Devices 1	4P3a - Transmission Line, Waveguide & Filter	4P3b - Microwave and Millimeter Wave Circuits and Devices 2
<b>ROOM 8 - 1st Floor</b>	3A4 - Computational Techniques in Electromagnetics and Applications 1		3P4 - Novel Mathematical Methods in Electromagnetics: Part 2		4A4 - Computational Techniques in Electromagnetics and Applications 2		4P4 - Computational Electromagnetics, Hybrid Methods	
<b>Hall of Frescoes - 1st Floor</b>	3A5 - Machine Learning Techniques for Remote Sensing and Electromagnetic Applications 1		3P5 - Machine Learning Techniques for Remote Sensing and Electromagnetic Applications 2		4A5 - Medical Applications of Radars		4P5a - SAR for Agriculture	4P5b - Microwave Remote Sensing, Polarimetry SAR, and Radar Imaging 2
<b>Cloister Hall - 1st Floor</b>	3A6a - Special Antennas for Direction of Arrival Estimation/Positioning	3A6b - Massive MIMO	3P6 - Recent Advances in 2-D Leaky-wave Antennas		4A6 - Microstrip Antennas, Array Antennas, Theory and Radiation 1		4P6 - Microstrip Antennas, Array Antennas, Theory and Radiation 2	
<b>ROOM 17 - 1st Floor</b>	3A7 - Ultrafast Nonlinear Optics: Ultrafast Fiber Lasers and Nonlinear Applications 1		3P7a - Ultrafast Nonlinear Optics: Ultrafast Fiber Lasers and Nonlinear Applications 2	3P7b - Liquid Crystal Devices and Applications 2	4A7 - Optical Sensor, Photonics, Nano Optics, Biophotonics		4P7a - Photonics for Lab-on-Chip	4P7b - Remote Sensing of the Earth and Atmosphere 2
<b>ROOM 6 - Mezzanine</b>	3A8 - 2D Materials and Optoelectronic Devices		3P8 - Quantum Information Processing and Devices 1		4A8 - Quantum Information Processing and Devices 2		4P8a - Quantum Electrodynamics, Computing and Information	4P8b - Quantum Information Processing and Devices 3
<b>ROOM 4 - Mezzanine</b>	3A9 - Multimode Nonlinear Optical Fibers 1		3P9a - Multimode Nonlinear Optical Fibers 2	3P9b - Optical Fibers and Sensors for Biochemistry, Medical Diagnostics and Imaging	4A9 - Label-based and Label-free Optical Biosensors 1		4P9a - Label-based and Label-free Optical Biosensors 2	4P9b - Reconfigurable and Programmable Photonic Integrated Circuits
<b>ROOM 12 - Mezzanine</b>	3A10 - Luminescence and Lasing of Nanomaterials		3P10 - Label-free Optical Nanobiosensors for Bio-diagnostics, Environmental Monitoring and Food Safety		4A10 - Glass Photonics: Novel Systems and Ongoing Applications 1		4P10a - Glass Photonics: Novel Systems and Ongoing Applications 2	4P10b - Optics and Fiber Laser

	<b>WEDNESDAY AM</b> <b>9:00 June 19</b>		<b>WEDNESDAY PM</b> <b>14:30 June 19</b>		<b>THURSDAY AM</b> <b>9:00 June 20</b>		<b>THURSDAY PM</b> <b>14:30 June 20</b>	
<b>ROOM 11 - Mezzanine</b>	3A11 - Analytical Methods for Metamaterials, Metasurfaces, and 2D Materials from Microwaves to Optics 1		3P11a - Analytical Methods for Metamaterials, Metasurfaces, and 2D Materials 2	3P11b - Short and Ultrashort Pulsed Electric Fields for Biomedical and Industrial Applications	4A11 - THz Metamaterials, Devices and Systems 1		4P11a - THz Metamaterials, Devices and Systems 2	4P11b - Metamaterials and Plasmonics
<b>ROOM 21 - 2nd Floor</b>	3A12 - Advanced Metasurface Designs and Devices 1		3P12 - Advanced Metasurface Designs and Devices 2		4A12 - Nonlinear, Active, and Quantum Metaphotonics		4P12 - Topological Features of Metamaterials and Non-Hermitian Systems: From Microwave to NIR	
<b>ROOM 22 - 2nd Floor</b>	3A13 - Resonant Optics: Fundamentals and Applications 3		3P13 - Advanced Optofluidics: Where Photonics Meets Microfluidics and Life Science 2		4A13 - Group IV Photonics for Sensing and Signal Processing		4P13 - Photonic Sensing in Health Science and Environmental Monitoring	
<b>ROOM 24 - 2nd Floor</b>	3A14 - Advanced Photonic Technologies for Spectroscopic Applications 2		3P14a - Advanced Photonic Technologies for Spectroscopic Applications 3	3P14b - Radio Astronomy Instrumentation	4A14 - Graphene 2D Materials for Photonics, Plasmonics and Metamaterials 1		4P14 - Graphene 2D Materials for Photonics, Plasmonics and Metamaterials 2	
<b>ROOM 25 - 2nd Floor</b>	3A15 - Optical Coatings for Extreme Metrology		3P15 - Laser, Spectroscopy and Imaging for Functionalised Photonic Devices		4A15 - Silicon Photonics 1		4P15 - Silicon Photonics 2	
<b>ROOM 15 - 2nd Floor</b>	3A16 - Visible, Near-infrared and Beyond: Materials and Devices 1		3P16 - Visible, Near-infrared and Beyond: Materials and Devices 2		4A16 - Optomechanics, Microfluidics, and Spectroscopy in Microcavities 1		4P16 - Optomechanics, Microfluidics, and Spectroscopy in Microcavities 2	
<b>ROOM 33 - Bank Building</b>	3A17 - Casimir Effect and Forces at the Nanoscale 1		3P17 - Casimir Effect and Forces at the Nanoscale 2		4A17 - Fluctuational Electrodynamics and Heat Transfer 1		4P17 - Fluctuational Electrodynamics and Heat Transfer 2	
<b>ROOM 38 - Chemistry Building</b>	3A18 - Terahertz Radiation: From Generation to Applications in Condensed Matter, Biomedicine and Particle Physics 1		3P18a - THz Radiation: From Generation to Applications in Condensed Matter, Biomedicine and Particle Physics 2	3P18b - Millimeter Wave and Terahertz Source Devices	4A18 - Wireless Communication		4P18 - Microwave Photonic Signal Processing	
<b>ROOM 39 - Electrical Building</b>	3A19a - Computational Fractional Dynamic Systems and Its Applications	3A19b - Nonreciprocal and Topological Electromagnetics 1	3P19a - Health Monitoring of Structures and Electrical Wire Interconnect Systems	3P19b - Wireless Power Transfer for Biomedicine and IoTs	4A19 - Nonreciprocal and Topological Electromagnetics 2		4P19a - Photovoltaics, Optoelectronic Devices and Integration	4P19b - Advanced Photonic Materials and Nanophotonics
<b>ROOM 40 - Electrical Building</b>	3A20 - Applications of EM Field in Medical Diagnostics and Therapy		3P20 - EMC Problems with Antennas & Wave Propagation		4A20 - Extended/Unconventional Electromagnetic Theory, EHD/EMHD, and Electro-biology		4P20 - Systems and Components, Electromagnetic Compatibility	
<b>Corridor</b>	3A0 - Poster Session 3		3P0 - Poster Session 4		4A0 - Poster Session 5		4P0 - Poster Session 6	

