PIERS 2023 Prague

PhotonIcs & Electromagnetics Research Symposium

also known as Progress In Electromagnetics Research Symposium

Preliminary Program

July 3–6, 2023

Prague, CZECH REPUBLIC

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THE ELECTROMAGNETICS ACADEMY

PIERS: PhotonIcs and Electromagnetics Research Symposium, also known as Progress in Electromagnetics Research Symposium, is sponsored by The Electromagnetics Academy.

The Electromagnetics Academy is devoted to academic excellence and the advancement of research and relevant applications of the electromagnetic theory and to promoting educational objectives of the electromagnetics profession. PIERS provides an international forum for reporting progress and advances in the modern development of electromagnetic theory and its new and exciting applications.

Founded by the late Professor Jin Au Kong (1942–2008) of MIT in 1989, The Electromagnetics Academy is a non-profit organization registered in USA.

PIERS Founding Chair:

Jin Au Kong, MIT, USA

PIERS Chair and President of The Electromagnetics Academy:

Professor Leung Tsang, University of Michigan, USA

JOURNAL: PROGRESS IN ELECTROMAGNETICS RESEARCH

Progress In Electromagnetics Research (PIER) publishes peer-reviewed original and comprehensive articles on all aspects of electromagnetic theory and applications. This is an open access, on-line journal PIER (E-ISSN 1559-8985). It has been first published as a monograph series on Electromagnetic Waves (ISSN 1070-4698) in 1989. It is freely available to all readers via the Internet.

PIER is a non-profit organization.

WWW.JPIER.ORG

Contact Email: work@jpier.org

Founding Editor in Chief:

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Editors in Chief:

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SYMPOSIUM VENUE

The 2023 PhotonIcs & Electromagnetics Research Symposium, will be held in Prague from 3 to 6 July 2023, at the Prague Congress Center (Address: Kongresové Centrum Praha, a.s., 5. května 1640/65, Nusle, 140 00 Prague 4, Czechia).

REGISTRATION

The PIERS technical sessions will begin at 8:00 on Monday, July 3, 2023. You may come to register during 9:30–18:30 on Sunday, July 2, 2023, at the registration desks at the Prague Congress Center, Czech Republic. Registration is also available from 7:30 to 18:00 on Monday, July 3, 2023 and from 8:00 to 18:00 on July 4–6, 2023.

The on-site registration fee is USD 730 or RMB 5110, and the reduced registration fee for a student is USD 490 or RMB 3430 (a valid student ID is required). 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, July 3, 2023, all conference participants are invited to a welcome reception at the conference hotel. The tickets are free and handed out on a first-come-first-served basis. Please make reservation in advance for the reception by June 5, 2023.

Symposium Banquet

On Wednesday evening, July 5, 2023, symposium banquet is planned for PIERS participants and their guests at the conference hotel. Detailed information will be posted here...

PIERS ONLINE

Information on PIERS 2023 Prague and future PIERS is posted at www.piers.org.

GUIDELINE FOR PRESENTERS

Onsite Oral Presentations

- **Load and TEST Presentation Files in Advance:**
  Onsite Oral Presenters must upload and test presentation files in the onsite PIERS OFFICE no late 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.
- **USB Disk:**
  Presentation files in USB disk are acceptable by onsite PIERS Computer.
- **Report to Session Chair:**
  Onsite Presenters are required to report to their session chairs at least 10 minutes prior to the start of their session.
- **Talk Limit: 15 Minutes (Onsite Oral Talk):**
  All oral presentations, including questions and answers, should be less than the given minutes.
- **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.

Onsite Poster Presentations

- One panel will be available for each poster. The panel size may be different for each PIERS.
- The poster panels for PIERS 2023 Prague will be 84 cm (Width) x 120 cm (Height).
- All presenters are required to mount their papers one hour before the session and remove them at the end of their sessions. All poster presenters are suggested to be present at least during 10:00–10:30 and 15:30–16:00.
- Presenters should post time slots of their presence on the panel and be present for interactive questions at the given time.

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- Czech Technical University in Prague
- Zhejiang University
- The Electromagnetics Academy at Zhejiang University

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- IEEE Geoscience and Remote Sensing Society (IEEE GRSS)
- IEEE Antennas and Propagation Society (IEEE AP-S)
- IEEE Photonics Society
- Czech National Committee of URSI
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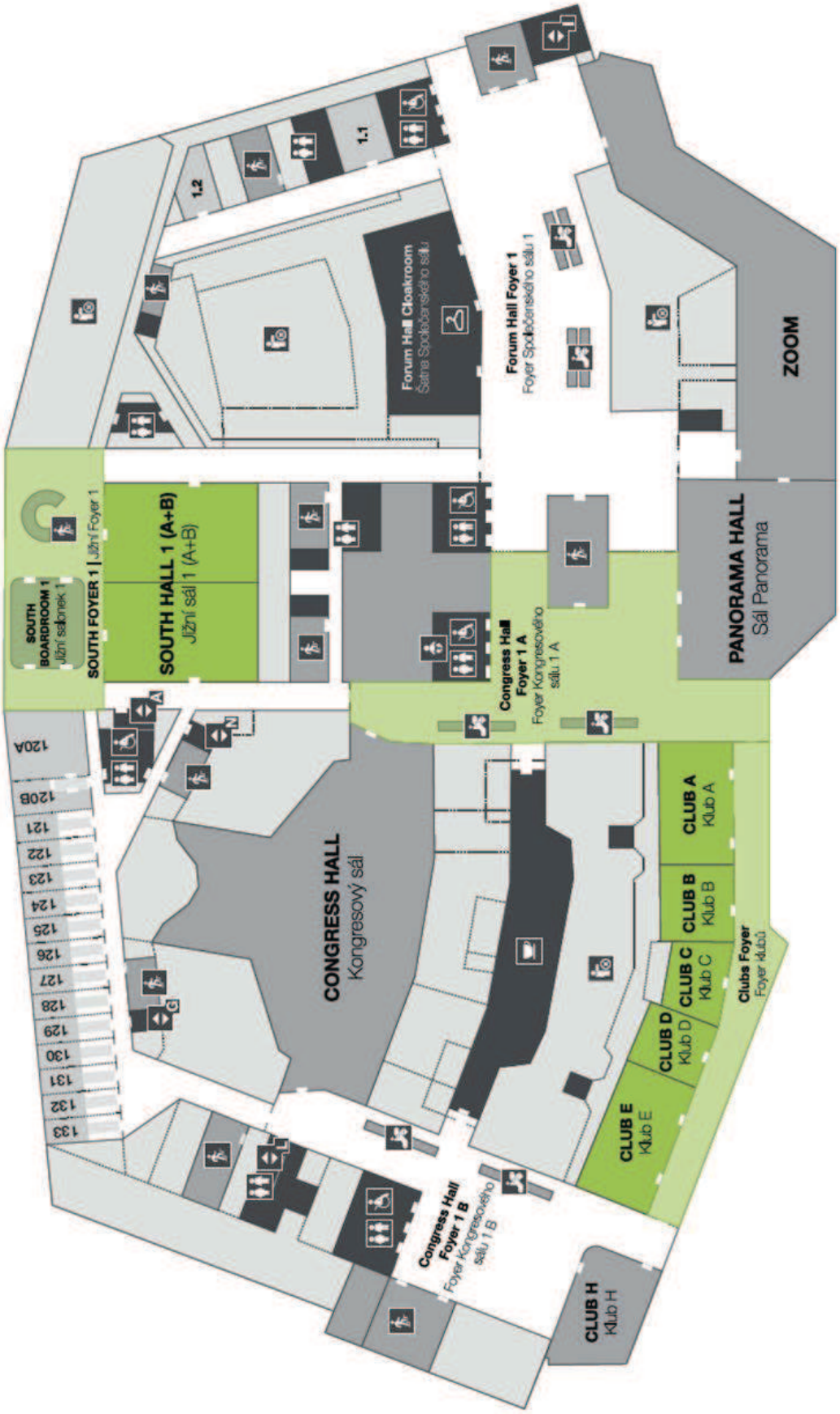
- nanoplus Nanosystems and Technologies GmbH

MAP OF CONFERENCE SITE



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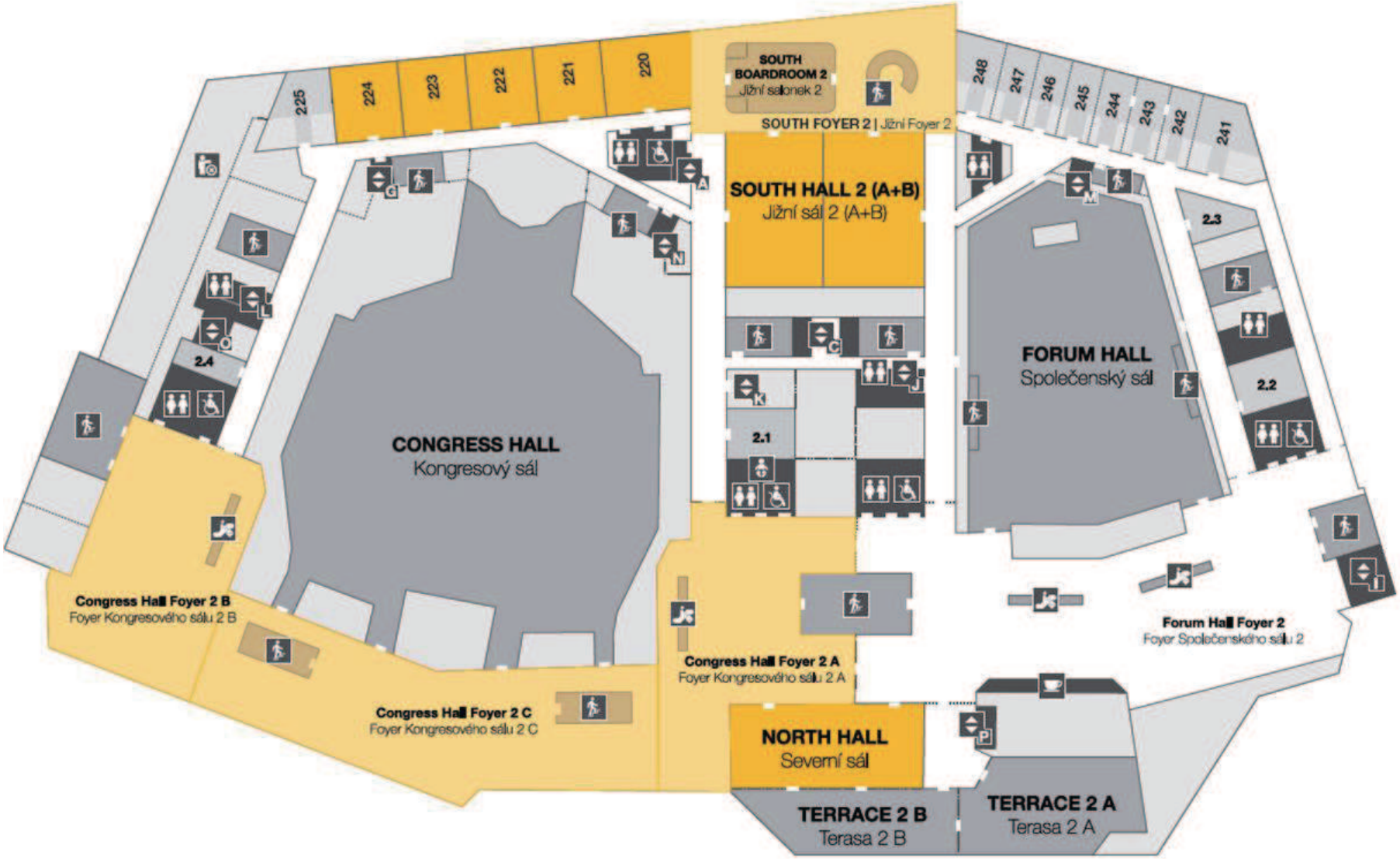
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Terasa 2 B
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2.4

2nd Floor

GENERAL INFORMATION

LANGUAGE

The official language for the Symposium is English.

CURRENCY AND CREDIT CARDS

The local currency is the Czech Crown (CZK) and the exchange rate is approximately 1 USD = 21 CZK, or 1 EUR = 24 CZK. The credit cards and cash in either USD or EUR are acceptable on the PIERS registration desk. This is also the case in large shopping centers, restaurants and hotels in Prague or generally in the Czech Republic.

TAXI

Usually, a taxi is available along the roadsides, while you wave for it.

BUSINESS OPENING HOURS

- **Bank and Post Office**
  Opening hours: usually 09:00 – 17:00, from Monday to Sunday.
- **Government Office**
  Operating hours: generally 09:00 – 17:00, from Monday to Friday.
- **Store**
  Opening hours: usually 08:00 – 18:00, but the large shopping center serves till 22:00, from Monday to Sunday.

ELECTRICITY

In the Czech Republic, the standard outlets provide AC of 220 V/50 Hz.

HOT TOPICS IN PHOTONICS AND ELECTROMAGNETICS

Monday PM, July 3, 2023

Room South Hall 2

Organized by Sailing He

00:00 **Nanowire Photonics: From High Efficiency Micro-LEDs to Stable Solar Fuel Production**
Zetian Mi (University of Michigan);

00:00 **Perovskite LEDs: A Next-generation Light Source**
Dawei Di (Zhejiang University);

00:00 **iSCAT Microscopy: Label-free Protein Sensing, Nanoparticle Sizing, and 3D Imaging of Structure and Dynamics in Live Cells**
Vahid Sandoghdar (Max-Planck-Institute for the Science of Light);

Session 1A1
Nonlinear and Nonclassical Plasmonics

Monday AM, July 3, 2023

Room Club E

Organized by Fan Yang, Cristian Ciraci

Chaired by Cristian Ciraci

00:00 Keynote — Dynamics of Nonlinear Response of Plasmonic Heterostructures
Anton Yu. Bykov (*King's College London*); *Diane J. Roth* (*King's College London*); *Alexey V. Krasavin* (*King's College London*); *Anatoly V. Zayats* (*King's College London*);

00:00 Invited — The Nonlinear Optical Response and Electron Dynamics in ITO
Subhajit Sarkar (*Ben-Gurion University*); *Ieng Wai Un* (*Ben-Gurion University*); *Yonatan Sivan* (*Ben-Gurion University*);

00:00 Invited — Quantum Nanophotonics: Antibunched Light and Molecular Entanglement
Antonio I. Fernandez-Dominguez (*Universidad Autonoma de Madrid*);

00:00 Invited — Nonlocal Surface Effects in the Optical Response of Plasmonic Nanoresonators
Rubén Esteban (*Materials Physics Center CSIC-UPV/EHU*); *Antton Babaze* (*Materials Physics Center CSIC-UPV/EHU*); *T. Neuman* (*Institute of Physics of the Czech Academy of Sciences*); *E. Ogando* (*University of the Basque Country UPV/EHU*); *P. Elli Stamatopoulou* (*University of Southern Denmark*); *C. Tserkezis* (*University of Southern Denmark*); *N. Asger Mortensen* (*University of Southern Denmark*); *Javier Aizpurua* (*Donostia International Physics Center (DIPC) and Centro Mixto de Física de Materiales (CSIC-UPV/EHU)*); *A. Borisov* (*UMR 8214 CNRS-Université Paris-Saclay*);

00:00 Invited — Homogenization of Metamaterials in Macroscopic Quantum Electrodynamics
Ehsan Amooghorban (*Shahrekord University*); *Martijn Wubs* (*Technical University of Denmark*);

00:00 Invited — Geometric Phase and Nonlinear Photonic Metasurfaces
Guixin Li (*Southern University of Science and Technology*);

00:00 Invited — Lattice Resonances Excited by Arbitrary Light Sources
Alejandro Manjavacas (*Consejo Superior de Investigaciones Cientificas*);

00:00 Invited — Generalized Lorentz Model and Quasinormal Mode Theory for Extreme Nanophotonic
Xuewen Chen (*Huazhong Universtiy of Science and Technology*);

00:00 Electrostatic Theory of Optical Rectification in Hydrodynamic Nonlocal Optical Response
Tetsuyuki Ochiai (*National Institute for Materials Science (NIMS)*);

00:00 Extreme Plasmonics with Atomically Smooth Monocrystalline Gold Flakes
Vladimir A. Zenin (*University of Southern Denmark*);

00:00 Nonlinear Photoluminescence in Crystalline Gold Thin Films
Alvaro Rodriguez Echarri (*ICFO — Institut de Ciencies Fotoniques, The Barcelona Institute of Science and Technology*); *F. İyikanat* (*ICFO — Institut de Ciencies Fotoniques, The Barcelona Institute of Science and Technology*); *S. Boroviks* (*University of Southern Denmark*); *N. Asger Mortensen* (*University of Southern Denmark*); *Joel D. Cox* (*University of Southern Denmark*); *F. Javier García de Abajo* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*);

00:00 Contribution of Patchy Reconnection to the Ion to Electron Temperature Ratio in the Earth's Magnetotail
Chuxin Chen (*University of Science and Technology of China*); *Chih-Ping Wang* (*University of California*);

00:00 Second-harmonic Generation from Singular Plasmonic System
Yunfei Zhang (*Sichuan University*); *Chen Wei* (*Sichuan University*); *Fuhua Gao* (*Sichuan University*); *Cristian Ciraci* (*Istituto Italiano di Tecnologia*); *Fan Yang* (*Sichuan University*);

Session 1A2
Nanophotonics 1

Monday AM, July 3, 2023

Room Club D

Organized by Yeshaiahu Shaya Fainman, Newton C. Frateschi

Chaired by Newton C. Frateschi

00:00 Keynote — The Challenge of Photonic Crystals (and Metamaterials) is Inverse Electromagnetic Design (Aperiodic)
Eli Yablonovitch (*University of California*);

00:00 Invited — Nonlinear and Topological Photonics on a CMOS Chip
Dawn T. H. Tan (*Singapore University of Technology and Design*); *Ju Won Choi* (*Singapore University of Technology and Design*); *Byoung-Uk Sohn* (*Singapore University of Technology and Design*); *George F. R. Chen* (*Singapore University of Technology and Design*); *Doris K. T. Ng* (*Institute of Microelectronics, A*STAR*); *Yanmei Cao* (*Singapore University of Technology and Design*); *Xavier X. Chia* (*Singapore University of Technology and Design*); *Hongwei Gao* (*Singapore University of Technology and Design*); *Kenny Y. K. Ong* (*Singapore University of Technology and Design*);

00:00 Invited — Photonics for Neuromorphic Computing
Paul R. Prucnal (*Princeton University*);

00:00 Invited — Realizing Petabit/s IO and Sub-pJ/bit System-wide Communication with Silicon Photonics
Keren Bergman (*Columbia University*);

00:00 Inverse Design of Arbitrary Optical Helicity Patterns
Romuald Kilianski (*University of Glasgow*); *Robert Bennett* (*University of Glasgow*);

00:00 Enhanced Coupled Mode Theory Including Integrated Network's Topology and Ordered Directionality
Guilherme Fornias Machado De Rezende (*University of Campinas/Gleb Wataghin Physics Institute*); *Caue M. Kersul* (*University of Campinas*); *Luis A. M. Barea* (*Federal University of Sao Carlos*); *Gabriel R. Ascencao* (*Federal University of Sao Carlos*); *Pierre-Louis de Assis* (*University of Campinas*); *Newton C. Frateschi* (*Universidade Estadual de Campinas*);

00:00 Invited — Integrated Photonics for AI-assisted Telecom Signal Processing
Luigi Di Lauro (*Institut National de la Recherche Scientifique (INRS-EMT)*); *Stefania Sciara* (*Institut national de la recherche scientifique (INRS-EMT)*); *Aadhi Abdul Rahim* (*Institut National de la Recherche Scientifique (INRS-EMT)*); *Imtiaz Alamgir* (*Institut National de la Recherche Scientifique (INRS-EMT)*); *Pavel Dmitriev* (*Institut National de la Recherche Scientifique (INRS-EMT)*); *Bennet Fischer* (*Institut National de la Recherche Scientifique (INRS-EMT)*); *Seyedeh Nazanin Kamali* (*Institut National de la Recherche Scientifique (INRS-EMT)*); *Riza Fazili* (*Institut National de la Recherche Scientifique (INRS-EMT)*); *Celine Mazoukh* (*Institut National de la Recherche Scientifique (INRS-EMT)*); *Armaghan Eshaghi* (*Huawei Technologies Canada*); *Brent E. Little* (*QXP Technology*); *Sai T. Chu* (*Infinera Corp.*); *David J. Moss* (*Swinburne University of Technology*); *Roberto Morandotti* (*Institut National de la Recherche Scientifique (INRS-EMT)*);

00:00 Invited — Large-scale Silicon Photonics Switch: Introduction of FSR-free Wavelength Selectivity
Kazuhiro Ikeda (*National Institute of Advanced Industrial Science and Technology (AIST)*);

00:00 Invited — Photonic Integrated Circuits Realized Using Micro-transfer Printing
Jing Zhang (*Ghent University*); *Laurens Bogaert* (*Ghent University*); *Maximilien Billet* (*Ghent University*); *Dongbo Wang* (*Ghent University*); *Biwei Pan* (*Ghent University*); *Senbiao Qin* (*Ghent University*); *Emadreza Soltanian* (*Ghent University*); *Stijn Cuyvers* (*Ghent University*); *Dennis Maes* (*Ghent University*); *Tom Vanackere* (*Ghent University*); *Tom Vandekerckhove* (*Ghent University*); *Stijn Poelman* (*Ghent University*); *Max Kiewiet* (*Ghent University*); *Isaac Luntadila Lufungula* (*Ghent University*); *Xin Guo* (*Ghent University*); *He Li* (*Ghent University*); *Jasper De Witte* (*Ghent University*); *Guy Lepage* (*IMEC*); *Peter Verheyen* (*IMEC*); *Joris Van Campenhout* (*IMEC*); *Bart Kuyken* (*Ghent University, IMEC*); *Geert Morthier* (*Ghent University, IMEC*); *Dries Van Thourhout* (*Ghent University*); *Roe Baets* (*Ghent University*); *Gunther Roelkens* (*Ghent University, IMEC*);

00:00 A Molecular Optomechanical Nanocavity Platform for Continuous-wave Mid-infrared to Visible Frequency Upconversion
Wen Chen (*East China Normal University*); *Philippe Roelli* (*CIC nanoGUNE*); *Huatian Hu* (*Wuhan Institute of Technology*); *Ewold Verhagen* (*AMOLF*); *Alejandro Martínez* (*Universitat Politècnica de València*); *Christophe Galland* (*Ecole Polytechnique Fédérale de Lausanne (EPFL)*);

00:00 Wavelength-selective Photoacoustics in Plasmonic Hetero-nanoparticles
Yuanyang Xie (*King's College London*); *Anton Bykov* (*King's College London*); *Alexey V. Krasavin* (*King's College London*); *Pan Wang* (*King's College London*); *Anatoly V. Zayats* (*King's College London*);

Session 1A3a
Optical Sensing and Detection

Monday AM, July 3, 2023

Room Club C

Organized by Jiang Wu, Aobo Ren

00:00 MXene-GST-Graphene-Si Composited Tunable Surface Plasmon Resonance-based Refractive Index Sensor Operated at Infrared Optical Wavelength
Vishal Parsotambhai Sorathiya (*Parul University*); *Vipul Vekariya* (*Parul University*); *Kalpesh Jadav* (*Parul University*);

00:00 Efficient Passivation Strategies for High-performance Perovskite-based Photodetectors
Kai Shen (*University of Electronic Science and Technology of China*);

00:00 Graphene-sandwiched Van der Waals Heterostructures for Infrared Photodetectors
Beitong Cheng (*Southwest Institute of Technical Physics*); *Yong Zhou* (*Chengdu Technological University*); *Ruomei Jiang* (*Southwest Institute of Technical Physics*); *Xule Wang* (*Southwest Institute of Technical Physics*); *Shuai Huang* (*Southwest Institute of Technical Physics*); *Xingyong Huang* (*Yibin University*); *Wei Zhang* (*Southwest Institute of Technical Physics*); *Qian Dai* (*Southwest Institute of Technical Physics*); *Hai-Zhi Song* (*Southwest Institute of Technical Physics*);

00:00 Plasmonic Resonators for Carrier Envelope Phase Readout
András Szenes (*University of Szeged*); *Dávid Vass* (*University of Szeged*); *Balazs Banhelyi* (*University of Szeged*); *Maria Csete* (*University of Szeged*);

00:00 On Estimation of Flight Path of Unmanned Aerial Vehicle by Using LiDAR
Takashi Kuroiwa (*Nihon University*); *Yifan Wu* (*Nihon University*); *Syota Yazawa* (*Nihon University*); *Kiyozumi Niizuma* (*Nihon University*);

00:00 High Speed Type-II Superlattice Photodiodes
Invited
Baile Chen (*ShanghaiTech University*);

00:00 III-V Nanolasers Monolithically Integrated on Silicon
Invited Platform
Mingchu Tang (*University College London*); *T. Zhou* (*University College London*); *Mickael Martin* (*Université Grenoble Alpes, CNRS, CEA-LETI, MINATEC, LTM*); *Thierry Baron* (*Université Grenoble Alpes, CNRS, CEA-LETI, MINATEC, LTM*); *Siming Chen* (*University College London*); *Alwyn J. Seeds* (*University College London*); *Z. Zhang* (*The Chinese University of Hong Kong*); *H. Liu* (*University College London*);

00:00 Tailoring Charge Carrier Dynamics in Perovskite Light-
Invited emitting Diodes for Efficient Optical Wireless Communications
Aobo Ren (*University of Electronic Science and Technology of China*); *Jiang Wu* (*University of Electronic Science and Technology of China*);

Session 1A3b
Optical Sensors: Fundamentals and Applications

Monday AM, July 3, 2023

Room Club C

Organized by Cees Ronda

00:00 Role of Instantaneous Poynting Vector in Enhancing the Performance of Surface Plasmon Resonance Based Sensors
Himanshu Kushwah (*University of Delhi*); *Jagneet Kaur Anand* (*University of Delhi*);

00:00 Development of Optical Sensors Based on Porous TiO_2 Layers Created Using Bottom-Up Synthesis Methods
Salvador Ponce-Alcantara (*Universitat Politécnica de València*); *David Ortiz de Zárate* (*Universitat Politècnica de València*); *Jaime Garcia Ruperez* (*Universitat Politècnica de València*);

00:00 The Effectiveness of Edge Detection Evaluation Metrics for Automated Coastline Detection
Conor O'Sullivan (*The ADAPT SFI Research Centre*); *Seamus Coveney* (*Envo-Geo Environmental Geoinformatics*); *Xavier Monteys* (*Geological Survey Ireland*); *Soumyabrata Dev* (*Beijing-Dublin International College*);

00:00 Integration of Pupil Phase Mask and Principal Component Analysis-based Image Fusion for Enhanced Depth-of-Field
Benny Milgrom (*The Jerusalem College of Technology*); *Roy Avrahamy* (*Ben-Gurion University of the Negev*); *Y. Golovachev* (*The Jerusalem College of Technology*); *A. Caspi* (*The Jerusalem College of Technology*);

00:00 Fiber-tip Photonic Crystal Biosensors
Invited
Mathias Dolci (*Eindhoven University of Technology*); *Mildred S. Cano-Velázquez* (*Eindhoven University of Technology*); *Arthur Hendriks* (*Eindhoven University of Technology*); *Peter J. van Veldhoven* (*Eindhoven University of Technology*); *Andrea Fiore* (*Eindhoven University of Technology*); *Peter Zijlstra* (*Eindhoven University of Technology*);

00:00 SPR-based Refractive Index Sensor at 1550-nm Wavelength Using Silicon and Graphene
Mohd Uwais (*Indian Institute of Technology Roorkee*); *Vipul Rastogi* (*Indian Institute of Technology Roorkee*);

Session 1A4
Microresonator Frequency Comb and THz Sources for Next-generation Communications and Related Applications 1

Monday AM, July 3, 2023

Room Club B

Organized by Takasumi Tanabe, Takeshi Yasui

Chaired by Takeshi Yasui

00:00 Photonic Integrated Optical Microcombs
Invited
Tobias J. Kippenberg (*EPFL*);

00:00 Microresonator Soliton Frequency Combs for Terahertz
Invited Wave Generation
Shuangyou Zhang (*Max Planck Institute for the Science of Light*); *Pascal Del'Haye* (*Max Planck Institute*);

00:00 A Microcomb-based Terahertz Oscillator and Its Appli-
Invited cation in Wireless Communication
B. Heffernan (*IMRA America, Inc.*); *Y. Kawamoto* (*Osaka University*); *K. Maekawa* (*Osaka University*); *T. Hori* (*IMRA America, Inc.*); *T. Tanigawa* (*IMRA America, Inc.*); *J. Greenberg* (*IMRA America, Inc.*); *T. Nagatsuma* (*Osaka University*); *Antoine Rolland* (*IMRA America, Inc.*);

00:00 A Photonic Terahertz-wave Oscillator with Broadband Frequency Coverage Based on Two Lasers Synchronized to a Microresonator Frequency Comb
Tomohiro Tetsumoto (*National Institute of Information and Communications Technology*); *Kentaro Furusawa* (*National Institute of Information and Communications Technology*); *Norihiko Sekine* (*National Institute of Information and Communications Technology*);

00:00 Generation of Terahertz Wave at 560 GHz Based on Photomixing of 560-GHz-spacing Soliton Microcomb with UTC-PD
S. Okada (*Tokushima University*); *K. Nishimoto* (*Tokushima University*); *Y. Tokizane* (*Tokushima University*); *H. Kishikawa* (*Tokushima University*); *Y. Okamura* (*Tokushima University*); *N. Kuse* (*Tokushima University*); *Takeshi Yasui* (*Tokushima University*);

00:00 Generation of 300-GHz Terahertz Waves with Microresonator Frequency Combs
K. Tanikawa (*Keio University*); *S. Fujii* (*Keio University*); *Soma Kogure* (*Keio University*); *H. Kumazaki* (*Keio University*); *Satoki Kawanishi* (*Keio University*); *Takasumi Tanabe* (*Keio University*);

00:00 Versatile Cavity Solitons for Kerr Frequency Comb Gen-
Invited eration
Xiaoxiao Xue (*Tsinghua University*);

00:00 Counter-propagating Microcavity Solitons Interaction
Invited and Application in Spectroscopy
Chengying Bao (*Tsinghua University*);

00:00 Extending Spectral Tunability of Soliton Microcombs in Ultrahigh-Q Microresonators
Shun Fujii (*Keio University*); *Koshiro Wada* (*Keio University*); *Hajime Kumazaki* (*Keio University*); *Soma Kogure* (*Keio University*); *Takasumi Tanabe* (*Keio University*);

00:00 Nonlinear Photonics Based on Thin-film Lithium Nio-
Invited bate
Mengjie Yu (*University of Southern California*);

00:00 Low-phase-noise Frequency-tunable Microwave and
Invited Millimeter-wave Generation Using an Electro-optic-modulation Comb
Atsushi Ishizawa (*Nippon University*); *Y. Kikkawa* (*NTT Corporation*); *R. Kou* (*National Institute of Advanced Industrial Science and Technology (AIST)*); *G. Cong* (*National Institute of Advanced Industrial Science and Technology (AIST)*); *X. Xu* (*NTT Corporation*); *T. Aihara* (*NTT Corporation*); *K. Hitachi* (*NTT Corporation*); *T. Tsuchizawa* (*NTT Corporation*); *N. Yamamoto* (*National Institute of Advanced Industrial Science and Technology (AIST)*); *T. Nishikawa* (*Tokyo Denki University*); *K. Yamada* (*National Institute of Advanced Industrial Science and Technology (AIST)*); *K. Oguri* (*NTT Corporation*);

Session 1A5
FocusSession.SC1: Casimir Effect and Radiative Heat Transfer 1

Monday AM, July 3, 2023

Room Club A

Organized by Mauro Antezza, Matthias Krüger

Chaired by Mauro Antezza

00:00 Near-field Quantum Electrodynamics of Optical Meta-
Invited surfaces
Igor V. Bondarev (*North Carolina Central University*);

00:00 Heat Radiation and Transfer with Cylindrical Waveg-
Invited uides
Kiryl Asheichyk (*Belarusian State University*); *Matthias Krüger* (*Georg-August-Universitat Gottingen*);

00:00 Tunable Critical Casimir Forces Counteract Casimir-
Invited Lifshitz Attraction
Agnese Callegari (*University of Gothenburg*); *Falko Schmidt* (*University of Gothenburg*); *Abdallah Daddi-Moussa-Ider* (*Max-Planck-Institut für Dynamik und Selbstorganisation*); *Battulga Munkhbat* (*Technical University of Denmark*); *Ruggero Verre* (*Chalmers University of Technology*); *Timur Shegai* (*Chalmers University of Technology*); *Mikael Käll* (*Chalmers University of Technology*); *Hartmut Löewen* (*Heinrich-Heine-Universität Düsseldorf*); *Andrea Gambassi* (*SISSA — International School for Advanced Studies and INFN*); *Giovanni Volpe* (*University of Gothenburg*);

00:00 Nonlinearity and Anisotropy Interplay in van der Waals
Invited Interactions
Lilia M. Woods (*University of South Florida*);

00:00 Radiative Heat Transfer in Three-body Moiré Elliptical
Invited System
Cheng-Long Zhou (*Harbin Institute of Technology*); *Yong Zhang* (*Harbin Institute of Technology*); *Hongliang Yi* (*Harbin Institute of Technology*);

00:00 Radiative Heat Transfer in Ensembles of Nanostructures
Invited
Alejandro Manjavacas (*CSIC*);

00:00 Randomly Micro-structured Silicon for Thermal Light
Invited Engineering: Radiative Properties and Applications
Elyes Nefzaoui (*University Gustave Eiffel*); *T. Bourouina* (*University Gustave Eiffel*); *P. Basset* (*University Gustave Eiffel*); *E. Richalot* (*University Gustave Eiffel*); *G. Hamaoui* (*University Gustave Eiffel*); *A. Hervé* (*University Gustave Eiffel*);

00:00 Vacuum Torque, Propulsive Forces, and Anomalous Tan-
Invited gential Force: Effects of Nonreciprocal Media Out of Equilibrium
Kimball A. Milton (*University of Oklahoma*); *Xin Guo* (*University of Oklahoma*); *Gerard Kennedy* (*University of Southampton*); *Nima Pourtolami* (*National Bank of Canada*); *Dylan Delcol* (*University of Oklahoma*);

00:00 Enhancement and Modulation of Near-field Radiative
Invited Heat Transfer through Graphene-based Heterostructures
Kezhang Shi (*Zhejiang University*); *Sailing He* (*Royal Institute of Technology & Zhejiang University*);

00:00 Effect of Giant Anisotropy in Casimir Effect
Invited
Pablo Rodriguez-Lopez (*Universidad Rey Juan Carlos*); *Mauro Antezza* (*Universite de Montpellier*); *Igor V. Bondarev* (*North Carolina Central University*); *Lilia M. Woods* (*University of South Florida*);

00:00 Casimir Effects: A Novel Multiple Scattering Approach
Invited for Dielectric Media
Thorsten Emig (*Universite Paris-Sud, Universite Paris-Saclay*); *Giuseppe Bimonte* (*Università di Napoli Federico II*);

00:00 Originating from Quantum Fluctuation of the Electro-
magnetic Field
Julien Lecoffre (*Universite Paris 13*);

Session 1A6
Recent Advances in Optical Metasurfaces 1

Monday AM, July 3, 2023

Room Terrace 2A

Organized by Fei Ding, Cheng Zhang, Chao Meng

Chaired by Fei Ding

00:00 Structural Reconfigurable Metamaterials Driven by
Invited Phase-transition Materials
Zhixiang Huang (*University of Delaware*); *Weipeng Wu* (*University of Delaware*); *Eric Herrmann* (*University of Delaware*); *Ke Ma* (*University of Delaware*); *Zizwe Chase* (*University of Illinois Chicago*); *Thomas Searles* (*University of Illinois Chicago*); *M. Benjamin Jungfleisch* (*University of Delaware*); *Xi Wang* (*University of Delaware*);

00:00 Physics-informed Reinforcement Learning for Nanopho-
Invited tonic Device Design
Min Seok Jang (*Korea Advanced Institute of Science and Technology*);

00:00 Ultrabright Single-nanocrystal Upconversion via Cou-
Invited pling to Single Nanocavity Mode
Jianwei Tang (*Huazhong University of Science and Technology*); *Guanying Chen* (*Harbin Institute of Technology*); *Xuewen Chen* (*Huazhong Universtiy of Science and Technology*);

00:00 Versatile Nanopainting with Pixelated Plasmonic Meta-
Invited surface
Maowen Song (*Nanjing University*); *Yan-Qing Lu* (*Nanjing University*); *Ting Xu* (*Nanjing University*);

00:00 Ultraviolet Metasurfaces Using Wide-bandgap Di-
Invited electrics
Cheng Zhang (*Huazhong University of Science and Technology*);

00:00 Efficient Integrated Nanophotonic Interfaces to Atoms
Invited and Ions
Amit K. Agrawal (*National Institute of Standards and Technology*);

00:00 3D Meta-optics: A New Platform for Wavefront Shaping
Invited and Optical Sensing
Haoran Ren (*Monash University*); *S. A. Maier* (*Monash University*);

00:00 Polarization Manipulation from Planar Chiral Dielectric
Invited Metasurfaces
Yi Jin (*Zhejiang University*);

00:00 All-solid-state Beam Steering Module Based on a
Metafiber with High Compactness
Nan He (*Zhejiang University*); *Xinan Xu* (*Zhejiang University*); *Tingbiao Guo* (*Zhejiang University*); *Yi Jin* (*Zhejiang University*); *Sailing He* (*Royal Institute of Technology & Zhejiang University*);

00:00 Twisting Induced Nonlocality and Non-volatile Beam Steering in Rotating Metasurfaces
Peng Tang (*Zhejiang University*); *Jie Tao* (*Zhejiang University*); *Min Li* (*Zhejiang University*); *Fei Gao* (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*); *Zuojia Wang* (*Zhejiang University*);

00:00 Gaussian Process Regression for the Modeling of Metalenses
A. Al-Zawqari (*Vrije Universiteit Brussel*); *G. Vandersteen* (*Vrije Universiteit Brussel*); *Francesco Ferranti* (*Vrije Universiteit Brussel*);

Session 1A7
Recent Advances in Topological Photonics and Acoustics 1

Monday AM, July 3, 2023

Room Terrace 2B

Organized by Hai-Xiao Wang, Zhiwang Zhang, Weiwei Zhu
Chaired by Hai-Xiao Wang

00:00 Topological Sonic Defects
Invited
Johan Christensen (*IMDEA Materials Institute*);

00:00 Degenerate Zero-energy Topological States at Disclinations in an Acoustic Lattice
Invited
Yun Jing (*The Pennsylvania State University*);

00:00 Multimer Analysis Method Reveals Unconventional Higher-order Topology in Quasicrystals
Invited
Jianjun Liu (*Hunan University*);

00:00 Topological Phononic Band Topologies Arising from Fluid-solid Interactions and Experimental Observations
Invited
Xiaoxiao Wu (*Hong Kong University of Science and Technology (Guangzhou)*); *Jie Zhu* (*Tongji University*); *Xiang Zhang* (*The University of Hong Kong*);

00:00 Nonreciprocal Acoustics from Asymmetric Peierls Phases
Li Zhang (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*); *Yihao Yang* (*Zhejiang University*);

00:00 Structured Sonic Tube with Carbon Nanotube-like Topological Edge States
Invited
Zhiwang Zhang (*Nanjing University*); *Penglin Gao* (*Shanghai Jiao Tong University*); *Ying Cheng* (*Nanjing University*); *Xiao-Jun Liu* (*Nanjing University*); *Johan Christensen* (*IMDEA Materials Institute*);

00:00 Observation of the Photonic Topological Anderson Insulator in Microwave Metamaterial
Mina Ren (*Tongji University*); *Zhigang Chen* (*Nankai University*); *Yong Sun* (*Tongji University*); *Hong Chen* (*Tongji University*);

00:00 Hybrid Topological Photonic Crystals
Invited
Hai-Xiao Wang (*Guangxi Normal University*);

00:00 Non-Hermitian Topological Whispering Gallery
Invited
Bolun Hu (*Nanjing University*); *Zhiwang Zhang* (*Nanjing University*); *Haixiao Zhang* (*Nanjing University*); *Ying Cheng* (*Nanjing University*); *Xiao-Jun Liu* (*Nanjing University*); *Johan Christensen* (*Universidad Carlos III de Madrid*);

00:00 Equivalent Lasing and Coherent Perfect Absorption Enabled through an Acoustic Anti-parity-time Symmetric Structure
Invited
Da-Jian Wu (*Nanjing Normal University*); *Xing-Feng Zhu* (*Nanjing Normal University*); *Jie Yao* (*Nanjing Normal University*);

Session 1A8
Quantum Information Processing and Devices 1

Monday AM, July 3, 2023

Room South Room 220

Organized by Hai-Zhi Song, Guangwei Deng
Chaired by Hai-Zhi Song, Guangwei Deng

00:00 Quantum Many-body Sensors
Invited
Abolfazl Bayat (*University of Electronic Science and Technology of China*);

00:00 Photon-counting Reconstructive Spectrometers Utilizing Superconducting Nanowire Single-photon Detectors and On-chip Photonic Structures
Invited
Wei Zhang (*Tsinghua University*); *Yidong Huang* (*Tsinghua University*);

00:00 Detecting the Symmetry Breaking of the Quantum Vacuum in a QED System
Invited
Tie-Fu Li (*Tsinghua University*);

00:00 Mid-infrared Single-photon Upconversion Spectroscopy Based on Temporal-spectral Quantum Correlation
Invited
Yu-Jie Cai (*East China Normal University*); *Yu Chen* (*East China Normal University*); *Xiaoning Xin* (*East China Normal University*); *Kun Huang* (*East China Normal University*); *E Wu* (*East China Normal University*);

00:00 Remote Preparation of Squeezed States and Non-Gaussian States Based on Gaussian Entanglement
Invited
Xiaolong Su (*Shanxi University*); *Dongmei Han* (*Shanxi University*); *Na Wang* (*Shanxi University*); *Meihong Wang* (*Shanxi University*);

00:00 Nanoelectromechanical Interfaces Based on Low Dimensional Nanostructures
Invited
Zhuo-Zhi Zhang (*University of Science and Technology of China*);

00:00 Phonon Cavity and Dark Phonon Modes in Nonlinearly Coupled Nanomechanical Resonators
Invited
Xiang-Xiang Song (*University of Science and Technology of China*);

00:00 Ultrastable Single-molecule Single Photon Sources on Chip
Invited
Jianwei Tang (*Huazhong University of Science and Technology*); *Yaocheng Shi* (*Zhejiang University*); *Xuewen Chen* (*Huazhong Universtiy of Science and Technology*);

00:00 Infrared Property of One-dimensional Weyl Fermion under High Magnetic Field
Invited
Xiang Yuan (*East China Normal University*); *Wenbin Wu* (*East China Normal University*); *Cheng Zhang* (*Fudan University*);

00:00 Design of a Nano-optomechanical System with Exceptional Point at Room Temperature
Invited
Feng Tian (*The University of Tokyo*); *Yasutomo Ota* (*The University of Tokyo*); *Satoshi Iwamoto* (*The University of Tokyo*);

00:00 Design of Quantum Light Sources in Mid-infrared Band Using Lithium Niobate Crystal
Invited
Rui-Bo Jin (*Wuhan Institute of Technology*); *Zi-Xiang Yang* (*Wuhan Institute of Technology*);

Session 1A9
Nanomaterials and Advanced Characterizations for Innovative Energy Generation and Storage Technologies

Monday AM, July 3, 2023

Room South Room 221

Organized by Sara Pescetelli, Antonio Agresti

Chaired by Sara Pescetelli, Antonio Agresti

00:00 Industrial Production of High Quality 2D Materials for Energy Applications
Invited
Francesco Bonaccorso (*BeDimensional Spa.*);

00:00 A Sputtered Gig-lox TiO_2 Sponge for Multipurpose Application in Perovskite Solar Cells
Invited
Alessandra Alberti (*CNR-IMM*); *Salvatore Valastro* (*CNR-IMM*); *Ioannis Deretzies* (*CNR-IMM*); *Giuseppe Fisicaro* (*CNR-IMM*); *Giovanni Mannino* (*CNR-IMM*); *Emanuele Smecca* (*CNR-IMM*);

00:00 Additive Engineering: A Route Towards Flexible and Robust Perovskite Solar Cells
Invited
A. Giuri (*CNR NANOTEC — Istituto di Nanotecnologia*); *F. Bisconti* (*CNR NANOTEC — Istituto di Nanotecnologia*); *Nicholas Rolston* (*Arizona State University*); *Reinhold H. Dauskardt* (*VTT Technical Research Centre of Finland Ltd.*); *R. Suhonen* (*VTT Technical Research Centre of Finland Ltd.*); *T. M. Kraft* (*VTT Technical Research Centre of Finland Ltd.*); *M. Ylikunnari* (*VTT Technical Research Centre of Finland Ltd.*); *V. Holappa* (*VTT Technical Research Centre of Finland Ltd.*); *R. Po* (*Renewable, New Energies and Material Science Research Centere*); *P. Biagini* (*Renewable, New Energies and Material Science Research Centere*); *C. Esposito Corcione* (*Università del Salento, Campus Ecotekne*); *A. Listorti* (*Università di Bari*); *Silvia Colella* (*Università di Bari*); *Aurora Rizzo* (*CNR NANOTEC — Istituto di Nanotecnologia*);

00:00 Band Structure and Exciton Dynamics in Quasi-2D Dodecylammonium Halide Perovskites
Invited
Daniele Catone (*CNR-ISM*); *G. Ammirati* (*Istituto di Struttura della Materia — CNR (ISM-CNR), EuroFEL Support Laboratory (EFSL)*); *F. Martelli* (*Istituto per la Microelettronica e i Microsistemi (IMM), CNR*); *P. O'Keeffe* (*Istituto di Struttura della Materia - CNR (ISM-CNR), EuroFEL Support Laboratory (EFSL)*); *S. Turchini* (*Istituto di Struttura della Materia - CNR (ISM-CNR), EuroFEL Support Laboratory (EFSL)*); *Alessandra Paladini* (*CNR-ISM*); *Maurizia Palummo* (*University of Rome Tor Vergata*); *G. Giorgi* (*University of Perugia*); *M. Cinquino* (*University of Salento*); *M. De Giorgi* (*University of Salento*); *L. De Marco* (*University of Salento*);

00:00 Ultrafast Spin Relaxation Mechanisms in Layered Perovskites
Valentino Romano (*Politecnico di Milano*); *Martin Hörmann* (*Politecnico di Milano*); *Anna Stadlbauer* (*Technical University Munich*); *Felix Deschler* (*Technical University Munich*); *Giulio Cerullo* (*Politecnico di Milano*); *Franco Valduga De Almeida Camargo* (*Istituto di Fotonica e Nanotecnologie-CNR*);

00:00 Plasmonic Metal@Oxide, Core@Shell Nanoparticles: Applications in Photovoltaic Materials and Interactions with Reducible Oxides
Invited
Sergio D'Addato (*Università di Modena e Reggio Emilia*);

00:00 The Role of Water at the Interface with TiO_2 for H_2 Photoproduction
Invited
R. Verduci (*University of Messina*); *F. Creazzo* (*University of Zürich*); *G. Cassone* (*Institute for Chemical-Physical Processes, National Research Council of Italy (IPCF-CNR)*); *F. Tavella* (*University of Messina*); *C. Ampelli* (*University of Messina*); *S. Luber* (*University of Zürich*); *S. Perathoner* (*University of Messina*); *G. Centi* (*University of Messina*); *Giovanna D'Angelo* (*University of Messina*);

00:00 MoS_2 Nanosheets Protected Black Silicon for Enhanced Solar Hydrogen Production
Huaping Jia (*The Hong Kong Polytechnic University*); *Fengjia Xie* (*The Hong Kong Polytechnic University*); *Xuming Zhang* (*The Hong Kong Polytechnic University*);

00:00 All-optical Retrieval of the Thermal Boundary Resistance at the Interface between Carbon Nanotubes and Water
Alessandro Casto (*Université Lyon 1*); *Margherita Vittucci* (*Université Lyon 1*); *Francesco Maria Bellussi* (*Politecnico di Torino*); *Michele Diego* (*The University of Tokyo*); *Fabien Vialla* (*Université Lyon 1*); *Aurelien Crut* (*University of Lyon 1*); *Fabrice Vallée* (*Université Lyon 1*); *Matteo Fasano* (*Politecnico di Torino*); *Natalia Del Fatti* (*Université Lyon 1*); *Francesco Banfi* (*Universite de Lyon, Institut Lumiere Matiere (iLM), Universite Lyon 1 and CNRS*); *Paolo Maioli* (*Université Lyon 1*);

00:00 Biomimetic Microreactor for Glucose Precursor Production from CO_2
Yujiao Zhu (*The Hong Kong Polytechnic University*); *Fengjia Xie* (*The Hong Kong Polytechnic University*); *Kangning Ren* (*Hong Kong Baptist University*); *Xuming Zhang* (*The Hong Kong Polytechnic University*);

00:00 Silver-bismuth Double Perovskite: Variations on a Theme
Teresa Gatti (*Politecnico di Torino*);

Session 1A10
Remote Sensing of Water and Energy Cycles 1

Monday AM, July 3, 2023

Room South Room 222

Organized by Hui Lu, Jiancheng Shi, Rajat Bindlish

Chaired by Hui Lu, Jiancheng Shi

00:00 The Spatial Impact Changes of Heat Wave Disasters Based on Long Time Series: A Case Study of Qingdao, China
Zhimei Zhang (*China University of Petroleum (East China)*); *Yanguo Fan* (*China University of Petroleum (East China)*); *Zhijun Jiao* (*China University of Petroleum (East China)*);

00:00 High Resolution 3D Mapping of Coastal Floods Due to Hurricanes from Moderate Resolution Remote Sensing Data
Donglian Sun (*George Mason University*); *Sanmei Li* (*George Mason University*); *Tianshu Yang* (*George Mason University*);

00:00 Explainable AI for Radar Quantitative Estimation of Precipitation
Haonan Chen (*Colorado State University*);

00:00 Updates on the GLASS and Hi-GLASS Water Cycle and Energy Budget Products
Shunlin Liang (*University of Hong Kong*);

00:00 Estimation of Cloud Base Height and Surface Downward Longwave Radiation Using H8/AHI Measurement
Husi Letu (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences (CAS)*); *Ri Xu* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences (CAS)*); *Jiangqi Shao* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences (CAS)*);

00:00 A Total Precipitable Water Fusion Algorithm by Considering Microwave and Optical Remote Sensing Observations
Dabin Ji (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Qixiang Sun* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jiancheng Shi* (*National Space Science Center, Chinese Academy of Sciences*); *Husi Letu* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences (CAS)*);

00:00 A Proposed Cryosphere Monitoring Satellite
Jiancheng Shi (*National Space Science Center, Chinese Academy of Sciences*); *Hao Liu* (*National Space Science Center, Chinese Academy of Sciences*); *Jinmei Pan* (*Aerospace Information Research Institute, Chinese Academy of Sciences*);

00:00 Detection, Mapping and Tracking Large Scale Inundation Dynamics Using CYGNSS Level-1 Coherence Detections
Mohammad Al-Khaldi (*The Ohio State University*); *Joel T. Johnson* (*The Ohio State University*); *Nicholas Brendle* (*The Ohio State University*);

00:00 X/ku-band Radar SWE Retrieval Performance from SnowEX 2017
Edward J. Kim (*NASA Goddard Space Flight Center*); *D. K. Kang* (*NOAA*); *Firoz Borah* (*University of Michigan*); *Leung Tsang* (*University of Michigan*);

00:00 Retrieval of Cloud Microphysical Properties from Himawari-8/AHI Infrared Channels and Its Application in Surface Shortwave downward Radiation Estimation in the Sun Glint Region
Gegen Tana (*National Space Science Center, Chinese Academy of Sciences*); *Xu Ri* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Chong Shi* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Run Ma* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Husi Letu* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jian Xu* (*National Space Science Center, Chinese Academy of Sciences*); *Jiancheng Shi* (*National Space Science Center, Chinese Academy of Sciences*);

00:00 Multi-channel Collaborative Retrieval of Soil Moisture and Vegetation Optical Depth
Tianjie Zhao (*Aerospace Information research Institute, Chinese Academy of Sciences*); *Zhiqing Peng* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Lu Hu* (*Nanjing University*); *Dabin Ji* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jiancheng Shi* (*National Space Science Center, Chinese Academy of Sciences*);

00:00 Downscaling Passive Microwave Soil Moisture Across All Sensors
Venkataraman Lakshmi (*University of South Carolina*);

00:00 Soil Moisture Downscaling through the Simultaneous Assimilation of Multi-scale and Multi-source Remote Sensing
Hui Lu (*Tsinghua University*);

Session 1A11a
Axions and Axion Electrodynamics

Monday AM, July 3, 2023

Room South Room 223

Organized by Iver Hakon Brevik, Roberto Passante

Chaired by Iver Hakon Brevik, Roberto Passante

00:00 Axion Electrodynamics: Energy-momentum Aspects, and Measurement Possibilities
Iver Hakon Brevik (*Norwegian University of Science and Technology*);

00:00 Classical and Quantum Studies of an Atom with Rectilinear Motion in the Presence of Topological Insulators
Omar Jesús Franca Santiago (*Universität Kassel*); *Stefan Yoshi Buhmann* (*Universität Kassel*);

00:00 Axion Detection Setup Exploiting Magnetic-type Transitions in Alkali Atoms Trapped in a Cold Matrix of Inert Gases
Caterina Braggio (*Universita di Padova and INFN Padova*); *Roberto Calabrese* (*Universita di Ferrara and INFN Ferrara*); *Giovanni Carugno* (*INFN, Sezione di Padova*); *Giuseppe Fiscelli* (*Universita degli Studi di Palermo*); *Marco Guarise* (*Universita di Ferrara and INFN Ferrara*); *Alen Khanbekyan* (*Universita di Ferrara and INFN Ferrara*); *Antonio Noto* (*Universita degli Studi di Palermo and CNISM*); *Roberto Passante* (*University of Palermo*); *Lucia Rizzuto* (*Universita degli Studi di Palermo and CNISM*); *Giuseppe Ruoso* (*Viale dell'Universita 2*); *Luca Tomassetti* (*Universita di Ferrara and INFN Ferrara*);

00:00 Green's Functions and Zero-point Energy in Axion Electrodynamics
Amedeo Maria Favitta (*University of Palermo*); *Iver Hakon Brevik* (*Norwegian University of Science and Technology*); *Masud Chaichian* (*University of Helsinki*);

00:00 Searching for Dark Matter with BREAD: Broadband
Invited Reflector Experiment for Axion Detection
Stefan Knirck (*Fermi National Accelerator Laboratory*);

00:00 Comparison of Axion Haloscopes via Axion Spectral
Invited Sensitivity and the Use of Poynting Theorem to Calculate Sensitivity
Michael E. Tobar (*University of Wstern Australia*);

00:00 The ORGAN Experiment: Results, Status, and Future
Invited Plans
Ben T. McAllister (*University of Wstern Australia*);

Session 1A11b
Electromagnetic Problems Involving Layered Media

Monday AM, July 3, 2023

Room South Room 223

Organized by Tolga Ulaş Gürbüz, Qiwei Zhan

Chaired by Tolga Ulaş Gürbüz

00:00 A Semi-analytical Method for TE Scattering from Arbitrary Shaped Radially Inhomogeneous Cylindrical Shells at Normal Incidence
Tolga Ulaş Gürbüz (*Gaziantep University*); *Birol Aslanyürek* (*Yildiz Technical University*);

00:00 Wake Fields in a Three-layer Cylindrical Waveguide
Mikayel Ivan Ivanyan (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *B. Grigoryan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *Lusine Aslyan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *A. Grigoryan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *A. Vardanyan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*);

00:00 An Asymptotic Approach to Linear Pulse Propagation in Layered, Causally Dispersive, Media
Constantinos M. Balictsis (*Hellenic Telecommunications and Post Commission*);

00:00 Metasurface Modeling in Plane-stratified Media via Plane Wave Decomposition
Botond Tamás Csathó (*Budapest University of Techn*); *Jozsef Pavo* (*Budapest University of Technology and Economics*); *Zsolt Badics* (*Tensor Research LLC*); *B. P. Horvath* (*Budapest University of Technology and Economics*);

00:00 Interaction of THz Radiation with Dielectric Layer with Periodic Interface Backed with Graphene Monolayer: Regimes of Resonant Scattering
Anotliy Ye. Poyedinchuck (*O. Ya. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine*); *Petro Nikolaevich Melezhik* (*O. Ya. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine*); *Kostyantyn Sirenko* (*O. Ya. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine*); *Seil Seitenovich Sautbekov* (*Al-Farabi Kazakh National University*); *Yury A. Tuchkin* (*O. Ya. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine*); *Nataliya P. Yashina* (*O. Ya. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine*); *Gerard Granet* (*Universite Clermont Auvergne*);

Session 1A12
Microstrip Antennas, Array Antennas, Theory and Radiation

Monday AM, July 3, 2023

Room South Room 224

Organized by Peter Stoyanov Apostolov

Chaired by Peter Stoyanov Apostolov, Dimitar G. Valchev

00:00 Miniaturized Ultra-wideband Bandpass Filter with Multifrequency Suppression Capability
Abdul Basit (*NingboTech University*); *Muhammad Zubair Ajmal* (*University of Engineering and Technology*); *Chaman Ali* (*University of Engineering and Technology*); *Saad Ashhad* (*University of Engineering and Technology*); *Amil Daraz* (*NingboTech University*); *Guoqiang Zhang* (*NingboTech University*);

00:00 Characterization of Frequency Selective Surfaces (FSS) at Oblique Incidence by a Generalized Equivalent Circuit Based on Foster's Theorem
Gerardo Pérez-Palomino (*Universidad Politécnica de Madrid*); *José Ramón Montejo-Garai* (*Universidad Politécnica de Madrid*); *Juan E. Page* (*Universidad Politécnica de Madrid*);

00:00 Evaluation of Radiation Efficiency of Single-wall Carbon Nanotube-based Flexible Antenna Using Wheeler Cap Method
Sho Kuromatsu (*Aoyama Gakuin University*); *Takeshi Watanabe* (*Aoyama Gakuin University*); *Yoshiyuki Nonoguchi* (*Kyoto Institute of Technology*); *Ryosuke Suga* (*Aoyama Gakuin University*); *Osamu Hashimoto* (*Aoyama Gakuin University*); *Shinji Koh* (*Aoyama Gakuin University*);

00:00 Steering of Two-element Array Antenna with Arbitrary Narrow Beam Array Factor
Peter Stoyanov Apostolov (*South-West University*); *Dimitar G. Valchev* (*The Open University*);

00:00 Planar Log-periodic Antenna Array for Milimetric 5G Band
Anton Venouil (*Aix Marseille University*); *M. Benwadih* (*University Grenoble Alpes, CEA, LITEN*); *C. Serbutoviez* (*University Grenoble Alpes, CEA, LITEN*); *Philippe Pannier* (*Aix Marseille University*); *Matthieu Egels* (*Aix-Marseille University*);

00:00 Design of a Passive Retrodirective SHF-RFID Transponder for Communication and Localization
Sebastian Böller (*Fraunhofer Institute for Microelectronic Circuits and Systems (IMS)*); *Thorben Grenter* (*Fraunhofer Institute for Microelectronic Circuits and Systems (IMS)*); *Anton Grabmaier* (*Fraunhofer Institute for Microelectronic Circuits and Systems (IMS)*);

00:00 Fast Analysis and Design of Cylindrical Array of Patch Antennas via Phase Modes
Hasan Aydin (*Istanbul Technical University*); *Ozgur Özdemir* (*Istanbul Technical University*);

00:00 A Scalable X-band Overlapped Subarray Beamformer for Linear Phased Array Antennas
Yasin Özer (*Istanbul Technical University*); *Selçuk Paker* (*Istanbul Technical University*);

00:00 Design of a Low-cost Broadband Dual-polarized Aperture-coupled Stacked Patch Antenna
Okay Schierhorn (*Technical University of Berlin (TUB)*); *Jesus Cumana Morales* (*Corning Optical Communications GmbH & Co. KG*); *Wolfgang Heinrich* (*Technical University of Berlin (TUB)*);

00:00 On the Development of a Microwave Sensor to Detect Pesticides
Nouf Al Eissaee (*Technology Innovation Institute*); *John Jairo Pantoja Acosta* (*Technology Innovation Institute*); *Luciano P. Oliveira* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*); *Chaouki Kasmi* (*Technology Innovation Institute*);

00:00 S Band Monopole Plasma Antenna Design and Beam Forming Application by Plasma Columns
Atalay Kocakusak (*Akdeniz University*); *Selcuk Helhel* (*Akdeniz University*);

00:00 Passive 2-D Retro Directive Array Antenna with Adjustable Reflection Angle
Mohammadreza Fallah (*Iran University of Science and Technology*); *Nima Mokary Bahar* (*Iran University of Science and Technology*); *Seyed Hassan Sedighy* (*Iran University of Science and Technology*);

00:00 Near Field-far Field Conversion Using a Semicircular Probe Antenna
Jorge R. Sosa-Pedroza (*Instituto Politecnico Nacional*); *Fabiola Martinez-Zuniga* (*Instituto Politecnico Nacional*); *David Calderón-Medellín* (*Instituto Politecnico Nacional*); *Rodrigo Del Villar-Ramírez* (*Instituto Politecnico Nacional*);

00:00 Low-profile Frequency-reconfigurable LTE and LTE-A-CRLH PIFA for Smart-devices
Afshin Shahgholi (*Amirkabir University of Technology*); *G. Moradi* (*Radio Communications Center of Excellence*); *A. Abdipour* (*Radio Communications Center of Excellence*);

00:00 Ultra-wideband Antenna Based on Frequency Independent Ethos
Mostafa Mohamed Salah (*The British University in Egypt*); *Hassan A. Ragheb* (*The British University in Egypt*);

00:00 Analytical Models and Equivalent Networks of MED Antennas
Keivan Kaboutari (*University of Aveiro*); *Stanislav Maslovski* (*University of Aveiro*); *Majid Shokri* (*Urmia University*); *Zhale Amiri* (*Urmia University*); *Changiz Ghobadi* (*Urmia University*); *Javad Nourinia* (*Urmia University*);

00:00 Mutual Coupling Reduction between Closely Packed Microstrip Patch Antennas Using Parallel Coupled-line Resonators
Beytullah Bozkir (*ASELSAN Inc*); *Selçuk Paker* (*Istanbul Technical University*);

00:00 Residual Motion Error Compensation for Airborne Array Flexible SAR Based on Height Mismatched Building Contour
Ling Yang (*University of Chinese Academy of Sciences*); *Long-Yong Chen* (*Institute of Electronics, Chinese Academy of Sciences*); *Fubo Zhang* (*Institute of Electronics, Chinese Academy of Sciences*);

Session 1P0a
FocusSession.SC1: Casimir Effect and Radiative Heat Transfer 2

Monday PM, July 3, 2023

Room South Hall 2

Organized by Mauro Antezza, Matthias Krüger

00:00 Thermal Radiation in Topological Systems
Invited
Svend-Age Biehs (*Carl von Ossietzky Universitat*);

00:00 Limits on Electromagnetic Fluctuation Phenomena
Invited
Alejandro W. Rodriguez (*Princeton University*);

00:00 Is There a Super-Planckian Regime of Heat Transfer between Side-by-side Two-dimensional Metal Sheets?
Invited
Jian-Sheng Wang (*National University of Singapore*);

00:00 Thermodynamics and Quantum Computing
Invited
Gabriele De Chiara (*Queen's University Belfast*);

00:00 Equlibrium and Non-equilbrium Casimir Forces on Non-reciprocal Materials
David Gelbwaser-Klimovsky (*Technion-Israel Institute of Technology*);

00:00 Super-Planckian Thermal Radiation of a Macroscopic Cavity Due to the In-plane Propagation of Polaritons
Invited
Jose Ordonez-Miranda (*The University of Tokyo*); *Sebastian Volz* (*The University of Tokyo*); *Masahiro Nomura* (*The University of Tokyo*);

00:00 Axion Electrodynamics: Fundamentals
Invited
Iver Hakon Brevik (*Norwegian University of Science and Technology*);

00:00 Motion-induced Effects in Dispersion Forces
Invited
Francesco Intravaia (*Humboldt-Universität zu Berlin*);

00:00 Universal Casimir Interaction and Its Relevance for Colloidal and Biophysical Systems
Tanja Schoger (*Universitat Augsburg*); *Benjamin Spreng* (*Universitat Augsburg*); *Gert-Ludwig Ingold* (*Universitat Augsburg*); *Paulo A. Maia Neto* (*Universidade Federal do Rio de Janeiro*); *S. Reynaud* (*Laboratoire Kastler Brossel*);

00:00 Critical Casimir Forces Control Colloidal Assembly
Invited
Peter Schall (*Institute of Physics*);

00:00 Control of Thermal State and Relaxation Dynamic of Non-Hermitian Many-body Systems
Invited
Philippe Ben-Abdallah (*Universite Paris-Sud 11*);

Session 1P1
Specific Approaches in Computational Electromagnetics as Applied to Modern Nanophotonics 1

Monday PM, July 3, 2023

Room Club E

Organized by Maha Ben Rhouma

Chaired by Maha Ben Rhouma

00:00 Finite Element Method and Semi-analytical Approaches to Model the Optical, Thermal, Magnetic and Ultrafast Response of Plasmonic and Photonic Metamaterials
Invited
Nicolò Maccaferri (*Umeå University*);

00:00 Nanostructuration Effects in Casimir Torque and in Thermophotovoltaics
Invited
Mauro Antezza (*Universite de Montpellier*);

00:00 An Efficient Numerical Approach Combining Finite Element with Integral Methods
Q. Didier (*Avignon Universite*); *Slimane Arhab* (*Avignon Université — INRAE*); *Gaëlle Lefeuve-Mesgouez* (*Avignon Université — INRAE*);

00:00 Designing Nonlinear Optoelectronic Devices with Numerical Optimization: Lessons Learned
Ergun Simsek (*University of Maryland Baltimore County*); *Ishraq Md Anjum* (*University of Maryland Baltimore County*); *Curtis R. Menyuk* (*University of Maryland Baltimore County*);

00:00 Coupling between Conduction and Near-field Radiative
Invited Heat Transfer
Riccardo Messina (*Institut d'Optique, CNRS, Universite Paris-Sud 11*); *P. Ben-Abdallah* (*Institut d'Optique Graduate School, CNRS, Université Paris-Saclay*);

00:00 Fast Multi-channel Full-wave Solver and Inverse Design
Invited with Augmented Partial Factorization
Chia Wei Hsu (*University of Southern California*);

00:00 Multipolar Metasurface Modeling with Application to
Invited the Generalized Brewster Effect
Karim Achouri (*Swiss Federal Institute of Technology Lausanne (EPFL)*);

00:00 Modeling the Acousto-plasmonic Coupling: Raman En-
Invited ergy Density Framework
Nicolas Large (*University of Texas at San Antonio*); *Montaño Priede* (*University of Texas at San Antonio*); *Adnen Mlayah* (*Université de Toulouse*);

00:00 Accelerating Photonic Crystal Waveguide Simulation:
Invited From CPU Hours to Sub-ms Timescales
Caspar F. Schwahn (*University of St Andrews*); *Sebastian Andreas Schulz* (*University of St Andrews*);

00:00 Projector-based Quantization and Potential-based Nu-
Invited merical Mode Decomposition for Quantum Nanophotonics
Soomin Moon (*Purdue University*); *Jie Zhu* (*Purdue University*); *Thomas E. Roth* (*Purdue University*); *Dong-Yeop Na* (*Purdue University*); *Weng Cho Chew* (*Purdue University*);

00:00 Modeling the Excitation of Graphene Magneto-plasmons in Periodic Grating of Magnetostatic Biased Graphene Ribbons
Maha Ben Rhouma (*Université Gustave-Eiffel*); *Kofi Edee* (*Clermont Uniniversite*); *Brahim Guizal* (*University of Montpellier*);

Session 1P2
Nanophotonics 2

Monday PM, July 3, 2023

Room Club D

Organized by Yeshaiahu Shaya Fainman, Newton C. Frateschi
Chaired by Newton C. Frateschi

00:00 Nanophotonics in Two-dimensional Materials
Keynote
F. Javier García de Abajo (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*);

00:00 2D Materials: From Optical Characterization to Pho-
Invited tonic Application
Christiano J. S. de Matos (*Mackenzie Presbyterian University*);

00:00 Ultra-low-loss GeAsSeTe/GeAsSe Pedestal Waveguides
Invited and Their Thermo-optic Characterisation for On-chip Long-wave IR Spectrometer Applications
Vasileios Mourgelas (*University of Southampton*); *Sirawit Boonsit* (*University of Southampton*); *James S. Wilkinson* (*University of Southampton*); *Ganapathy Senthil Murugan* (*University of Southampton*);

00:00 Strategies for Dynamic Control over Infrared Absorption
Invited and Emission Using Symmetry Breaking
Michelle L. Povinelli (*University of Southern California*); *B. Shrewsbury* (*University of Southern California*); *A. Ghanekar* (*University of Southern California*); *R. Audhkhasi* (*University of Southern California*);

00:00 Transmission-line-based Plasmonic Logic Gates and Half-adder
Pei-Yuan Wu (*National Tsing Hua University*); *Chen-Bin Huang* (*National Tsing Hua University*);

00:00 Enhancing the Gain Factor of Nanoscale Optical Parametric Amplifiers via Active Tuning
Ozum Emre Aşirim (*Technical University of Munich*);

00:00 Unlocking the Potential of High-frequency Nano-
Invited optomechanical Systems with Dissipative Optomechanics
Thiago Pedro Mayer Alegre (*University of Campinas*);

00:00 Triple-state Photonic Molecules for Degenerate Optical
Invited Parametric Oscillation
Nathalia B. Tomazio (*University of Sao Paulo — USP*); *Lais Fujii* (*University of Campinas — UNICAMP*); *Luca O. Trinchao* (*University of Campinas — UNICAMP*); *Eduardo S. Goncalves* (*University of Campinas — UNICAMP*); *Paulo F. Jarschel* (*University of Campinas — UNICAMP*); *Felipe G. S. Santos* (*University of Campinas — UNICAMP*); *Thiago Pedro Mayer Alegre* (*University of Campinas — UNICAMP*); *Felippe A. Barbosa* (*University of Campinas — UNICAMP*); *Gustavo S. Wiederhecker* (*University of Campinas — UNICAMP*);

00:00 Modulating Refractive Index: Energy and Speed Con-
Invited siderations
Jacob B. Khurgin (*Johns Hopkins University*);

00:00 Lagrangian Formulation for Deriving Electromagnetic Energy Density in Dispersive Metamaterials with Non-negligible Absorption
Pi-Gang Luan (*National Central University*);

00:00 Dynamics of Hot Electrons and Optical Near-field in Plasmonic Nanoparticles under Ultrashort Laser Pulses: Influence on the Generation of ROS in Biomedical Applications
Syrine Gueffrache (*Université Paris-Saclay*); *Sarra Mitiche* (*Université Paris-Saclay*); *Sylvie Marguet* (*Université Paris-Saclay*); *Jean-Frederic Audibert* (*Université Paris-Saclay*); *Ludovic Douillard* (*CEA/SPEC*); *Christophe Leboeuf* (*Université de Paris*); *L. Ghezil* (*Université de Paris*); *G. Bousquet* (*Université de Paris*); *R. B. Pansu* (*Université Paris-Saclay*); *Bruno Palpant* (*Université Paris Saclay*);

00:00 Investigation of Magneto-transport and Optical Behaviour of VN Superconductors for Their Application as Single-photon Detector
Anish Mahavir Bhargav (*Council of Scientific and Industrial Research*); *Rajib K. Rakshit* (*Council of Scientific and Industrial Research*); *Sudhir Husale* (*CSIR — National Physical Laboratory*); *Samaresh Das* (*Indian Institute of Technology*); *Venugopal Achanta* (*CSIR — National Physical Laboratory*);

00:00 Observation of Hot-carrier Photocurrent in Ruddlesden-Popper (RP) Perovskite/MoS_2 Heterostructures
Chenhao Wang (*The Hong Kong Polytechnic University*); *Qi Wei* (*The Hong Kong Polytechnic University*); *Mingjie Li* (*The Hong Kong Polytechnic University*);

00:00 "Hot" Photoluminescence from Metals — Theory and Comparison to Experiments
Ieng Wai Un (*Ben-Gurion University*); *Yonatan Sivan* (*Ben-Gurion University*); *Yonatan Dubi* (*Ben-Gurion University*); *John Lupton* (*Regensburg University*); *Sebastian Bange* (*Regensburg University*);

00:00 Low-threshold Plasmonic Nanolasers through Mode Engineering
Invited
Jialu Xu (*Tsinghua University*); *Taiping Zhang* (*Tsinghua University*); *Yongzhuo Li* (*Tsinghua University*); *Qiang Kan* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Ruikang Zhang* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Cun-Zheng Ning* (*Arizona State University*);

00:00 Non-Hermitian Control of Confined Optical Skyrmions in Microcavities Formed by Photonic Spin-orbit Coupling
Xiaoxuan Luo (*Xi'an Jiaotong University*); *Yin Cai* (*Xi'an Jiaotong University*); *Xin Yue* (*Xi'an Jiaotong University*); *Wei Lin* (*Xi'an Jiaotong University*); *Jingping Zhu* (*Xi'an Jiaotong University*); *Yanpeng Zhang* (*Xi'an Jiaotong University*); *Feng Li* (*Xi'an Jiaotong University*);

00:00 Tuning Plasmonic Coupling of Touching to Near-touching Nanodimers via Nanometric Gaps
Yina Wu (*The Barcelona Institute of Science and Technology*); *Andrea Konečná* (*Brno University of Technology*); *Shin Hum Cho* (*Keimyung University*); *Delia J. Milliron* (*The University of Texas at Austin*); *Jordan A. Hachtel* (*Oak Ridge National Laboratory*); *F. Javier García de Abajo* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*);

00:00 Active Individual Core-shell Nanoresonators for Plasmonic Lasing
Dávid Vass (*University of Szeged*); *András Szenes* (*University of Szeged*); *Balazs Banhelyi* (*University of Szeged*); *Maria Csete* (*University of Szeged*);

Session 1P3a
Emerging On-chip Laser Technologies

Monday PM, July 3, 2023

Room Club C

Organized by Xiyuan Lu, Lin Chang

00:00 Silicon Nitride Integrated Photonics: From Microcombs
Keynote to Frequency Agile Low Noise Lasers and Erbium Amplifiers
Tobias J. Kippenberg (*EPFL*);

00:00 Ultrahigh-Q Rare-earth-doped Microcavities for Lasing
Invited Applications
Lei Shi (*Huazhong University of Science and Technology*);

00:00 Organic Hybrid Platform for Microcavity Nonlinear Optics
Xiaoqin Shen (*ShanghaiTech University*);

00:00 Topological-cavity Surface-emitting Laser
Invited
Ling Lu (*Institute of Physics, Chinese Academy of Sciences*);

00:00 On-Chip Integrated Light Sources of Miniaturized
Invited Bound State in the Continuum
Chao Peng (*Peking University*);

00:00 Heterogeneously Integrated, On-chip, Lasers with Sub-
Invited micron Wavelengths for Quantum Applications
Nima Nadar (*National Institute of Standards and Technology*); *Ali Eshaghian Dorche* (*National Institute of Standards and Technology*); *Eric J. Stanton* (*National Institute of Standards and Technology*); *Sae Woo Nam* (*National Institute of Standards and Technology*); *Richard P. Mirin* (*National Institute of Standards and Technology*);

00:00 Nanowire Photonic Crystal Arrays for Optical Elements
Invited in Photonic Integrated Circuits
Chia-Wei Tu (*University of Cincinnati*); *Matthew Larson* (*University of Cincinnati*); *Masoud Kaveh* (*University of Cincinnati*); *Martin Fränzl* (*University of Leipzig*); *Qian Gao* (*The Australian National University*); *Hark Hoe Tan* (*The Australian National University*); *Chennupati Jagadish* (*The Australian National University*); *Heidrun Schmitzer* (*Xavier University*); *Hans-Peter Wagner* (*University of Cincinnati*);

00:00 Fundamental Limits on Earth-like Exoplanet Imaging with Large Telescopes by Laser Tomography Adaptive Optics System
Nagendra Prasad Yadav (*Hubei Polytechnic University*);

00:00 Invited InAs/GaAs Quantum-dot Lasers Monolithically Grown on Si Substrate

Jiajing Yuan (*University College London*); *Xuanchang Zhang* (*University College London*); *Xueying Yu* (*University College London*); *Khaya Mtunzi* (*University College London*); *Huiwen Deng* (*University College London*); *Hui Jia* (*University College London*); *Mingchu Tang* (*University College London*); *Huiyun Liu* (*University College London*);

00:00 Keynote Enabling On-chip Lasers in the Visible through Integrated Optical Parametric Oscillators

Kartik Srinivasan (*National Institute of Standards and Technology*);

Session 1P4a
Microresonator Frequency Comb and THz Sources for Next-generation Communications and Related Applications 2

Monday PM, July 3, 2023

Room Club B

Organized by Takasumi Tanabe, Takeshi Yasui

00:00 Electro-optic-modulation Comb Generation Using a Silicon Modulator at 25-GHz Repetition Rate

Yugo Kikkawa (*NTT Corporation*); *A. Ishizawa* (*NTT Corporation*); *X. Xu* (*NTT Corporation*); *G. Cong* (*Nihon University*); *R. Kou* (*Nihon University*); *K. Yoshida* (*NTT Corporation*); *K. Hitachi* (*NTT Corporation*); *N. Yamamoto* (*Nihon University*); *T. Nishikawa* (*Tokyo Denki University*); *K. Yamada* (*Nihon University*); *H. Sanada* (*NTT Corporation*); *K. Oguri* (*NTT Corporation*);

00:00 Dual-Wavelength, Low-Phase-Nose, Optical Carrier for Terahertz-to-Optical Carrier Conversion with Electro-Optic Polymer Modulator

Y. Matsumura (*Tokushima University*); *Eiji Hase* (*Tokushima University*); *Yu Tokizane* (*Tokushima University*); *Naoya Kuse* (*Tokushima University*); *J. Fujikata* (*Tokushima University*); *Hiroki Kishikawa* (*Tokushima University*); *Masanobu Haraguchi* (*Tokushima University*); *Yasuhiro Okamura* (*Tokushima University*); *Takahiro Kaji* (*National Institute of Information and Communications Technology (NICT)*); *Akira Otomo* (*National Institute of Information and Communications Technology (NICT)*); *Atsushi Kanno* (*National Institute of Information and Communications Technology (NICT)*); *Shintaro Hisatake* (*Gifu University*); *Takeshi Yasui* (*Tokushima University*);

00:00 SiN/Si Hybrid Integration with Edge Couplers by Butt-coupling

R. Sugano (*Keio University*); *R. Otake* (*Keio University*); *Takasumi Tanabe* (*Keio University*);

Session 1P4b
Millimeter-Terahertz Wave Sources Technologies and Imaging Applications

Monday PM, July 3, 2023

Room Club B

Organized by Wenxin Liu, Ziran Zhao

Chaired by Wenxin Liu

00:00 Characterization of Impedance and Physical Properties of CVD-grown Graphene up to 50 GHz

Ryota Okuda (*AGC Inc.*); *Kazuhiko Niwano* (*AGC Inc.*); *Kaname Hatada* (*Aoyama Gakuin University*); *Kei Kokubu* (*Aoyama Gakuin University*); *Ryosuke Suga* (*Aoyama Gakuin University*); *Shinji Koh* (*Aoyama Gakuin University*);

00:00 Dual-Polarized Reflectarray Antenna for Computational Polarimetric Imaging at Microwave Frequencies

Aobo Li (*Queen's University Belfast*); *Mengran Zhao* (*Queen's University Belfast*); *Babar Abbasi* (*Queen's University Belfast*); *Okan Yurduseven* (*Queen's University Belfast*);

00:00 Terahertz Spectroscopic Techniques for Material Characterization and Source Development

Meng Chen (*National Engineering Research Center for Dangerous Articles and Explosives Detection Technologies*); *Yingxin Wang* (*Tsinghua University*); *Ziran Zhao* (*Tsinghua University*);

00:00 A Model-based Low-frequency Image Quality Enhancement Method

Jiaheng Zhou (*Tsinghua University*); *Yongshen Zhang* (*Tsinghua University*); *Zhiqiang Chen* (*Tsinghua University*); *Ziran Zhao* (*Tsinghua University*);

00:00 Short-range Millimeter-wave Imaging for Multilayer Objects

Yongshen Zhang (*Tsinghua University*); *Jiaheng Zhou* (*Tsinghua University*); *Ziran Zhao* (*Tsinghua University*);

00:00 Design and Simulation of 1.0 THz Staggered Double Vane Backward-wave Oscillator

Wenxin Liu (*Aerospace Information of Research Institute, Chinese Academy of Sciences*); *Xiangpeng Liu* (*Beijing University of Technology*); *Zhiqiang Zhang* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Zhihao Jin* (*Aerospace Information of Research Institute, Chinese Academy of Sciences*); *Fan Deng* (*Aerospace Information of Research Institute, Chinese Academy of Sciences*); *Zhaochuan Zhang* (*Aerospace Information of Research Institute, Chinese Academy of Sciences*);

00:00 Steering Smith-Purcell Radiation Angle in a Fixed Frequency by the Metal Grating
Wanyue Lu (*Guilin University of Electronic Technology*); *Daofan Wang* (*Guilin University of Electronic Technology*); *Wenxin Liu* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Tao Fu* (*Guilin University of Electronic Technology*);

00:00 Study on Electron Optics System for 670 GHz Travelling Wave Tube
Zhiqiang Zhang (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Wenxin Liu* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jianliang Wang* (*Aerospace Information Research Institute, Chinese Academy of Sciences*);

00:00 Design of a Pillbox Window for 340 GHz Traveling Wave Tubes
Jiawei Tang (*Shenzhen University*); *Guoxiang Shu* (*Shenzhen University*); *Junchen Ren* (*Shenzhen University*); *Xinlun Xie* (*Shenzhen University*); *Huaxing Pan* (*Shenzhen University*); *Shaochen Ma* (*Shenzhen University*); *Mingze Li* (*Shenzhen University*); *Siyuan Liu* (*Shenzhen University*); *Wenlong He* (*Shenzhen University*);

00:00 Narrow Linewidth, Energy-enhanced Injection-seeded Tunable Terahertz Parameter Oscillator
Yuye Wang (*Tianjin University*); *Jingxi Zhang* (*Tianjin University*); *Zikun Liu* (*Tianjin University*); *Bingfeng Xu* (*Tianjin University*); *Hai Bin Li* (*Tianjin University*); *Mei Lan Ge* (*Tianjin University*); *Kai Chen* (*Tianjin University*); *Z. L. Wang* (*Tianjin University*); *Degang Xu* (*Tianjin University*);

00:00 Ultra-broadband Terahertz Photothermoelectric Sensing and Multifunctional Imaging
Yingxin Wang (*Tsinghua University*); *Meng Chen* (*National Engineering Research Center for Dangerous Articles and Explosives Detection Technologies*); *Ziran Zhao* (*Tsinghua University*);

Session 1P6a
Theory and Applications of Reconfigurable Photonic Metasurfaces

Monday PM, July 3, 2023

Room Terrace 2A

Organized by Costantino De Angelis, Andrea Locatelli

Chaired by Costantino De Angelis, Andrea Locatelli

00:00 Metasurface Generation of Second Harmonic Vortex
Invited Beams
L. Coudrat (*Université de Paris*); *P. Filloux* (*Université de Paris*); *R. Tanos* (*Université de Paris*); *Julien Claudon* (*CEA/INAC/SP2M*); *Jean-Michel Gerard* (*CEA/INAC/SP2M*); *Aloyse Degiron* (*Université de Paris*); *Giuseppe Leo* (*CNRS, Université de Paris*);

00:00 Adaptive and Nonlinear Diffractive Metasurfaces Based
Keynote on Multiple Operation Principles
Thomas Pertsch (*Friedrich-Schiller-Universitat*);

00:00 Second and Third Harmonic Generation from Aluminum
Invited Nanolayers and Nanostructures
Michael Scalora (*Aviation and Missile Center, US Army CCDC*); *S. Mukhopadhyay* (*Universitat Politècnica de Catalunya*); *K. Hallman* (*PeopleTec, Inc.*); *R. Vilaseca* (*Universitat Politécnica de Catalunya*); *Crina Cojocaru* (*Universitat Politecnica de Catalunya*); *J. Trull* (*Universitat Politecnica de Catalunya*); *D. De Ceglia* (*University of Brescia*); *Maria Antonietta Vincenti* (*University of Brescia*);

00:00 Hot-carrier Reconfigurable Plasmonic Metasurfaces: The
Invited Key Role of Spatial Inhomogeneities at the Nanoscale
Andrea Schirato (*Politecnico di Milano*); *Giulia Crotti* (*Politecnico di Milano*); *Andrea Toma* (*Istituto Italiano di Tecnologia*); *Remo Proietti Zaccaria* (*Italian Institute of Technology & Ningbo Institute of Materials and Technology Engineering, CAS*); *Alessandro Alabastri* (*Rice University*); *Giulio Cerullo* (*Politecnico di Milano*); *Margherita Maiuri* (*Politecnico di Milano*); *Giuseppe Della Valle* (*Politecnico di Milano*);