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## **About the PIXAPP Pilot Line**

PIXAPP is funded by the European Commission and was established in January 2017. The goal of PIXAPP is to support the transition of integrated photonic devices from prototypes to manufacture via pilot-scale production. PIXAPP is a distributed consortium of partners with a wide range of packaging technologies and capabilities, from the development of advanced photonic prototypes through to medium-volume commercial production. A key focus of PIXAPP is to establish a set of packaging design standards and related design rules which provides users with easy access to well-defined and qualified packaging technologies that are sufficiently flexible to address a wide range of markets, from communications to sensing and medical diagnostics. PIXAPP also provides advanced training to industry, including practical hands-on laboratory-based training using state-of-the-art equipment and training on advanced PIC design, test and reliability systems.

For more information on how PIXAPP can help you move to pilot-scale photonic manufacturing, please see [www.pixapp.eu](http://www.pixapp.eu).

## **PIXAPP Advanced Photonic Packaging Training Programme**

Photonic device packaging can account for over 50% of the photonic product manufacturing cost. Therefore, it is vital that industries developing photonic-based products have an understanding of the materials, technologies and processes required to package photonic devices.

PIXAPP have pioneered a new hands-on training programme in advanced photonic packaging. Running for the last two years, participants from around the world have attended a week long training course at the Tyndall National Institute, Cork, Ireland. The PIXAPP training programme provides industry, and those involved in photonic product development, with the fundamental technical skills in package design, assembly and reliability testing. The course covers the key optical, electrical, thermal and mechanical aspects of packaging technologies. It also provides an overview of packaging equipment and photonic device foundry services, which are critical parts of the packaging ecosystem.

Training programme topics include:

- Fiber Array Attachment
- Micro Lens Alignment
- Flip Chip Bonding
- DC Ball Bonding
- Reliability Testing
- Lectures on Emerging Technologies (Photonic Wire Bonds)

Please contact the PIXAPP Gateway office ([info@pixapp.eu](mailto:info@pixapp.eu)) at Tyndall National Institute for more information about the next course, which is scheduled for autumn 2019.



# SEMATRON ITALIA

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## COMPONENTS & SYSTEMS



COMPONENTS / SUB-SYSTEMS / SYSTEMS  
SATCOM & BROADCAST SOLUTIONS

# TECNOLOGIE PER COMUNICARE

MIXERS, OSCILLATORS, PHASE SHIFTERS, VCO,  
FREQUENCY SYNTHESIZERS, MMIC  
MODULATORS, POWER COMBINERS DIVDERS,  
NOISE COMPONENTS AND TEST EQUIPMENTS,  
RF POWER TRANSISTOR, SUB ASSEMBLIES,  
AMPLIFIERS, ANTENNAS, ATTENUATORS, DRO,  
CABLE ASSEMBLIES AND CONNECTORS,  
CAPACITORS, CIRCULATORS ISOLATORS,  
DIRECTIONAL COUPLERS, FILTERS,  
FREQUENCY MULTIPLIERS, HYBRID COUPLERS,  
SWITCHES, TERMINATIONS, TEST SYSTEMS  
AND ACCESSORIES, THIN FILM PRODUCTS,  
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