00:00 Van der Waals Semiconductors for All-dielectric
Invited Nanophotonics Empowered by Bounds States in the Continuum
Luca Sortino (*Ludwig-Maximilians-Universität München*); *Lucca Kühner* (*Ludwig-Maximilians-Universität München*); *Thomas Weber* (*Ludwig-Maximilians-Universität München*); *Stefan A. Maier* (*Monash University*); *Andreas Tittl* (*Ludwig-Maximilians-Universität München*);

00:00 Functionalized Mie Resonators Obtained via Solid State
Invited Dewetting
L. Fagiani (*Politecnico di Milano*); *N. Granchi* (*University of Florence*); *C. Barri* (*Politecnico di Milano*); *M. Gherardi* (*Politecnico di Milano*); *Marco Salvalaglio* (*Technische Universitat Dresden*); *A. Voigt* (*Technische Universitat Dresden*); *M. Pasini* (*Institute of Chemical Sciences and Technologies (SCITEC) — CNR*); *M. Bouabdellaoui* (*Aix Marseille University, University de Toulon, CNRS, IM2NP*); *Andrea Chiappini* (*IFN, CNR CSMFO Lab.*); *A. Fedorov* (*Institute of Photonics and Nanotechnology (IFN) — CNR, LNESS*); *Marco Abbarchi* (*Aix Marseille University, University de Toulon*); *Maria Antonietta Vincenti* (*University of Brescia*); *Francesca Intonti* (*University of Florence*); *Monica Bollani* (*LNESS*);

00:00 Broad/Tailored Band Metamaterials for Microwave for
Invited Perfect Absorption, and Independence of Incident Angle and Polarization
Young Pak Lee (*Hanyang University*); *H. Y. Zheng* (*Hanyang University*); *L. Y. Chen* (*Hanyang University*);

Session 1P6b
Recent Advances in Optical Metasurfaces 2

Monday PM, July 3, 2023

Room Terrace 2A

Organized by Fei Ding, Cheng Zhang, Chao Meng

Chaired by Fei Ding

00:00 Invited — Geometric Metasurface Photodetectors for Polarized Mid-infrared Light
Jingxuan Wei (*University of Electronic Science and Technology of China*); *Cheng-Wei Qiu* (*National University of Singapore*);

00:00 Invited — Bifacial Metalens for Compact Pancake Camera
Chen Chen (*Nanjing University*); *Tao Li* (*Nanjing University*);

00:00 Invited — Ultra-broadband Metasurface for Meta-mirrors, Terahertz Cloak, and Perfect Absorber
Shiwei Tang (*Ningbo University*); *Tong Cai* (*Airforce Engineering University*); *Junhua Gao* (*Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences*);

Session 1P7a
Topological Micro-nano Cavities

Monday PM, July 3, 2023

Room Terrace 2B

Organized by Qi Jie Wang, Song Han

Chaired by Song Han

00:00 Keynote — Topological Insulator Vertical Cavity Lasers and Single Photon Emitters
Alex Dikopoltsev (*Technion — Israel Institute of Technology*); *Tristan H. Harder* (*Universität Würzburg*); *J. Jurkat* (*Universität Würzburg*); *E. Lustig* (*Technion — Israel Institute of Technology*); *O. A. Egorov* (*Friedrich-Schiller-Universitat Jena*); *J. Beierlein* (*Universität Würzburg*); *A. Wolf* (*Universität Würzburg*); *Yaakov Lumer* (*Technion — Israel Institute of Technology*); *M. Emmerling* (*Universitat Wurzburg*); *M. De Gregorio* (*Universität Würzburg*); *M. Meinecke* (*Universität Würzburg*); *Q. Buchinger* (*Universität Würzburg*); *C. Krause* (*Universität Würzburg*); *T. Huber-Loyola* (*Universität Würzburg*); *Christian Schneider* (*University of Oldenburg*); *Sebastian Klembt* (*Universität Würzburg*); *Mordechai (Moti) Segev* (*Technion — Israel Institute of Technology*); *Sven Hofling* (*Universitat Wurzburg*);

00:00 Invited — Monopole Cavities
Ling Lu (*Institute of Physics, Chinese Academy of Sciences*);

00:00 Invited — Landau Levels and Topological Edge States in Photonic Crystals through Synthetic Strain Engineering
René Barczyk (*AMOLF*); *Sonakshi Arora* (*Delft University of Technology*); *L. Kuipers* (*Delft University of Technology*); *Ewold Verhagen* (*AMOLF*);

00:00 Invited — Exploring "Unconventional" Topological Nanoparticle Photonics Situations
Vincenzo Giannini (*Instituto de Estractura de la Materia, C.S.I.C.*); *Alvaro Buendía* (*Instituto de Estructura de la Materia (IEM-CSIC)*); *Jose Antonio Sanchez-Gil* (*Instituto de Estractura de la Materia, C.S.I.C.*);

00:00 Invited — Topological Phase Switching and Lasing in a Perovskite Polariton Lattice
Rui Su (*Nanyang Technological University*);

00:00 Invited — Semiconductor Nanowire Array for Topological Lasers
Zhao Yan (*Cardiff University*); *Bogdan-Petrin Ratiu* (*Cardiff University*); *Parco Wong* (*Cardiff University*); *Qiang Li* (*Cardiff University*); *Sang Soon Oh* (*Cardiff University*);

00:00 Tunable Topological Electromagnetic Waves in Plasmonic Metasurfaces
Menglin L. N. Chen (*The Hong Kong Polytechnic University*);

00:00 Topological Corner States Based Nonlinear Optical Frequency-conversion in Topological Photonics
Kai Guo (*Hefei University of Technology*); *Jintao Wu* (*Hefei University of Technology*); *Jun Ma* (*Hefei University of Technology*);

00:00 Topological Emitters Monolithically Grown on Silicon
Wentao Xie (*The Chinese University of Hong Kong*); *Jingwen Ma* (*The Chinese University of Hong Kong*); *Yuanhao Gong* (*The Chinese University of Hong Kong*); *Ping Sun* (*The Chinese University of Hong Kong*); *Taojie Zhou* (*The Chinese University of Hong Kong*); *Mingchu Tang* (*University College London*); *Haochuan Li* (*The Chinese University of Hong Kong*); *Zhan Zhang* (*The Chinese University of Hong Kong*); *Xiang Xi* (*The Chinese University of Hong Kong*); *Mickael Martin* (*Université Grenoble Alpes, CNRS, CEA-LETI, MINATEC, LTM*); *Thierry Baron* (*Université Grenoble Alpes, CNRS, CEA-LETI, MINATEC, LTM*); *Huiyun Liu* (*University College London*); *Siming Chen* (*University College London*); *Xiankai Sun* (*The Chinese University of Hong Kong*); *Zhaoyu Zhang* (*The Chinese University of Hong Kong*);

00:00 Tailoring the Plasmon Enhanced Lasing via Babinet Complementary Complex Structures
Emese Tóth (*University of Szeged*); *Olivér Fekete* (*University of Szeged*); *Balazs Banhelyi* (*University of Szeged*); *Maria Csete* (*University of Szeged*);

Session 1P8
Quantum Information Processing and Devices 2

Monday PM, July 3, 2023

Room South Room 220

Organized by Hai-Zhi Song, Guangwei Deng

Chaired by Hai-Zhi Song, Guangwei Deng

00:00 Landau Polaritons with Hybridized Metamaterials
Invited

Hsun-Chi Chan (*The University of Hong Kong*); *Hongxia Xue* (*The University of Hong Kong*); *Dong-Keun Ki* (*The University of Hong Kong*); *Shuang Zhang* (*The University of Hong Kong*);

00:00 Strong Photon-magnon Coupling in a System of Two Coupled Resonators: Planar Photonic Crystal with Defect and Inverted Split-ring Resonator
Invited

Aleksey A. Girich (*Usikov Institute for Radiophysics and Electronics of NAS of Ukraine*); *Sergey V. Nedukh* (*Usikov Institute for Radiophysics and Electronics of NAS of Ukraine*); *Sergey Yu. Polevoy* (*Usikov Institute for Radiophysics and Electronics of NAS of Ukraine*); *A. S. Vakula* (*Usikov Institute for Radiophysics and Electronics of NAS of Ukraine*); *K. Yu. Sova* (*Usikov Institute for Radiophysics and Electronics of NAS of Ukraine*); *Sergey I. Tarapov* (*Usikov Institute for Radiophysics and Electronics of NAS of Ukraine*);

00:00 Quantum Parameter Estimation via Reinforcement Learning
Invited

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

00:00 Optimized Entanglement Detection
Invited

Zizhu Wang (*University of Electronic Science and Technology of China*); *Xiao-Min Hu* (*University of Science and Technology of China*); *Bi-Heng Liu* (*University of Science and Technology of China*); *Chuan-Feng Li* (*University of Science and Technology of China, CAS*); *Zhaohui Wei* (*Tsinghua University*); *Miguel Navascués* (*Austrian Academy of Sciences*);

00:00 Telecom-band Integrated Multimode Photonic Quantum Memory
Invited

Qiang Zhou (*University of Electronic Science and Technology of China*);

00:00 Circuit Quantum Electrodynamics for Semiconductor Quantum Dot
Invited

Gang Cao (*University of Science and Technology of China*);

00:00 Theoretical Studies on the Interfacial Properties of Carbon Nanotube Bundles and Their Interaction with Metallic Surfaces
Invited

Yanning Zhang (*University of Electronic Science and Technology of China*); *Weili Li* (*University of Electronic Science and Technology of China*);

00:00 Studying Quantum Many-body Problems through Meta-learning

Si Jiang (*Tsinghua University*); *Dong-Ling Deng* (*Tsinghua University*);

00:00 Silicon Photonic Crystal Architecture for Ultra-thin, High-efficiency Single Photon Detectors

Sumay Avi (*Indian Institute of Technology Kanpur*); *Sayak Bhattacharya* (*Indian Institute of Technology Delhi*);

00:00 Photonic Devices for Quantum Technology Enabled through Adaptive Laser Fabrication
Invited

Martin J. Booth (*University of Oxford*);

00:00 The Diabatic SWAP Gate Based on Si-MOS Double Quantum Dots
Invited

Hai-Ou Li (*University of Science and Technology of China*);

00:00 Majorana-Magnon Interactions in Topological Shiba Chains

Pei-Xin Shen (*Institute of Physics, Polish Academy of Sciences*); *Mircea Trif* (*Institute of Physics, Polish Academy of Sciences*);

Session 1P9
Materials and Applications: Ferroelectrics, Piezoelectrics, and Ferromagnetics

Monday PM, July 3, 2023

Room South Room 221

Organized by Tong-Yi Zhang, Shi-Gu Cao

Chaired by Shi-Gu Cao

00:00 Introduction to Materials Informatics
Keynote

Tong-Yi Zhang (*The Hong Kong University of Science and Technology (Guangzhou)*);

00:00 Relaxor-antiferroelectric HfO_2 Thin Films for Energy Storage Application
Invited

Wentao Shuai (*South China Normal University*); *Xubing Lu* (*South China Normal University*); *Jiyan Dai* (*The Hong Kong Polytechnic University*);

00:00 Low Power Smart Gas Sensor System Based on Three-dimensional Tin-oxide Nanotube Arrays
Invited

Zhiyong Fan (*The Hong Kong University of Science and Technology*);

00:00 Mechanical Control of Topological Domain Structure in Ferroelectric Materials

Jie Wang (*Zhejiang University*); *Chang Liu* (*Zhejiang University*); *Xu Hou* (*Zhejiang University*);

00:00 Machine Learning Assisted Phase Diagram Construction and Property Prediction in Multi-component Ferroelectric Materials

Yang Bai (*University of Science and Technology Beijing*);

00:00 Optimization of Nanoporous Metallic Actuators by Combining Multiscale Calculations and Machine Learning
Sheng Sun (*Shanghai University*); *Tong-Yi Zhang* (*Shanghai University*);

00:00 Stress Induced Twinning and Phase Transition in Ferroelectric Perovskites
Shi-Gu Cao (*The Hong Kong University of Science and Technology*); *Honghui Wu* (*The Hong Kong University of Science and Technology*); *Tong-Yi Zhang* (*The Hong Kong University of Science and Technology (Guangzhou)*);

00:00 Predictions of Ferroelectricity and Antiferroelectricity in One-dimensional Atomic Wires
Tao Xu (*Shanghai University*);

00:00 Flexible Ferroelectric Thin Film with Large Electrocaloric Effect and Good Energy Storage Performance
Chengwen Bin (*Zhejiang University*);

00:00 Phase Field Study of a Jumping Dielectric Breakdown Behavior Induced by Crack Propagation in Ferroelectric Materials
Yong Zhang (*Tongji University*); *Jie Wang* (*Zhejiang Laboratory*);

00:00 Phase Field Simulation of the Magneto-acoustic Interaction in Ferromagnetic Materials Induced by Einstein-de Haas Effect
Jiajun Sun (*Zhejiang University*); *Shengbin Shi* (*Zhejiang University*); *Jie Wang* (*Zhejiang University*);

00:00 A Phase-field Study: Coherent Magnitude-fluctuated Spin Waves Emitted by Magnetic Skyrmions
Yu Wang (*Kyoto University*); *Jie Wang* (*Zhejiang University*); *Takayuki Kitamura* (*Kyoto University*); *Hiroyuki Hirakata* (*Kyoto University*); *Takahiro Shimada* (*Kyoto University*);

00:00 A Phase-field Model for the Fracture Behavior of Ferroelectric Materials with Flexoelectric Effect
Chang Liu (*Southwest Jiaotong University*); *Zhaoyi Liu* (*Southwest Jiaotong University*);

00:00 Many-valued Logic-memory Elements Based on Nanoscale Electromechanical Oscillators
Yingming (Steven) Yan (*Exponent*); *B. Zhang* (*Physics Department of Hong Kong University of Science and Technology*); *Shi-Gu Cao* (*HKUST Shenzhen-Hong Kong Collaborative Innovation Research Institute*);

00:00 Structurally and Magnetically Driven Ferroelectricity in Perovskites
Yajun Zhang (*Lanzhou University*); *Jie Wang* (*Zhejiang University*); *Philippe Ghosez* (*University of Liege*);

00:00 Effect of Grain Size on the Electrocaloric Properties of Polycrystalline Ferroelectrics
Xu Hou (*Zhejiang University*);

00:00 Structure Control of the Ferroelectric Electrocaloric Material
Huiyu Li (*Hangzhou Polytechnic*); *Xu Hou* (*Zhejiang University*); *Jie Wang* (*Zhejiang University*);

00:00 Progress and Prospects of Machine Learning on Ferroelectric Materials
Shi-Gu Cao (*HKUST Shenzhen-Hong Kong Collaborative Innovation Research Institute*); *Liquan Liu* (*Shenzhen Inequation Technology Co., Ltd.*);

Session 1P10a
Ocean and Coastal Remote Sensing: The AI Approach

Monday PM, July 3, 2023

Room South Room 222

Organized by Xiaofeng Li, Xiaofeng Yang

Chaired by Xiaofeng Li, Xiaofeng Yang

00:00 Invited Neural Networks for Ocean Color Remote Sensing: A Few Examples and the Question
Zhongping Lee (*Xiamen University*); *Xiaolong Yu* (*Xiamen University*); *Shaoling Shang* (*Xiamen University*);

00:00 A New Indicator for Representing Different Life Phases of Floating Green Tide on the Yellow Sea
Le Gao (*Institute of Oceanography, Chinese Academy of Sciences*); *Xiaofeng Li* (*Institute of Oceanography, Chinese Academy of Sciences*);

00:00 Dual-branch Neural Network for Mesoscale Eddy Identification Based on Multi-variables Remote Sensing Data
Yingjie Liu (*Institute of Oceanology, Chinese Academy of Sciences*); *Le Gao* (*Institute of Oceanography, Chinese Academy of Sciences*); *Qian Liu* (*Institute of Oceanology, Chinese Academy of Sciences*); *Xiaofeng Li* (*Institute of Oceanography, Chinese Academy of Sciences*);

00:00 Evaluating the Effect of Incident Angle on Sea Ice Classification in SAR Images Based on a Deep Learning Model
Yibin Ren (*Institute of Oceanology, Chinese Academy of Sciences*); *Xiaofeng Li* (*Institute of Oceanography, Chinese Academy of Sciences*); *Yan Huang* (*Institute of Oceanology, Chinese Academy of Sciences*);

00:00 Sea Ice and Open Water Classification from Radarsat-2 Dual-polarized SAR Imagery by Deep Learning
Yiru Lu (*Nanjing University of Information Science and Technology*); *Biao Zhang* (*Nanjing University of Information Science and Technology*); *William Perrie* (*Bedford Institute of Oceanography*);

00:00 Deep Learning Based Reconstruction of Three-dimensional Temperature in the South China Sea from Satellite Data
Qing Xu (*Hohai University*); *Huarong Xie* (*Ocean University of China*); *Yongcun Cheng* (*PIESAT Information Technology Co., Ltd.*); *Xiaobin Yin* (*Hohai University*);

00:00 Machine Learning Techniques Promote the Study of Internal Solitary Waves
Xudong Zhang (*Institute of Oceanology, Chinese Academy of Sciences*); *Xiaofeng Li* (*Institute of Oceanography, Chinese Academy of Sciences*);

00:00 Flood Mapping from SAR Imagery Based on Convolutional Autoencoder with Total-variation Constraint
Bin Liu (*Shanghai Ocean University*); *Bohui Jiang* (*Shanghai Ocean University*); *Xiaofeng Li* (*Institute of Oceanography, Chinese Academy of Sciences*);

00:00 Accurate Mean Wave Period Retrieved from SWIM Instrument On-Board CFOSAT Using Deep Learning
Haoyu Jiang (*China University of Geosciences*);

00:00 Tropical Cyclogenesis Prediction from Satellite Sea Surface Wind Observations Using Broad Learning
Xiaofeng Yang (*Aerospace Information Research Institute, Chinese Academy of Sciences*);

Session 1P10b
Remote Sensing of Water and Energy Cycles 2

Monday PM, July 3, 2023

Room South Room 222

Organized by Hui Lu, Jiancheng Shi, Rajat Bindlish

Chaired by Hui Lu, Jiancheng Shi

00:00 Soil Moisture and Vegetation Optical Depth Retrieval from the SMAP Mission by Using Multi-channel Collaborative Algorithm
Zhiqing Peng (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Tianjie Zhao* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Lu Hu* (*Nanjing University*); *Panpan Yao* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jiancheng Shi* (*National Space Science Center, Chinese Academy of Sciences*);

00:00 Continual Lifelong Learning for Precipitation Retrievals Using ABI and GLM Measurements on the GOES-R Series
Yifan Yang (*Colorado State University*); *Haonan Chen* (*Colorado State University*); *Mahmood R. Azimi-Sadjadi* (*Colorado State University*);

00:00 Dual Frequency SWE Retrieval Algorithm Validation Using Airborne and Tower Data at X and Ku Band
Leung Tsang (*University of Michigan*); *Firoz Borah* (*University of Michigan*); *Joel T. Johnson* (*The Ohio State University*); *Edward J. Kim* (*NASA Goddard Space Flight Center*); *Michael Durand* (*Byrd Polar Research Center*); *Ana P. Barros* (*University of Illinois*); *Carrie Vuyovich* (*NASA Goddard Space Flight Center*); *Batuhan Osmanoglu* (*NASA Goddard Space Flight Center*); *Hans-Peter Marshall* (*Boise State University*);

00:00 Time-series Ratio Algorithm for NISAR Soil Moisture Retrieval
Jeonghwan Park (*NASA Goddard Space Flight Center*); *Rajat Bindlish* (*NASA's Goddard Space Flight Center*); *Dustin Horton* (*The Ohio State University*); *Joel T. Johnson* (*The Ohio State University*);

Session 1P11a
Oral Presentations for Best Student Paper Awards — SC1: CEM, EMC, Scattering & EM Theory

Monday PM, July 3, 2023

Room South Room 223

Chaired by Giuseppe Schettini, Rachid Talhi, Jiefu Chen

Encryption and Eavesdropping in Underwater Wireless Optical Communication
Amir Handelman (*Holon Institute of Technology*);

Session 1P11b
Oral Presentations for Best Student Paper Awards — SC4: Antennas and Microwave Technologies

Monday PM, July 3, 2023

Room South Room 223

Chaired by Pavel Fiala, Jian Jia Yi, Milan Polivka

00:00 A Warping Strategy and MPME Algorithm for Data Reduction in Near-field Antenna Measurements
Antonio Ciociola (*University of Campania "L. Vanvitelli"*);

00:00 Application and Challenges of Machine Learning-assisted Antenna Design
Zhaohui Wei (*Aalborg University*); *Zhao Zhou* (*Aalborg University*); *Peng Wang* (*Aalborg University*); *Jiali Kang* (*Aalborg University*); *Nan Sun* (*Aalborg University*); *Ming Shen* (*Aalborg University*);

00:00 Efficiency-improved Highly Transparent Antenna Using Multiple Layer Transparent Conducting Oxide
Jeong-Wook Kim (*Korea Advanced Institute of Science and Technology*); *Sol Kim* (*Korea Advanced Institute of Science and Technology*); *Kwang-Seok Kim* (*Affiliated Research Organization of the Electronics and Telecommunications Research Institute*); *Seong-Jin Kim* (*Korea Advanced Institute of Science and Technology*); *Jong-Won Yu* (*Korea Advanced Institute of Science and Technology (KAIST)*);

00:00 A Wideband and Compact $\mathbf{3} \times \mathbf{3}$ Nolen Matrix with Flat Phase Differences
Ye Yang (*City University of Hong Kong*); *Yu Fei Pan* (*Guangzhou University*); *Wing Shing Chan* (*City University of Hong Kong*); *Shao Yong Zheng* (*Sun Yat-sen University*);

00:00 Phased Array Diagnostics by TR-MUSIC Approach by a Reduced Set of Measurements
Mario Del Prete (*Università degli Studi della Campania — Dipartimento di Ingegneria*);

00:00 Received Signal Strength Prediction Using Generative Adversarial Networks for Indoor Localization
Haochang Wu (*University College Dublin*); *Hao Qin* (*University College Dublin*); *Siteng Ma* (*University College Dublin*); *Hans-Dieter Lang* (*OST — Eastern Switzerland University of Applied Sciences*); *Xingqi Zhang* (*University College Dublin*);

Session 1P12a
Emerging Antenna Techniques and Applications for 5G/B5G

Monday PM, July 3, 2023

Room South Room 224

Organized by Yao Zhang, Peng Fei Hu

00:00 Experimental Analysis of Plane Wave Generator Performance in Anechoic and Non-anechoic Setups
Wei Fan (*Aalborg University*); *Zhengpeng Wang* (*Beihang University*); *Fengchun Zhang* (*Aalborg University*);

00:00 Ultra-thin and Continuous Scanning Metasurface Luneburg-like Lens Based on Addition Theorem
Jun Lang Feng (*Lanzhou University*); *Zhong-Lei Mei* (*Lanzhou University*);

00:00 A Flat Dual-polarized Millimeter-wave Luneburg Lens Antenna Using Transformation Optics with Reduced Anisotropy and Impedance Mismatch
Yuanyan Su (*Ecole Polytechnique Fédérale de Lausanne (EPFL)*); *Teng Li* (*Southeast University*); *Wei Hong* (*Southeast University*); *Zhining Chen* (*National University of Singapore*); *Anja K. Skrivervik* (*Ecole Polytechnique Fédérale de Lausanne (EPFL)*);

00:00 Tunable Photogenerated Silicon Plasma Monopole Antenna
Thomas R. Jones (*Purdue University*); *Alden Fisher* (*Purdue University*); *Dimitrios Peroulis* (*Purdue University*);

00:00 An Extremely Low-profile Dual-band Antenna Based on Miniaturized Metasurface for 5G Mobile Applications
Xiaocheng Wang (*Shanghai Jiao Tong University*); *Gaobiao Xiao* (*Shanghai Jiao Tong University*);

Session 1P12b
Wideband and High-Gain Lens Antennas for 5G and Beyond 5G applications

Monday PM, July 3, 2023

Room South Room 224

Organized by Qingyi Guo, Xin Dai

Chaired by Qingyi Guo, Xin Dai

00:00 A Miniaturized MIMO Antenna with Dual-band for 5G Smartphones
Yi Liu (*Shenzhen University*); *Zhe Chen* (*Shenzhen University*); *Qingyi Guo* (*Shenzhen University*); *Yan-Shan Li* (*Shenzhen University*); *Lei Ma* (*Kunshan Innowave Communication Technology Co., Ltd.*); *Tao Yuan* (*Shenzhen University*);

00:00 Study on High Flexibility of the Ceramic Patch Antenna
Wenjian Sun (*City University of Hong Kong*); *Hang Wong* (*City University of Hong Kong*);

00:00 Millimeter-wave CP-LP Reconfigurable Antennas Using PCM
Runcong Lv (*Shenzhen University*); *Xinyu Xie* (*Shenzhen University*); *Qingyi Guo* (*Shenzhen University*); *Wenlong He* (*Shenzhen University*);

00:00 Invited A Planar High Efficiency Lens Antenna Using High-refractive-index Metamaterial
Xue Ren (*Shenzhen University*); *Youpeng Bao* (*South China University of Technology*); *Rui Cheng* (*Shenzhen University*); *Wenlong He* (*Shenzhen University*);

00:00 A Wideband Dual-polarized Reconfigurable Transmitarray Element
Zikang Zhang (*Guangzhou University*); *Xin Dai* (*Guangzhou University*);

Session 1P13
Poster Session 1

Monday PM, July 3, 2023

8:00 AM - 12:00 AM

Room Forum Hall Foyer 1

00:00 Plasma Discharge-based Treatment to Increase the Strength of a Dielectric Surface
Roman Pernica (*Brno University of Technology*); *Miloš Klíma* (*Brno University of Technology*); *Zoltán Szabó* (*Brno University of Technology*); *Radim Kadlec* (*Brno University of Technology*); *P. Londák* (*Brno University of Technology*); *Pavel Fiala* (*Brno University of Technology*);

00:00 Immunity Measurement of Military Equipment to Radiated Radio Frequency Field
Rafal Przesmycki (*Military University of Technology*); *Marek Bugaj* (*Military University of Technology*); *Diana Myszkowska* (*Military University of Technology*);

00:00 Photoelectric Effect and Relativity
Manuel Fiolhais (*University of Coimbra*);

00:00 Accurate Electromagnetic Modeling for Multiscale Interconnect Structures Based on Volume-surface Integral Equations
Hao Nan Dong (*Tongji University*); *Bao Qi Wang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Efficient Smoothers for Multigrid Solver in 3D Magnetotelluric Modeling
Yongfei Wang (*Central South University*); *Rongwen Guo* (*Central South University*); *Jian-Xin Liu* (*Central South University*); *Gangqiang Yang* (*Central South University*); *Rong Liu* (*Central South University*);

00:00 Possibility of Generating High Power with Thermionic Converters
Dilip K. De (*Sustainable Green Power Technologies*); *Olawole C. Olukunle* (*Covenant University*);

00:00 The Associated Hermite Orthogonal Expansion in Time-domain (AH-OETD) Method: A New Tool for Solving Multi-scale and Multi-physical Fields
Zheng-Yu Huang (*Nanjing University of Aeronautics and Astronautics*); *Viviana Lorena Robalino Espinoza* (*Nanjing University of Aeronautics and Astronautics*); *Hai-Yan Duan* (*Nanjing University of Aeronautics and Astronautics*); *Feng Jiang* (*Nanjing University of Aeronautics and Astronautics*); *Xiu-Zhen Gong* (*Nanjing University of Aeronautics and Astronautics*);

00:00 Study of High-power Microwave Protection Technology Based on Plasma
Zhigang Li (*National University of Defense Technology*); *Xuesong Deng* (*National University of Defense Technology*); *Li Cheng* (*National University of Defense Technology*); *Zongshen Chen* (*National University of Defense Technology*); *Jiaming Shi* (*National University of Defense Technology*);

00:00 Rotatable Rod-type Three-mode Switchable Metamaterial Based on Structural Transformation
Lei Zheng (*Huazhong University of Science and Technology*); *Lei Niu* (*Huazhong University of Science and Technology*); *Lili Wu* (*Huazhong University of Science and Technology*); *Xian Wang* (*Huazhong University of Science and Technology*);

00:00 Improving the Gain of a Multiband Antenna by Adding an AMC Metasurface
Amira Bousselmi (*Tunis EL Manar University*); *Ali Gharsallah* (*Tunis EL Manar University*); *Tan-Phu Vuong* (*Universite Grenoble-Alpes, IMEP-LAHC*);

00:00 Investigation of Periodic Structures on Dual Band Metamaterial Antenna Performance for 5G Systems
Shantu Ghose (*North Carolina A&T State University*); *Brinta Chowdhury* (*North Carolina A&T State University*); *Jyosri M. Karra* (*North Carolina A&T State University*); *Thisara Walpita* (*North Carolina A&T State University*); *Abdullah Eroglu* (*Purdue University*);

00:00 All-optical NOR Logic Gate Based on MIM Plasmonic Waveguide Structure with Nano-rectangular Resonators
Yaw-Dong Wu (*National Kaohsiung University of Science and Technology*); *Yi-Jun Xu* (*National Kaohsiung University of Science and Technology*); *Tien-Tsorng Shih* (*National Kaohsiung University of Applied Sciences*);

00:00 Conformal FSS Based Radome to Mitigate the Interference between Radio Altimeters and 5G Base Stations
T. Jayanandan (*Vellore Institute of Technology*); *Zachariah Callottu Alex* (*Vellore Institute of Technology*);

00:00 A Broadband Metacomposite Absorber Based on Structure-material Integrated Design
Faxiang Qin (*Zhejiang University*); *M. Y. Peng* (*Zhejiang University*);

00:00 Modulation of Acoustic Properties of Ferroelectric Superlattices
Si Zheng Zheng (*Zhejiang University*);

00:00 Unexpected Dependence of Photonic Band Gap Size on Particle Randomness in Self-assembled Colloidal Crystals
Duanduan Wan (*Wuhan University*);

00:00 Designing of FBG Based Sensor Networks for Long-distance Monitoring Solutions
Ints Murans (*Riga Technical University*); *Janis Braunfelds* (*Riga Technical University*); *Ugis Senkans* (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 IoT-based Smart Home System with Deep Learning Algorithm Based on FPGA Development Board
Guo-Ming Sung (*National Taipei University of Technology*); *Chih-Yu Lin* (*National Taipei University of Technology*); *Chih-Jung Huang* (*National Taipei University of Technology*); *Chih-Ping Yu* (*National Taipei University of Technology*);

00:00 Optical Waveguides with Microfluidic Channel for Raman Spectroscopy
Hideki Yokoi (*Shibaura Institute of Technology*); *Yutaro Kozato* (*Shibaura Institute of Technology*); *Yoshikazu Koike* (*Shibaura Institute of Technology*);

00:00 Superconductor Nanostructures for Sensitive Infrared Photodetectors
Hai-Zhi Song (*Southwest Institute of Technical Physics*); *Wei Zhang* (*Southwest Institute of Technical Physics*); *Gang Liu* (*Beijing University of Posts and Telecommunications*); *Yuchen Zhao* (*Xi'an University of Technology*); *Qiang Xu* (*Southwest Institute of Technical Physics*); *Xiumin Xie* (*Southwest Institute of Technical Physics*); *Pengfei Lu* (*Beijing University of Posts and Telecommunications*); *Xiaoli Xi* (*Xi'an University of Technology*); *Jie Xiong* (*University of Electronic Science and Technology of China*);

00:00 Frequency Control of Terahertz Wave Parametric Generation Using Spectral Drill Cavity
Shin'ichiro Hayashi (*National Institute of Information and Communications Technology*); *Seigo Ohno* (*Tohoku University*); *Katsuhiko Miyamoto* (*Chiba University*); *Yoshiharu Urata* (*PHLUXi, Inc.*); *Norihiko Sekine* (*National Institute of Information and Communications Technology*);

00:00 Performance Analysis of FEC Codes for WDM-PON Transmission Systems
Ricards Kudojars (*Riga Technical University*); *Dmitrijs Prigunovs* (*Riga Technical University*); *Ilja Lyashuk* (*Riga Technical University*); *Vitalijs Devjatovskis* (*Riga Technical University*); *Nikita Krupenins* (*Riga Technical University*); *Vladislavs Kergets* (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*); *Svitlana Matsenko* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Optimizing Grating Processing Conditions for Radiation-resistant Fiber Bragg Grating Sensors
Jong-Yeol Kim (*Korea Atomic Energy Research Institute*); *Youngwoong Kim* (*Korea Atomic Energy Research Institute*); *Young-Gwan Hwang* (*Korea Atomic Energy Research Institute*); *Gukbeen Ryu* (*Korea Atomic Energy Research Institute*);

00:00 Algae Luminescence Dynamics Applied for Fast Toxicological Testing
Cristiano De Mello Gallep (*Universidade Estadual de Campinas*); *Julya C. M. Tavares* (*Universidade Estadual de Campinas*); *Marcos V. Da Silva* (*Universidade Estadual de Campinas*);

00:00 Monolithically Integrated Circuits with Optical Injection Locking of Ring Lasers for QKD and QPSK Applications
D. Massela (*UVigo — Campus Universitario As Lagoas*); *M. Wallace* (*Bright Photonics BV*); *R. Broeke* (*Bright Photonics BV*); *F. Diaz* (*UVigo — Campus Universitario As Lagoas*); *Nelson FIlipe Duarte Pinto* (*UVigo — Campus Universitario As Lagoas*);

00:00 Magnetically Controllable Power Splitting in Topological Photonic Crystals
Weiyuan Tang (*The University of Hong Kong*); *Mudi Wang* (*The Hong Kong University of Science and Technology*); *Shaojie Ma* (*The University of Hong Kong*); *C. T. Chan* (*The Hong Kong University of Science and Technology*); *Shuang Zhang* (*The University of Hong Kong*);

00:00 Direct Laser Writing of Complex 3D Ag Nanoparticle Patterns inside Polymer Microstructures
Luisa Lavelle (*Trinity College Dublin*); *Srikanth Kolagatla* (*Trinity College Dublin*); *Paola Parlanti* (*Istituto Italiano di Tecnologia*); *Mauro Gemmi* (*Istituto Italiano di Tecnologia*); *Colm Delaney* (*Trinity College Dublin*); *Larisa Florea* (*Trinity College Dublin*);

00:00 Radiation Characteristics of a $\mathbf{1} \times \boldsymbol{N}$ Planar Array Microstrip Antenna with a Parasitic Patch Using a Distribution Edge
Imelda Uli Vistalina Simanjuntak (*Bandung Institute of Technology*); *Chairunnisa* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 A Novel Design of Differential Dual-polarized Filtering DRA
Min Tang (*Shanghai Jiaotong University*);

00:00 On Parametric Amplification in Discrete Josephson Transmission Line
Eugene Kogan (*Bar-Ilan University*);

00:00 A V-band Cascoded Low Noise Amplifier with Path Coupling between Gate and Source Terminals in 90-nm CMOS
Yen-Chung Chiang (*National Chung Hsing University*); *Yen-Yi Wu* (*National Chung Hsing University*); *Hsiang-Yu Kao* (*National Chung Hsing University*);

00:00 Performance Evaluation on Radiation Characteristics of Kaiser-based Linear Antenna Array
Hartuti Mistialustina (*Institut Teknologi Bandung*); *Budi Syihabuddin* (*Institut Teknologi Bandung*); *Chairunnisa* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Design of Axial-mode 2.4 GHz Helix-conical Antenna for Wireless Communication
Sania Asri Monica (*Institut Teknologi Bandung*); *Rheyuniarto Sahlendar Asthan* (*Institut Teknologi Sumatera*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 A Novel Corrosion Sensor for Metallic Structures Based on RFID Tag with Square Spiral Structure
Zi Cheng Jiang (*Tongji University*); *Ya Ming Xie* (*Tongji University*); *Guo Chun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Characterization of Slotted Microstrip Patch Array Antenna for UAV Communication System
Achmad Munir (*Bandung Institute of Technology*); *Novelita Rahayu* (*Bandung Institute of Technology*); *Junas Haidi* (*Institut Teknologi Bandung*); *Muhamad Hilman Fauzi* (*Universitas Pendidikan Indonesia*); *Farohaji Kurniawan* (*National Research and Innovation Agency*);

00:00 Dual-band Planar Microstrip Monopole Antenna Design Using Multi-objective Hybrid Optimization Algorithm
Vahid Hosseini (*Islamic Azad University*); *Farnaz Shapour* (*Islamic Azad University*); *Pedro Pinho* (*University of Aveiro*); *Yousef Farhang* (*Islamic Azad University*); *Kambiz Majidzadeh* (*Islamic Azad University*); *Changiz Ghobadi* (*Urmia University*); *Javad Nourinia* (*Urmia University*); *Saeid Barshandeh* (*Afagh Higher Education Institute*); *Majid Shokri* (*Urmia University*); *Zhale Amiri* (*Urmia University*); *Morteza Jalilirad* (*University of Aveiro*); *Keivan Kaboutari* (*University of Aveiro*);

00:00 A Novel Frequency-adjustable RC Relaxation Oscillator with Low Power Consumption
Min Ye (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Fast Calibration of Radar and Camera Images
Wei Huang (*Guilin University of Technology*); *Ying Yang* (*Nanjing University of Science and Technology*); *Kun-Shan Chen* (*Guilin University of Technology*);

00:00 A High Gain SIW Cavity-backed Differential-fed Dual-polarized Slot Antenna for 5G Applications
Amit Kumar (*Indian Institute of Technology (BHU)*); *Arvind Kumar* (*Visvesvaraya National Institute of Technology*); *A. G. Keskar* (*Visvesvaraya National Institute of Technology*); *Amit Kumar Singh* (*Indian Institute of Technology (BHU)*);

00:00 A 3.3 kW AC-AC Converter of Transmitter for Wireless Power Transfer Systems of Automated Guided Vehicle
Kye-Seok Yoon (*Electronics and Telecommunications Research Institute (ETRI)*); *Sang-Won Kim* (*Electronics and Telecommunications Research Institute (ETRI)*); *Gwangzeen Ko* (*Electronics and Telecommunications Research Institute (ETRI)*); *Seong-Min Kim* (*Electronics and Telecommunications Research Institute*);

00:00 Theoretical Analysis of Graphene-coated Microwave Coaxial Slot Antenna for Cancer Treatment
Tayyab Hussain Malik (*Center of Advanced Studies in Health & Technology (CASHT)*);

00:00 A Stacked Doherty Power Amplifier For Ka-band Space Applications
Stela Furxhi (*University of Roma Tor Vergata*); *Rocco Giofre* (*University of Roma Tor Vergata*); *Anna Piacibello* (*Politecnico di Torino*); *Vittorio Camarchia* (*Polytechnic of Turin*); *Paolo Colantonio* (*University of Rome Tor Vergata*);

00:00 Four Port Wide Band Shared Radiator with Diversity Effects for Wireless Application
Sanjay Chouhan (*Jawaharlal Institute of Technology*);

00:00 Energy Efficiency Analysis of Novel Index Modulation-based Non-orthogonal Multiple Access (IMNOMA) System for 5G Networks
H. M. Shwetha (*National Institute of Technology*); *Sundru Anuradha* (*National Institute of Technology Warangal*);

00:00 Assessment of Sea Surface Wind Field Retrieval from 1-meter C-SAR-01 Satellite Imagery Based on Different Models
Yue Zhang (*China University of Petroluem (East China)*); *Wentao An* (*National Satellite Ocean Application Service*); *Mingsen Lin* (*National Satellite Ocean Application Service*);

00:00 Determination of Water Content of Dried Aquatic Products Based on Complex Dielectric Spectrum
Xinru Yang (*China University of Petroleum (East China)*); *Bin Wang* (*China University of Petroleum*); *Lanchang Xing* (*China University of Petroleum*); *Muzhi Gao* (*China University of Petroleum (East China)*); *Jianqin Deng* (*41st Institute of China Electronic Technology Group Corporation*); *Chuan Li* (*The Affiliated Hospital of Qingdao University*); *Linlin Qu* (*The Affiliated Hospital of Qingdao University*); *Shihong Shao* (*The Affiliated Hospital of Qingdao University*);

00:00 Spatial and Temporal Variability of Upwelling in the West-central South China Sea and Its Relationship with the Wind Field
Jinke Shi (*Guilin University of Technology*); *Hongchang He* (*Guilin University of Technology*); *Donglin Fan* (*Guilin University of Technology*);

00:00 Stereo Camera-based Position Estimation for Unmanned Aircraft Navigation
Jiři Janoušek (*Brno University of Technology*); *O. Koukal* (*Brno University of Technology*); *Petr Marcoň* (*Brno University of Technology*);

00:00 A Multidimensionality Reduction approach to Rainfall Prediction
Menatallah Abdel Azeem (*University College Dublin*); *Prasanjit Dey* (*Technological University Dublin*); *Soumyabrata Dev* (*The ADAPT SFI Research Centre*);

00:00 Parameter Estimation Error of Random Rough Surface and Its Effect on Microwave Emission Calculation
Zhihua Wang (*Guilin University of Technology*); *Ying Yang* (*Nanjing University Of Science and Technology*); *Kun-Shan Chen* (*Guilin University of Technology*);

00:00 A Study on Arc Detection Technology in Renewable Energy Plant
Seung Jin Chang (*Hanbat National University*);

00:00 Investigation of the Continuous Wavelet Transform Method for Use with Late Time Response Analysis of Concealed on Body Threat Objects
Ali Saied Atiah (*Alzzaytuna University*);

00:00 An Automatic Collection and Cutting Algorithm for Video Deep Learning on Table Tennis Competition
Jieh-Ren Chang (*National Ilan University*); *Zhong-Kai Wei* (*National Ilan University*); *Chiu-Ju Lu* (*National Ilan University*); *Hsueh-Yi Lin* (*National Ilan University*);

00:00 Bitrate-based Video Traffic Classification
Tianhua Chen (*Riga Technical University*); *Elans Grabs* (*Riga Technical University*); *Aleksandrs Ipatovs* (*Riga Technical University*); *Ernests Pētersons* (*Riga Technical University*); *Arnis Ancans* (*Riga Technical University*);

00:00 The Implementation of Shannon-limited Polar Codes-based Information Reconciliation for Quantum Key Distribution
Junbin Guo (*Sun Yat-Sen University*); *Bangying Tang* (*National University of Defense Technology*); *Tingqin Lai* (*Sun Yat-Sen University*); *Xiaolin Liang* (*Sun Yat-Sen University*); *Siyuan Zhang* (*Sun Yat-Sen University*); *Zhiyu Tian* (*Sun Yat-Sen University*); *Jinquan Huang* (*Sun Yat-Sen University*); *Xuelin Yuan* (*Sun Yat-Sen University*); *Wanrong Yu* (*National University of Defense Technology*); *Bo Liu* (*National University of Defense Technology*); *Shaobo Luo* (*Southern University of Science and Technology*); *Shihai Sun* (*Sun Yat-Sen University*);

00:00 Deep Complex Convolutional Speech Enhancement Network Based on Priori SNR Estimation
Liheng Cui (*Chongqing University of Posts and Telecommunications*); *Yi Zhou* (*Chongqing University of Posts and Telecommunications*); *Hongqing Liu* (*Chongqing University of Posts and Telecommunications*);

00:00 Evaluation of Electromagnetic Absorption Characteristics and Temperature Rises in the Human Body from 10 GHz to 100 GHz
Tomoaki Nagaoka (*National Institute of Information and Communications Technology*);

00:00 Large-Signal Stabilization of Interleaved Floating Multilevel Boost Converter-Integrated High-Power DC Microgrids
Minghao Wang (*The Hong Kong Polytechnic University*); *Xiangke Li* (*The Hong Kong Polytechnic University*); *Xu Xu* (*The Hong Kong Polytechnic University*); *Menglin L. N. Chen* (*The Hong Kong Polytechnic University*);

00:00 Nitrilotriacetic Acid (NTA) Conjugating on the γ-Fe_2O_3 via Anionic/Cationic Surface Treatment
Gye Seok An (*Kyonggi University*); *Su Young Kang* (*Kyonggi University*); *Ji Hun Jeong* (*Kyonggi University*); *Jong Hun Kim* (*Kyonggi University*);

00:00 Multilevel Fusion Lightweight Networks for Acoustic Echo Cancellation
Lei Zhang (*Chongqing University Of Posts And Telecommunications*); *Yi Zhou* (*Chongqing University of Posts and Telecommunications*); *Hongqing Liu* (*Chongqing University of Posts and Telecommunications*);

00:00 Scattering Analysis from Lossy Dielectric Loaded Grooves Using the Extended Method of Auxiliary Sources
Hichem Naamen (*Ecole Nationale d'ingénieurs de Tunis*); *Ajmi Ben Hadj Hamouda* (*University of Monastir*); *Taoufik Aguili* (*University of Tunis El Manar (UTM)*);

00:00 Influencing the Power Flow along a Superconducting Transmission Line-based Electromagnetic Metamaterial
Melanie Schiemer (*Technische Universitat Ilmenau*); *Thomas Reum* (*Technische Universitat Ilmenau*); *Hannes Toepfer* (*Technische Universitat Ilmenau*);

Session 2A1
Specific Approaches in Computational Electromagnetics as Applied to Modern Nanophotonics 2

Tuesday AM, July 4, 2023

Room Club E

Organized by Maha Ben Rhouma

Chaired by Maha Ben Rhouma

00:00 Invited Polarization and Complexity Effects on Ultrafast Laser-induced Nanoscale Surface Structuring
Jean-Philippe Colombier (*Universite Jean Monnet Saint-Etienne*); *E. Moreno* (*Universite Jean Monnet Saint-Etienne*); *Anton Rudenko* (*Lyon University*); *V. Fedorov* (*Universite Jean Monnet Saint-Etienne*);

00:00 Applications of the Spatial Spectral Maxwell Solver
Ligang Sun (*Eindhoven University of Technology*); *M. C. Van Beurden* (*Eindhoven University of Technology*); *R. J. Dilz* (*Eindhoven University of Technology*);

00:00 Invited Spectral Galerkin Modal Method for Computing Leaky and Resonant Modes
Nan Zhang (*City University of Hong Kong*); *Ya Yan Lu* (*City University of Hong Kong*);

00:00 Invited Selectively Enhancing Second Harmonic Generation from Diffraction at Gold Nanogratings
S. Beer (*Friedrich-Schiller Universität Jena*); *J. Gour* (*Friedrich-Schiller Universität Jena*); *A. Alberucci* (*Friedrich-Schiller Universität Jena*); *Christin David* (*Friedrich-Schiller Universität Jena*); *Stefan Nolte* (*Friedrich-Schiller-Universitat Jena*); *Uwe-Detlef Zeitner* (*Fraunhofer Institute for Applied Optics and Precision Engineering*);

00:00 Invited Simulation of Harmonic Generation in Thin Films and Metasurfaces
M. Nikitin (*Technical University of Denmark*); *L. Vertchenko* (*Technical University of Denmark*); *Andrei V. Lavrinenko* (*Technical University of Denmark*);

00:00 Invited Topology Optimization in the Time Domain of Dispersive Optical Materials: Novel 3D Nanostructures and Functionalities
Antonio Calà Lesina (*Leibniz University Hannover*);

00:00 Invited A Simplified Version of the Fourier Modal Method for Graphene Gratings
Brahim Guizal (*University of Montpellier*);

00:00 Invited Image Processing with Nonlocal Nonlinear Metasurfaces
D. De Ceglia (*University of Brescia*); *Costantino De Angelis* (*University of Brescia*);

00:00 Invited Quantum Hydrodynamic Theory for Plasmonics: A Computational Perspective
Cristian Ciraci (*Istituto Italiano di Tecnologia (IIT)*); *M. Castriotta* (*Istituto Italiano di Tecnologia (IIT)*); *H. Baghramyan* (*Istituto Italiano di Tecnologia (IIT)*); *M. Khalid* (*Institute of Nanotechnology (CNR-Nanotec)*); *F. Della Sala* (*Istituto Italiano di Tecnologia (IIT)*);

00:00 Heat Transfer Modelling in the Crossover Regime between Conduction and Radiation
Mauricio Gómez Viloria (*Universite Paris-Saclay*); *Riccardo Messina* (*Institut d'Optique, CNRS, Universite Paris-Sud 11*); *Philippe Ben-Abdallah* (*Universite Paris-Sud 11*);

00:00 Inverse Design of Two-dimensional Photonic Crystals
Invited through Physics-informed Deep Learning
G. Katsikas (*Center for Nanophotonics*); *V. Peano* (*Max Planck Institute for the Science of Light*); *F. Marquardt* (*Max Planck Institute for the Science of Light*); *Ewold Verhagen* (*AMOLF*);

Session 2A2
Laser Processing and Applications

Tuesday AM, July 4, 2023

Room Club D

Organized by Dezhi Tan

00:00 High-efficient Engineering of Domain in Lithium Niobate Crystals
Qiang Cao (*Wuhan University*); *Xiaoliang Wang* (*Wuhan University*);

00:00 Multi-material Nanoscale 3D Fabrication Based on Fem-
Invited tosecond Light Sheets
Shih-Chi Chen (*The Chinese University of Hong Kong*);

00:00 3D Photonic Integrated Devices Preparation via Fem-
Invited tosecond Laser Direct Writing
Zhen-Nan Tian (*Jilin University*); *Bao-Xu Wang* (*Jilin University*); *Qi-Dai Chen* (*Jilin University*);

00:00 Hybrid Femtosecond Laser 3D Processing for Fabrica-
Invited tion of Microfluidic SERS Chip Enabling Attomolar Sensing
Koji Sugioka (*RIKEN Advanced Science Institute*); *Shi Bai* (*RIKEN Advanced Science Institute*);

00:00 Ultrafast Laser-induced Transformations inside Various Transparent Dielectrics
Heng Yao (*Shanghai University*); *Matthieu Lancry* (*Université Paris-Saclay*); *Ye Dai* (*Shanghai University*);

00:00 Laser Direct Writing on Flexible Materials for Electrical
Invited and Optical Applications
Mitsuhiro Terakawa (*Keio University*);

00:00 Direct Writing of GQDs with Different Fluorescent Properties by Femtosecond Laser Irradiation on PDMS
Kosuke Tsukada (*Keio University*); *Mitsuhiro Terakawa* (*Keio University*);

00:00 Laser Derived Nanocrystals Embedding for High Perfor-
Invited mance Perovskite Photovoltaics
Hongqiang Wang (*Northwestern Polytechnical University*);

00:00 Adaptive Optics for Precision Laser Processing
Keynote
Martin J. Booth (*University of Oxford*);

00:00 Femtosecond Laser Structuring of Multicore and Multi-
Invited mode Fibers for Laser Applications
Sergey A. Babin (*Institute of Automation and Electrometry SB RAS*);

Session 2A3
Perspectives in Soft Matter Optics and Photonics

Tuesday AM, July 4, 2023

Room Club C

Organized by Pasquale Pagliusi, Gabriella Cipparrone

Chaired by Pasquale Pagliusi, Gabriella Cipparrone

00:00 Topological Steering of Light by Liquid Crystal Defects
Keynote and Solitons
Ivan I. Smalyukh (*University of Colorado at Boulder*);

00:00 Exotic Optical Forces in Optical Tweezers
Invited
Yuzhi Shi (*Tongji University (TJU)*);

00:00 Light to Work Conversion and Physical Properties of
Invited Holographic Gratings Recorded in a New Class of Photomobile Polymeric Mixtures
Daniele Eugenio Lucchetta (*Universita Politecnica delle Marche*); *A. Didonato* (*Università Politecnica delle Marche*); *Riccardo Castagna* (*URT-CNR@UNICAM*);

00:00 Modeling the Photoinduced Ordering and Reshaping of
Invited Glassy Azopolymers
Marina Grenzer Saphiannikova (*Leibniz-Institut für Polymerforschung Dresden*);

00:00 Reprogrammable Diffractive Micro-optical Elements
Invited
Francesco Reda (*Complesso Universitario di Monte Sant'Angelo*); *Marcella Salvatore* (*University of Naples "Federico II"*); *Fabio Borbone* (*University of Naples "Federico II"*); *Stefano Luigi Oscurato* (*University of Naples "Federico II"*);

00:00 Anomalous Angular Light-scattering by Acrylate-based Materials and Structured-light
Riccardo Castagna (*URT-CNR@UNICAM*); *A. Didonato* (*Università Politecnica delle Marche*); *Cristiano Riminesi* (*Institute for Applied Physics — National Research Council*); *Daniele Eugenio Lucchetta* (*Universita Politecnica delle Marche*);

00:00 Flexible Physical Unclonable Functions Based on Random Distributed Dye-doped Fibers and Droplets
Mauro Daniel Luigi Bruno (*University of Calabria*); *Giuseppe Emanuele Lio* (*University of Florence*); *Antonio Ferraro* (*University of Calabria*); *Sara Nocentini* (*European Laboratory for Non-linear Spectroscopy*); *Giuseppe Papuzzo* (*Institute for High Performance and Networking*); *Agostino Forestiero* (*Institute for High Performance and Networking*); *Giovanni Desiderio* (*Istituto di Nanotecnologia CNR-Nanotec*); *Maria Penelope De Santo* (*University of Calabria*); *Diederik Sybolt Wiersma* (*University of Florence*); *Roberto Caputo* (*University of Calabria*); *Giovanni Golemme* (*University of Calabria*); *Francesco Riboli* (*European Laboratory for Nonlinear Spectroscopy (LENS)*); *Riccardo Cristoforo Barberi* (*University of Calabria*);

00:00 High Fidelity Vectorial Holography via Broadband Laser: Towards a Scale-up of Ultra-compact Optics
Biagio Audia (*University of Calabria*); *Pasquale Pagliusi* (*University of Calabria*); *Alfredo Mazzulla* (*CNR Nanotec — Institute of Nanotechnology*); *Gabriella Cipparrone* (*University of Calabria*);

00:00 Photo-driven Micropatterning Technique for Three-dimensional Surface Engineering
Marcella Salvatore (*University of Naples "Federico II"*); *Francesco Reda* (*Complesso Universitario di Monte Sant'Angelo*); *I. Komang Januariyasa* (*University of Naples "Federico II"*); *Stefano Luigi Oscurato* (*University of Naples "Federico II"*);

00:00 Invited Hydrogel Microstructures for Tuneable and Dynamic Structural Colour
Colm Delaney (*Trinity College Dublin*);

00:00 Easy 4D Microprinting by Tweaking Structural Color and Optical Axis in Reactive Mesogens
Pasquale Pagliusi (*University of Calabria*); *Tiziana Ritacco* (*University of Calabria*); *Alfredo Mazzulla* (*CNR Nanotec — Institute of Nanotechnology*); *Michele Giocondo* (*CNR Nanotec — Institute of Nanotechnology*); *Gabriella Cipparrone* (*University of Calabria*);

Session 2A4a
Photonics of Photovoltaic Device for Plant Growth

Tuesday AM, July 4, 2023

Room Club B

Organized by Feng-Yu Tsai, Wei-Fang Su

Chaired by Feng-Yu Tsai, Wei-Fang Su

00:00 Should Solar Cells be Installed on the Inside or Outside of the Windows in Greenhouses?
Frederik C. Krebs (*InfinityPV ApS*);

00:00 Wavelength-dependence of Plants' Interactions with Light: Toward Photovoltaics-complementing Agriculture
Radomira Vankova (*Institute of Experimental Botany of the Czech Academy of Sciences*);

00:00 Analysis of the Interface Effects in Semitransparent Perovskite Solar Cells
Jedrzej Szmytkowski (*Gdansk University of Technology*); *Damian Glowienka* (*Gdansk University of Technology*);

00:00 Highly Efficient Semitransparent Cs-FA Based Wide-bandgap Perovskite Solar Cell for 4-terminal Perovskite/Silicon Tandem Solar Cell
Chia-Feng Li (*National Taiwan University*); *Yu-Ching Huang* (*Ming Chi University of Technology*); *Sheng-Wen Huang* (*Ming Chi University of Technology*); *Chih-Yun Chen* (*Ming Chi University of Technology*); *Wei-Fang Su* (*National Taiwan University*); *Feng-Yu Tsai* (*National Taiwan University*);

00:00 Transparent Electrodes and Thin-film Encapsulation Technologies Based on Atomic Layer Deposition for Semitransparent Photovoltaic Devices
Dung-Yue Su (*National Taiwan University*); *Ming-Hung Tseng* (*National Taiwan University*); *Feng-Yu Tsai* (*National Taiwan University*);

00:00 Vegetable Growth Tuned by Semitransparent Organic Photovoltaic Modules for Agrivoltaic Applications
Cheng-Si Tsao (*Institute of Nuclear Energy Research, Atomic Energy Concioulencile*); *Yu-Yu Huang* (*Taiwan Agricultural Research Institute*); *Hou-Chin Cha* (*Institute of Nuclear Energy Research*); *Chih-Min Chuang* (*Institute of Nuclear Energy Research*); *Tsui-Yun Chung* (*Institute of Nuclear Energy Research*); *Zhe-Cheng Hu* (*Institute of Nuclear Energy Research*); *Tian-Cheng Liu* (*Institute of Nuclear Energy Research*); *Ying-Yuan Lien* (*Institute of Nuclear Energy Research*); *Yun-Ming Sung* (*Institute of Nuclear Energy Research*); *Wei-Yang Ma* (*Institute of Nuclear Energy Research*); *Yu-Hua Wang* (*Taiwan Agricultural Research Institute*); *Keng-Peng Chang* (*Taiwan Agricultural Research Institute*); *Yu-Chiang Chao* (*National Taiwan Normal University*); *Hsiao-Wen Zan* (*National Chiao Tung University*); *Wei-Fang Su* (*National Taiwan University*); *Hsin-Fei Meng* (*National Chiao Tung University*);

00:00 Field Phenotyping Rail System and Photosynthesis of Vicia Faba under Agriphotovoltaics
Onno Muller (*Institute of Bio- and Geoscience 2: Plant Sciences (IBG-2)*); *C. Jedmowski* (*Institute of Bio- and Geoscience 2: Plant Sciences (IBG-2)*); *C. Mueller* (*Institute of Bio- and Geoscience 2: Plant Sciences (IBG-2)*); *K. Hoelscher* (*Institute of Bio- and Geoscience 2: Plant Sciences (IBG-2)*); *M. Quarten* (*Institute of Bio- and Geoscience 2: Plant Sciences (IBG-2)*); *M. Berwind* (*Fraunhofer Institute of Solar Energy Systems (ISE)*); *U. Schurr* (*Institute of Bio- and Geoscience 2: Plant Sciences (IBG-2)*); *U. Rascher* (*Institute of Bio- and Geoscience 2: Plant Sciences (IBG-2)*); *M. Meier-Grüll* (*Institute of Bio- and Geoscience 2: Plant Sciences (IBG-2)*);

00:00 Characterization of Semitransparent Perovskite Solar Cells with Light Intensity Modulated Technique
Damian Glowienka (*Gdansk University of Technology*);

Session 2A4b
Integrated Electrically-driven Nano-photonic Devices

Tuesday AM, July 4, 2023

Room Club B

Organized by Hao Hu, Songyan Hou

Chaired by Hao Hu, Songyan Hou

00:00 Free Electrons for Infrared Nanophotonics
Invited
F. Javier García de Abajo (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*);

00:00 Free-electron Radiation Based on Phonon Plartions
Juan-Feng Zhu (*Singapore University of Technology and Design*); *Zi-Wen Zhang* (*Peking University*); *Lin Wu* (*Singapore University of Technology and Design (SUTD)*);

00:00 Observation of 2D Cherenkov Radiation and Its Quantized Photonic Nature
Yuval Adiv (*Technion-Israel Institute of Technology*); *Hao Hu* (*Nanyang Technological University*); *Shai Tsesses* (*Technion-Israel Institute of Technology*); *Raphael Dahan* (*Technion-Israel Institute of Technology*); *Kangpeng Wang* (*Technion-Israel Institute of Technology*); *Yaniv Kurman* (*Technion-Israel Institute of Technology*); *Alexey Gorlach* (*Technion-Israel Institute of Technology*); *Hongsheng Chen* (*Zhejiang University*); *Xiao Lin* (*Zhejiang University*); *Guy Bartal* (*Technion-Israel Institute of Technology*); *Ido Kaminer* (*Technion-Israel Institute of Technology*);

00:00 Lithium Niobate Ring-pair Modulator
Songyan Hou (*Xidian University*);

00:00 Spatiotemporal Quarter-wave Impedance Transformers
Youxiu Yu (*Soochow University*); *Hao Hu* (*Nanjing University of Aeronautics and Astronautics*); *Linyang Zou* (*Nanyang Technological University*); *Qianru Yang* (*Nanyang Technological University*); *Xiao Lin* (*Zhejiang University*); *Zhuo Li* (*Nanjing University of Aeronautics and Astronautics*); *Lei Gao* (*Soochow University*); *Dongliang Gao* (*Soochow University*);

00:00 Superluminal Pulse Propagation in Photonic Time Moiré Superlattice
Linyang Zou (*Nanyang Technological University*); *Hao Hu* (*Nanyang Technological University*); *Haotian Wu* (*Nanyang Technological University*); *Qianru Yang* (*Nanyang Technological University*); *Yu Luo* (*Nanyang Technological University*);

Session 2A5
FocusSession.SC1: Casimir Effect and Radiative Heat Transfer 3

Tuesday AM, July 4, 2023

Room Club A

Organized by Mauro Antezza, Matthias Krüger

Chaired by Mauro Antezza

00:00 Tunable Thermal Emission of Subwavelength Silica Ribbons
Juan José García Esteban (*Universidad Autónoma de Madrid*); *Jorge Bravo-Abad* (*Universidad Autonoma de Madrid*); *Juan Carlos Cuevas* (*Universidad Autonoma de Madrid*);

00:00 Thermal Radiation, Electroluminescence and Heat Engines in the Near Field
Invited
J. Legendre (*Université de Lyon, CNRS, INSA-Lyon, Université Claude Bernard Lyon 1, CETHIL UMR5008*); *T. Châtelet* (*Université de Lyon, CNRS, INSA-Lyon, Université Claude Bernard Lyon 1, CETHIL UMR5008*); *M. Thomas* (*Université de Lyon, CNRS, INSA-Lyon, Université Claude Bernard Lyon 1, CETHIL UMR5008*); *Christophe Lucchesi* (*INSA Lyon*); *Olivier Merchiers* (*Université de Lyon, CNRS, INSA-Lyon, Universite Claude Bernard Lyon 1*); *R. Vaillon* (*IES, Université de Montpellier, CNRS*); *Pierre-Olivier Chapuis* (*CNRS, National Institute of Applied Physics (INSA) Lyon*);

00:00 Thermal Hall Force and Frequency Mixing of Electromagnetic Fluctuations
Invited
Carsten Henkel (*University of Potsdam*);

00:00 The Casimir Interaction in Electrolyte Solutions
Invited
Paulo A. Maia Neto (*Universidade Federal do Rio de Janeiro*);

00:00 Nonlinear Fluctuation-dissipation Theorem and Dispersion Forces
Invited
Stefan Scheel (*University of Rostock*); *Matthias Krüger* (*Universität Göttingen*);

00:00 Casimir-like Forces in Flocking Active Matter
Invited
Andrea Gambassi (*SISSA — International School for Advanced Studies and INFN*);

00:00 Heat Transport Using Nonreciprocal Media
Nico Strauß (*University of Kassel*); *Omar Jesús Franca Santiago* (*University of Kassel*); *Stefan Yoshi Buhmann* (*University of Kassel*);

00:00 Very Low Noise Measurement of the Near-field Radiative Conductance
Victor Guillemot (*Universite PSL, CNRS*); *W. Poirier* (*LNE-Laboratoire National De Métrologie Et D'essais*); *Yannick De Wilde* (*Institut Langevin*);

00:00 Large Area, Self-supported Emitter-cell Structures for Nanogap Thermophotovoltaics
Invited
Jennifer Selvidge (*National Renewable Energy Laboratory*); *Myles A. Steiner* (*National Renewable Energy Laboratory*); *Ryan M. France* (*National Renewable Energy Laboratory*); *Eric J. Tervo* (*University of Wisconsin-Madison*);

00:00 Purcell-induced Suppression of Radiative Decays near Dielectric Surfaces
Johannes Fiedler (*University of Bergen*); *S. Y. Buhmann* (*University of Kassel*);

00:00 Invited From Photonic to Temperonic Metamaterials: A New Paradigm in Nanoscale Heat Transport
Marco Gandolfi (*University of Brescia*); *G. Mazza* (*University of Geneva*); *Massimo Capone* (*CNR-IOM Democritos National Simulation Center and Scuola Internazionale Superiore di Studi Avanzati (SISSA)*); *C. Giannetti* (*Université Claude Bernard Lyon 1*); *Francesco Banfi* (*Universite de Lyon, Institut Lumiere Matiere (iLM), Universite Lyon 1 and CNRS*);

Session 2A6
Multifunctional and Reconfigurable Terahertz and Infrared Metasurfaces

Tuesday AM, July 4, 2023

Room Terrace 2A

Organized by Jin Hui Shi, Yuancheng Fan

Chaired by Chunying Guan, Chunmei Ouyang

00:00 Design and Simulation of a Sub-Terahertz Metasurface for 6G Communication Systems
Hisham Khalil (*The University of Lahore*); *Saeed Ur Rahman* (*Xidian University*); *Umair Rafique* (*University of Oulu*);

00:00 Invited Multifunction Metasurfaces for Mode Conversion and Multiplexing in Terahertz Regime
Jianqiang Gu (*Tianjin University*); *Wanying Liu* (*Tianjin University*);

00:00 Invited Phase Change Materials-enabled Metasurfaces with Tunable Properties
Jin Hui Shi (*Harbin Engineering University*); *Tingting Lv* (*Harbin Engineering University*); *Guohua Dong* (*Harbin Engineering University*); *Zheng Zhu* (*Harbin Engineering University*); *Yuxiang Li* (*Harbin Engineering University*); *Chunying Guan* (*Harbin Engineering University*);

00:00 Invited Ultrahigh-Q Chiroptical Resonances and Perfect Absorption in Quasi-BIC Metasurfaces
Chunying Guan (*Harbin Engineering University*); *Shun Wan* (*Harbin Engineering University*); *Keda Wang* (*Harbin Engineering University*); *Yuxiang Li* (*Harbin Engineering University*); *Jin Hui Shi* (*Harbin Engineering University*);

00:00 Active Beam Manipulation in VO_2-integrated Coding Terahertz Metasurfaces
Zheng Zhu (*Harbin Engineering University*); *Yuxiang Li* (*Harbin Engineering University*); *Huawei Tang* (*Harbin Engineering University*); *Bo Lv* (*Harbin Engineering University*); *Chunying Guan* (*Harbin Engineering University*); *Jin Hui Shi* (*Harbin Engineering University*);

00:00 Development of Metasurface Biosensors Using Free-space and On-chip Terahertz Spectroscopy
Sae June Park (*Queen Mary University of London*);

00:00 Invited Disorder Immunity in Photonics: From Topological Metamaterials to Optical Skyrmions
Changxu Liu (*University of Exeter*);

00:00 Invited Active Metasurface Devices for Terahertz Field Modulation
Yan Zhang (*Capital Normal University*); *Guocui Wang* (*Capital Normal University*); *Xinke Wang* (*Capital Normal University*);

00:00 Invited Moiré-driven Electromagnetic Responses and Negative Refraction in Hyperbolic Metasurfaces
Chunmei Ouyang (*Tianjin University*); *Yi Liu* (*Tianjin University*);

00:00 Invited Piezoelectric MEMS-empowered Dynamic Metasurfaces
Fei Ding (*University of Southern Denmark*);

00:00 Observation of Photonic Quantum Spin Hall Effect in Hyperbolic Metasurfaces
Yuqian Wang (*Tongji University*); *Zhiwei Guo* (*Tongji University*); *Hong Chen* (*Tongji University*);

00:00 Efficient and Stable Triple-resonance Wireless Power Transfer with the Aid of Bound State in the Continuum
Haiyan Zhang (*Tongji University*); *Zhiwei Guo* (*Tongji University*); *Yuguang Chen* (*Tongji University*); *Yunhui Li* (*Tongji University*); *Hong Chen* (*Tongji University*);

00:00 Tunable Focusing of Dyakonov Surface Waves Based on Hyperbolic Metamaterial Film
Xiaoyu Xiong (*Tsinghua University*); *Kaiyuan Zhang* (*Tsinghua University*); *Junming Zhang* (*Tsinghua University*); *Yongzheng Wen* (*Tsinghua University*); *Ji Zhou* (*Tsinghua University*);

Session 2A7
Physical and Topological Properties of Waves in Complex Media 1

Tuesday AM, July 4, 2023

Room Terrace 2B

Organized by Igor Tsukerman, Andrei V. Lavrinenko

Chaired by Igor Tsukerman, Andrei V. Lavrinenko

8:00 Invited Plasmonic and Dielectric Resonances of Homogeneous Objects: From Quasistatic Approximations to the Full-wave Regime
Carlo Forestiere (*Universita degli Studi di Napoli Federico II*); *G. Miano* (*Universita degli Studi di Napoli Federico II*); *Guglielmo Rubinacci* (*Universita degli Studi di Napoli Federico II*);

8:20 Invited Light Energy Trapping in Dielectric Nanoparticle Structures and Metasurfaces via Multipole Coupling
Andrey B. Evlyukhin (*Leibniz University Hannover*); *Vladimir R. Tuz* (*Jilin University*);

8:40 Cross-polarization Effects in Metasurfaces Based on Silicon Nanocuboids with a Defect
Alexei V. Prokhorov (*Moscow Institute of Physics and Technology*); *Alexander V. Shesterikov* (*Vladimir State University named after A. G. and N. G. Stoletovs*); *Mikhail Yu. Gubin* (*Vladimir State University named after A. G. and N. G. Stoletovs*); *Sergey M. Novikov* (*Moscow Institute of Physics and Technology*); *Roman V. Kirtaev* (*Moscow Institute of Physics and Technology*); *Aleksey V. Arsenin* (*Moscow Institute of Physics and Technology*); *Valentyn S. Volkov* (*Moscow Institute of Physics and Technology*);

8:55 Experimental Investigation of Quasi-trapped Modes in Dielectric Metasurfaces Designed on the Basis of Broken Symmetry Nanoparticles
Sergey M. Novikov (*Moscow Institute of Physics and Technology*); *Alexei V. Prokhorov* (*Moscow Institute of Physics and Technology*); *Mikhail Yu. Gubin* (*Alexandr and Nikolai Stoletovs Vladimir State University*); *Roman V. Kirtaev* (*Moscow Institute of Physics and Technology*); *Elena S. Zhukova* (*Moscow Institute of Physics and Technology*); *Alexander V. Shesterikov* (*Alexandr and Nikolai Stoletovs Vladimir State University*); *Aleksey V. Arsenin* (*Moscow Institute of Physics and Technology*); *Valentyn S. Volkov* (*Moscow Institute of Physics and Technology*);

9:10 Topological and Dynamical Properties of Classical Waves
Keynote
Konstantin Y. Bliokh (*RIKEN*);

9:40 Advanced Plasmonic Material Models and the Computation of Atom-surface Interactions
Invited
Kurt Busch (*Max-Born Institute for Nonlinear Optics and Short Pulse Spectroscopy*);

10:30 Multiphysics Analysis of Composite Metasurfaces Based on Phase Change Materials
Invited
Dmitry N. Chigrin (*DWI Leibniz Institute for Interactive Materials*);

10:50 Longitudinal Field Tailoring for Interactions of Complex Beams with Anisotropic Metamaterials
Vittorio Aita (*King's College London*); *Diane J. Roth* (*King's College London*); *Alexey V. Krasavin* (*King's College London*); *Anastasiia Zaleska* (*King's College London*); *Francisco J. Rodríguez Fortuño* (*King's College London*); *Anatoly V. Zayats* (*King's College London*);

11:05 Propagation of Generalised Higher Order Radial Beams through Anisotropic Metamaterials
Vittorio Aita (*King's College London*); *Anatoly V. Zayats* (*King's College London*);

11:20 Localization Properties of 1D Random Fibonacci Multilayer
P. Falcone (*University of Campania "Luigi Vanvitelli"*); *Luigi Moretti* (*University of Campania "Luigi Vanvitelli"*);

11:35 Bulk-Edge Correspondence and Monotonicity of Bloch Impedance
Igor Tsukerman (*The University of Akron*); *Vadim A. Markel* (*University of Pennsylvania*);

11:50 Design of Reflectionless Photonic Structures with Randomly Distributed Nanoparticles
Cedric Blanchard (*CNRS*); *Timothée Guerra* (*CNRS*); *Jean-Paul Hugonin* (*CNRS, Institut d'Optique Graduate School*); *Olivier Rozenbaum* (*CNRS*);

Session 2A8
Quantum Cryptography and Quantum Networks

Tuesday AM, July 4, 2023

Room South Room 220

Organized by Qin Wang

Chaired by Qin Wang

00:00 Integrated Quantum Photonics for Quantum Network
Invited
Xiaosong Ma (*Nanjing University*);

00:00 Long Distance Quantum Key Distribution with Vibration Sensing
Invited
Jiu-Peng Chen (*University of Science and Technology of China*); *Chi Zhang* (*University of Science and Technology of China*); *Yang Liu* (*Jinan Institute of Quantum Technology*); *Cong Jiang* (*Jinan Institute of Quantum Technology*); *Dong-Feng Zhao* (*University of Science and Technology of China*); *Weijun Zhang* (*Shanghai Institute of Microsystems, CAS*); *Fa-Xi Chen* (*Jinan Institute of Quantum Technology*); *Hao Li* (*Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences*); *Lixing You* (*Shanghai Institute of Microsystem and Information Technology (SIMIT), Chinese Academy of Sciences*); *Zhen Wang* (*Shanghai Institute of Microsystem and Information Technology (SIMIT), Chinese Academy of Sciences*); *Yang Chen* (*University of Science and Technology of China*); *Xiang-Bin Wang* (*Tsinghua University*); *Qiang Zhang* (*University of Science and Technology of China*); *Jian-Wei Pan* (*University of Science and Technology of China*);

00:00 The Implement of Reference-frame-independent Quantum Key Distribution
Invited
Shihai Sun (*Sun Yat-Sen University*);

00:00 Quantum Key Distribution with Integrated Silicon Photonics
Invited
Kejin Wei (*Guangxi University*);

00:00 Networking of Measurement-Device-Independent Quantum Key Distribution
Guan-Jie Fan-Yuan (*University of Science and Technology of China*); *Feng-Yu Lu* (*University of Science and Technology of China*); *Shuang Wang* (*University of Science and Technology of China*); *Zhen Qiang Yin* (*University of Science and Technology of China*); *De-Yong He* (*University of Science and Technology of China*); *Wei Chen* (*University of Science and Technology of China*); *Zheng Zhou* (*University of Science and Technology of China*); *Guang-Can Guo* (*University of Science and Technology of China, CAS*); *Zhengfu Han* (*University of Science and Technology of China*);

00:00 Long-distance Measurement-device-independent Quantum Cryptography
Jingyang Liu (*Nanjing University of Posts and Telecommunications*); *Xiao Ma* (*Nanjing University of Posts and Telecommunications*); *Hua-Jian Ding* (*Nanjing University of Posts and Telecommunications*); *Chun-Hui Zhang* (*Nanjing University of Posts and Telecommunications*); *Xing-Yu Zhou* (*Nanjing University of Posts and Telecommunications*); *Qin Wang* (*Nanjing University of Posts and Telecommunications*);

00:00 An Access Network for Continuous-variable Quantum Key Distribution Based on Frequency Division Multiplexing
Tao Wang (*Shanghai Jiao Tong University*); *Yuehan Xu* (*Shanghai Jiao Tong University*); *Lang Li* (*Shanghai Jiao Tong University*); *Peng Huang* (*Shanghai Jiao Tong University*); *Guihua Zeng* (*Shanghai Jiao Tong University*);

00:00 Quantum Photonics Enhances Continuous Variable Quantum Key Distribution
Lang Li (*Shanghai Jiao Tong University*); *Tao Wang* (*Shanghai Jiao Tong University*); *Peng Huang* (*Shanghai Jiao Tong University*); *Guihua Zeng* (*Shanghai Jiao Tong University*);

00:00 Optimizing the Trade off between Precision and Probability in Post-selection Estimation of the Coupling of Trapped Ion System
Ya-Fei Yu (*South China Normal University*); *He-Fei Li* (*South China Normal University*); *Han-Tong Zou* (*South China Normal University*); *Jian Deng* (*South China Normal University*); *Tian-Ming Zhao* (*South China Normal University*); *Ping Zou* (*South China Normal University*); *Jin-Dong Wang* (*South China Normal University*);

00:00 Practical Memory-assisted Measurement-device-independent Quantum Key Distribution
Ming-Shuo Sun (*Nanjing University of Posts and Telecommunications*); *Qin Wang* (*Nanjing University of Posts and Telecommunications*);

00:00 Prime Comb Lasing in a Fiber Ring at Low Temperatures
Eyal Buks (*Technion-Israel Institute of Technology*);

00:00 An Semi-quantum Secret Sharing Scheme Based on Hyperentangled Bell State
Yuan Tian (*Xi'an University of Architecture and Technology*); *Gen Qing Bian* (*Xi'an University of Architecture and Technology*); *Jian Li* (*Beijing University of Posts and Telecommunications*);

00:00 Multipartite Entanglement Distribution Using Separable States
Hannah McAleese (*Queen's University Belfast*); *Alessandro Laneve* (*Sapienza Universita di Roma*); *Mauro Paternostro* (*Queen's University Belfast*);

Session 2A9a
Multiphysics Modeling in Electromagnetics

Tuesday AM, July 4, 2023
Room South Room 221
Organized by Ming Fang, Wenchao Chen
Chaired by Ming Fang, Wenchao Chen

00:00 Coherent Perfect Absorption and Maximum Information States in Complex Environments
Ruifeng Li (*Zhejiang University — UIUC Institute*); *Da Li* (*Zhejiang University — UIUC Institute*); *Er Ping Li* (*Zhejiang University — UIUC Institute*);

00:00 Multiphysics Analysis of High-power Vacuum Feedthrough for DTT ICRH System
Lorenzo Valletti (*University of Rome "Tor Vergata"*); *Gian Luca Ravera* (*ENEA*); *Stefano Fantauzzi* (*University of Rome "Tor Vergata"*); *Silvio Ceccuzzi* (*"Roma Tre" University*); *Francesco Mirizzi* (*CREATE Consortium*); *Sofia Bertolami* (*University of Roma "Tor Vergata"*); *Franco Di Paolo* (*University of Roma "Tor Vergata"*);

00:00 Physics-based Optimization of Tapered Slot Waveguides for Sub-relativistic Electron Acceleration
Andrea Locatelli (*Università degli Studi di Brescia*); *R. Palmeri* (*Istituto per il Rilevamento Elettromagnetico dell'Ambiente, Consiglio Nazionale delle Ricerche*); *G. S. Mauro* (*Istituto Nazionale di Fisica Nucleare — Laboratori Nazionali del Sud*); *D. Rocco* (*Università degli Studi di Brescia*); *N. Salerno* (*Università degli Studi di Catania*); *G. Torrisi* (*Istituto Nazionale di Fisica Nucleare — Laboratori Nazionali del Sud*); *G. Sorbello* (*Università degli Studi di Catania*);

00:00 Modeling Mesoscopic Electrodynamics in Nanosphere-on-mirror (NSoM) Construct
Xuezhi Zheng (*KU Leuven*);

00:00 Intelligent Multiphysics Modeling of High-power Microwave Devices
Jianwei You (*Southeast University*); *Jing Ze Li* (*Southeast University*); *Zhong Kuan Tan* (*Southeast University*); *Qi Cheng Chen* (*Southeast University*); *Zi Xin Hu* (*Southeast University*); *Xiong Wei Wu* (*Southeast University*); *Zhuo Chen Lou* (*Southeast University*); *Long Chen* (*Southeast University*); *Jun Ming Hou* (*Southeast University*); *Jianan Zhang* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

00:00 Hybrid Maxwell-Schrödinger Modeling of a Fluxonium Qubit Capacitively Coupled to a Transmission Line Network
Thomas E. Roth (*Purdue University*);

00:00 Multiphysics Design of High-power Microwave Vacuum Window for Vircator
Lorenzo Valletti (*University of Rome "Tor Vergata"*); *Fabrizio Marrese* (*University of Rome "Tor Vergata"*); *Sofia Bertolami* (*University of Roma "Tor Vergata"*); *Stefano Fantauzzi* (*University of Rome "Tor Vergata"*); *Franco Di Paolo* (*University of Roma "Tor Vergata"*);

00:00 Multiphysics Computation for Self-heating Induced Thermal Stress Effects on Quantum Transport in p-type Ultrathin Body-FinFET
Wenchao Chen (*Zhejiang University*); *Huali Duan* (*Zhejiang University*); *Er Ping Li* (*Zhejiang University — UIUC Institute*);

00:00 Study on the Mechanism of Strong Electromagnetic Pulse Acting on Solar Cells Based on Optical-electrical-thermal Modeling
Tao Liu (*Xidian University*); *Genrui Hua* (*Laser Fusion Research Center*); *Shiyan Jiao* (*Xidian University*); *Xiao-Wei Shi* (*Xidian University*); *Le Xu* (*Xidian University*);

Session 2A9b
Microwave Vision and AI in Electromagnetics

Tuesday AM, July 4, 2023

Room South Room 221

Organized by Feng Xu

Chaired by Feng Xu

00:00 A Status Recognition Method Based on Scattering Center Matching
J. Chen (*Nanjing University of Science and Technology*); *Shengkai Sun* (*Nanjing University of Science and Technology*); *Zi He* (*Nanjing University of Science and Technology*); *Da-Zhi Ding* (*Nanjing University of Science and Technology*); *J. W. Lu* (*National Key Laboratory of Scattering and Radiation*); *J. Zhang* (*Nanjing University of Science and Technology*);

00:00 Physics-informed Supervised Residual Learning for Electromagnetic Modeling
Tao Shan (*Tsinghua University*); *Maokun Li* (*Tsinghua University*); *Fan Yang* (*Tsinghua University*); *Shenheng Xu* (*Tsinghua University*);

00:00 Three-dimensional Reconstruction of Space Targets from Multi-view ISAR Images Using Differentiable Voxel Reconstruction Network
Bo Long (*Fudan University*); *Zhi-Chao Wang* (*Fudan University*); *Jia-Wei Tan* (*Fudan University*); *Feng Wang* (*Fudan University*);

00:00 Blind Source Separation of Adjacent Group Targets Based on Coupling Scattering Center Removal
X. Y. Sun (*Nanjing University of Science and Technology*); *R. Wen* (*Nanjing University of Science and Technology*); *J. W. Lu* (*National Key Laboratory of Scattering and Radiation*); *S. X. Sun* (*Nanjing University of Science and Technology*); *Zi He* (*Nanjing University of Science and Technology*); *Da-Zhi Ding* (*Nanjing University of Science and Technology*);

00:00 Recent Progress in Artificial Intelligence Computational Electromagnetics
Xiaohan Xue (*University of Electronic Science and Technology of China*); *Ming Jiang* (*University of Electronic Science and Technology of China*); *Yongpin Chen* (*University of Electronic Science and Technology of China*); *Sheng Sun* (*University of Electronic Science and Technology of China*); *Jun Hu* (*University of Electronic Science and Technology of China*);

Session 2A10a
Recent Progresses in Hardware Technologies, Architectures, and Signal Processing for Automotive Sensors

Tuesday AM, July 4, 2023

Room South Room 222

Organized by Ivan Russo, Raffaele Solimene

Chaired by Ivan Russo, Raffaele Solimene

00:00 Edge-fed Microstrip Spline Antenna Design for Automotive Radar
Lorenzo Poli (*University of Trento*); *Marco Salucci* (*University of Trento*); *Pietro Rosatti* (*University of Trento*); *Paolo Rocca* (*University of Trento*); *Andrea Massa* (*University of Trento*);

00:00 **±45°** Linearly Polarized PCB Antennas for Polarimetric Automotive Radar
Alessandro Tinti (*Huawei Technologies Duesseldorf*); *Simon Tejero Alfageme* (*Huawei Technologies Duesseldorf*); *Sergio Duque Biarge* (*Huawei Technologies Duesseldorf*); *Nils Pohl* (*Ruhr-University of Bochum*);

00:00 Angle of Arrival Estimation through Low-profile Patch Antenna Array and Short Data Snapshot Acquisition
O. Crisafulli (*University "Mediterranea" of Reggio Calabria*); *N. I. Piazzese* (*STMicroelectronics*); *M. Sardo* (*STMicroelectronics*); *S. C. Pavone* (*University of Catania*); *G. Sorbello* (*University of Catania*); *Loreto Di Donato* (*University of Catania*);

00:00 Automotive MIMO-SAR Imaging from Non-continuous Radar Acquisitions
Mattia Giovanni Polisano (*Politecnico di Milano*); *Marco Manzoni* (*Politecnico di Milano*); *Stefano Tebaldini* (*Politecnico di Milano*); *Andrea Virgilio Monti-Guarnieri* (*Politecnico di Milano*); *Claudio Maria Prati* (*Politecnico di Milano*); *Ivan Russo* (*Huawei Technologies s.r.l.*);

00:00 Computationally Efficient MUSIC Algorithm for ADAS Radar Processing
Maria Antonia Maisto (*Universita degli Studi della Campania "Luigi Vanvitelli"*); *Angela Dell'Aversano* (*Seconda Università di Napoli*); *Ivan Russo* (*Huawei Technologies Italia S.r.l.*); *Adriana Brancaccio* (*Seconda Università di Napoli*); *Raffaele Solimene* (*Universita degli Studi della Campania "Luigi Vanvitelli"*);

00:00 High Accurate Cast Shadow Detection of Moving Vehicles in Low Illumination Environment
Kalpesh Jadav (*Parul University*); *Vishal Parsotambhai Sorathiya* (*Parul University*); *Vipul Vekariya* (*Parul University*);

00:00 DOA Estimation in Automotive Applications: Compressed vs Subspace Projection Methods
Maria Antonia Maisto (*Universita degli Studi della Campania "Luigi Vanvitelli"*); *Angela Dell'Aversano* (*Universita degli Studi della Campania "Luigi Vanvitelli"*); *Raffaele Solimene* (*Universita degli Studi della Campania "Luigi Vanvitelli"*);

00:00 Convolutional Sparse Coding and Dictionary Learning for Lidar Depth Completion in Automotive Scenarios
Fabio Giovanneschi (*Fraunhofer FHR*); *Avinash Nittur Ramesh* (*Fraunhofer FHR*); *Maria Antonia Gonzalez-Huici* (*Fraunhofer FHR*); *Erdem Altuntac* (*Fraunhofer FHR*);

Session 2A10b
Information Retrieval from Microwave Remote Sensing Data for Earth Observation

Tuesday AM, July 4, 2023

Room South Room 222

Organized by Gerardo Di Martino, Alessio Di Simone

Chaired by Gerardo Di Martino, Alessio Di Simone

00:00 Fractal Surface Model for the Evaluation of Scattering from the Sea along the Specular Direction
Gerardo Di Martino (*Università di Napoli Federico II*); *Alessio Di Simone* (*University of Naples Federico II*); *Antonio Iodice* (*University of Naples "Federico II"*); *Daniele Riccio* (*University of Naples Federico II*); *Giuseppe Ruello* (*Universita di Napoli "Federico II"*);

00:00 Sea Ice Types and Sea Water Distinction in the Arctic Using CFOSAT SWIM Data
Ran Yan (*Qingdao University*); *Xi Zhang* (*First Institute of Oceanography, Ministry of Natural Resources*); *Ying Xu* (*National Satellite Ocean Application Service*); *Ping Chen* (*Huazhong University of Science and Technology*); *Ning Wang* (*North China Sea Marine Forecasting Center of State Oceanic Administration*); *Luchuan Bi* (*Qingdao University*); *Haipeng Guan* (*Qingdao University*); *Yunbo Liu* (*Qingdao University*); *Fuxi Duan* (*Qingdao University*); *Qiwei Xing* (*Qingdao University*); *Jun-Cheng Zhang* (*Qingdao University*); *Meijie Liu* (*Qingdao University*);

00:00 An Interference Scattering Model for Nonzero INSAR Phase Closure for Remote Sensing of Soil and Vegetation Canopy Water Content
Howard A. Zebker (*Stanford University*); *Elizabeth Wig* (*Stanford University*);

00:00 Scattering-based Despeckling of Multi-frequency SAR Data
Alessio Di Simone (*University of Naples Federico II*); *Gerardo Di Martino* (*Università di Napoli Federico II*); *Antonio Iodice* (*University of Naples "Federico II"*); *Daniele Riccio* (*University of Naples "Federico II"*); *Giuseppe Ruello* (*Universita di Napoli "Federico II"*);

00:00 Backscattering Coefficient Reconstruction from SAR
Invited Images
Pasquale Imperatore (*Institute for Electromagnetic Sensing of the Environment (IREA), National Research Council (CNR)*);

Session 2A11a
Oral Presentations for Best Student Paper Awards — SC3: Optics and Photonics

Tuesday AM, July 4, 2023

Room South Room 223

Chaired by Sailing He, Dangyuan Lei, Stanislav Zvanovec

Encryption and Eavesdropping in Underwater Wireless Optical Communication
Amir Handelman (*Holon Institute of Technology*);

Session 2A11b
Oral Presentations for Best Student Paper Awards — SC5: Remote Sensing, Inverse Problems, Imaging, Radar and Sensing

Tuesday AM, July 4, 2023

Room South Room 223

Chaired by Kun-Shan Chen, Saibun Tjuatja, Hong Tat Ewe

Encryption and Eavesdropping in Underwater Wireless Optical Communication
Amir Handelman (*Holon Institute of Technology*);

Session 2A12a
Microwave Physical, Chemical and Biological Sensors and Measurement

Tuesday AM, July 4, 2023

Room South Room 224

Organized by Yunjing Zhang

Chaired by Yunjing Zhang

00:00 A Van-Atta UWB Cross-polar Chipless Tag to Be Used as a Sensor
Alessandro Di Carlofelice (*University of L'Aquila*); *Emidio Di Giampaolo* (*Universita degli Studi dell'Aquila*); *Piero Tognolatti* (*University of L'Aquila*);

00:00 Concentration Measurement of Aqueous Solutions Using Capacitive Coupling between Resonators
Ying Tian (*Soochow University*); *Yunjing Zhang* (*Soochow University*); *Lingfeng Li* (*Soochow University*); *Xingli He* (*Soochow University*); *Peng Li* (*Soochow University*);

00:00 An Empiric Mathematical Models to Predict Electrical Properties of Natural Juniper Wood Samples by Using Non-distractive Methods
Sinan Saeed Jasim Alsaadi (*Akdeniz University*); *Atalay Kocakusak* (*Akdeniz University*); *Selcuk Helhel* (*Akdeniz University*);

00:00 Broadband Planar Transmission Line Characterization with Applications of Substrate Dielectric Parameter Extractions
Chien-Chang Huang (*Yuan Ze University*);

00:00 Wireless Wearable Devices for Passive Monitoring Pressure Information
Yang Li (*Shandong University*); *Yunjian Guo* (*University of Jinan*); *Song Gao* (*University of Jinan*); *Wenjing Yue* (*University of Jinan*); *Hao Li* (*University of Jinan*);

00:00 An Ultra-highly Sensitive Microwave Glucose Sensor Based on Coupled Resonators
Yunjing Zhang (*Soochow University*);

00:00 Inkjet-printed Split Ring Resonators for Microwave Sensor Applications on Flexible Kapton Substrate
Matthias Paul (*University of Applied Sciences Vienna*); *Rudolf Oberpertinger* (*University of Applied Sciences Vienna*); *Christoph Mehofer* (*University of Applied Sciences Vienna*); *Markus Wellenzohn* (*FH Campus WIEN*);

00:00 A Microwave Holographic Imaging Method by Photo-induced Plasma Scanning
Ning Leng (*Beihang University*); *Liao Ma* (*Beihang University*); *Ou Pan* (*Beihang University*); *Ming Bai* (*Beihang University*);

Session 2A12b
RF Filters

Tuesday AM, July 4, 2023

Room South Room 224

Organized by Thottam S. Kalkur

Chaired by Thottam S. Kalkur

00:00 Tunable Combline Filter with Continuous Control of Central Frequency and Bandwidth
Mohammad Hosuba (*University of Colorado, Colorado Springs*); *Thottam S. Kalkur* (*University of Colorado, Colorado Springs*);

00:00 High Speed Line Driver with Tunable Stub Using Tunable Ferroelectric Capacitors
Aarushi Gupta (*University of Colorado Colorado Springs*); *Dubari Borah* (*University of Colorado Colorado Springs*); *Thottam S. Kalkur* (*University of Colorado Colorado Springs*);

00:00 Design Method for MMW LC Tunable Microstrip Periodic Filters
Abdolreza Divsalar (*University of Essex*); *Dariush Mirshekar-Syahkal* (*University of Essex*);

00:00 X-band Microwave Filter with Low Multipactor Susceptibility
Andreas Neuber (*Texas Tech University*); *Dawson Wright* (*Texas Tech University*); *Austin Gregory* (*Texas Tech University*); *Harrison Spencer* (*Texas Tech University*); *John J. Mankowski* (*Texas Tech University*); *James Claude Dickens* (*Texas Tech University*); *Jacob Stephens* (*Texas Tech University*);

00:00 Invited Design and Realisation Aspects of SWaP Optimised Multi Function Module Based Switch Filter Banks
Saripaka Lalitha (*Hyderabad Central University*); *Thumiki Abhilash* (*Hyderabad Central University*); *Kanakkappillavila Chinnayya James Raju* (*Hyderabad Central University*);

Session 2A13
Poster Session 2

Tuesday AM, July 4, 2023

14:00 PM - 18:00 PM

Room Forum Hall Foyer 1

00:00 Designing a Robust Model of a Linear Motion-driven Harvester
Jiri Zukal (*Brno University of Technology*); *Zoltán Szabó* (*Brno University of Technology*); *Roman Pernica* (*Brno University of Technology*); *Radim Kadlec* (*Brno University of Technology*); *Jarmila Dědková* (*Brno University of Technology*); *Miloš Klíma* (*Brno University of Technology*); *Pavel Fiala* (*Brno University of Technology*);

00:00 Measurement of Magnetic Field Generated by Wireless Chargers
Rafał Przesmycki (*Military University of Technology*); *Marek Bugaj* (*Military University of Technology*);

00:00 A Nested Approach for Determination of Extracted Parameters for Dispersive FDTD Analyses at Low Frequency Region
Jerdvisanop Chakarothai (*National Institute of Information and Communication Technology*); *Katsumi Fujii* (*National Institute of Information and Communications Technology*); *Jun Shibayama* (*Hosei University*); *Yukihisa Suzuki* (*Tokyo Metropolitan University*);

00:00 Analysis and Design of a Tapered Stripline with a Tapered Slot for Stripline Transitions
Yu-Xu Liu (*Shanghai Jiao Tong University*); *Xiao-Chun Li* (*Shanghai Jiaotong University*); *Xin He* (*Shanghai Jiao Tong University*); *Jun-Fa Mao* (*Shanghai Jiao Tong University*);

00:00 Antenna Gain Measurement Using Band Edge Effect Mitigation Method
Young-Ji Yun (*Korea Testing Laboratory*); *Cheol-Min Choi* (*Korea Testing Laboratory*); *Jae-Suk Lee* (*Korea Testing Laboratory*); *Sung-Sik Wang* (*Hanyang Cyber University*);

00:00 Charge form Factors of the ^{20}Ne and ^{28}Si Nuclei in the α-cluster Model with Dispersion
Yu. A. Berezhnoy (*Karazin Kharkov National University*); *Vadim P. Mikhailyuk* (*Institute for Nuclear Research*); *V. V. Pilipenko* (*National Science Center "Kharkov Institute of Physics and Technology"*);

00:00 A Novel Simulation Method for Analyzing Diode Electrical Characteristics Based on Neural Networks
Tao Liu (*Xidian University*); *Le Xu* (*Xidian University*); *Yao He* (*Xidian University*); *Han Wu* (*Xidian University*); *Yong Yang* (*Beijing Institute of Spacecraft Environment Engineering*); *Nankai Wu* (*Beijing Institute of Spacecraft Environment Engineering*); *Xiaoning Yang* (*Beijing Institute of Spacecraft Environment Engineering*); *Xiao-Wei Shi* (*Xidian University*); *Feng Wei* (*Xidian University*);

00:00 A MLP-based HF Modeling Method for Star-connected Induction Motors
Zhenyu Zhao (*Nanyang Technological University*); *Kye Yak See* (*Nanyang Technological University*);

00:00 The Rogue Wave Clusters of the Nonlinear Schrödinger Equation Composed of the Kuznetsov-Ma Solitons
Sarah Alwashahi (*University of Belgrade*); *Najdan B. Aleksić* (*Texas A&M University at Qatar*); *Milivoj R. Belic* (*Texas A&M University at Qatar*); *Stanko N. Nikolic* (*Texas A&M University at Qatar*);

00:00 Observation of Dirac Hierarchy in Three-dimensional Acoustic Topological Insulators
Linyun Yang (*Southern University of Science and Technology*); *Zhen Gao* (*Southern University of Science and Technology*);

00:00 LC Circuit Utilization as Impedance Matching for Spiral Resonator-based Planar Antenna
Mochamad Yunus (*University of Pakuan*); *Agustini Rodiah Mahdi* (*University of Pakuan*); *Evyta Wismiana* (*University of Pakuan*); *Yamato Tan* (*University of Pakuan*); *Muhammad Farhan Maulana* (*Institut Teknologi Bandung*); *Achmad Munir* (*Bandung Institute of Technology*);

00:00 Freeform Optimization of Metamaterial Microwave Absorber Using the Adjoint Method
Hyeonjin Park (*Korea Advanced Institute of Science and Technology (KAIST)*); *Jonghwa Shin* (*Korea Advanced Institute of Science and Technology (KAIST)*);

00:00 Simultaneous Emergence of Odd-even Order Eigenmodes in Plasmonic Metasurfaces
Soumyajyoti Mallick (*Mahindra University*); *Nityananda Acharyya* (*Mahindra University*); *Dibakar Roy Chowdhury* (*Mahindra University*);

00:00 A Magnetically Tunable Metasurface Based on Ferrite
Chengpeng Liang (*Nanjing University*); *Xiao Zhang* (*Nanjing University*); *Li Liang* (*Nanjing University*); *Fei Fei Li* (*China University of Mining and Technology*); *Yin Poo* (*Nanjing University*);

00:00 Thickness Reduction of an UHF-RFID Reader Antenna (860 MHz–960 MHz) Using an AMC Reflector
Safia Chenaoui (*University of Blida 1*); *Lila Mouffok* (*Saad Dahlad University*); *Sami Hebib* (*University of Blida 1*);

00:00 Two-dimensional Simulation of a Large-size Magnetized Inductively Coupled Plasma Generator
Fan Lei (*Shaanxi University of Science and Technology*); *Yan Xue* (*Shaanxi University of Science and Technology*); *Chaoyang Zhang* (*Shaanxi University of Science and Technology*); *Hongzhi Wu* (*Shaanxi University of Science and Technology*);

00:00 Analysis of FBG Based Sensing for Infrastructure Structural Health Monitoring Applications
Ugis Senkans (*Riga Technical University*); *Janis Braunfelds* (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*); *Jurgis Porins* (*Riga Technical University*);

00:00 Multilevel Beam Shapers for Optical Beams Generation with Curved Trajectories
Rebeca Tudor (*IMT*); *Viorel Avramescu* (*IMT*);

00:00 Experimental Characterization of Signal Gain Evolution in Cladding-pumped Doped Fiber Amplifier
Kaspars Zakis (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*); *Lilita Gegere* (*Riga Technical University*); *Mareks Parfjonovs* (*Riga Technical University*); *Dmitrijs Prigunovs* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*); *Andis Supe* (*Riga Technical University*);

00:00 Performance Study of Channel Pre-equalisation in Mm-wave ARoF System for 5G and B5G Networks
Armands Ostrovskis (*Riga Technical University*); *Kristaps Rubuls* (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*); *Laura Skladova* (*Riga Technical University*); *Inna Kurbatska* (*Riga Technical University*); *Oskars Ozolins* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*);

00:00 The Approach for Simulation of the Noise-related Characteristics for Radio-over-fiber Transmission Systems
Inna Kurbatska (*Riga Technical University*); *Armands Ostrovskis* (*Riga Technical University*); *Laura Skladova* (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Ultra-fast Laser Written Multifunctional Waveguide Devices Enabled by Cross-sectional Control
Ze-Zheng Li (*Jilin University*); *Zhen-Nan Tian* (*Jilin University*); *Qi-Dai Chen* (*Jilin University*);

00:00 Dual-comb Spectroscopy of Angular Surface-plasmon-resonance Spectrum Using Angle-converting Optical Frequency Comb
Yuya Kodama (*Tokushima University*); *Hidenori Koresawa* (*Tokushima University*); *Eiji Hase* (*Tokushima University*); *Yu Tokizane* (*Tokushima University*); *Takeo Minamikawa* (*Tokushima University*); *Takeshi Yasui* (*Tokushima University*);

00:00 Binomial Data Compression Method without Loss of Information
Svitlana Matsenko (*Riga Technical University*); *Oleksiy Borysenko* (*Sumy State University*); *Toms Salgals* (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*); *Jurgis Porins* (*Riga Technical University*);

00:00 Enhancing Hole Injection by Electric Dipole Layer for Efficient and Stable PeLEDs
Xiangtian Xiao (*The University of Hong Kong*); *Hong Lin* (*The University of Hong Kong*); *Dongyu Li* (*The University of Hong Kong*); *Kai Wang* (*Southern University of Science and Technology*); *Wallace C. H. Choy* (*The University of Hong Kong*);

00:00 Nonreciprocal Solar Thermophotovoltaics
Invited
Bo Zhao (*University of Houston*);

00:00 2D MoS_2 Response to Hydrogen and Nitrogen Plasma Exposure
D. E. Melezhenko (*Lomonosov Moscow State University*); *D. V. Lopaev* (*Lomonosov Moscow State University*); *A. I. Zotovich* (*Lomonosov Moscow State University*); *S. A. Khlebnikov* (*Lomonosov Moscow State University*); *Yuri A. Mankelevich* (*Lomonosov Moscow State University*); *Alexander Solovykh* (*Lomonosov Moscow State University*); *A. A. Sycheva* (*Lomonosov Moscow State University*); *Ekaterina N. Voronina* (*Lomonosov Moscow State University*);

00:00 Toward Programmable Fibers Using Liquid Core Materials
Mario Chemnitz (*Leibniz Institute of Photonic Technology*);

00:00 Enhancing the Color Stability and Luminous Efficiency of Organic Light Emitting Diodes with Various Device Architectures
Shui-Hsiang Su (*I-Shou University*); *Yu-Cheng Lin* (*I-Shou University*);

00:00 Development of Representing Algorithms for Internet Broadband Geographically Based Information Modules Interaction
Elmars Lipenbergs (*Riga Technical University*); *Inga Vagale* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Dual-band Liner-to-Circular Polarization Converter for Ku & Ka-band Satellite Communications
Yi-Chen Lo (*Yuan Ze University*); *Cheng-Nan Chiu* (*Yuan Ze University*); *Chiu-Kuo Chen* (*Ministry of Economic Affairs*); *Ye-Hong Chen* (*Ministry of Economic Affairs*);

00:00 The Evaluation of the Internet Access Service QoS Measurement Equipment Placement Conditions Based on Signal Parameters Values
Alina Stafecka (*Riga Technical University*); *Andrejs Lizunovs* (*Riga Technical University*); *Aleksandrs Olinš* (*Riga Technical University*); *Mihails Rjumšins* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 A Triangular Dual-band Patch Antenna with Harmonic Frequencies Suppression
Rezki Benedikto Renwarin (*Institut Teknologi Bandung*); *Agus Dwi Prasetyo* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Investigation on Radiation Characteristics of Slotted SIW Antenna with Non-uiform Slots in Array Configuration
Fadjrianah (*Institut Teknologi Bandung*); *Agus Dwi Prasetyo* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Ku-band 35 W Power Amplifier MMIC Using 0.15 µm GaN HEMT Techology
Younsub Noh (*ETRI*); *Hyun Wook Jung* (*ETRI*);

00:00 Noise Reduction Methods for Resonant Sensor Impedance Phase Measurement
Josef Pokorný (*Brno University of Technology*); *Zdeněk Roubal* (*Brno University of Technology*); *Zoltán Szabó* (*Brno University of Technology*); *Pavel Fiala* (*Brno University of Technology*); *Lukáš Zdražil* (*Brno University of Technology*); *Jiří Wiesner* (*Brno University of Technology*);

00:00 A Pair of Rectangular Slots for Bandwidth Improvement of Microstrip Antenna Fed by Proximity Coupling
Mohammad Ridwan Effendi (*Institut Teknologi Bandung*); *Rheyuniarto Sahlendar Asthan* (*Institut Teknologi Sumatera*); *Fadjrianah* (*Institut Teknologi Bandung*); *Rama Rahardi* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Low Power Consumption Beamforming System for Multi-beam Generation in 5G/6G Communications
Seung-Won Keum (*Korea Advanced Institute of Science and Technology*); *Ju-Yong Lee* (*Korea Advanced Institute of Science and Technology*); *Eun-Jin Kim* (*Korea Advanced Institute of Science and Technology*);

00:00 A Gravity-controlled Circularly-polarized Reconfigurable Antenna Based on Liquid Metal Coplanar Waveguide
Qi Ying Liang (*Tongji University*); *Li Zhang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 5G Indoor Micro-BTS Antenna Design Using Quad-MIMO MED Antennas
Keivan Kaboutari (*University of Aveiro*); *Pedro Pinho* (*University of Aveiro*); *Arnaldo S. R. Oliveira* (*University of Aveiro*);

00:00 Preliminary Results About the Number of Degrees of Freedom of 3D Surface Scattering Objects
Ehsan Akbari Sekehravani (*Universita degli studi della Campania Luigi Vanvitelli*); *Giovanni Leone* (*Universita degli studi della Campania Luigi Vanvitelli*);

00:00 A 24–44 GHz Up-conversion Mixer with LO Boosting Linearization Using 65-nm CMOS Technology
Jeng-Han Tsai (*National Taiwan Normal University*); *Y.-H. Tu* (*National Taiwan Normal University*); *W.-H. Liu* (*National Taiwan Normal University*);

00:00 A New Variable RF Power Ratio Splitter Based on the Variation of Output Impedances in Presence of an RF Power Transistor
Kamran Davoodi (*University of Rome Tor Vergata*); *Paolo Colantonio* (*University of Rome Tor Vergata*); *Rocco Giofre* (*University of Roma Tor Vergata*);

00:00 Design and Fabrication a W-shape Form Dual-band Flexible Antenna for Biomedical Applications
Sara Yehia Abdel Fatah Ahmed (*Egyptian Chinese University*); *Fatma Taher* (*Zayed University*); *Mohammad T. Haweel* (*Shaqra University*); *Hussam Al Hamadi* (*University of Dubai*); *Khaled Hassan Mohamadien* (*Arab Academy for Science, Technology and Maritime Transport*); *Mohamed Fathy Abo Sree* (*Arab Academy for Science, Technology and Maritime Transport*);

00:00 A Miniaturized Slotted Patch Antenna for 5G Millimeter Wave Applications
Saba Tariq (*Ghulam Ishaq Khan Institute of Engineering Sciences and Technology*); *Waleed Tariq Sethi* (*Ghulam Ishaq Khan Institute of Engineering Sciences and Technology*); *Arbab Abdur Rahim* (*GIK Institute of Engineering Sciences and Technology*);

00:00 A Dual-mode Homogenous OFDM IM System for Next-generation Wireless Networks
Bandi Narasimha Rao (*National Institute of Technology Warangal*); *S. Anurdha* (*National Institute of Technology Warangal*);

00:00 Hyper-spectral Infrared Remote Sensing for Wildfire-related Research and Air Quality Monitoring
Daniel K. Zhou (*National Aeronautic and Space Administration*); *Allen M. Larar* (*NASA Langley Research Center*); *Xu Liu* (*NASA Langley Research Center*); *Xiaozhen Xiong* (*NASA Langley Research Center*); *Hyun-Sung Jang* (*NASA Langley Research Center*);

00:00 Nanoscale Roughness Effects in Double Layer and Casimir Forces
Razieh BakhshandehSeraji (*University of Groningen*); *George Palasantzas* (*University of Groningen*);

00:00 The Design, Characterization and Testing of a Multi-static Breast Microwave Imaging System for Evaluating Deep-learning Cancer Detection Using Data from Both Breasts
Fatimah Eashour (*University of Manitoba*); *Tyson Reimer* (*University of Manitoba*); *Stephen Pistorius* (*University of Manitoba*);

00:00 Vertical Structures Associated with Orographic Heavy Precipitation during Warm Season in the Sichuan Basin and Its Surrounding Areas at Different Altitudes from GPM DPR
Guoping Li (*Chengdu University of Information Technology*); *Chengfeng Shen* (*Chengdu University of Information Technology*);

00:00 Performance Characteristics of Compressive Sensing-based Image Reconstruction on Microwave Imaging Using Horn Antennas
Folin Oktafiani (*Institut Teknologi Bandung*); *Sri Muliyani* (*Institut Teknologi Bandung*); *Budi Syihabuddin* (*Institut Teknologi Bandung*); *Levy Olivia Nur* (*Telkom University*); *Effrina Yanti Hamid* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 A Two-dimensional Hybrid Electromagnetic Reconstruction Scheme for Dielectric Objects Based on Generative Adversarial Network
Xi Rui Yang (*Shanghai Normal University*); *Ming Jin* (*Shanghai Normal University*); *Chunxia Yang* (*Shanghai Normal University*); *Mei Song Tong* (*Tongji University*);

00:00 Rainfall Prediction Using Azure Automated Machine Learning
Menatallah Abdel Azeem (*University College Dublin*); *Soumyabrata Dev* (*The ADAPT SFI Research Centre*);

00:00 Subsurface Chlorophyll Profile Construction Neural Network with BGC-Argo and Satellite Data
Baoxiang Huang (*Qingdao University*);

00:00 On the Problem of the Sea Surface Effective Reflection Coefficient at Microwave Backscattering
Vladimir Yurjevich Karaev (*Institute of Applied Physics, Russian Academy of Sciences*); *Maria Panfilova* (*Institute of Applied Physics, Russian Academy of Sciences*); *Yuriy A. Titchenko* (*Institute of Applied Physics, Russian Academy of Science*); *Eugeny Meshkov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Dmitry Kovaldov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Xiuzhong Li* (*Nanjing University of Information Science and Technology*); *Yijun He* (*Nanjing University of Information Science and Technology*);

00:00 Security Analysis of the CV-QKD with Gaussian-modulated Coherent State
Svitlana Matsenko (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*); *Jurgis Porins* (*Riga Technical University*);

00:00 Analysis of Multilayared Metamaterial Stuctures with Frequency Dependent Constitutive Parameters Using Wave Matrices Approach
Said Choukri (*Gustave Eiffel University*); *Hakim Takhedmit* (*Gustave Eiffel University*); *Otman El Mrabet* (*Abdelmalek Essaadi University*); *Laurent Cirio* (*Gustave Eiffel University*);

00:00 Effect of Children's Stay on Aerosol and Concentration of Light Air Ions during Speleotherapy in the Cisarska Cave
Zdeněk Roubal (*Brno University of Technology*); *Zoltán Szabó* (*Brno University of Technology*); *Radim Kadlec* (*Brno University of Technology*); *Lukáš Zdražil* (*Brno University of Technology*);

00:00 An Efficient Diagnosis Method for Short-circuit Fault of Electrically-excited Double Salient Pole Motor
Yingjie Gao (*Shanghai University of Engineering Science*); *Shu Jia Yan* (*Shanghai University of Engineering Science*); *Qiang Chen* (*Shanghai University of Engineering Science*); *Rong Song* (*Shanghai University of Engineering Science*); *Mei Song Tong* (*Tongji University*);

00:00 Speaker Speaker Identification, Differentiation and Verification Using Deep Learning for Human Machine Interface
Prakhar Mishra (*Samsung India Electronics Pvt. Ltd.*); *Jabed Akhtar Choudhury* (*Optum Global Solutions*); *Edison Kho* (*National Institute of Technology Silchar*); *Banani Basu* (*National Institute of Technology Silchar*); *Arnab Nandi* (*National Institute of Technology Silchar*);

00:00 Mathematical Models for Seizure Source Localization in Neonates Using Machine Learning and Finite Element Method
Aleksandar Jeremic (*McMaster University*);

00:00 A Parallel Network Integrating Multiple Features for First-order Ambisonics Speech Signal Enhancement
Jiacheng Zhou (*Chongqing University of Post and Telecommunications*); *Yi Zhou* (*Chongqing University of Posts and Telecommunications*); *Hongqing Liu* (*Chongqing University of Posts and Telecommunications*);

Session 2P1a
Algorithm-empowered Application of Artificial Photonic Structures and Devices

Tuesday PM, July 4, 2023

Room Club E

Organized by Wei Ma, Yongmin Liu

Chaired by Wei Ma

00:00 Design of Zero-index Photonic Crystals with Arbitrary Epsilon
Yixin Wang (*Guizhou University*); *Quan Xie* (*Guizhou University*); *Chun Jiang* (*Shanghai Jiao Tong University*);

00:00 Four-dimensional Light Field Sensing Enabled by Disordered Anisotropic Medium and Deep Learning
Sheng-Ke Zhu (*Xiamen University*); *Ze-Huan Zheng* (*Xiamen University*); *Huanyang Chen* (*Xiamen University*); *Jinhui Chen* (*Xiamen University*);

00:00 Inverse Design and Intelligent Characterization of
Invited Nanophotonic Devices Based on Deep Neural Network
Li Gao (*Nanjing University of Posts and Telecommunications*);

00:00 Polarization Manipulation and Multiplexing via Optical
Keynote Metasurfaces
Ru-Wen Peng (*Nanjing University*); *Mu Wang* (*Nanjing University*);

00:00 Real-time, High-resolution Hyperspectral Video Under-
Invited standing and Ultrasensitive Detection via Universal Light Encoders
A. B. Lopez (*King Abdullah University of Science and Technology (KAUST)*); *Q. Wang* (*King Abdullah University of Science and Technology (KAUST)*); *M. Makarenko* (*King Abdullah University of Science and Technology (KAUST)*); *Andrea Fratalocchi* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Machine-learning-assisted Optimisation for Designing an
Invited Ultra-stretchable Metamaterial
A. Ghasemi (*Durham University*); *R. Fang* (*Durham University*); *D. A. Zeze* (*Durham University*); *Mehdi Keshavarz-Hedayati* (*Durham University*);

00:00 Deep-learning Enhanced Imaging with Achromatic Flat-
Invited lens
Shanshan Hu (*Nanjing University*); *Xingjian Xiao* (*Nanjing University*); *Tao Li* (*Nanjing University*);

00:00 Inverse Design of 3D Vectorial Holography: A Platform for Realising and Studying the Robustness of Optical Skyrmions
Haoran Ren (*Monash University*); *C. Liu* (*University of Exeter*); *S. A. Maier* (*Monash University*);

00:00 Design of Compact Apodised Subwavelength Grating Coupler Based on Inverse Design
Qiao Wang (*Zhejiang Lab*); *Wei Ma* (*Zhejiang University*);

00:00 Invited Manipulation of Waves in Four Dimensions with Space-time Media
Victor Pacheco-Pena (*Newcastle University*); *Nader Engheta* (*University of Pennsylvania*);

00:00 Realizing Colorful Holographic Mimicry by Metasurfaces
Bo Xiong (*Nanjing University*); *Yihao Xu* (*Northeastern University*); *Jia-Nan Wang* (*Nanjing University*); *Ru-Wen Peng* (*Nanjing University*); *Mu Wang* (*Nanjing University*); *Yongmin Liu* (*Northeastern University*);

00:00 Invited Data Science for the Extraction of Knowledge from Photonic Data and for the Understanding of Optical Processes
R. Houhou (*Leibniz Centre for Photonics in Infection Research (LPI)*); *P. Pradhan* (*Leibniz Centre for Photonics in Infection Research (LPI)*); *S. Guo* (*Leibniz Centre for Photonics in Infection Research (LPI)*); *O. Ryabchykov* (*Leibniz Centre for Photonics in Infection Research (LPI)*); *Thomas W. Bocklitz* (*Friedrich Schiller University Jena*);

Session 2P1b
Oral Presentations for Best Student Paper Awards — SC2: Metamaterials, Plasmonics and Complex Media

Tuesday PM, July 4, 2023

Room Club E

Chaired by Jan Machac, Guancong Ma, Yongmin Liu

Encryption and Eavesdropping in Underwater Wireless Optical Communication
Amir Handelman (*Holon Institute of Technology*);

Session 2P2
Organic, Perovskite, and Quantum Dot Optoelectronics 1

Tuesday PM, July 4, 2023

Room Club D

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

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

00:00 Effects of Doping on the Power Factor and Efficiency of Nano-materials for Thermoelectric Generator
Wiqar Hussain Shah (*King Faisal University Hofuf*);

00:00 Invited Sequential Doping of Semiconducting Polymers: Homojunction Organic Transistors and Electrochemical Transistors
Han Young Woo (*Korea University*);

00:00 Invited Quantum Dots Engineering for Overcoming the LED Light Outcoupling Efficiency Limit
Chih-Jen Shih (*ETH Zurich*);

00:00 Invited Balancing Charge Transport in Various QD-based EL Devices
Heesun Yang (*Hongik University*); *Jiwan Kim* (*Kyonggi University*);

00:00 Q-switched Mode-locked Fiber Laser by Using Covalent Organic Frameworks Saturable Absorber
Hsuan-Sen Wang (*National Sun Yat-Sen University*); *Ahmed F. M. EL-Mahdy* (*National Sun Yat-Sen University*); *Shiao-Wei Kuo* (*National Sun Yat Sen University*); *Gong-Ru Lin* (*National Taiwan University*); *Chao-Kuei Lee* (*National Sun-Yat-Sen University*);

00:00 Hot-biexciton Coulombic Interaction and Dynamical Photo-bleaching Shift in Lead Halide Perovskites
Kezhou Fan (*The Hong Kong University of Science and Technology*); *Christopher Chang Sing Chan* (*The Hong Kong University of Science and Technology*); *Ligang Yuan* (*South China University of Technology*); *Keyou Yan* (*South China University of Technology*); *Kam Sing Wong* (*Hong Kong University of Science and Technology*);

00:00 Invited Faraday Rotaor with Large Verdet Constant Based on Organic/Inorganic Hybrid Perovskite Single Crystals
Kien Wen Sun (*National Yang Ming Chiao Tung University*);

00:00 Dynamics and Characteristics of Self-trapped Excitons in Low Dimensional Copper Halides
Zengshan Xing (*The Hong Kong University of Science and Technology*); *Kam Sing Wong* (*Hong Kong University of Science and Technology*);

00:00 Invited Colloidal Halide Perovskite Nanocrystal Based High-efficiency, Large-area Light-emitting Diodes
Young-Hoon Kim (*Hanyang University*);

00:00 Invited Pseudo-halide Anion Engineering for α-FAPbI3 Perovskite Solar Cells
Jaeki Jeong (*Ulsan National Institute of Science and Technology (UNIST)*); *Minjin Kim* (*Korea Institute of Energy Research (KIER)*); *Jongdeuk Seo* (*Ulsan National Institute of Science and Technology (UNIST)*); *Dong Suk Kim* (*Ulsan National Institute of Science and Technology (UNIST)*); *Jin Young Kim* (*Ulsan National Institute of Science and Technology (UNIST)*);

00:00 Invited 2D Material-based Perovskite Photovoltaics for Efficient Perovskite/Silicon Tandem Devices: From Lab-scale Cells to Large Area Modules and Panels
Antonio Agresti (*University of Rome Tor Vergata*); *Sara Pescetelli* (*University of Rome Tor Vergata*); *Francesco Di Giacomo* (*University of Rome Tor Vergata*); *Giuseppe Bengasi* (*Enel Green Power (EGP) SpA*); *Enrico Leonardi* (*GreatCell Solar Italia SRL*); *Carmelo Connelli* (*Enel Green Power (EGP) SpA*); *Hanna Pazniak* (*Université Grenoble Alpes, CNRS*); *Fabrizio Bizzarri* (*Enel Green Power (EGP) SpA*); *Cosimo Gerardi* (*Enel Green Power (EGP) SpA*); *Francesco Bonaccorso* (*BeDimensional Spa.*); *Emmanuel Kymakis* (*Hellenic Mediterranean University (HMU)*); *Marina Foti* (*Enel Green Power (EGP) SpA*); *Aldo Di Carlo* (*Universita di Roma "Tor Vergata"*);

00:00 Invited Solution-processed, Ultrahigh-density OLEDs by Silicone Engineered Anisotropic Lithography
Hyukmin Kweon (*Hanyang University*); *Keun-Yeong Choi* (*Soongsil University*); *Ryungyu Lee* (*Soongsil University*); *Borina Ha* (*Hanyang University*); *Kwun Bum Chung* (*Dongguk University*); *Jang-Yeon Kwon* (*Yonsei University*); *Moon Sung Kang* (*Sogang University*); *Hojin Lee* (*Soongsil University*); *Do Hwan Kim* (*Hanyang University*);

00:00 Invited Material Design for Stretchable and Efficient Polymer Solar Cells
Bumjoon Kim (*KAIST*);

Session 2P3a
Holographic Materials and Applications

Tuesday PM, July 4, 2023

Room Club C

Organized by Daniele Eugenio Lucchetta, Riccardo Castagna

Chaired by Daniele Eugenio Lucchetta, Riccardo Castagna

00:00 Invited High Density Holographic Data Storage Using Multi-modulation
Xiaodi Tan (*Fujian Normal University*); *Xiao Lin* (*Fujian Normal University*); *Jianying Hao* (*Fujian Normal University*); *Haiyang Song* (*Fujian Normal University*); *Yongkun Lin* (*Fujian Normal University*); *Hongjie Liu* (*Fujian Normal University*); *Rupeng Yang* (*Fujian Normal University*); *Kun Wang* (*Fujian Normal University*); *Dakui Lin* (*Fujian Normal University*); *Yuhong Ren* (*Fujian Normal University*);

00:00 Light-sensitive Sensors Systems
Daniele Eugenio Lucchetta (*Universita Politecnica delle Marche*); *C. Riminesi* (*Institute of Heritage Science*); *A. Di Donato* (*Università Politecnica delle Marche*); *Riccardo Castagna* (*URT-CNR@UNICAM*);

00:00 Invited Heterodyne Holography in a Scanning Probe Microscope Configuration
Andrea Di Donato (*Harvard University*);

00:00 Compact Holographic Microscope Coupled with Deep Learning Strategies for Analyzing Flowing Microplastics
Teresa Cacace (*Institute of Applied Science and Intelligent System — ISASI (CNR)*); *Marco Del Coco* (*Institute of Applied Science and Intelligent System — ISASI (CNR)*); *Pierluigi Carcagnì* (*Institute of Applied Science and Intelligent System — ISASI (CNR)*); *Mariacristina Cocca* (*Institute for Polymers Composites and Biomaterials — IPCB (CNR)*); *Cosimo Distante* (*Institute of Applied Science and Intelligent System — ISASI (CNR)*); *Melania Paturzo* (*Institute of Applied Science and Intelligent System — ISASI (CNR)*);

00:00 Invited Highly Transparent Holographic Gratings Based on Multifunctional Acrylates as Linear Compression and Displacement Sensors
Cristiano Riminesi (*Institute of Heritage Science*);

00:00 Invited In-situ Holographic Recording of Conical Diffraction Vector Beams
Germano Montemezzani (*Université de Lorraine, CentraleSupélec, LMOPS*); *Muhammad Waqar Iqbal* (*Université de Lorraine, CentraleSupélec, LMOPS*); *Yulija Shiposh* (*Uzhhorod National University*); *Anton Kohutych* (*Uzhhorod National University*); *Nicolas Marsal* (*Université de Lorraine, CentraleSupélec, LMOPS*); *Alexander A. Grabar* (*Uzhhorod National University*);

00:00 Invited Perspective of Multi-wavelength Optical Patterning for Topographical Design
Biagio Audia (*University of Calabria*); *Pasquale Pagliusi* (*University of Calabria*); *Alfredo Mazzulla* (*CNR Nanotec — Institute of Nanotechnology*); *Caterina Tone* (*University of Calabria*); *Gabriella Cipparrone* (*University of Calabria*);

00:00 Invited Vectorial Holograms in Azopolymer Films: Birefringence and Surface Relief Gratings Amplitudes and Phase Evolution via an All-optical Method
Pasquale Pagliusi (*University of Calabria*); *L. Sorridente* (*University of Calabria*); *Biagio Audia* (*University of Calabria*); *Gabriella Cipparrone* (*University of Calabria*);

Session 2P3b
External Field-induced Motion: Materials and System

Tuesday PM, July 4, 2023

Room Club C

Organized by Riccardo Castagna, Daniele Eugenio Lucchetta

Chaired by Riccardo Castagna, Daniele Eugenio Lucchetta

00:00 Transient Electromagnetic Forces under Pulsed Excitation
Andrei Kiselev (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *Karim Achouri* (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *Olivier J. F. Martin* (*Swiss Federal Institute of Technology (EPFL)*);

00:00 Invited Controlled Rotational Dynamics of Gas Phase Molecules via Orchestrated Excitations of Short Terahertz and Near-IR Pulses
Ran Damari (*Tel Aviv University*); *Amit Beer* (*Tel Aviv University*); *Dina Rosenberg* (*Tel Aviv University*); *Sharly Fleischer* (*Tel Aviv University*);

00:00 Invited Rotation of Polarization of Light Propagating through a Gas of Molecular Super-rotors
Ilya Sh. Averbukh (*The Weizmann Institute of Science*); *Ilia Tutunnikov* (*The Weizmann Institute of Science*); *Uri Steinitz* (*The Weizmann Institute of Science*); *Erez Gershnabel* (*The Weizmann Institute of Science*); *Jean-Michel Hartmann* (*CNRS, École Polytechnique, Institut Polytechnique de Paris*); *Alexander A. Milner* (*The University of British Columbia*); *Valery Milner* (*University of British Columbia*);

00:00 Photonically-responsive Polymers for Dynamic Holography and Photonic Devices
Riccardo Castagna (*URT-CNR@UNICAM*); *A. Didonato* (*Università Politecnica delle Marche*); *Cristiano Riminesi* (*Institute for Applied Physics — National Research Council*); *Daniele Eugenio Lucchetta* (*Universita Politecnica delle Marche*);

00:00 Invited Photo-induced Bending of Asymmetric Graphene Oxide Paper
Cristiano Riminesi (*Institute of Heritage Science*); *Daniele Eugenio Lucchetta* (*Universita Politecnica delle Marche*); *Riccardo Castagna* (*URT-CNR@UNICAM*); *F. Vita* (*Università Politecnica delle Marche*); *A. Didonato* (*Università Politecnica delle Marche*);

00:00 Invited Orientation Approach to Light-induced Deformations in Azobenzene-containing Materials
Marina Grenzer Saphiannikova (*Leibniz-Institut für Polymerforschung Dresden*);

00:00 Tuning Photoacoustic Generation in Water with Nanotransducers via Laser Pulse Duration
Michele Diego (*The University of Tokyo*); *Marco Gandolfi* (*University of Brescia*); *Stefano Giordano* (*Université de Lille*); *Fabien Vialla* (*Université Lyon 1*); *Aurelien Crut* (*University of Lyon 1*); *Fabrice Vallée* (*Université Lyon 1*); *Paolo Maioli* (*Université Lyon 1*); *Natalia Del Fatti* (*Université Lyon 1*); *Francesco Banfi* (*Universite de Lyon, Institut Lumiere Matiere (iLM), Universite Lyon 1 and CNRS*);

Session 2P4a
Novel Light-emitting Diode Technology and Applications

Tuesday PM, July 4, 2023

Room Club B

Organized by Yiyu Ou, Daisuke Iida

Chaired by Yiyu Ou, Daisuke Iida

00:00 Keynote RGB-emitting NanoLEDs Based on Relaxed InGaN Template
Zhaoxia Bi (*Lund University*); *Anders Gustafsson* (*Lund University*); *Mikael Björk* (*Hexagem AB*); *Lars Samuelson* (*Lund University*);

00:00 Invited Crystal Growth and Characterizations of GaN-based Multi-quantum Shell/Nanowire LEDs/Lasers
Satoshi Kamiyama (*Meijo University*); *Tetsuya Takeuchi* (*Meijo University*); *Motoaki Iwaya* (*Meijo University*);

00:00 Invited Novel Medical Applications of UV and Visible LEDs Systems
Marcus Carstensen (*Technical University of Denmark*); *Yiyu Ou* (*Technical University of Denmark*); *Paul Michael Petersen* (*Technical University of Denmark*);

00:00 Performance Improvement of InGaN-based LEDs via a Current-blocking Region Prepared via Hydrogen Passivation
Cesur Altinkaya (*King Abdullah University of Science and Technology (KAUST)*); *Pavel Kirilenko* (*King Abdullah University of Science and Technology (KAUST)*); *Daisuke Iida* (*King Abdullah University of Science and Technology*); *Kazuhiro Ohkawa* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Invited Polarity Control in AlGaN and Recent Advances in Lateral-polarity-structure Based Optoelectronic and Electronic Devices
Wei Guo (*Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences*); *Yijun Dai* (*Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences*); *Jiaxin Zhang* (*Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences*); *Kunzi Liu* (*Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences*); *Liqiong Deng* (*Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences*); *Tian Luo* (*Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences*); *Zhenhai Yang* (*Soochow University*); *Li Chen* (*Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences*); *Jichun Ye* (*Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences*);

00:00 Efficient Red Emission for Full Color Micro-display: The Invited Full InGaN Structure Grown on Relaxed InGaN Pseudo-substrates
Amelie Dussaigne (*University of Grenoble-Alpes, CEA, LETI, Minatec Campus*);

00:00 New Developments in Plasmonics and Nanophotonics for Invited Highly Efficient Light-emitting Devices in a Wide Wavelength Range
Koichi Okamoto (*Osaka Prefecture University*);

00:00 Optical Manipulation in Blue Micro-LEDs through Plasmonic Quantum Dots
Jing Li (*Xiamen University*); *Jun Yin* (*Xiamen University*); *Junyong Kang* (*Xiamen University*);

Session 2P4b
Energy Harvesting Systems Beyond Photovoltaics

Tuesday PM, July 4, 2023

Room Club B

Organized by Remo Proietti Zaccaria, Alessandro Alabastri
Chaired by Alessandro Alabastri

00:00 Cobalt Copper Sulfide/Tungsten Disulfide Nanowire Heterostructure as an Excellent Bifunctional Electrocatalyst for Overall Water Splitting
Jagadis Gautam (*Kumoh National Institute of Technology*); *Karthik Kannan* (*Kumoh National Institute of Technology*); *Jang Seok Gwon* (*Kumoh National Institute of Technology*); *Mikiyas Mekete Meshesha* (*Kumoh National Institute of Technology*); *Debabrata Chanda* (*Kumoh National Institute of Technology*); *G. S. Lee* (*National Nanofab Center*); *D. W. Hong* (*National Nanofab Center*); *Suhee Kwon* (*Kumoh National Institute of Technology*); *Myungsik Choi* (*SJ Tech. Co., Ltd.*); *Bee Lyong Yang* (*Kumoh National Institute of Technology*);

00:00 Solar-to-hydrogen Conversion with an Optimally Balanced Light Absorption in a $BiVO_4$/PM6:Y6 Compact Tandem
Catarina G. Ferreira (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*); *Constanza Sansierra* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*); *Francisco Bernal-Texca* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*); *Mingyu Zhang* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*); *Carles Ros* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*); *Jordi Martorell* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*);

00:00 New Perspectives for Microwave Energy Harvesting
Martino Aldrigo (*IMT Bucharest*); *Mircea Dragoman* (*IMT Bucharest*); *Adrian Dinescu* (*IMT Bucharest*); *Dan Vasilache* (*IMT Bucharest*); *Sergiu Iordanescu* (*IMT Bucharest*); *Simone Trovarello* (*University of Bologna*); *Diego Masotti* (*Universita di Bologna*); *Alessandra Costanzo* (*University of Bologna*); *Daniela Dragoman* (*University of Bucharest*); *Emiliano Laudadio* (*Università Politecnica delle Marche*); *Eleonora Pavoni* (*Università Politecnica delle Marche*);

00:00 Controlling Complex Chemical Reactions with Plasmonic Nanoresonators
Alberto Naldoni (*University of Turin*);

00:00 Broadband Absorption and Photothermal Properties of TiN Nanostructured Films
Luca Mascaretti (*Czech Advanced Technology and Research Institute, Regional Centre of Advanced Technologies and Materials*); *S. Kment* (*Czech Advanced Technology and Research Institute, Regional Centre of Advanced Technologies and Materials*); *Alberto Naldoni* (*University of Turin*);

00:00 ***Operando*** Chemical Mapping of Photo-products from Hot Carrier-driven Catalysis with Plasmonic Nanosystems
Olivier Henrotte (*Palacký University*); *Alberto Naldoni* (*University of Turin*);

00:00 Piezoelectric Nanogenerators: Harvesting Energy from Mechanical Deformations
Luana Persano (*NEST, Istituto Nanoscienze-CNR*);

00:00 Tailoring the Field Enhancement and Energy Deposition in Plasmonic Nanoresonator-seeded Active Targets Illuminated by Short Pulses
Dávid Vass (*University of Szeged*); *Balázs Bánhelyi* (*University of Szeged*); *András Szenes* (*University of Szeged*); *Emese Tóth* (*University of Szeged*); *Olivér Fekete* (*University of Szeged*); *László Pál Csernai* (*Wigner Research Center for Physics*); *Tamás Biró* (*Wigner Research Center for Physics*); *Norbert Kroó* (*Wigner Research Center for Physics*); *Mária Csete* (*University of Szeged*);

00:00 On Maximum Received Power in Rectenna Structures
Abdelghafour Abraray (*Instituto de Telecomunicacoes*); *Telmo R. Fernandes* (*Polytechnic Institute of Leiria*); *Stanislav Maslovski* (*University of Aveiro*);

00:00 High Efficiency, Ultra-stable Solar Hydrogen Production
Zetian Mi (*University of Michigan*);

Session 2P5
FocusSession.SC1: Casimir Effect and Radiative Heat Transfer 4

Tuesday PM, July 4, 2023

Room Club A

Organized by Mauro Antezza, Matthias Krüger
Chaired by Mauro Antezza

00:00 Invited From Quantum-vacuum Detection to Energy Loss and Transfer
Stefan Yoshi Buhmann (*Universität Kassel*); *Janine Christine Franz* (*University of Freiburg*); *Frieder Lindel* (*University of Freiburg*);

00:00 Near-field Radiative Heat Transfer Enhancement via an External Magnetic Field
S. G. Castillo-Lopez (*Universidad Nacional Autonoma de Mexico*); *Alonso Márquez Hernández* (*Universidad Nacional Autonoma de Mexico*); *Raul P. Esquivel-Sirvent* (*Universidad Nacional Autonoma de Mexico*);

00:00 Invited Near-field Heat Transfer Control Using Plasmonic Metasurfaces
Raul P. Esquivel-Sirvent (*Universidad Nacional Autonoma de Mexico*); *S. G. Castillo-Lopez* (*Universidad Nacional Autonoma de Mexico*); *C. Villarreal* (*Universidad Nacional Autonoma de Mexico*); *F. G. Pirruccio* (*Universidad Nacional Autonoma de Mexico*);

00:00 Invited Radiative Thermal Rectification in Many-body Systems
Ivan Latella (*University of Barcelona*); *Philippe Ben-Abdallah* (*Université Paris-Saclay*); *Moladad Nikbakht* (*University of Zanjan*);

00:00 Controlling the Cavity System Dynamics via Dynamical Casimir Effect
Muhib Ullah (*Zhejiang University, International Campus*); *Said Mikki* (*Zhejiang University*);

00:00 Invited Quantum Field Correlations in Two Cavities with a Fluctuating Reflecting Boundary
Federico Armata (*Universita degli Studi di Palermo*); *Federico Montalbano* (*Universita degli Studi di Palermo*); *Roberto Passante* (*University of Palermo*); *Lucia Rizzuto* (*Universita degli Studi di Palermo and CNISM*);

00:00 Invited Effective Hamiltonians in Molecular Quantum Electrodynamics
Roberto Passante (*University of Palermo*); *Lucia Rizzuto* (*Universita degli Studi di Palermo and CNISM*);

00:00 Invited Thermal Transport Across Nanoscale Gaps and Across Single Molecule Junctions
F. Tabatabaei (*Université Lyon 1*); *Y. Guo* (*Université Lyon 1*); *Christophe Adessi* (*Universite de Lyon*); *M. Gomez Viloria* (*Université Paris-Saclay*); *Philippe Ben-Abdallah* (*Universite Paris-Sud 11*); *R. Messina* (*Université Paris-Saclay*); *T. Niehaus* (*Université Lyon 1*); *Samy Merabia* (*Universite de Lyon*);

00:00 Extended Platform for Tunable Self-assembled Casimir Microcavities
Oleg Kotov (*Chalmers University of Technology*); *Betül Küçüköz* (*Chalmers University of Technology*); *Adriana Canales* (*Chalmers University of Technology*); *Timur Shegai* (*Chalmers University of Technology*);

00:00 Invited Fluctuation-induced Decoherence of Nanoparticles
Kanupriya Sinha (*Arizona State University*);

00:00 Keynote Thermodynamic Paradox and Non-Hermitian Topological Singularities
Mário G. Silveirinha (*University of Lisbon*);

00:00 Invited Manipulation of Heat Transport Via Proximity Effect: The Thermal Superconducting Quantum Interference Proximity Transistor
Francesco Giazotto (*Istituto Nanoscienze — CNR & Scuola Normale Superiore*);

00:00 Invited Tailoring the Casimir Force: From Active Control to Repulsion
Jeremy N. Munday (*University of California*);

00:00 Invited Radiative Heat Transfer in High-order Topological Photonic Structures
Boxiang Wang (*Shanghai Jiao Tong University*);

Session 2P6a
Programmable and Intelligent Metasurface

Tuesday PM, July 4, 2023

Room Terrace 2A

Organized by Bin Zheng, Yunbo Li

Chaired by Bin Zheng, Yunbo Li

00:00 Design of the Programmable and Intelligent Metasurface for Detection and Sensing Applications
He Li (*Southeast University*); *Yunbo Li* (*Southeast University*);

00:00 Tunable Multifunction Metasurface for Intelligent Communication Systems
Da Li (*Zhejiang University — UIUC Institute*); *Yudi Fan* (*Zhejiang University*); *Er Ping Li* (*Zhejiang University — UIUC Institute*);

00:00 Metasurface-enabled High-resolution Localization of Non-cooperative Wireless Source in an Indoor Environment
Hanting Zhao (*Peking University*); *Shengguo Hu* (*Peking University*); *Siyuan Jiang* (*Peking University*); *Hongrui Zhang* (*Peking University*); *Menglin Wei* (*Peking University*); *Zhuo Wang* (*Peking University*); *Lianlin Li* (*Peking University*);

00:00 Intelligent Imaging and Sensing Based on Programmable Metasurface
Hongrui Zhang (*Peking University*); *Zhuo Wang* (*Peking University*); *Hanting Zhao* (*Peking University*); *Lianlin Li* (*Peking University*);

00:00 Multi-source Wave Sensing Enabled with Diffraction Neural Network
Min Huang (*Zhejiang University*); *Bin Zheng* (*Zhejiang University*); *Tong Cai* (*Zhejiang University*); *Tianhang Chen* (*Zhejiang University*); *L. M. He* (*China Aeronautical Establishment*); *Hongsheng Chen* (*Zhejiang University*);

00:00 Deep Learning-driven Adaptive Metasurface Transmission Focusing
Jiwei Zhao (*Nanjing University*); *Huan Lu* (*Zhejiang University*); *Rongrong Zhu* (*Zhejiang University*); *Chi Wang* (*Zhejiang University*); *Bin Zheng* (*Zhejiang University*);

00:00 The Reconfigurable Spatial Channels of Non-reciprocal Electromagnetic Transmission by Active Metasurface
Shi Yu Wang (*Southeast University*); *Qian Wei Zhang* (*Southeast University*); *He Li* (*Southeast University*); *Hao Han He* (*Southeast University*); *Yun Bo Li* (*Southeast University*);

Session 2P6b
Optical Metasurfaces for Energy Harvesting and Manipulation

Tuesday PM, July 4, 2023

Room Terrace 2A

Organized by Guixin Li, Changxu Liu

Chaired by Changxu Liu

00:00 Large-area Metasurfaces for High-definition Structural Coloration and Stable, Efficient Water-splitting (Invited)
F. Wang (*King Abdullah University of Science and Technology (KAUST)*); *N. Li* (*King Abdullah University of Science and Technology (KAUST)*); *M. Elizarov* (*King Abdullah University of Science and Technology (KAUST)*); *Z. He* (*King Abdullah University of Science and Technology (KAUST)*); *Andrea Fratalocchi* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Light Manipulation in Organic Light-Emitting Devices by Meta-Electrodes (Invited)
Yan-Gang Bi (*Jilin University*); *Shi-Rong Wang* (*Jilin University*); *Yue-Feng Liu* (*Jilin University*); *Ran Ding* (*Jilin University*); *Jing Feng* (*Jilin University*);

00:00 Infrared Metasurfaces for the Thermal Management of Spacecraft (Invited)
Otto L. Muskens (*University of Southampton*);

00:00 Modelling Hot Carrier Generation in Large Metallic Nanoparticles (Invited)
Johannes Lischner (*Imperial Coll London*);

00:00 Metasurfaces for the Transformation and Measurement of Multiphoton Quantum States (Invited)
Kai Wang (*McGill University*);

00:00 Optically Resonant Metasurfaces for Nonlinear Imaging and Sensing Applications (Invited)
Lei Xu (*Nottingham Trent University*); *Ze Zheng* (*Nottingham Trent University*); *Ride Wang* (*National Innovation Institute of Defense Technology*); *Cuifeng Ying* (*Nottingham Trent University*); *Mohsen Rahmani* (*Nottingham Trent University*);

00:00 Topological Toroidal Optical Skyrmions of Free Spacetime (Invited)
Yijie Shen (*University of Southampton*);

00:00 Nonlinear Optical Image Encryption Based on Multistep Plasmonic Epsilon-near-Zero Metasurface (Invited)
Junhong Deng (*Southern University of Science and Technology*);

00:00 Inverted Nano-pyramid Surface Texture for High Efficiency, Flexible Photovoltaics
Ratna Sai Kiran (*Indraprastha Institute of Information Technology Delhi*); *Sayak Bhattacharya* (*Indraprastha Institute of Information Technology Delhi*);

Session 2P7
Photonic Topological Meta-materials and Meta-crystals 1

Tuesday PM, July 4, 2023

Room Terrace 2B

Organized by Biao Yang, Shaojie Ma

Chaired by Biao Yang, Shaojie Ma

00:00 Acoustic and Photonic Non-Abelian Braiding (Invited)
Guancong Ma (*Hong Kong Baptist University*);

00:00 Maximally-charged Weyl Point (Invited)
Yihao Yang (*Zhejiang University*);

00:00 Moiré Metasurfaces: Low-cost Solution for Dynamic Beamforming (Invited)
Shuo Liu (*University of Birmingham*); *Shaojie Ma* (*Fudan University*); *Tie Jun Cui* (*Southeast University*);

00:00 Topological Metasurface: From Passive toward Active Regime (Invited)
Jianwei You (*Southeast University*); *Xiong Wei Wu* (*Southeast University*); *Long Chen* (*Southeast University*); *Qian Ma* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

00:00 Topological States in the Quasiperiodic-periodic Composite Photonic Crystals (Invited)
Jianjun Liu (*Hunan University*);

00:00 Geometry-dependent Skin Effects and Experimental Realization in Reciprocal Systems (Invited)
Kun Ding (*Fudan University*);

00:00 Topological Thouless Pumping in Photonic Time Crystals (Invited)
Xiang Ni (*City University of New York*); *Shixiong Yin* (*City University of New York*); *Huanan Li* (*City University of New York*); *Andrea Alù* (*City University of New York*);

00:00 Experimental Realization of a Three-dimensional Topo-
Invited logical Crystalline Insulator
Minkyung Kim (*Gwangju Institute of Science and Technology (GIST)*); *Z. Wang* (*Nanyang Technological University*); *Y. Yang* (*Nanyang Technological University*); *J. Rho* (*Pohang University of Science and Technology (POSTECH)*); *B. Zhang* (*Nanyang Technological University*);

00:00 Adiabatic Topological Photonics
Invited
Anton Vakulenko (*The City College of New York*); *Svetlana Kiriushechkina* (*The City College of New York*); *Daria A. Smirnova* (*Australian National University*); *Sriram Guddala* (*The City College of New York*); *Filipp Komissarenko* (*The City College of New York*); *Andrea Alù* (*The City University of New York*); *Monica S. Allen* (*Air Force Research Laboratory*); *Jeffery W. Allen* (*Air Force Research Laboratory*); *Alexander B. Khanikaev* (*Graduate Center of City University of New York*);

00:00 Nodal-line Topology and Surface States in Double-
Invited diamond Photonic Crystal
Haedong Park (*Cardiff University*); *Sang Soon Oh* (*Cardiff University*);

00:00 Nonlinearity Enabled Higher-order Exceptional Point
Invited
Meng Xiao (*Wuhan University*);

00:00 Spinful Topological Phases in Acoustic Crystals with Projective ***PT*** Symmetry
Yan Meng (*Southern University of Science and Technology*); *Zhen Gao* (*Southern University of Science and Technology*);

00:00 Rainbow Trapping Based on Higher-order Topological Corner Modes
Hai-Xiao Wang (*Guangxi Normal University*);

00:00 Considerations on the Reflection Eigenstates of Weyl Metamaterial
Wei Xu (*National University of Defense Technology*); *Hanyu Wang* (*National University of Defense Technology*); *Zhihong Zhu* (*National University of Defense Technology*); *Biao Yang* (*National University of Defence Technology*);

00:00 Triple Point and Euler Class in Photonic Crystal
Wenwen Liu (*The University of Hong Kong*); *Biao Yang* (*National University of Defence Technology*); *Shuang Zhang* (*The University of Hong Kong*);

00:00 Topological Unidirectional Edge State in Broken Parity and Time Symmetries System
Hsun-Chi Chan (*The University of Hong Kong*); *Zhongfu Li* (*The University of Hong Kong*); *Biao Yang* (*National University of Defence Technology*); *Yuanjiang Xiang* (*Hunan University*); *Shuang Zhang* (*The University of Hong Kong*);

Session 2P8
Quantum Light Source and Quantum Interference

Tuesday PM, July 4, 2023

Room South Room 220

Organized by Rui-Bo Jin, Chen-Zhi Yuan

Chaired by Rui-Bo Jin, Chen-Zhi Yuan

00:00 Silicon Photonic Chips for Quantum Entanglement Dis-
Invited tribution Networks
Wei Zhang (*Tsinghua University*); *Yidong Huang* (*Tsinghua University*);

00:00 Quantum Optical Synthesis of a Biphoton Wave Packet
Invited
Ryosuke Shimizu (*University of Electro-Communications*);

00:00 Optical Phase Amplification Based on Nonlinear Wave
Invited Mixing
Zhi-Yuan Zhou (*University of Science and Technology of China*); *Wu-Zhen Li* (*University of Science and Technology of China*); *Baosen Shi* (*University of Science and Technology of China*);

00:00 Mesoscopic Quantum Interference
Invited
Omar S. Magana-Loaiza (*Louisiana State University*);

00:00 Quantum Microwave Photonics
Invited
Ruifang Dong (*National Time Service Center, Chinese Academy of Sciences*); *Yaqing Jin* (*National Time Service Center, Chinese Academy of Sciences*); *Ye Yang* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Xiao Xiang* (*National Time Service Center, Chinese Academy of Sciences*); *Runai Quan* (*National Time Service Center, Chinese Academy of Sciences*); *Tao Liu* (*National Time Service Center, Chinese Academy of Sciences*); *Ming Li* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Shou-Gang Zhang* (*National Time Service Center, Chinese Academy of Sciences*);

00:00 Complete Spectral Characterization of Biphotons by Si-
Invited multaneously Determining Its Frequency Sum and Difference in a Single Quantum Interferometer
Baihong Li (*Shaanxi University of Science and Technology*);

00:00 Experimental Preparation and Manipulation of
Invited Squeezed Cat States
Meihong Wang (*Shanxi University*); *Miao Zhang* (*Shanxi University*); *Zhongzhong Qin* (*Shanxi University*); *Xiaolong Su* (*Shanxi University*);

00:00 Titanium Indiffused Lithium Niobate Waveguide
Invited Squeezer with Integrated Phase Modulator
Michael Steve Stefszky (*Paderborn University*); *Felix Vom Bruch* (*Paderborn University*); *Matteo Santandrea* (*Paderborn University*); *Viktor Quiring* (*University of Paderborn*); *Raimund Ricken* (*University of Paderborn*); *Christof Eigner* (*University of Paderborn*); *Harald Herrmann* (*University of Paderborn*); *Christine Silberhorn* (*Paderborn University*);

00:00 Spectrally Multiplexed Single-photon Source at
Invited Telecom-band
Chen-Zhi Yuan (*University of Electronic Science and Technology of China*);

00:00 Multi-wavelength Quantum Light Source at Telecom-band
Yun-Ru Fan (*University of Electronic Science and Technology of China*); *Chen Lyu* (*University of Electronic Science and Technology of China*); *Chen-Zhi Yuan* (*University of Electronic Science and Technology of China*); *Hao Li* (*Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences*); *Guangwei Deng* (*University of Electronic Science and Technology of China*); *Hai-Zhi Song* (*Southwest Institute of Technical Physics*); *You Wang* (*Southwest Institute of Technical Physics*); *Lixing You* (*Shanghai Institute of Microsystem and Information Technology (SIMIT), Chinese Academy of Sciences*); *Guang-Can Guo* (*University of Electronic Science and Technology of China*); *Qiang Zhou* (*University of Electronic Science and Technology of China*);

00:00 Towards Optimized Nonlocal Dispersion Cancellation with Wavelength Tuning
Xiao Xiang (*National Time Service Center, Chinese Academy of Sciences*); *Runai Quan* (*National Time Service Center, Chinese Academy of Sciences*); *Yuting Liu* (*National Time Service Center, Chinese Academy of Sciences*); *Bingke Shi* (*National Time Service Center, Chinese Academy of Sciences*); *Huibo Hong* (*National Time Service Center, Chinese Academy of Sciences*); *Yaqing Jin* (*National Time Service Center, Chinese Academy of Sciences*); *Tao Liu* (*National Time Service Center, Chinese Academy of Sciences*); *Ruifang Dong* (*National Time Service Center, Chinese Academy of Sciences*); *Shou-Gang Zhang* (*National Time Service Center, Chinese Academy of Sciences*);

00:00 Quantum Machine Learning with Linear Optics
Kui An (*Shandong University*); *Ling-Xuan Kong* (*Shandong University*); *He Lu* (*Shandong University*);

00:00 Direct Measurement of Biphoton Temporal Distributions with Sub-ps Resolution by Optical Kerr Gating
Takahisa Kuwana (*University of Electro-Communications*); *Masahiro Yabuno* (*National Institute of Information and Communications Technology*); *Fumihiro China* (*National Institute of Information and Communications Technology*); *Shigehito Miki* (*National Institute of Information and Communications Technology*); *Hirotaka Terai* (*National Institute of Information and Communications Technology*); *Peter J. Mosley* (*University of Bath*); *Rui-Bo Jin* (*Wuhan Institute of Technology*); *Ryosuke Shimizu* (*University of Electro-Communications*);

00:00 Experimental Quantification of Coherence and Entanglement without Tomography
Ting Zhang (*Shandong University*); *Xiao Yuan* (*Peking University*); *He Lu* (*Shandong University*);

00:00 Hong-Ou-Mandel Interference of Entangled Photons Generated from BBO Crystal
Zi-Xiang Yang (*Wuhan Institute of Technology*); *Cong Zhang* (*Wuhan Institute of Technology*); *Rui-Bo Jin* (*Wuhan Institute of Technology*);

00:00 All-optical Quantum Information Protocols Based on
Invited Four-wave Mixing Process
Shengshuai Liu (*East China Normal University*); *Yanbo Lou* (*East China Normal University*); *Jietai Jing* (*East China Normal Unversity*);

Session 2P9a
Deep Learning in Electromagnetics

Tuesday PM, July 4, 2023

Room South Room 221

Organized by Willie John Padilla

00:00 Modeling of Near- and Far-field Diffraction from EUV Absorbers Using Physics-informed Neural Networks
Vlad Medvedev (*Fraunhofer Institute for Integrated Systems and Device Technology IISB*); *Andreas Erdmann* (*Fraunhofer Institute for Integrated Systems and Device Technology IISB*); *Andreas Rosskopf* (*Fraunhofer Institute for Integrated Systems and Device Technology IISB*);

00:00 Interpreting a Semantic Segmentation Model for Coastline Detection
Conor O'Sullivan (*The ADAPT SFI Research Centre*); *Seamus Coveney* (*Envo-Geo Environmental Geoinformatics*); *Xavier Monteys* (*Geological Survey Ireland*); *Soumyabrata Dev* (*Beijing-Dublin International College*);

00:00 Designing Energy Efficient Neural Networks According to Device Operation Principles
Ergun Simsek (*University of Maryland Baltimore County*);

00:00 A Reconstruction Method of Electromagnetic Scattering Target Based on Diffusion Model
Yuhao Shen (*Zhejiang University*); *Yuan Li* (*Zhejiang University*); *Lizhen Yang* (*Zhejiang University*); *Ce Ding* (*Zhejiang University*); *Yifan Wu* (*Zhejiang University*); *Hai Lin* (*Zhejiang University*);

00:00 Deep Learning to Accelerate Electromagnetic Spectra Simulations for Inverse Design of Metasurfaces
Wei-Jiang Zhao (*A*STAR Institute of High Performance Computing*); *En-Xiao Liu* (*A*STAR Institute of High Performance Computing*); *Ching-Eng Png* (*Institute of High Performance Computing (IHPC)*);

00:00 Search for Efficient Wireless Network Structures
Simon Ziegler (*Adaptive Wireless Network Design*); *Klaus Ziegler* (*Universität Augsburg*);

00:00 Signal Integrity Modeling and Analysis for Memristor-based Neuromorphic Computing Chips
Tuomin Tao (*Zhejiang University*); *Da Li* (*Zhejiang University*); *Hanzhi Ma* (*Zhejiang University*); *Er Ping Li* (*Zhejiang University — UIUC Institute*);

00:00 Conducted Emission Methods to Investigate the Susceptibility of Data Security
Aysha Al Neyadi (*Technology Innovation Institute*); *David Martinez* (*Technology Innovation Institute*); *Islem Yahi* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*); *Chaouki Kasmi* (*Technology Innovation Institute*);

00:00 Deep Learning Enabled Integrated mmWave/THz Passives, Integrated Circuits and Antennas
Kaushik Sengupta (*CALTECH*);

Session 2P9b
Advances in Modeling and Optimization Methods for Realistic Applications

Tuesday PM, July 4, 2023

Room South Room 221

Organized by Da-Zhi Ding, Ming Jiang

Chaired by Mengmeng Li, Ming Jiang

00:00 Interval Evaluation of Electromagnetic Scattering Using a Polynomial Chaos Expansion-based DGTD Method
Yiting Yang (*Southeast University*); *Wenming Yu* (*Southeast University*); *Huaguang Bao* (*Nanjing University of Science and Technology*); *Da-Zhi Ding* (*Nanjing University of Science and Technology*); *Tie Jun Cui* (*Southeast University*);

00:00 A Mixed Spectrum for Predicting Scattering Properties of Typical Rough Surface
Wenjing Zheng (*Nanjing University of Science and Technology*); *Zi He* (*Nanjing University of Science and Technology*); *Xunwang Dang* (*National Key Laboratory of Scattering and Radiation*); *Da-Zhi Ding* (*Nanjing University of Science and Technology*);

00:00 Redefinition of the Amplitude Probability Distribution Measuring Function for Electromagnetic Emissions Assessment
Marc Garcia Bermúdez (*Universitat Politecnica de Catalunya*); *Xileidys Parra* (*EMC Electromagnetic BCN*); *Marco A. Azpurua* (*Universitat Politecnica de Catalunya*);

00:00 Solving Large Scale Meta-surface Antennas by FEM-BI-DDM with Characteristic Subdomain Technique
Ming Jiang (*University of Electronic Science and Technology of China*); *Weijian Ran* (*University of Electronic Science and Technology of China*); *Jun Hu* (*University of Electronic Science and Technology of China*);

00:00 Angular Self-adaptive Doppler Cloak Based on Space-time Modulated Metasurface
Xinyu Fang (*Nanjing University of Science and Technology*); *Minghui Chen* (*Nanjing University of Science and Technology*); *Mengmeng Li* (*Nanjing University of Science and Technology*); *Dazhi Ding* (*Nanjing University of Science and Technology*);

00:00 A Semi-analytical Computation Method for Conformal Space-time Modulated Metasurface Design
Yonggeng Zhu (*Nanjing University of Science and Technology*); *Xinyu Fang* (*Nanjing University of Science and Technology*); *Mengmeng Li* (*Nanjing University of Science and Technology*); *Dazhi Ding* (*Nanjing University of Science and Technology*);

00:00 A Field-circuit Co-simulation Method for Antenna and RF Front-ends with DGTD Solver
Chunyu Li (*Nanjing University of Science and Technology*); *Tiancheng Zhang* (*Nanjing University of Science and Technology*); *Huaguang Bao* (*Nanjing University of Science and Technology*); *Zhou Dai* (*Nanjing University of Science and Technology*); *Da-Zhi Ding* (*Nanjing University of Science and Technology*);

Session 2P10a
Physical Modeling and Applications in GNSS+R with Application towards Sustainable Development Goal

Tuesday PM, July 4, 2023

Room South Room 222

Organized by Rashmi Shah, Mehmet Kurum

00:00 Airborne P-band Signals of Opportunity Synthetic Aperture Radar for Remote Sensing of Snow and Soil Moisture
Simon H. Yueh (*California Institute of Technology*); *Rashmi Shah* (*NASA JPL/California Institute of Technology*); *Javier Bosch-Lluis* (*California Institute of Technology*); *Mario Julian Chaubell* (*California Institute of Technology*); *Garth W. Franklin* (*California Institute of Technology (JPL)*); *Justin Nguyen* (*California Institute of Technology*); *Xiaolan Xu* (*California Institute of Technology*); *Steven A. Margulis* (*UCLA*); *Kelly Elder* (*United States Forest Service*); *Manuela Girotto* (*United States Forest Service*); *Adrian Harpold* (*University of Reno*); *Hans-Peter Marshall* (*Boise State University*);

00:00 The NASA Commercial Smallsat Data Acquisition (CSDA) Program GNSS-R Dataset: A Calibration Assessment of Spire's Batch-1 and Batch-2 Receivers
Mohammad Al-Khaldi (*The Ohio State University*); *Joel T. Johnson* (*The Ohio State University*); *Darren S. McKague* (*University of Michigan*); *Anthony Russel* (*University of Michigan*); *Dorina Twigg* (*University of Michigan*);

00:00 Analysis of GLORI GNSS-R Airborne Measurements for Moisture and Land Use Estimation
Mehrez Zribi (*Toulouse III University*); *Karin Dassas* (*CESBIO (CNES/CNRS/INRAE/IRD/UPS)*); *Pascal Fanise* (*LATMOS (UVSQ/CNRS/UPMC)*); *Vincent Dehaye* (*CESBIO (CNES/CNRS/INRAE/IRD/UPS)*); *Michel Le Page* (*LATMOS (UVSQ/CNRS/UPMC)*);

00:00 Signals of Opportunity P-band Investigation (SNOOPI): Validation Plans
James L. Garrison (*Purdue University*); *Rashmi Shah* (*NASA JPL/California Institute of Technology*); *Manuel A. Vega* (*NASA Goddard Space Flight Center*); *Mehmet Kurum* (*Mississippi State University*); *Justin Mansell* (*California Institute of Technology*); *Rajat Bindlish* (*NASA's Goddard Space Flight Center*); *Benjamin Nold* (*Purdue University*); *Juan Raymond* (*NASA Goddard Space Flight Center*); *Roger Banting* (*NASA Goddard Space Flight Center*); *Seho Kim* (*Purdue University*); *Weihang Li* (*Purdue University*); *Jeffrey R. Piepmeier* (*NASA Goddard Space Flight Center*);

00:00 P-band Signal of Opportunity for Snow Water Equivalence Retrieval: From Ground Experiment to Space Mission Design
Xiaolan Xu (*California Institute of Technology*); *Simon H. Yueh* (*California Institute of Technology*); *Rashmi Shah* (*NASA JPL/California Institute of Technology*); *Steven A. Margulis* (*UCLA*); *Kelly Elder* (*United States Forest Service*); *Charles Reynerson* (*California Institute of Technology*); *Steve Franklin* (*California Institute of Technology*);

00:00 Understanding the Relationship between Surface Roughness and Coherence in GNSS Land Reflected Signals
Tianlin Wang (*The Ohio State University*); *Joel T. Johnson* (*The Ohio State University*); *Alexandra Bringer* (*NASA Goddard Space Flight Center*); *Mohammad Al-Khaldi* (*The Ohio State University*);

00:00 Validation of Forest Effects on P-band Signals of Opportunities by Using Electromagnetic Scattering Model of Fast Hybrid Method
Jongwoo Jeong (*University of Michigan*); *Leung Tsang* (*University of Michigan*); *Xiaolan Xu* (*California Institute of Technology*); *Simon H. Yueh* (*California Institute of Technology*); *Steven A. Margulis* (*UCLA*);

00:00 A Realistic Framework of GNSS-T for Simulating Scattering and Propagation of GNSS Signals under a Forest Canopy
Suraj Yadav (*Mississippi State University*); *Abesh Ghosh* (*Mississippi State University*); *Dylan Boyd* (*Mississippi State University*); *Mehmet Kurum* (*Mississippi State University*);

00:00 Development and Optimization of a Full-wave Model for Multistatic Scattering from Vegetated Terrains at P/L Band
Ines Fenni (*California Institute of Technology*); *Helene Roussel* (*Sorbonne Université et Université Paris Saclay*); *Mehmet Kurum* (*Mississippi State University*); *Dylan Ray Boyd* (*Mississippi State University*); *Mark S. Haynes* (*California Institute of Technology*); *Ziad S. Haddad* (*California Institute of Technology*);

Session 2P10b
Remote Sensing Natural Hazards

Tuesday PM, July 4, 2023

Room South Room 222

Organized by Donglian Sun

Chaired by Donglian Sun

00:00 Studies of Maximum Hurricane Wind Retrievals and Their Use for Improved Storm Surge Simulations Using Spaceborne GNSS-R Systems
Mohammad Al-Khaldi (*The Ohio State University*); *Joel T. Johnson* (*The Ohio State University*); *Ethan J. Kubatko* (*The Ohio State University*); *Younghun Kang* (*The Ohio State University*); *Suranjan Nepal* (*The Ohio State University*); *Aaron Sines* (*The Ohio State University*); *Stephen J. Katzberg* (*NASA Langley Research Center*);

00:00 Improved Active Fire Detection Using Operational U-nets
Ozer Can Devecioglu (*Tampere University*); *Muharrem Mete Ahishali* (*Tampere University*); *Fahad Sohrab* (*Tampere University*); *Turker Ince* (*Izmir University of Economics*); *Moncef Gabbouj* (*Tampere University*);

00:00 Design and Simulation of a Flood Forecasting and Alerting System: A Focus on Rwanda
Gerard Rushingabigwi (*University of Rwanda College of Science and Technology (UR CST)*); *G. B. Ishimwe* (*University of Rwanda College of Science and Technology (UR CST)*); *E. Irasubiza* (*University of Rwanda College of Science and Technology (UR CST)*); *V. M. Sugira* (*University of Rwanda College of Science and Technology (UR CST)*); *P. Bakunzibake* (*University of Rwanda College of Science and Technology (UR CST)*); *T. Ndabamenye* (*University of Rwanda College of Science and Technology (UR CST)*); *Louis Sibomana* (*University of Rwanda*); *A. Vodacek* (*University of Rwanda College of Science and Technology (UR CST)*);

00:00 A Low Sidelobe Level Sub-reflector for Meteorological Applications
András Eszes (*PPKE-ITK*); *Zsolt Szabo* (*PPKE-ITK*); *B. Ladanyi-Turoczy* (*Grante Co.*);

00:00 Detection of Nitrogen Substances by Nuclear Quadrupole Resonance in Large Volumes
Georgy Mozzhukhin (*Gebze Technical University*); *Maksut Maksutoğlu* (*Gebze Technical University*); *B. Çolak* (*Gebze Technical University*); *A. Maraşli* (*Gebze Technical University*); *Eren Doğan* (*Gebze Technical University*); *Kamil Çinar* (*Gebze Technical University*); *Pavel Kupriyanov* (*Gebze Technical University*); *C. Okay* (*Marmara University*); *R. Khusnutdinov* (*Kazan State Power Engineering University*); *S. Kazan* (*Gebze Technical University*); *Bulat Rameev* (*Gebze Technical University*);

00:00 Development of Method for Suppression of Transient Processes in Large Power NQR Sensor
Eren Doğan (*Gebze Technical University*); *Kamil Çinar* (*Gebze Technical University*); *Pavel Kupriyanov* (*Gebze Technical University*); *Georgy Mozzhukhin* (*Gebze Technical University*); *Bulat Rameev* (*Gebze Technical University*);

00:00 J-coupling in NMR-spectra of Organophosphorus Liquids in Earth's Magnetic Field
Rifat Gimatdin (*Gebze Technical University*); *Pavel Kupriyanov* (*Gebze Technical University*); *Georgy Mozzhukhin* (*Gebze Technical University*); *Bulat Rameev* (*Gebze Technical University*); *Vladimir Chizhik* (*Saint-Petersburg State University*);

Session 2P11a
Inverse Problems in Antenna and Scattering: Theory, Challenges and Applications

Tuesday PM, July 4, 2023

Room South Room 223

Organized by Andrea Randazzo, Raffaele Solimene

Chaired by Andrea Randazzo, Raffaele Solimene

00:00 Application of MUSIC Algorithm for Identifying Unknown Objects from Limited-Aperture Configuration
Won-Kwang Park (*Kookmin University*);

00:00 A Microwave Reflection-based Measurement System for Moisture Detection in Textiles
Felix Essingholt (*Fraunhofer IMS*); *Sebastian Böller* (*Fraunhofer Institute for Microelectronic Circuits and Systems (IMS)*); *Thorben Grenter* (*Fraunhofer Institute for Microelectronic Circuits and Systems (IMS)*); *Anton Grabmaier* (*Fraunhofer Institute for Microelectronic Circuits and Systems (IMS)*);

00:00 Antenna Array Diagnostics through a Lebesgue-space Inversion Technique
Valentina Schenone (*University of Genoa*); *Alessandro Fedeli* (*University of Genoa*); *Claudio Estatico* (*University of Genoa*); *Matteo Pastorino* (*University of Genoa*); *Andrea Randazzo* (*University of Genoa*);

00:00 A Practical Strategy for Improving GPR Images Referred to Inhomogeneous Scenarios
Raffaele Persico (*University of Calabria*); *Francesco Marasco* (*University of Calabria*); *Gianfranco Morelli* (*Geostudi Astier S.r.l.*); *Giuseppe Esposito* (*National Research Council of Italy*); *Ilaria Catapano* (*Institute for Electromagnetic Sensing of Environment, National Research Council*);

00:00 Phaseless Array Faulty Diagnostics via Convex Optimization
Maria Antonia Maisto (*Universita degli Studi della Campania "Luigi Vanvitelli"*); *Raffaele Moretta* (*Università degli Studi della Campania "Luigi Vanvitelli"*); *Giovanni Leone* (*Universita della Campania Luigi Vanvitelli*);

00:00 Geometry Reconstruction from Method of Moments Matrices
Quanfeng Wang (*Technical University of Munich*); *Alexander Paulus* (*Technical University of Munich*);

00:00 Improving Precision Pointing of Monopulse Radars by Exploiting OAM Vortex Beams
Giada Maria Battaglia (*Università Mediterranea di Reggio Calabria*); *Tommaso Isernia* (*Università Mediterranea di Reggio Calabria*); *Roberta Palmeri* (*National Research Council*); *Andrea Francesco Morabito* (*University "Mediterranea" of Reggio Calabria*);

00:00 Solving Phase Retrieval Problems for Antenna Characterization and Diagnostics by Means of a Single Measurement Surface: Recent Developments and New Goals
Giada Maria Battaglia (*Università Mediterranea di Reggio Calabria*); *Andrea Francesco Morabito* (*Università Mediterranea di Reggio Calabria*); *Roberta Palmeri* (*National Research Council*); *Tommaso Isernia* (*Università Mediterranea di Reggio Calabria*);

Session 2P11b
Radar Signal Processing and Imaging Using Intelligent Technology

Tuesday PM, July 4, 2023

Room South Room 223

Organized by Gang Xu, Liangtian Wan

00:00 A Spiral-like Acquisition Strategy for 3D Huygens' Principle Based Microwave Imaging
Bilal Khalid (*London South Bank University*); *Banafsheh Khalesi* (*UBT-UK DIVISION*); *Navid Ghavami* (*UBT-Umbria Bioengineering Technologies*); *Giovanni Raspa* (*Spin off of University of Perugia*); *Mario Badia* (*Umbria Bioengineering Technologies*); *Sandra Dudley* (*London South Bank University*); *Mohammad Ghavami* (*London South Bank University*); *Gianluigi Tiberi* (*London South Bank University*);

00:00 Hyperspectral Image Analysis with Subspace Learning-based One-Class Classification
Sertac Kilickaya (*Izmir University of Economics*); *Muharrem Mete Ahishali* (*Tampere University*); *Fahad Sohrab* (*Tampere University*); *Turker Ince* (*Izmir University of Economics*); *Moncef Gabbouj* (*Tampere University*);

00:00 Preliminary Results of Near Field Microwave Imaging System for Dielectric Material
Ercan Menguc (*Akdeniz University*); *Melikhan Eren* (*Turkish Aerospace Industries Inc.*); *Atalay Kocakusak* (*Akdeniz University*); *Selcuk Helhel* (*Akdeniz University*);

00:00 Study on the Detection of Vehicles under Effect of Foreground Obstacles
Yifan Wu (*Nihon University*); *Syota Yazawa* (*Nihon University*); *Kiyozumi Niizuma* (*Nihon University*); *Takashi Kuroiwa* (*Nihon University*);

00:00 A Novel Tensor Alternating Direction Method of Multiplier (TADMM) Approach for Video SAR Imaging
Wei Pu (*University of Electronic Science and Technology of China*); *Junjie Wu* (*University of Electronic Science and Technology of China*); *Hongyang An* (*University of Electronic Science and Technology of China*); *Yue Song* (*University of Electronic Science and Technology of China*); *Yulin Huang* (*University of Electronic Science and Technology of China*); *Haiguang Yang* (*University of Electronic Science and Technology of China*); *Jianyu Yang* (*University of Electronic Science and Technology of China*);

00:00 Image Spectrum Decomposition of Ice-sounding Data in Stratified Medium for Back Projection Algorithm
Chen Lv (*Tongji University*); *Tong Hao* (*Tongji University*);

00:00 Investigation of Usage Possibility FMCW Radar for Non-destructive Corrosion Detection in Building Structures
Melikhan Eren (*Turkish Aerospace Industries Inc.*); *Ercan Menguc* (*Akdeniz University*); *Atalay Kocakusak* (*Akdeniz University*); *Selcuk Helhel* (*Akdeniz University*);

Session 2P12a
Filters, Amplifiers and Microwave Technologies

Tuesday PM, July 4, 2023

Room South Room 224

00:00 3D Printed PLA-based SIW Bandpass Filter with Artificial Dielectric Material
Muhammad Farhan Maulana (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Incorporation of CSRRs for Bandwidth Enhancement of SIW Bandpass Filter
Junas Haidi (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Miniaturize Broadband Coplanar Stripline Bandpass Filter Based on Cross-coupled Resonances
Edison Kho (*National Institute of Technology Silchar*); *Banani Basu* (*National Institute of Technology Silchar*); *Arnab Nandi* (*National Institute of Technology Silchar*);

00:00 Suppression of High-order Resonance in High-speed Connectors
Wen-Chieh Liang (*National Taipei University of Technology*); *Jeih-Weih Hung* (*National Chi Nan University*); *Eric S. Li* (*National Taipei University of Technology*);

00:00 A 36–39 GHz Power Amplifier with Built-in Linearizer Using 0.1-μm GaAs pHEMT Process
Jeng-Han Tsai (*National Taiwan Normal University*); *Y.-C. Yu* (*National Taiwan Normal University*); *C.-L. Lin* (*National Taiwan Normal University*);

00:00 On the Design Consideration for Prototyping of Flexible Phase-difference Butler Matrix
Zulfi (*Institut Teknologi Bandung*); *Joko Suryana* (*Bandung Institute of Technology*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Power Transfer Maximization through Locally Planar Layered Media of Focused Bessel-shaped Beams in Near-field
Santi Concetto Pavone (*University of Catania*); *Gino Sorbello* (*University of Catania*);

00:00 Efficient Channel Estimation for LIS-based Systems
Inês Gonçalves Saúde de Almeida (*Universidade Autonoma de Lisboa*); *Joao Guerreiro* (*Instituto de Telecomunicacoes*); *Rui Dinis* (*Universidade Nova de Lisboa*);

00:00 On the Performance of LDPC Codes over Radio Stripes System
Ali Gashtasbi (*Universidade Autonoma de Lisboa*); *Mario Marques da Silva* (*Universidade Autonoma de Lisboa*); *Rui Dinis* (*Universidade Nova de Lisboa*);

00:00 On the LIS System Performance with and without Equalization
Ali Gashtasbi (*Universidade Autonoma de Lisboa*); *Mario Marques da Silva* (*Universidade Autonoma de Lisboa*); *Rui Dinis* (*Universidade Nova de Lisboa*);

Session 2P12b
Advanced RF and Microwave Technologies for New Mobility Applications

Tuesday PM, July 4, 2023

Room South Room 224

Organized by Sang-Min Han

Chaired by Sang-Min Han, Yongchae Jeong

00:00 Miniaturized Four Port MIMO Antenna for URLLC and Virtual MIMO Applications
Osama Aziz (*Ghulam Ishaq Khan Institute of Engineering Sciences and Technology*); *MuhibUr Rahman* (*Polytechnique Montreal*);

00:00 Utilizing Transmission Lines for Efficient Energy Harvesting in 5G Networks
Maryam Eshaghi (*University of Windsor*); *Rashid Rashidzadeh* (*University of Windsor*);

00:00 The Method of De-embedding without the TRL Calibration Board
Minseong Kim (*Soonchunhyang University*); *Sohui Kim* (*Soonchunhyang University*); *Jiwon Kim* (*Soonchunhyang University*); *Heaseong Cha* (*SAWNICS Co., Ltd.*); *Soon Hong Ahn* (*SAWNICS Co., Ltd.*); *Youna Jang* (*Soonchunhyang University*); *Dal Ahn* (*Soonchunhyang University*);

00:00 Design of Compact and High Selective RF Front-end Module for Low-band 5G and IoT Applications
Trong-Hieu Le (*Electric Power University*); *Manh-Cuong Ho* (*Electric Power University*); *Le-Cuong Nguyen* (*Electric Power University*);

00:00 Compact Microwave Device Designs with DGSs for Mobility Applications
Sang-Min Han (*Soonchunhyang University*); *Won-Sang Yoon* (*Hoseo University*); *Jongsik Lim* (*Sooncheonhyang University*); *Dal Ahn* (*Soonchunhyang University*);

00:00 Deep Reinforcement Learning-based Auto-tuning Algorithm for Cavity Filters
Daniel Poul Mtowe (*Soonchunhyang University*); *Seong-Ho Son* (*Soonchunhyang University*); *Dal Ahn* (*Soonchunhyang University*); *Dong Min Kim* (*Soonchunhyang University*);

00:00 Magnetless Nonreciprocal Bandpass Filter Using Time-modulated Resonators
Girdhari Chaudhary (*Jeonbuk National University*); *Phanam Pech* (*Jeonbuk National University*); *Samdy Saron* (*Jeonbuk National University*); *Yongchae Jeong* (*Jeonbuk National University*);

00:00 Unequal Termination Impedances Bandpass Filter Based on Different-mode Substrate Integrated Waveguide Cavity
Phanam Pech (*Jeonbuk National University*); *Samdy Saron* (*Jeonbuk National University*); *Girdhari Chaudhary* (*Jeonbuk National University*); *Yongchae Jeong* (*Jeonbuk National University*);

00:00 A Design of Multilayer Interdigital Bandpass Filter Using Low-temperature Co-fired Ceramic (LTCC) Technology
Sohui Kim (*Soonchunhyang University*); *Minseong Kim* (*Soonchunhyang University*); *Dae-Ung Lee* (*Huba Research Institute*); *Hyung-Sik Park* (*Huba Research Institute*); *Youna Jang* (*Soonchunhyang University*); *Dal Ahn* (*Soonchunhyang University*);

00:00 A Size-reduced CPW Ring Hybrid Coupler Using a Phase Converting Structure
Jongsik Lim (*Sooncheonhyang University*); *Donghun Kang* (*Soonchunhyang University*); *Kyungmin Park* (*Soonchunhyang University*); *Gil-Young Lee* (*Air Force Academy*); *Sang-Min Han* (*Soonchunhyang University*); *Dal Ahn* (*Soonchunhyang University*); *Yongchae Jeong* (*Jeonbuk National University*);

Session 2P13
Poster Session 3

Tuesday PM, July 4, 2023

8:00 AM - 12:00 AM

Room Forum Hall Foyer 1

00:00 Glare Points in Laser Flow Cytometry
Alexander Putz (*Physikalisch-Technische Bundesanstalt*); *M. Hussels* (*Physikalisch-Technische Bundesanstalt*); *Jonas Gienger* (*Physikalisch-Technische Bundesanstalt*);

00:00 A Single-layer Polarization-insensitive Broadband Absorber for X-band Applications
Cheng-Yen Chung (*Yuan Ze University*); *Cheng-Nan Chiu* (*Yuan Ze University*); *Chu-Kuo Chen* (*Ministry of Economic Affairs*); *Ye-Hong Chen* (*Ministry of Economic Affairs*);

00:00 Utilization of Transmission Phase Shift Method for Characterizing Properties of Material Encapsulated by Rectangular Waveguide
Sulistyaningsih (*Institut Teknologi Bandung*); *Zulfi* (*Institut Teknologi Bandung*); *Umar Khayam* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Design of Conical Lens-corrected Horn Antennas by Means of a Method Using Higher-order Free-spurious Finite Elements
José M. Gil (*Universidad Politécnica de Madrid*); *M. A. González De Aza* (*Universidad Politécnica de Madrid*); *Alfonso Gómez García* (*Universidad de Extremadura*); *Rafael Gómez Alcalá* (*Universidad de Extremadura*); *J. Garcia* (*Universidad Politécnica de Madrid*); *Jesús Rubio* (*Universidad de Extremadura*);

00:00 Mesh Simplification Method Based on Monto-Carlo Algorithm
Ce Ding (*Zhejiang University*); *Lizhen Yang* (*Zhejiang University*); *Ruoming Zhang* (*Zhejiang University*); *Yuechen Zhao* (*Zhejiang University*); *Han Wang* (*Zhejiang University*); *Yuxuan Li* (*Zhejiang University*); *Hai Lin* (*Zhejiang University*);

00:00 Hybrid Modes of Spatial Dispersion Based on Bianisotropic Materials
Xiao Feng Liu (*Hangzhou Dianzi University*); *Mingzhu Li* (*Hangzhou City College*); *Guang Chen* (*Hangzhou City College*); *Liang Peng* (*Hangzhou City University*); *Zhu Hong Lin* (*Hangzhou City College*);

00:00 Study on the Mechanism of the Effect of High Power Microwave on the Optical-electrical Characteristics of Solar Cells
Tao Liu (*Xidian University*); *Genrui Hua* (*Laser Fusion Research Center*); *Shiyan Jiao* (*Xidian University*); *Xiao-Wei Shi* (*Xidian University*); *Le Xu* (*Xidian University*);

00:00 Effect of a Gold Nanoparticles Monolayer on the Enhancement of Silicon Quantum Dots Photoluminescence
Jorge Alberto Betancourt-Delgadillo (*Universidad Nacional Autónoma de México*);

00:00 Formation of Bound States in the Continuum in Double Trapezoidal Grating
Jicheng Wang (*Jiangnan University*); *Ying Hu* (*Optical Control Telian (Shanghai) Information Technology Co., Ltd.*);

00:00 Large Area Spin-locked Topological Edge and Corner State in Dielectric Photonic Crystal
Bei Yan (*Southern University of Science and Technology*); *Zhen Gao* (*Southern University of Science and Technology*);

00:00 Nonlinearity-tuned Optical Spin-orbit Interaction of Graphene-wrapped Nanoparticles
Xiaoying Gu (*Soochow University*); *Yuchen Sun* (*Soochow University*); *Lei Gao* (*Soochow University*); *Andrey V. Novitsky* (*Belarusian State University*); *Wenjing Yu* (*Jiangsu University of Technology*); *Dongliang Gao* (*Soochow University*);

00:00 Cross-shaped Graphene Enabled Coding Metasurface for Dynamic THz Beam Steering
Qian Wang (*Shanghai University*); *Fengyuan Yang* (*Shanghai University*);

00:00 Displacement Sensor Based on Quasi Bound States in the Continuum of Localized Spoof Surface Plasmons
Si-Qi Li (*Peking University*); *Fan-Hong Li* (*Peking University*); *Yu Zhu* (*Peking University*); *Chao-Hai Du* (*Peking University*);

00:00 Study of Active Terahertz Chiral Metasurfaces
Meng Liu (*Shandong University of Science and Technology*);

00:00 Ultraviolet Chiral Shells Towards High Performance Full-Stokes Polarimeters
Shanshan Huang (*Sichuan University*); *Shilin Xian* (*Sichuan University*); *Xiu Yang* (*Sichuan University*); *Jinglei Du* (*Sichuan University*); *Yidong Hou* (*Sichuan University*);

00:00 Low-k Surface Functionalization by He and Ar Electron Beam rf Plasma: Complex Simulation Approach
Alexander Solovykh (*Lomonosov Moscow State University*); *A. A. Sycheva* (*Lomonosov Moscow State University*); *Ekaterina N. Voronina* (*Lomonosov Moscow State University*); *O. V. Proshina* (*Lomonosov Moscow State University*); *T. V. Rakhimova* (*Lomonosov Moscow State University*); *A. P. Palov* (*Lomonosov Moscow State University*); *A. T. Rakhimov* (*Lomonosov Moscow State University*);

00:00 A Novel Demultiplexer Solution for Silica-titania Platform-based Photonic Integrated Circuits
Muhammad Ali Butt (*Warsaw University of Technology*); *L. Kozlowski* (*Warsaw University of Technology*); *M. Dudek* (*Warsaw University of Technology*); *M. Shahbaz* (*Warsaw University of Technology*); *E. Kilicaslan* (*Warsaw University of Technology*); *Z. Dziekan* (*Warsaw University of Technology*); *A. Kazmierczak* (*Warsaw University of Technology*); *Ryszard Piramidowicz* (*Warsaw University of Technology*);

00:00 Development of the Strain Measurement Calibration Technique for Road Pavement Structural Health Monitoring Applications Using Optical FBG Sensors
Janis Braunfelds (*Riga Technical University*); *Ugis Senkans* (*Riga Technical University*); *Peteris Skels* (*Riga Technical University*); *Jurgis Porins* (*Riga Technical University*); *Viktors Haritonovs* (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Experimental Demonstration of WDM-PON Transmission System Based on the FWM-assisted Optical Frequency Comb Generator
Rihards Murnieks (*Riga Technical University*); *Armands Ostrovskis* (*Riga Technical University*); *Kaspars Zakis* (*Riga Technical University*); *Ilja Lyashuk* (*Riga Technical University*); *Oskars Ozolins* (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Efficient Indoor Perovskite Solar Cells via Surface Defect Passivation of Electron Transporting Layer
Bing-Huang Jiang (*Ming Chi University of Technology*); *Chih-Ping Chen* (*Ming Chi University of Technology*);

00:00 Theoretical Realization of Half-vortices and Skyrmions of Exciton-polaritons in a Magnetic Field
Ting-Wei Chen (*National Pingtung University*); *Shih-Da Jheng* (*Chinese Culture University*); *Szu-Cheng Cheng* (*Chinese Culture University*);

00:00 High Precision Spectrum Measurement of Millimeter Waves by Electro-optic Detection Using a 40 GHz Actively Mode-locked Laser Diode
Isao Morohashi (*National Institute of Information and Communications Technology (NICT)*); *Norihiko Sekine* (*National Institute of Information and Communications Technology*); *Iwao Hosako* (*National Institute of Information and Communications Technology*);

00:00 Fabrication of Lensed Fibers with Arc Fusion Splicer for Telecommunication Applications
Arvids Sedulis (*Riga Technical University*); *Armands Ostrovskis* (*Riga Technical University*); *Kaspars Zakis* (*Riga Technical University*); *Kristaps Rubuls* (*Riga Technical University*); *Dilan Enrique Ortiz Blanco* (*Riga Technical University*); *Dmitrijs Prigunovs* (*Riga Technical University*); *Janis Alnis* (*University of Latvia*); *Vjaceslavs Bobrovs* (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*);

00:00 Aircraft Video Transmission Communication System Based on the Forward Error Correction Codes
Aleksandr Krotov (*Riga Technical University*); *Mihail Krotov* (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*); *Svitlana Matsenko* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 About Optical Sensors for Water Quality Monitoring
Ferdenant A. Mkrtchyan (*V. A. Kotelnikov's Institute of Radioengineering and Electronics, Russian Academy of Sciences*); *V. Yu. Soldatov* (*Kotelnikov Institute of Radioengineering and Electronics, Fryazno Branch, RAS*); *M. A. Mkrtchyan* (*Kotelnikov Institute of Radioengineering and Electronics, Fryazno Branch, RAS*);

00:00 Achieving High Resolution Temperature Measurement with Michelson Interferometer Utilizing Polymer Filled Hollow Core Fiber
Ghulam Abbas Lashari (*Wuhan University of Technology*);

00:00 A Highly Sensitive Surface-plasmonic Sensor Using Hyperbolic Columnar Thin Film in the Grating-coupled Configuration
Kiran Mujeeb (*Quaid-i-Azam University*);

00:00 Polarization Based Optical Microscopy for Better Resolution
Nagendra Prasad Yadav (*Hubei Polytechnic University*);

00:00 Plasmonic Molecular Rectennas to Produce Electricity from Light
David Duché (*Aix Marseille University*); *H. Abdoul Yasset Barhwal* (*Aix Marseille University*); *E. Sanchez Adaime* (*Aix Marseille University*); *V. Jangis* (*Aix Marseille University*); *C. Ruiz Herrero* (*Aix Marseille University*); *O. Margeat* (*Aix Marseille University*); *B. Sciacca* (*Aix Marseille University*); *J. Le Rouzo* (*Aix Marseille University*); *J. Ackermann* (*Aix Marseille University*); *J-J. Simon* (*Aix Marseille University*); *L. Escoubas* (*Aix-Marseille University*);

00:00 N-elements Pyramidal Horn Antenna Arrays for Ku Band Applications
Cristina Adelaida Heiman (*University Politehnica of Bucharest*);

00:00 Radio Frequency Energy Harvesting Chip for ISM-915 MHz Band Wireless Transmitter
Guo-Ming Sung (*National Taipei University of Technology*); *Hung-Yu Chou* (*National Taipei University of Technology*); *Zong-Wei Chen* (*National Taipei University of Technology*); *Chih-Ping Yu* (*National Taipei University of Technology*);

00:00 Analysis on Interference Impact of 5G in 6 GHz Band on Fixed Service Stations
Guntis Ancans (*Riga Technical University*); *Arnis Ancans* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Dual-band Patch Antenna with Operating Frequency Tuning Capability Based on Varactor Diode
Dwi Andi Nurmantris (*Telkom University*); *Muhammad Farhan Maulana* (*Institut Teknologi Bandung*); *Achmad Munir* (*Bandung Institute of Technology*);

00:00 A Compensation for Elevated Sidelobe of Radiation Pattern of Antenna Array Caused by Amplitude and Phase Discretization Based on Deep Reinforcement Learning
Shiyuan Zhang (*Beihang University*); *Chuan Shi* (*Beihang University*); *Ou Pan* (*Beihang University*); *Ming Bai* (*Beihang University*);

00:00 A Novel Modified Wilkinson Power Divider with Controllable 2^{nd} Harmonic Impedance Matching
Yunsik Park (*Korea Electronics Technology Institute*); *Hyunsook Kang* (*Hillntoe Inc.*); *Youngmin Kim* (*Hillntoe Inc.*); *Jongin Ryu* (*Korea Electronics Technology Institute*);

00:00 A Decision Method for Precise Load Modulation of Doherty PA Using Reactance Elimination
Yunsik Park (*Korea Electronics Technology Institute*); *Hyunsook Kang* (*Hillntoe Inc.*); *Youngmin Kim* (*Hillntoe Inc.*); *Jongin Ryu* (*Korea Electronics Technology Institute*);

00:00 An Efficient Design Method for Planer Inverted F-shaped Antenna Based on Optimization of Genetic Algorithm
Yuan Yang Du (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Design and Calibration of a Microstrip Planar Sensor Based on a Doubly Coupled Ring Resonator for Measuring the Dielectric Constant
Tae-Eon Park (*Korea Testing Laboratory*); *Jae-Suk Lee* (*Korea Testing Laboratory*); *Jae-Lim Chang* (*Korea Testing Laboratory*);

00:00 Nature-inspired MIMO Antenna for a 5G Base Station
Carolina Gouveia (*Instituto de Telecomunicacoes*); *Rita Almeida* (*Instituto Superior de Engeharia de Lisboa*); *Pedro Pinho* (*University of Aveiro*);

00:00 Relay Provisioning Simulator for Maximizing 5G MIMO Capacity in an Indoor Environment
Eun-Jin Kim (*Korea Advanced Institute of Science and Technology*); *Seung-Won Keum* (*Korea Advanced Institute of Science and Technology*); *Ju-Yong Lee* (*Korea Advanced Institute of Science and Technology*);

00:00 A Wideband and High-Isolation MIMO Slot Antenna for 5G Smartphone Applications
Xiao Jie Lu (*Tongji University*); *Min Ye* (*Tongji University*); *Ren Yuan Liu* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 A Spoof Surface Plasmon Polaritons Frequency Scanning Antenna Based on Coplanar Waveguides
Zhen Wang (*Tongji University*); *Xiao Yu Li* (*Tongji University*); *Xiao Jie Lu* (*Tongji University*); *Ji Yuan Duan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Ka-band Diffraction Radiation Antenna
Asel Begimova (*L.N. Gumilyov Eurasian National University*); *Vadim L. Pazynin* (*O.Ya. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine (IRE NASU)*); *Kostyantyn Sirenko* (*O.Ya. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine*); *Nataliya P. Yashina* (*O.Ya. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine*);

00:00 High Gain Dual-band Compact Antenna Array for Millimeter Wave Applications
Saba Tariq (*Ghulam Ishaq Khan Institute of Engineering Sciences and Technology*); *Waleed Tariq Sethi* (*Ghulam Ishaq Khan Institute of Engineering Sciences and Technology*); *Arbab Abdur Rahim* (*GIK Institute of Engineering Sciences and Technology*);

00:00 Analysis of Characteristics of Low-loss for Wireless Charging Coil
Jung-Ick Moon (*Electronics and Telecommunications Research Institute*); *Sang-Won Kim* (*Electronics and Telecommunications Research Institute (ETRI)*); *Gwangzeen Ko* (*Electronics and Telecommunications Research Institute (ETRI)*); *Seong-Min Kim* (*Electronics and Telecommunications Research Institute*); *In-Kui Cho* (*Electronics and Telecommunications Research Institute*);

00:00 Experimental Results of Rain Rate and Drop Size Distribution in Athens-Greece, for the Estimation of Rain Attenuation in E- and D-band
Petros Kontos (*School of Pedagogical and Technological Education*); *Ioannis Kontos* (*School of Pedagogical and Technological Education*); *Spiros N. Livieratos* (*School of Pedagogical and Technological Education*);

00:00 Locating Low-category Tropical Cyclones from Geostationary Satellite Images Using Convolutional Neural Network
Han Wang (*Ocean University of China*); *Qing Xu* (*Hohai University*); *Xiaobin Yin* (*Ocean University of China*);

00:00 Target Distance Measurement Technique by Neural Network Learning in Microwave Complex Scattering Environment
Janghoon Jeong (*Soonchunhyang University*); *Dongwon Kwon* (*Soonchunhyang University*); *Seongtae Hwang* (*Soonchunhyang University*); *Seong-Ho Son* (*Soonchunhyang University*);

00:00 Study on Sea Surface Spectrum Model for Electromagnetic Scattering in Ku-band Based on Two-scale Model
Chenyu Guo (*Fudan University*); *Hongxia Ye* (*Fudan University*);

00:00 A Rain Cell Extraction Method for Gaofen-3 Dual-polarization Data
Xianen Wei (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Wenjia Zhao* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Yongsheng Xu* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jinsong Chong* (*Aerospace Information Research Institute, Chinese Academy of Sciences*);

00:00 Representativeness Error Tracing in SSS Products Based on Quadruple Collocation Analysis
Jin Wang (*Qingdao University*); *Yifan Li* (*Qingdao University*); *Meijie Liu* (*Qingdao University*);

00:00 Improved Electromagnetic Inverse Scattering with M-Net Model Incorporating Diffraction Tomography
Ming Jin (*Shanghai Normal University*); *Xi Rui Yang* (*Shanghai Normal University*); *Chunxia Yang* (*Shanghai Normal University*); *Mei Song Tong* (*Tongji University*);

00:00 Satellite Observations of Geladandong Glacier Variation from 1999 to 2020
Xudong Liu (*Guilin University of Technology*); *Ying Yang* (*Nanjing University of Science and Technology*); *Kun-Shan Chen* (*Guilin University of Technology*);

00:00 Combination of Physical Information with Deep Learning for the Study of Electromagnetic Scattering Characteristics
Xianggang Wang (*Zhejiang University*); *Zheng Zhang* (*Zhejiang University*); *Chao Yang* (*Zhejiang University*); *Yang Du* (*Zhejiang University*);

00:00 Orbit Angular Momentum of Plasma May Be a New Detection Technology for Solar Flares
Liang Dong (*Yunnan Observatories, Chinese Academy of Sciences*); *Jian Jia Yi* (*Xi'an Jiaotong University*);

00:00 A Survey of Vehicle Trajectory Prediction Based on Deep-learning
Huilin Yin (*Tongji University*); *Yurong Wen* (*Tongji University*); *Jiaxiang Li* (*Tongji University*);

00:00 Optimization of Efficiency in an IPT System by Incorporating Additional Inductances
Michal Kosik (*CVUT*); *Jiri Lettl* (*Czech Technical University in Prague*);

00:00 Analysis of Functional Areas of Human Brain Based on Reconstructed Images of DMFG-generated Countermeasure Network
Renzhou Gui (*Tongji University*); *Aobo Zhang* (*Tongji University*); *Shuai Liu* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 An Accurate Detection Method for Insulator Dropout Based on Yolox Algorithm
Yuying Zhang (*Shanghai University of Engineering Science*); *Shu Jia Yan* (*Shanghai University of Engineering Science*); *Qiang Chen* (*Shanghai University of Engineering Science*); *Rong Song* (*Shanghai University of Engineering Science*); *Mei Song Tong* (*Tongji University*);

00:00 Cramer-Rao Bound for Source Localization of Ingested Sources in the Human Intestine Using Finite-element Method
Aleksandar Jeremic (*McMaster University*);

00:00 A Multi-stage Neural Network for Single Channel Speech Enhancement
Yi Wang (*Chongqing University of Posts and Telecommunications*); *Yi Zhou* (*Chongqing University of Posts and Telecommunications*); *Hongqing Liu* (*Chongqing University of Posts and Telecommunications*);

Session 3A1
Specific Approaches in Computational Electromagnetics as Applied to Modern Nanophotonics 3

Wednesday AM, July 5, 2023

Room Club E

Organized by Maha Ben Rhouma

Chaired by Maha Ben Rhouma

00:00 AI for Photonics and Topological Physics
Keynote
Marin Soljačić (*Massachusetts Institute of Technology*);

00:00 Design for Quality: Multifunctional Metasurface Flat Optics
Invited
Fan Yang (*Massachusetts Institute of Technology*); *Hung-I Lin* (*Massachusetts Institute of Technology*); *Juejun Hu* (*Massachusetts Institute of Technology*); *Tian Gu* (*Massachusetts Institute of Technology*);

00:00 Optimization of Silicon Nanoantenna for Optical Phased Arrays
Andreas Paul Sreauch (*University Paderborn*); *Henna Farheen* (*University Paderborn*); *Viktor Myroshnychenko* (); *Jens Forstneer* (*University Paderborn*);

00:00 Comparative Analysis of the Far- and Near-field Response of Ensembles of Nanostructures
Invited
Alejandro Manjavacas (*CSIC & University of New Mexico*);

00:00 Spintronic Stacks for Enhanced Emission of Terahertz Radiation and Polarization Control
Invited
Dominik Sokoluk (*State Research Center OPTIMAS*); *Jan Kappa* (*State Research Center OPTIMAS*); *Laura Scheuer* (*TU Kaiserslautern*); *Evangelos Th. Papaioannou* (*TU Kaiserslautern*); *Marco Rahm* (*University of Kaiserslautern*);

00:00 Multiphysics Simulations in Nanophotonics
Invited
Dmitry N. Chigrin (*DWI Leibniz Institute for Interactive Materials*);

00:00 Enhanced Harris Hawks Optimizer with a Well-selected Initial Population: Application to the Inverse Design of Metagratings
Kofi Edee (*Clermont Uniniversite*);

00:00 Efficient Multi-emitter Near Field Response Calculation for Multilayer Graphene Environments
Devashish Pandey (*Technical University of Denmark*); *Sanshui Xiao* (*Technical University of Denmark*); *Martijn Wubs* (*Technical University of Denmark*);

00:00 Electromagnetics in Media with Disorder: Enabling Convolution Dispersion in the Time Domain
Invited
Ludmila J. Prokopeva (*Purdue University*); *S. N. Chowdhury* (*Purdue University*); *K. Pagadala* (*Purdue University*); *Alexander V. Kildishev* (*Purdue University*);

00:00 Extremely Localized Plasmon Mode and Its Susceptibility to the External Electric Field
Invited
Xuewen Chen (*Huazhong University of Science and Technology*);

00:00 Symmetry and Topology in Photonic Crystals
Invited
Thomas Christensen (*Technical University of Denmark (DTU)*);

Session 3A2
Organic, Perovskite, and Quantum Dot Optoelectronics 2

Wednesday AM, July 5, 2023

Room Club D

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

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

00:00 Organic Photovoltaics Using Environmentally Friendly Non-halogenated Processing Solvents and Non-toxic Additives
Invited
Taeshik Earmme (*Hongik University*);

00:00 Defect Passivation for Stable Perovskite Crystals
Invited
Taiho Park (*Pohang University of Science and Technology (POSTECH)*);

00:00 Large-scale and Efficient Light-emitting Diodes Based
Invited on Halide Perovskite Quantum Materials
Zhiyong Fan (*The Hong Kong University of Science and Technology*);

00:00 Perovskite Nanocrystal Emitters for Bright, Efficient
Invited and Stable Light-emitting Diodes
Tae-Woo Lee (*Seoul National University*);

00:00 2D Sn-based Perovskites for Optoelectronic Applications
Invited
Chu-Chen Chueh (*National Taiwan University*);

00:00 Near Infra-red Perovskite Imaging Arrays with High Per-
Invited formance and Stability
Wallace C. H. Choy (*The University of Hong Kong*);

00:00 Development of Organic Semiconducting Materials for
Invited Organic Electronics
Yun-Hi Kim (*Gyeongsang National University*);

00:00 Novel Pixel Structures for Light Extraction of OLED
Invited Displays
Chung-Chih Wu (*National Taiwan University*);

00:00 Highly Efficient Halide-based Perovskite Light-emitting
Invited Diodes Using Multifunctional Conjugated Molecular Additives
Myoung Hoon Song (*Ulsan National Institute of Science and Technology (UNIST)*); *Han Young Woo* (*Korea University*);

00:00 High-brightness Microcavity OLEDs: Overcoming An-
Invited gular Color-shifts through Polaritons, and Monolithic Integration for Brain Implants
Malte C. Gather (*University of Cologne*);

00:00 Radiative and Non-radiative Recombination in Organic
Invited Photovoltaics
Koen Vandewal (*Hasselt University*);

Session 3A3
FocusSession.SC3: Optical Microscopy for Quantitative Imaging and Metrology 1

Wednesday AM, July 5, 2023

Room Club C

Organized by Xuewen Chen, Marek Piliarik

00:00 Ultrasensitive Full-field Dynamic Light Scattering Mi-
Invited croscopy Reveals Nanoscopic Cell Organization and Dynamics
Chia-Lung Hsieh (*Institute of Atomic and Molecular Sciences (IAMS), Academia Sinica*);

00:00 Quantitative Label-free Imaging of Protein Diffusion and
Invited Interaction at the Single Molecule Level
Barbora Spackova (*Institute of Physics of the Czech Academy of Sciences*);

00:00 Quantitative Plasmonic Microscopy towards Single
Invited Molecule Detection
Hui Yu (*Shanghai Jiao Tong University*);

00:00 Pixel-diversity Interferometric Imaging: A New
Keynote Paradigm in Digital Biosensing
M. Selim Unlu (*Boston University*); *Iris Celebi* (*Boston University*); *Mete Aslan* (*Boston University*);

00:00 Substrate Signature in Interferometric Scattering Mi-
Invited croscopy: Identification, Metrology Implication and Its Removal
Xuewen Chen (*Huazhong Universtiy of Science and Technology*);

00:00 Optical Phase Imaging and Phase Shaping with Coher-
Invited ent and Incoherent Light
A. Aggoun (*Sorbonne Université*); *J. M. Panadés* (*Sorbonne Université*); *H. Robert* (*Sorbonne Université*); *B. Rogez* (*Sorbonne Université*); *P. Berto* (*Sorbonne Université*); *Gilles Tessier* (*Sorbonne Université*);

00:00 Advancing Single Molecule Localization Microscopy:
Invited New Devices, New Methods and New Possibilities
Zhen-Li Huang (*Hainan University*);

00:00 Optical Wafer Inspection at Advanced Technology
Invited Nodes
Jinlong Zhu (*Huazhong University of Science and Technology*); *Jiamin Liu* (*Huazhong University of Science and Technology*); *Honggang Gu* (*Huazhong University of Science and Technology*); *Hao Jiang* (*Huazhong University of Science and Technology*); *Shiyuan Liu* (*Huazhong University of Science and Technology*);

00:00 Optical Characterization of Low-loss Phase Change Material Sb_2S_3 Based on Quantitative Phase Microscopy
Wenyu Chen (*Huazhong University of Science and Technology*); *Zhe Yu* (*Huazhong University of Science and Technology*); *Shiyuan Liu* (*Huazhong University of Science and Technology*); *Jinlong Zhu* (*Huazhong University of Science and Technology*);

00:00 Optical Measurement of Photonic Nanostructures Based on Quantitative Phase Microscopy
Zedi Li (*Huazhong University of Science and Technology*); *Yijun Xie* (*Hubei University of Technology*); *Renlong Zhu* (*Hubei University of Technology*); *Jingyi Wang* (*Hubei University of Technology*); *Zhengqiong Dong* (*Hubei University of Technology*); *Xiangdong Zhou* (*Hubei University of Technology*); *Lei Nie* (*Hubei University of Technology*); *Shiyuan Liu* (*Huazhong University of Science and Technology*); *Jinlong Zhu* (*Huazhong University of Science and Technology*);

00:00 Far-field Deep Sub-wavelength Defect Inspection Using Structured Light Field Illumination Microscopy
Jinsong Zhang (*Huazhong University of Science and Technology*); *Shiyuan Liu* (*Huazhong University of Science and Technology*); *Jinlong Zhu* (*Huazhong University of Science and Technology*);

Session 3A4
FocusSession.SC1: Casimir Effect and Radiative Heat Transfer 5

Wednesday AM, July 5, 2023

Room Club B

Organized by Mauro Antezza, Matthias Krüger

00:00 Invited — Thermodynamic Consistency of Driven Quantum Optical Master Equations
Ariane Soret (*University of Luxenbourg*);

00:00 Invited — Guided Resonant Modes Yield SuperPlanckian Radiation
Sebastian Volz (*The University of Tokyo*);

00:00 Invited — Parallel Plate Force Metrology: Status and Perspectives
René I. P. Sedmik (*TU Wien*);

00:00 Invited — Quantum Trapping in Glycerol and the Effect of Spatial Inhomogeneity
Victoria Esteso (*Istituto Nazionale di Ottica*);

00:00 Isotope Effect on Radiative Thermal Transport
Lanyi Xie (*Peking University*); *Bai Song* (*Peking University*);

00:00 Invited — Measurement of Near-field Thermal Radiation for Artificial Optical Surfaces
Shen Zhan (*Zhejiang University*); *Yongdi Dang* (*Zhejiang University*); *Yi Zhou* (*Zhejiang University*); *Yuxuan Li* (*Zhejiang University*); *Xinran Li* (*Zhejiang University*); *Yi Jin* (*Zhejiang University*); *Yungui Ma* (*Zhejiang University*);

00:00 Invited — Near-field Radiative Heat Transfer Measurements Using Nanomechanical Resonators
Mathieu Giroux (*University of Ottawa*); *Chang Zhang* (*University of Ottawa*); *Michel Stephan* (*University of Ottawa*); *Maxime Brazeau* (*University of Ottawa*); *Raphael St-Gelais* (*University of Ottawa*);

00:00 Invited — Quantum Devices at the Verge of a Phase Transition
Alberto Imparato (*Aarhus University*);

00:00 Invited — Low-noise Magnetic-field Shaping Systems for Quantum Technologies
T. Mark Fromhold (*University of Nottingham*);

00:00 Invited — Radiative Thermal Diode: Rational Design and Theoretical Limit
Bai Song (*Peking University*);

00:00 Quantum Fluctuation Forces between Trapped Nanospheres
Clemens Jakubec (*University of Vienna*); *Uros Delic* (*University of Vienna*); *Pablo Solano* (*Universidad de Concepción*); *Markus Aspelmeyer* (*University of Vienna*); *Kanupriya Sinha* (*Arizona State University*);

Session 3A5a
FocusSession.SC3: Advanced Photonic Technologies for Spectroscopic Applications 1

Wednesday AM, July 5, 2023

Room Club A

Organized by Wei Dong Chen, Vincenzo Spagnolo, Ulrike Willer

Chaired by Wei Dong Chen, Vincenzo Spagnolo

00:00 Invited — Recent Advances in QEPAS-based H_2S Detection
Marilena Giglio (*University and Politecnico of Bari*); *Mariagrazia Olivieri* (*University and Politecnico of Bari*); *Andrea Zifarelli* (*Universita degli Studi di Bari and Politecnico di Bari*); *Giansergio Menduni* (*Politecnico and University of Bari*); *Angelo Sampaolo* (*University and Politecnico of Bari*); *Pietro Patimisco* (*Universita degli Studi di Bari and Politecnico di Bari*); *Vincenzo Spagnolo* (*University and Politecnico of Bari*);

00:00 Invited — Development of a Quantum Cascade Laser-based Sensor for HONO and N_2O_4 Monitoring at 7.8 μm
Xiaojuan Cui (*Anhui Univerisitry*); *Yafan Li* (*Anhui Univerisitry*); *Chaochao Jiang* (*Anhui Univerisitry*); *Xiaohan Cui* (*Anhui Univerisitry*); *Benli Yu* (*Anhui University*);

00:00 Highly Sensitive Silicon Based Micro-electromechanical Resonator for Photoacoustic Gas Sensing
Tarek Seoudi (*Université de Montpellier, CNRS*); *J. Charensol* (*Université de Montpellier, CNRS*); *W. Trzpil* (*Université de Montpellier, CNRS*); *F. Pages* (*Université de Montpellier, CNRS*); *D. Ayache* (*Université de Montpellier, CNRS*); *R. Rousseau* (*Université de Montpellier, CNRS*); *A. Vicet* (*Université de Montpellier, CNRS*); *M. Bahriz* (*Université de Montpellier, CNRS*);

00:00 Invited — Laser Sensing Based on Photoacoustic Techniques: Resonators Studies and Applications
Aurore Vicet (*Universite de Montpellier*); *Diba Ayache* (*Université de Montpellier*); *Julien Charensol* (*Université de Montpellier, CNRS*); *T. Seoudi* (*Université de Montpellier, CNRS*); *E. Kniazeva* (*Université de Montpellier, CNRS*); *E. Rosenkrantz* (*Universite de Montpellier*); *F. Gouzi* (*Montpellier University, Montpellier University Hospital*); *Michael Bahriz* (*Universite de Montpellier*);

00:00 Exhaled Breath Analysis by Quartz Enhanced Photoacoustic Spectroscopy
Diba Ayache (*Université de Montpellier*); *Julien Charensol* (*Université de Montpellier*); *Tarek Seoudi* (*Université de Montpellier, CNRS*); *Nicolas Molinari* (*Montpellier University, Montpellier University Hospital*); *F. Gouzi* (*Montpellier University, Montpellier University Hospital*); *Michael Bahriz* (*Universite de Montpellier*); *Aurore Vicet* (*Universite de Montpellier*);

00:00 High-finesse Optical Cavity Based on Prism Retroreflectors for Broadband Cavity Enhanced Absorption Spectroscopy
Ruyue Cui (*Shanxi University*); *Gaoxuan Wang* (*Universite du Littoral Cote d'Opale*); *Azer P. Yalin* (*Colorado State University*); *Lingshuo Meng* (*Université du Littoral Côte d'Opale*); *Cécile Coeur* (*Universite du Littoral Cote d'Opale*); *Lei Dong* (*Shanxi University*); *Wei Dong Chen* (*Universite du Littoral Cote d'Opale*);

00:00 Ground-based Measurement of Carbon Dioxide in the Atmospheric Column Using Portable Laser Heterodyne Radiometer
Tingting Wei (*Shanxi University*); *Jingjing Wang* (*Université du Littoral Côte d'Opale*); *Fengjiao Shen* (*Universite du Littoral Cote d'Opale*); *Tu Tan* (*Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences*); *Zhensong Cao* (*Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences*); *Xiaoming Gao* (*Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences*); *Pascal Jeseck* (*Universite Pierre et Marie-Curie (Paris 6)*); *Yao-Veng Te* (*Universite Pierre et Marie-Curie (Paris 6)*); *Stéphane Plus* (*Université de Lille*); *Lei Dong* (*Shanxi University*); *Wei Dong Chen* (*Universite du Littoral Cote d'Opale*);

Session 3A5b
Light-matter Interaction in Nanophotonics 1

Wednesday AM, July 5, 2023

Room Club A

Organized by Lian Shen, Mikhail Y. Shalaginov, Huaping Wang

Chaired by Lian Shen, Mikhail Y. Shalaginov

00:00 Deterministically Fabricated Quantum Dot Devices for
Invited Applications in Photonic Quantum Information Technology
Johannes Schall (*Technische Universität*); *Jan Niklas Donges* (*Technische Universität*); *Lucas Bremer* (*Technische Universität*); *Martin Von Helversen* (*Technische Universität*); *Sven Rodt* (*Technische Universität*); *Stephan Reitzenstein* (*Technische Universitat Berlin*);

00:00 Statistical Characterization of Coherent Random Lasing
Invited from Subwavelength Quasi-2D Perovskite Films
Colton Fruhling (*Purdue University*); *Alexandra Boltasseva* (*Purdue University*); *Vladimir M. Shalaev* (*Purdue University*); *Alexander V. Kildishev* (*Purdue University*);

00:00 Dynamic Modeling of Mode-locked Quantum Cascade
Invited Lasers
Christian Jirauschek (*Technical University of Munich*);

00:00 Exact Analytical Quantum Theory for Strong-field Pulsed Photoelectron Emission from Biased Surfaces and Nanogaps
Peng Zhang (*Michigan State University*); *Yi Luo* (*Singapore University of Technology and Design*); *Yang Zhou* (*Michigan State University*); *Lan Jin* (*Michigan State University*);

00:00 Single-photon Emission under Spatial Topological Transition
Zijian Qin (*Zhejiang University*); *Lian Shen* (*Zhejiang University*); *Huaping Wang* (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*); *Xiao Lin* (*Zhejiang University*);

Session 3A6a
Metasurface Holography and Its Advanced Applications

Wednesday AM, July 5, 2023

Room Terrace 2A

Organized by Guoxing Zheng, Lingling Huang

00:00 Design Method of Broadband Metasurfaces for Generating a Two-dimensional Gaussian Beam from a Normal Incident Plane Wave with the Same Amplitude Distribution
Tsutomu Nagayama (*Kagoshima University*);

00:00 Optical Encryption with Metasurfaces and Computational Imaging
Hongchao Liu (*University of Macau*);

00:00 On-chip Meta-optics for AR Holographic Displays
Invited
Zhongyang Li (*Wuhan University*);

00:00 On-chip Metasurface for Multiplexed Guided-wave Holography
Wenwen Li (*Zhejiang University*); *Bo Xiong* (*Zhejiang University*); *Tao Chu* (*Zhejiang University*); *Wei Ma* (*Zhejiang University*);

00:00 Degeneracy Unlocks Metasurfaces' Information Capac-
Invited ity: Near- and Far-field Functionality Integration
Zhou Zhou (*Wuhan University*); *Zile Li* (*Wuhan University*); *Guoxing Zheng* (*Wuhan University*);

00:00 Broadband Polarization-insensitive Meta-Holographic Displays
Isma Javed (*Information Technology University of the Punjab*); *Azhar Javed Satti* (*Information Technology University of the Punjab*); *Muhammad Ashar Naveed* (*Information Technology University of the Punjab*); *Muhammad Qasim Mehmood* (*Information Technology University (ITU)*);

00:00 Metasurface-enabled Multifunctional Holographic Display
Cheng Zhang (*Huazhong University of Science and Technology*);

Session 3A6b
Active Optical Metasurfaces and Metamaterials

Wednesday AM, July 5, 2023

Room Terrace 2A

Organized by Tian Gu

Chaired by Tian Gu

00:00 Design of Broadband Metamaterial Absorbers for C- and X-band Applications
Ramesh Amugothu (*NIT Warangal*); *Damera Vakula* (*National Institute of Technology*);

00:00 Manipulation of the Optical Properties of Plasmonic Metamaterials by Application of Magnetic and Electric Fields
Yakov M. Strelniker (*Bar-Ilan University*); *David J. Bergman* (*Tel Aviv University*);

00:00 Light Upconversion and Routing by a Dielectric Metasurface
A. Di Francescantonio (*Politecnico Milano*); *A. Zilli* (*Politecnico Milano*); *D. Rocco* (*Università degli Studi di Brescia*); *F. Conti* (*Politecnico Milano*); *V. Vinel* (*CNRS, Université de Paris*); *A. Borne* (*CNRS, Université de Paris*); *M. Morassi* (*Université Paris-Saclay*); *A. Lemaître* (*Université Paris-Saclay*); *P. Biagioni* (*Politecnico Milano*); *L. Duò* (*Politecnico Milano*); *C. De Angelis* (*University of Brescia*); *G. Leo* (*CNRS, Université de Paris*); *M. Celebrano* (*Politecnico Milano*); *Marco Finazzi* (*Politecnico di Milano*);

00:00 Reconfigurable, Ultrathin, All-dielectric, Mid-IR Metamaterial Perfect Absorber Based on Phase-change Material GST-225
Roy Avrahamy (*Ben-Gurion University of the Negev*); *B. Milgrom* (*The Jerusalem College of Technology*); *Mark Auslender* (*Ben-Gurion University of the Negev*); *Amiel Avraham Ishaaya* (*Ben-Gurion University of the Negev*);

00:00 Tunable Filter Array Based on Vanadium Oxide for Spectral Imaging
Tingbiao Guo (*Zhejiang University*); *Zhi Zhang* (*Zhejiang University*); *Zijian Lin* (*Zhejiang University*); *Sailing He* (*Royal Institute of Technology & Zhejiang University*);

00:00 Scalable Hydrogel-based Platform for Humidity-driven Dynamic Meta-display
Chenjie Dai (*Wuhan University*); *Zejing Wang* (*Wuhan University*); *Wanlin Hu* (*Wuhan University*); *Zhongyang Li* (*Wuhan University*);

Session 3A7
Recent Advances in Topological Photonics and Acoustics 2

Wednesday AM, July 5, 2023

Room Terrace 2B

Organized by Hai-Xiao Wang, Zhiwang Zhang, Weiwei Zhu

Chaired by Hai-Xiao Wang

00:00 Invited Vectorial Valley Contrasting Physics in a Three-dimensional Phononic Crystal
Haoran Xue (*Nanyang Technological University*); *Baile Zhang* (*Nanyang Technological University*);

00:00 Amorphous Topological Scattering Networks
Zhe Zhang (*Ecole Polytechnique Federale de Lausanne (EPFL)*); *Pierre Delplace* (*Université de Lyon*); *Romain Fleury* (*Ecole Polytechnique Federale de Lausanne (EPFL)*);

00:00 Topological Interfacial Coupling Spawning Multiplexed Light Processing
Xinrong Xie (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*); *Hongtao Lin* (*Zhejiang University*); *Fei Gao* (*Zhejiang University*);

00:00 Invited Non-Hermitian Delocalization
Guancong Ma (*Hong Kong Baptist University*);

00:00 Invited Non-Abelian Nodal Links in Topological Metamaterials
Biao Yang (*National University of Defence Technology*);

00:00 Invited Topological Defects Induced Anomalous States in Photonic Crystals and Their Tunability
Feng Liu (*Ningbo University*); *Qinghua He* (*Ningbo University*); *Shiwei Tang* (*Ningbo University*);

00:00 Invited Granular Metamaterials: Symmetry and Topology
Li-Yang Zheng (*Shenzhen Campus of Sun Yat-sen University*);

00:00 Valley Higher-order Weyl Semimetals
Zhan Xiong (*Zhejiang Normal University*); *Zhi-Kang Lin* (*Soochow University*); *Hai-Xiao Wang* (*Guangxi Normal University*); *Shiyang Liu* (*Zhejiang Normal University*); *Yixian Qian* (*Zhejiang Normal University*); *Jian-Hua Jiang* (*Soochow University*);

00:00 Invited Symmetry-protected Braiding of Topological Edge States
Yang Long (*Nanyang Technological University*); *Baile Zhang* (*Nanyang Technological University*);

00:00 Nonreciprocal Large-area Waveguide Modes in All-dielectric Photonic Crystals
Li Liang (*Nanjing University*); *Chengpeng Liang* (*Nanjing University*); *Xiao Zhang* (*Nanjing University*); *Longzhen Fan* (*Nanjing University*); *Yin Poo* (*Nanjing University*);

00:00 The Non-Hermitian Non-equipartition Theorem in Optical Trapping
Jack Ng (*Southern University of Science and Technology*);

Session 3A8
Quantum Computation and Quantum Simulation

Wednesday AM, July 5, 2023

Room South Room 220

Organized by Xiaolong Su, Gang Li

Chaired by Xiaolong Su, Gang Li

00:00 Invited Realization of Quantum State Transfer and Quantum Gates by Use of Single Photons with Different Degrees of Freedom
Fuli Li (*Xi'an Jiaotong University*);

00:00 Invited Simulations of Topological Phases with Solid-state Spins in a Nitrogen-vacancy Center
Dong-Ling Deng (*Tsinghua University*);

00:00 Invited Time-multiplexed Programmable Continuous-variable Photonic Quantum Computing
Shuntaro Takeda (*The University of Tokyo*);

00:00 Invited An Integrated Source for Gaussian Boson Sampling
Kai-Hong Luo (*Paderborn University*); *Jan-Lucas Eickmann* (*Paderborn University*); *Florian Lutkewitte* (*Paderborn University*); *Simone Atzeni* (*Paderborn University*); *Laura Padberg* (*Paderborn University*); *Michael Steve Stefszky* (*Paderborn University*); *Harald Herrmann* (*University of Paderborn*); *Benjamin Brecht* (*Paderborn University*); *Christine Silberhorn* (*Paderborn University*);

00:00 Invited Generation, Manipulation and Application of Quantum Light Sources Based on Atomic Ensembles
Jietai Jing (*East China Normal Unversity*);

00:00 Invited Realization of Strong Coupling between Deterministic Single-atom Arrays and a High-finesse Miniature Optical Cavity
Gang Li (*Shanxi University*);

00:00 Invited High-dimensional Bell Test without Detection Loophole
Biheng Liu (*University of Science and Technology of China*);

00:00 Invited Detecting Quantum State with Shadow Tomography
He Lu (*Shandong University*);

00:00 Invited Simulators of Quantum Fluids Using Atomic Vapors
Feng Li (*Xi'an Jiaotong University*);

00:00 Invited Quantum Information Processing with Continuous Variables over Optical Fiber
Jinxia Feng (*Shanxi University*); *Yuanji Li* (*Shanxi University*); *Kuanshou Zhang* (*Shanxi University*);

00:00 Theoretical and Experimental Explorations of Variational Quantum Learning Models
Weikang Li (*Tsinghua University*); *Dong-Ling Deng* (*Tsinghua University*);

00:00 Digital Quantum Simulation of Floquet Topological States
Wenjie Jiang (*Tsinghua University*); *Dong-Ling Deng* (*Tsinghua University*);

00:00 Simulating Many-body Non-Hermitian Skin Effect in Cold Atoms
Haowei Li (*University of Science and Technology of China*); *Wei Yi* (*University of Science and Technology of China*);

00:00 Sample Complexity of Learning Parametric Quantum Circuits
Qi Ye (*Tsinghua University*); *Haoyuan Cai* (*Tsinghua University*); *Dong-Ling Deng* (*Tsinghua University*);

00:00 Deep Quantum Neural Networks Equipped with Backpropagation on a Superconducting Processor
Zhide Lu (*Tsinghua University*); *Dong-Ling Deng* (*Tsinghua University*);

00:00 Digital Simulation of Non-Abelian Anyons with 68 Superconducting Qubits
Zheng-Zhi Sun (*Tsinghua University*); *Dong-Ling Deng* (*Tsinghua University*);

Session 3A9a
Scientific Machine Learning in Electromagnetic Modeling and Analysis

Wednesday AM, July 5, 2023

Room South Room 221

Organized by Ping Li, Li Jun Jiang

00:00 A Study on Machine Learning Assisted Accelerated Design of Microwave Structures
Zhao Zhou (*Aalborg University*); *Zhaohui Wei* (*Aalborg University*); *Jian Ren* (*Xidian University*); *Nan Sun* (*Nanjing University of Aeronautics and Astronautics*); *Jiali Kang* (*Xi'an Jiaotong University*); *Ying Zeng Yin* (*Xidian University*); *Ming Shen* (*Aalborg University*);

00:00 Joint Application of Analytic Hierarchy Process (AHP) and Bayesian Networks (BN) to Electromagnetic Environment Effects (E3) Assessment
Congguang Mao (*Northwest Institute of Nuclear Technology*); *Chuanbao Du* (*Northwest Institute of Nuclear Technology*); *Zheng Liu* (*Northwest Institute of Nuclear Technology*); *Dongyang Sun* (*Northwest Institute of Nuclear Technology*); *Xin Nie* (*Northwest Institute of Nuclear Technology*);

00:00 A High Precision Parameter Estimation Method of Double Exponential Pulse Based on Artificial Neural Network
Zhizhen Zhu (*Northwest Institution of Nuclear Technology*); *Jing Yang* (*Northwest Institution of Nuclear Technology*); *Yuewu Shi* (*Northwest Institute of Nuclear Technology*); *Zheng Liu* (*Northwest Institute of Nuclear Technology*); *Xin Nie* (*Northwest Institute of Nuclear Technology*);

00:00 Design of a Broadband Fragmented Antenna with Maximum Transparency Based on Multi-objective Optimization
Liujia E (*Lanzhou University*); *Tiaoming Niu* (*Lanzhou University*); *Zhong-Lei Mei* (*Lanzhou University*);

00:00 Recent Advances in Physics-driven Machine Learning Approaches to Intelligent Design of Metasurfaces
Xiumei Lin (*Southeast University*); *Jun Ming Hou* (*Southeast University*); *Jianan Zhang* (*Southeast University*); *Jianwei You* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

00:00 Recent Advances in MOR-based Neuro-TF Methods for Parameterized Modeling of Microwave Passive Components
Jun Ming Hou (*Southeast University*); *Xiumei Lin* (*Southeast University*); *Jianan Zhang* (*Southeast University*); *Jianwei You* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

00:00 Challenges & Outlook on Electromagnetic Integrity for
Keynote AI IC & Heterogenous Integration
Er Ping Li (*Zhejiang University — UIUC Institute*);

Session 3A9b
Advanced Numerical Methods and Techniques in Computational Electromagnetics 1

Wednesday AM, July 5, 2023

Room South Room 221

Organized by Mei Song Tong, Maokun Li, Gaobiao Xiao

Chaired by Mei Song Tong, Maokun Li

00:00 Simulation of Perfect Electric Conductors in a Spatial Spectral Domain Integral Equation with 2DTM Polarization
Roeland Johannes Dilz (*Eindhoven University of Technology*); *D. van den Hof* (*Eindhoven University of Technology*); *Martijn Constant van Beurden* (*Eindhoven University of Technology*);

00:00 Electromagnetic-thermal-stress Multiphysics Simulation of Microwave Filter
Zheng Lang Jia (*Xidian University*); *Xin Yi Liu* (*Xidian University*); *Huan Huan Zhang* (*Xidian University*); *Mei Song Tong* (*Tongji University*); *Ying Liu* (*Xidian University*);

00:00 An Unequal Power Divider with Simple Isolation Topology for High Power Ratio and Wide Bandwidth
Taiyang Xie (*Jilin University*); *Nan Zhang* (*Jilin University*); *Xiaolong Wang* (*Jilin University*); *G. Milinevsky* (*Main Astronomical Observatory*); *Geyu Lu* (*Jilin University*);

00:00 A Finite Element Method to Solve the Maxwell Equations in Three-dimensional Singular Geometry
Franck Assous (*Ariel University*); *Irina Raichik* (*Bar-Ilan University*);

00:00 An Efficient Way to Calculate the Conducted Environment with the Consideration of Radiated Distribution
Zheng Liu (*Northwest Institute of Nuclear Technology*); *Jinjin Wang* (*Northwest Institute of Nuclear Technology*); *Congguang Mao* (*Northwest Institute of Nuclear Technology*); *Chuanbao Du* (*Northwest Institute of Nuclear Technology*); *Zhizhen Zhu* (*Northwest Institution of Nuclear Technology*); *Xin Nie* (*Northwest Institute of Nuclear Technology*);

00:00 An FDTD Formulation of a Metal Surface Impedance Using Fast Inverse Laplace Transform and Prony's Method
Kazuma Takeya (*National Institute of Information and Communications Technology*); *J. Chakarothai* (*National Institute of Information and Communications Technology*); *J. Shibayama* (*Hosei University*); *Y. Suzuki* (*Tokyo Metropolitan University*); *K. Fujii* (*National Institute of Information and Communications Technology*);

Session 3A10
5_ FocusSession.SC5: Inverse Scattering and Imaging via Machine Learning

Wednesday AM, July 5, 2023

Room South Room 222

Organized by Xudong Chen, Tiantian Yin

Chaired by Tiantian Yin

00:00 Physics-guided Loss Functions Impact Performance of
Invited Deep-learning-based Inverse-scattering-problem Solver
Zicheng Liu (*Northwestern Polytechnical University*); *Mayank Roy* (*UiT The Arctic University of Norway*); *Dilip K. Prasad* (*UiT — The Arctic University of Norway*); *Krishna Agarwal* (*UiT — The Arctic University of Norway*);

00:00 Reconstruction-free Face Verification with Lensless Camera and Neural Network
Yinger Zhang (*Zhejiang University*); *Zhengjie Huang* (*Zhejiang University*); *Jingxin Tang* (*Zhejiang University*); *Jiangtao Huangfu* (*Zhejiang University*);

00:00 Reverse Time Migration Method of Linear Frequency Modulation Ground Penetrating Radar Based on gprMax
Jianrong Geng (*Fudan University*); *Hongxia Ye* (*Fudan University*);

00:00 Key Points in Inverse Scattering Problems
Invited
Rocco Pierri (*Universita degli Studi della Campania "Luigi Vanvitelli"*); *Raffaele Solimene* (*Universita degli Studi della Campania "Luigi Vanvitelli"*);

00:00 Global Seamless 250-m 8-day Leaf Area Index (LAI) and Fraction of Absorbed Photosynthetically Active Radiation (FAPAR) Products Development Using a Bidirectional Long Short-term Memory (Bi-LSTM) Model
Han Ma (*The University of Hong Kong*); *Shunlin Liang* (*The University of Hong Kong*);

00:00 A Scalable Deep Learning Model for Simultaneous Reconstruction and Transmitter Localization in Inverse Scattering
Girija Ramesan Karthik (*Indian Institute of Science*); *Prasanta Kumar Ghosh* (*Indian Institute of Science*);

00:00 3D Inverse Scattering Imaging Based on Machine Learn-
Invited ing Method Trained by Semi-experimental Data
Naike Du (*Beijing Institute of Technology*); *Jing Wang* (*Beijing Institute of Technology*); *Xinhui Zhang* (*Beijing Institute of Technology*); *Xiuzhu Ye* (*Beijing Institute of Technology*);

00:00 A Deep Learning-based Approach for Millimeter-wave Short-range Imaging
Tiantian Yin (*National University of Singapore*); *Xudong Chen* (*National University of Singapore*);

00:00 Physics-assisted Deep-learning for Microwave Tomogra-
Invited phy: Merging Inverse Scattering Techniques with Artificial Intelligence
A. Yago Ruiz (*IREA — Institute for Electromagnetic Sensing of the Environment*); *Rosa Scapaticci* (*Institute for Electromagnetic Sensing of the Environment*); *Roberta Palmeri* (*National Research Council*); *Marta Cavagnaro* (*Sapienza University of Rome*); *Lorenzo Crocco* (*National Research Council*);

00:00 Electromagnetic Inverse Scattering via Deep Learning
Invited Enhanced by Virtual Experiments
Martina Teresa Bevacqua (*Università Mediterranea di Reggio Calabria*); *Cosimo Ieracitano* (*University 'Mediterranea' of Reggio Calabria*); *Nadia Mammone* (*University 'Mediterranea' of Reggio Calabria*); *Francesco Carlo Morabito* (*University Mediterranea of Reggio Calabria*); *Tommaso Isernia* (*Università Mediterranea di Reggio Calabria*); *Loreto Di Donato* (*University of Catania*);

00:00 Electromagnetic Inverse Design via Inverse Scattering
Keynote and Deep Learning Procedures
Tommaso Isernia (*Università Mediterranea di Reggio Calabria*); *R. Palmeri* (*National Council of Research (IREA-CNR)*); *A. Ruiz* (*National Council of Research (IREA-CNR)*); *R. Scapaticci* (*National Council of Research (IREA-CNR)*); *L. Crocco* (*National Council of Research (IREA-CNR)*);

Session 3A11a
Applications of EM Field in Industry

Wednesday AM, July 5, 2023

Room South Room 223

Organized by Jan Vrba

Chaired by Jan Vrba

00:00 Visualization of Microwave Exposure in Industrial Applications
Jan Vrba (*Czech Technical University in Prague*); *Milan Babak* (*Czech Technical University in Prague*); *Jesus Cumana* (*Czech Technical University in Prague*); *Jan Vrba, Jr.* (*Czech Technical University in Prague*); *David Vrba* (*Czech Technical University in Prague*); *Ondrej Fiser* (*Czech Technical University in Prague*);

00:00 Microwave Drying of Thin Layers
Jan Vrba (*Czech Technical University in Prague*); *Milan Babak* (*Czech Technical University in Prague*); *Jesus Cumana* (*Czech Technical University in Prague*); *Jan Vrba, Jr.* (*Czech Technical University in Prague*); *David Vrba* (*Czech Technical University in Prague*); *Ondrej Fiser* (*Czech Technical University in Prague*);

00:00 Microwave Heating of Aggressive Materials
Jan Vrba (*Czech Technical University in Prague*); *Milan Babak* (*Czech Technical University in Prague*); *Jesus Cumana* (*Czech Technical University in Prague*); *Jan Vrba, Jr.* (*Czech Technical University in Prague*); *David Vrba* (*Czech Technical University in Prague*); *Ondrej Fiser* (*Czech Technical University in Prague*);

00:00 A 3D-printed Wideband Sensor for Food Complex Permittivity Estimation Based on Double Ridge Waveguide
Claudia Macciò (*University of Cagliari*); *Matteo Bruno Lodi* (*University of Cagliari*); *N. Curreli* (*University of Cagliari*); *Andrea Melis* (*University of Cagliari*); *Giuseppe Mazzarella* (*University of Cagliari*); *Maurizio Bozzi* (*University of Pavia*); *Alessandro Fanti* (*University of Cagliari*);

00:00 Inverse Filtering Signal Localization and Identification for EMC of Electric Thrusters in a Vacuum Chamber
Alexandros Papamatthaiou (*ISAE-SUPAERO*); *Daniel Opoka* (*ISAE-SUPAERO*);

00:00 Exploring Low Band 5G Technology Impact in Human Cerebral Organoids and Experimental Setup
Andrea Rosca (*Instituto de Salud Carlos III, Chronical Diseases Research Functional Unit*); *Raquel Coronel* (*Instituto de Salud Carlos III, Chronical Diseases Research Functional Unit*); *Isabel Liste* (*Instituto de Salud Carlos III, Chronical Diseases Research Functional Unit*); *Oscar J. Suárez* (*Direccion General de Telecomunicaciones y Tecnologias de la Informacion*); *Pablo Marina* (*Instituto de Salud Carlos III, Telemedicine and eHealth Research Unit*); *Victoria López* (*Instituto de Salud Carlos III, Chronical Diseases Research Functional Unit*); *Mónica Torres-Ruiz* (*Instituto de Salud Carlos III, Environmental Health National Center*); *Victoria Ramos* (*Health Institute Carlos III*);

00:00 Implementation of Time Reversal Focusing on Hyperthermia Treatment of Brain Tumours
Michaela Černá (*Czech Technical University in Prague*); *Tomas Drizdal* (*Erasmus MC, Daniel den Hoed Cancer Center*);

00:00 Use of RF Signal Attenuation & Delay for the Detection of Pulmonary Oedema
Thomas Coombs (*Cambridge University*); *Ari Ercole* (*University of Cambridge*); *Michael J. Crisp* (*University of Cambridge*);

Session 3A11b
Extended/Unconventional Electromagnetic Theory, EHD(Electro-hydrodynamics)/EMHD(Electro-magneto-hydrodynamics), and Electro-biology

Wednesday AM, July 5, 2023

Room South Room 223

Organized by Eva Gescheidtova

Chaired by Petr Marcoň

00:00 Investigating Different Coil Configurations during Magnetic Nanoparticles Hyperthermia for Prostate Cancer
Amro A. Nour (*American University of Kuwait (AUK)*); *Fridon Shubitidze* (*Dartmouth College*);

00:00 Sensing Plasma Jet Electromagnetic Signals
Roman Pernica (*Brno University of Technology*); *Zoltán Szabó* (*Brno University of Technology*); *Jiri Zukal* (*Brno University of Technology*); *Radim Kadlec* (*Brno University of Technology*); *Miloš Klíma* (*Brno University of Technology*); *Pavel Fiala* (*Brno University of Technology*);

00:00 Motion of a Charge Density and the Speed of Light in Vacuum Revisited
Namik Yener (*Istanbul Gedik University*);

00:00 Concentration and Mobility of Air Ions in the Environment of the Cisarska Cave (Moravia)
Zdeněk Roubal (*Brno University of Technology*); *Zoltán Szabó* (*Brno University of Technology*); *Radim Kadlec* (*Brno University of Technology*); *Lukáš Zdražil* (*Brno University of Technology*);

00:00 Overview of Methods for Collision Avoidance for Unmanned Aerial Vehicles
Petr Marcoň (*Brno University of Technology*); *P. Raichl* (*Brno University of Technology*); *Jiři Janoušek* (*Brno University of Technology*);

00:00 Multi-sensor Data Analysis in Terms of Autonomous Drone Flight without GPS
Gregoire Issassis (*BURES-SUR-YVETTE*); *Petr Marcoň* (*Brno University of Technology*); *Jiři Janoušek* (*Brno University of Technology*); *Lukáš Venkrbec* (*Brno University of Technology*);

Session 3A12
Antennas, Array, Theory and Applications 1

Wednesday AM, July 5, 2023

Room South Room 224

00:00 Topological Directional Antenna by Valley Photonic Crystals
Zijian Zhang (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*); *Fei Gao* (*Zhejiang University*);

00:00 Miniaturized-Element Frequency Selective Surface Assisted Dual-Polarized Broadband High-Gain Resonance Cavity Antenna
Tayyab A. Khan (*City University of Hong Kong*); *Alex M. H. Wong* (*City University of Hong Kong*);

00:00 Dielectric Lens for a DRGH Antenna
Pieter Roodt (*University of Pretoria*); *Johann Wilhelm Odendaal* (*University of Pretoria*); *Johan Joubert* (*University of Pretoria*);

00:00 Analysis of a Leaky-wave Antenna with High Scanning Rate Using Microstrip Phase Delay Lines
Yiming Zhang (*South China Normal University*); *Wei Wu* (*Zhejiang University*); *Yuxi Liu* (*South China Normal University*); *Sailing He* (*Royal Institute of Technology & Zhejiang University*);

00:00 A Novel Dielectric Resonant Antenna Based on Flexible Materials
Dan Ni Lin (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Antenna Near-field for Distance Sensing Applications
Mahmoud Al Ahmad (*United Arab Emirates University*); *Limna S. Attoor* (*United Arab Emirates University*); *Shahd M. Alsereidi* (*United Arab Emirates University*); *Hour A. Mohamed* (*United Arab Emirates University*); *Lillian J. A. Olule* (*United Arab Emirates University*);

00:00 Bi-band Quasi Yagi-Uda Antenna for Worldwide 5G Applications
Matthieu Egels (*Aix-Marseille University*); *Anton Venouil* (*Aix Marseille University*); *Philippe Pannier* (*Aix-Marseille University*);

00:00 GA-based Bandwidth Enhancement of Wideband Printed Monopole Antenna through Control Points Position of Spline Curve on Its Groundplane
Agus Dwi Prasetyo (*Telkom University*); *Deny Hamdani* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Experimental Characterization on a Circularly Polarized Patch Antenna Incorporated with Bulk Ferrite Material
Rheyuniarto Sahlendar Asthan (*Institut Teknologi Sumatera*); *Tutun Juhana* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 A Self-complementary Minkowski Fractal Patch Antenna for Multiband Applications
Li Zhang (*Tongji University*); *Thomas F. Eibert* (*Technical University of Munich*); *Mei Song Tong* (*Tongji University*);

00:00 Non-invasive Microwave Glucose Sensor by Using a Hybrid Sensor Composed of a Frequency Selective Surface and Microstrip Patch Antenna
Umut Kose (*Fatih Sultan Mehmet Vakif University*); *Mesut Kartal* (*Istanbul Technical University*);

00:00 Polymer-based Ultra-wideband Antenna for Wearable Application
Debarati Ghosh (*National Institute of Technology Silchar*); *Arnab Nandi* (*National Institute of Technology Silchar*); *Ujjal Chakraborty* (*National Institute of Technology Silchar*);

00:00 A Circular Patch Multiband Antenna with Defected Ground Structure for WLAN and WiMAX Networks: Design, Analysis, and Performance Evaluation
Barun Dhabal (*National Institute of Technology Silchar*); *Masum Imran Laskar* (*National Institute of Technology Silchar*); *Arnab Nandi* (*National Institute of Technology Silchar*); *Banani Basu* (*National Institute of Technology Silchar*);

Session 3A13
Poster Session 4

Wednesday AM, July 5, 2023
14:00 PM - 18:00 PM
Room Forum Hall Foyer 1

00:00 Electromagnetic Immunity of Active Implantable Medical Devices to 5G Networks
Federica Censi (*Istituto Superiore di Sanita*); *Cecilia Vivarelli* (*Italian National Institute of Health*); *Giovanni Calcagnini* (*Italian National Institute of Health*); *Daniele Franci* (*ARPA Lazio*); *Settimio Pavoncello* (*ARPA Lazio*); *Tommaso Aureli* (*ARPA Lazio*); *Giancarlo Burriesci* (*INAIL*); *Rosaria Falsaperla* (*INAIL*); *Eugenio Mattei* (*Italian National Institute of Health (ISS)*);

00:00 Motion of a Charge Density, Necessary Magnetic Sources and Solution of Maxwell's Equations including Magnetic Sources by Employing Potentials
Namik Yener (*Istanbul Gedik University*);

00:00 Predicting the Risk of Electromagnetic Interference in Hospital Equipment Using Fuzzy Neural Networks
Chiedza Hwata (*University of Rwanda College of Science and Technology (UR CST)*); *Gerard Rushingabigwi* (*University of Rwanda College of Science and Technology (UR CST)*); *Omar Gatera* (*University of Rwanda College of Science and Technology (UR CST)*); *Celestin Twizere* (*University of Rwanda College of Science and Technology (UR CST)*); *Didacianne Mukanyiligira* (*University of Rwanda College of Science and Technology (UR CST)*); *Bolaji Thomas* (*Rochester Institute of Technology*);

00:00 Microwave Imaging for Highly-anisotropic Objects Based on Gauss-Newton Minimization Method
Bao Qi Wang (*Tongji University*); *Dun Ting Zhang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 An Omnidirectional Mirror Based on Hybrid Structure Combining Aperiodic and Periodic Multilayer
Pasquale Falcone (*University of Campania "Luigi Vanvitelli"*); *Saeid Pourmasoud* (*University of Campania "Luigi Vanvitelli"*); *Luigi Moretti* (*University of Campania "Luigi Vanvitelli"*);

00:00 A Novel Hybrid Discontinuous Galerkin-Robin Transmission Condition Method for Electromagnetic Problem Analysis
Xuan Zhang (*Shanghai Jiao Tong University*); *Xiaochun Li* (*Shanghai Jiao Tong University*); *Lijun Jiang* (*The Chinese University of Hong Kong*); *Ping Li* (*Shanghai Jiao Tong University*);

00:00 Symplectic FDTD Scheme for Semi-classical Quantum Electromagnetic Model
Guoda Xie (*Anhui University*); *Zhi-Xiang Huang* (*Anhui University*); *Wei E. I. Sha* (*Zhejiang University*);

00:00 Deep Neural Network Model for Assessing Decoupling Performance of Isolation Barriers in Nuclear Power Plants
Jae-Yoon Park (*Andong National University*); *Jaeyul Choo* (*Andong National University*);

00:00 Topological Photonic Crystal of Large Valley Chern Numbers
Xiang Xi (*Southern University of Science and Technology*); *Zhen Gao* (*Southern University of Science and Technology*);

00:00 Resonance Properties of Tamm-plasmon-polariton with Dual Photonic Crystals
Shih-Yuan Li (*National Yang Ming Chiao Tung University*); *Jiun-Shian Huang* (*National Yang Ming Chiao Tung University*); *Shie-Chang Jeng* (*National Yang Ming Chiao Tung University*);

00:00 Topological Zero Mode Induced by Local Non-Hermitian Modulation
Zhihua Deng (*Huazhong University of Science and Technology*); *Dingshan Gao* (*Huazhong University of Science and Technology*);

00:00 GHz-metasurface with Enhanced Permeability Bandwidth Consisting of Multi-Lorentzian Resonance Superposition
Yun Hyeong (*Korea Advanced Institute of Science and Technology (KAIST)*); *Hyeonjin Park* (*Korea Advanced Institute of Science and Technology (KAIST)*); *Jonghwa Shin* (*Korea Advanced Institute of Science and Technology (KAIST)*);

00:00 Study on the Tunable Bandgap of One-dimensional Anisotropic Weyl Semimetal Photonic Crystal
Linlin Dai (*Beijing University of Posts and Telecommunications*); *Limei Qi* (*Qufu Normal University*);

00:00 Design of a Multi-layer Dual-band Frequency Selective Surface Bandpass Filter
Mohammad Nasrat Zaqum (*Macquarie University*); *Ali Lalbakhsh* (*Macquarie University*);

00:00 Distinguishing Thermal from Non-thermal ("hot") Carriers in Illuminated Molecular Junctions
Yonatan Dubi (*Ben-Gurion University*); *Ieng Wai Un* (*Ben-Gurion University*); *Yonatan Sivan* (*Ben-Gurion University*);

00:00 Arduino-based Temperature Sensor Organization and Design
Daniils Aleksandrovs Moisejs (*Riga Technical University*); *Aleksandrs Ipatovs* (*Riga Technical University*); *Elans Grabs* (*Riga Technical University*); *Dmitrijs Rjazanovs* (*Riga Technical University*); *Ivars Sinuks* (*Riga Technical University*);

00:00 Demonstration of 512-TR-PPM Fiber Optical Transmission Link
Sandis Spolitis (*Riga Technical University*); *Dmitrijs Prigunovs* (*Riga Technical University*); *Sandis Migla* (*Riga Technical University*); *Dilan Enrique Ortiz Blanco* (*Riga Technical University*); *Oskars Selis* (*Riga Technical University*); *Pauls Eriks Sics* (*Riga Technical University*); *Armands Ostrovskis* (*Riga Technical University*); *Tatjana Solovjova* (*Riga Technical University*); *Janis Semenako* (*Riga Technical University*); *Arturs Aboltins* (*Riga Technical University*);

00:00 Infrared Spectrum Regulation of One-dimensional Photonic Crystal Thin Films with $Ge_2Sb_2Te_5$
Zichen Deng (*Huazhong University of Science and Technology*); *Yarui Su* (*Huazhong University of Science and Technology*); *Peng Zhou* (*Huazhong University of Science and Technology*); *Xian Wang* (*Huazhong University of Science and Technology*); *Rongzhou Gong* (*Huazhong University of Science and Technology*);

00:00 SiN_x Passivation Effect for AlGaInP-based Red LEDs with the Same Light Emission Area and Different-sized Arrays
Je-Sung Lee (*Gwangju Institute of Science and Technology (GIST)*); *Seung-Hyun Mun* (*Gwangju Institute of Science and Technology (GIST)*); *Kyung-Pil Kim* (*Gwangju Institute of Science and Technology (GIST)*); *Sunwoo Shin* (*Gwangju Institute of Science and Technology (GIST)*); *Dong-Seon Lee* (*Gwangju Institute of Science and Technology (GIST)*);

00:00 A Study on Circuit Components Based on Single-mode Sub-wavelength Grating NRD Guide
Keisuke Kazama (*Muroran Institute of Technology*); *Akito Iguchi* (*Muroran Institute of Technology*); *Yasuhide Tsuji* (*Muroran Institute of Technology*);

00:00 Leak Detection for Nuclear Safety Boundary System Using Heat and Radiation Resistant Fiber Bragg Grating Sensor
Youngwoong Kim (*Korea Atomic Energy Research Institute*); *Young-Gwan Hwang* (*Korea Atomic Energy Research Institute*); *Gukbeen Ryu* (*Korea Atomic Energy Research Institute*); *Jong-Yeol Kim* (*Korea Atomic Energy Research Institute*);

00:00 Optical Properties by Heterojunction of ZnO-nanorod and Graphene
Hak Dong Cho (*Dongguk University*); *Juwon Lee* (*Dongguk University*); *Jong-Kwon Lee* (*Cheongju University*); *Deuk Young Kim* (*Dongguk University*);

00:00 An Adaptive Spectrophotometer — Refractometer for Determinate of the Quality of Aqueous Solution
M. A. Mkrtchyan (*Kotelnikov Institute of Radioengineering and Electronics, Fryazno Branch, RAS*); *V. Yu. Soldatov* (*Kotelnikov Institute of Radioengineering and Electronics, Fryazno Branch, RAS*); *Ferdenant A. Mkrtchyan* (*Kotelnikov Institute of Radioengineering and Electronics, Fryazno Branch, RAS*);

00:00 Graphene Oxide Quantum Dots for Bioimaging
Sukhyun Kang (*Korea Institute of Industrial Technology*); *Kang Min Kim* (*Korea Institute of Industrial Technology*); *Hyuksu Han* (*Konkuk University*); *Sungwook Mhin* (*Kyonggi University*);

00:00 Localized Electron Wave Packets in Graphene Monolayer Induced by Non-classical Electromagnetic Field
Darya A. Starodubtseva (*Lomonosov Moscow State University*); *Ekaterina N. Voronina* (*Lomonosov Moscow State University*); *Olga V. Tikhonova* (*Lomonosov Moscow State University*);

00:00 Broadband Cavity-enhanced Extinction Measurements of Aerosol Extinction in a Coastal City of Kerala
Salma Jose (*National Institute of Technology Calicut*); *Shebin John* (*National Institute of Technology Calicut*); *Arun P. Thomas* (*National Institute of Technology Calicut*); *Ashish George* (*National Institute of Technology Calicut*); *Abhilash Sukumarappillai* (*National Institute of Technology Calicut*); *K. Satheesan* (*National Institute of Technology Calicut*); *Ravi Varma* (*National Institute of Technology Calicut*);

00:00 Study on the Electrospray Deposited PEDOT:PSS Thin Film Using an Electrohydrodynamic Jet Printer for Inverted Quantum Dots Light-emitting Diodes
Tuan Canh Nguyen (*Hoseo University*); *Woon-Seop Choi* (*Hoseo University*);

00:00 Determination of the Gouy Phase of Bessel-Gaussian Beams
Lyubomir Stoyanov (*Friedrich Schiller University*); *Aleksander Stefanov* (*Sofia University*); *Alexander Dreischuh* (*Sofia University "St. Kliment Ohridski"*); *Gerhard G. Paulus* (*Friedrich Schiller University*);

00:00 Design of D-band Quasi Yagi-Uda Antenna on Low-loss Flexible Substrate for Beyond 5G and 6G
Daisuke Yamanaka (*AGC Inc.*); *Osamu Kagaya* (*Asahi Glass Co., Ltd*);

00:00 Design and Implementation of Vivaldi Antenna with Modified Marchand Balun for V2X Communication
Joko Suryana (*Bandung Institute of Technology*); *Zharfa Haidan Nafilah* (*Bandung Institute of Technology*); *Zulfi* (*Bandung Institute of Technology*); *Achmad Munir* (*Bandung Institute of Technology*);

00:00 Characterization of Rainfall Rate Distribution for Satellite Networks
Guangguang Yang (*Foshan University*); *Yuanxin Song* (*Foshan University*); *David Ndzi* (*University of the West of Scotland*); *Hui Duan* (*Foshan University*);

00:00 Impact of Two-handed Grip on Quasi-omnidirectional Coverage of mmWave 5G Handset
Christopher Patrick Larmour (*Queen's University Belfast*); *Yangli Li* (*Queen's University Belfast*); *Aobo Li* (*Queen's University Belfast*); *Neil Buchanan* (*Queen's University Belfast*); *Vincent F. Fusco* (*Queen's University Belfast*); *Dmitry E. Zelenchuk* (*Queen's University Belfast*); *Muhammad Ali Babar Abbasi* (*Queen's University Belfast*);

00:00 Design and Analysis of a Compact Frequency Beam-scanning Leaky-wave Antenna Based on Slow-wave Half-mode Substrate Integrated Waveguide and Spoof Surface Plasmon Polaritons
Yuxi Liu (*South China Normal University*); *Yiming Zhang* (*Zhejiang University*); *Sailing He* (*Royal Institute of Technology & Zhejiang University*);

00:00 A Novel Frequency Modulation Receiver Built in System on a Programmable Chip Based on Digital Signal Processing Technique
Ya Ming Xie (*Tongji University*); *Guo Chun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 A Multiband Dipole Antenna Based on Mandelbrot Fractal Geometry
Wei Jia Dou (*Tongji University*); *Ming Xuan Li* (*Tongji University*); *Yuan Chu Xu* (*Tongji University*); *Dan Ni Lin* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Design and Characterization of RF Power Amplifier Driven by GaN Transistor for 5G Communication
Sarah Rahayu (*Institut Teknologi Bandung*); *Junas Haidi* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Modelling of the Powerline Communication Bursty Impulsive Noise
Florence Chelangat (*University of KwaZulu-Natal (UKZN)*); *Thomas Joachim Odhiambo Afullo* (*University of KwaZulu-Natal (UKZN)*);

00:00 Optimal Side-lobe Reduction Technique for Series-fed Microstrip Patch Antennas in Sub-THz
Jaewoong Jung (*Korea Electronics Technology Institute*); *Yunsik Park* (*Korea Electronics Technology Institute*); *Jongin Ryu* (*Korea Electronics Technology Institute*);

00:00 Beamforming Techniques for Terminal Tracking in Next-generation Fare Payment System
Dong-Jin Lee (*Korea Railroad Research Institute*); *Tae-Ki An* (*Korea Railroad Research Institute*); *Kyung-Hee Kim* (*Korea Railroad Research Institute*); *Jong-Gyu Hwang* (*Korea Railroad Research Institute*);

00:00 An Accurate Anti-collision Algorithm of Chipless RFID Tags Based on Deep Learning
Jintao Yang (*Shanghai University of Engineering Science*); *Shu Jia Yan* (*Shanghai University of Engineering Science*); *Qiang Chen* (*Shanghai University of Engineering Science*); *Ji Yuan Duan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Equal Filtering Power Divider for WIFI Application
Eugene A. Ogbodo (*University of Hertfordshire, College Lane*); *Azunka N. Ukala* (*University of Hertfordshire, College Lane*);

00:00 All Metal Focused Transmitarray Antenna Using II Shaped Slot Elements for Microwave Measurements
Zheng Zhang (*Xidian University*); *Yiwei Zhai* (*Xidian University*);

00:00 Design and Performance Analysis of a Dielectric-less, Thin and Sturdy Slotted Array Antenna for High Power and Mobile-satellite Applications
Md Zahidul Islam (*Macquarie University*); *Mst Nishat Yasmin Koli* (*Macquarie University*); *Ali Lalbakhsh* (*Macquarie University*);

00:00 Novel SSPP Sensor System with Octagon-shaped Unit Cell for Liquid Analyte Dielectric Constant Detection
Shaik Imamvali (*SRM University AP Andhrapradesh*); *Rishitej Chaparla* (*SRM University AP Andhrapradesh*); *Sreenivasulu Tupakula* (*SRM University AP Andhrapradesh*); *K. M. Divya Chaturvedi* (*SRM University-AP*);

00:00 CSI Based Object Identification Using $\mathbf{4} \times \mathbf{4}$ MIMO Access Point
Haydar Can Acar (*Desird Tasarım Ar-Ge A.Ş, Mehmetçik Mah. Aspendos Bulvarı 99/A*); *A. Kocakusak* (*Akdeniz University*); *S. Helhel* (*Akdeniz University*);

00:00 Parameter Estimation of LFM Signal Intercepted by Synchronous Nyquist Folding Receiver Based on Instantaneous Autocorrelation
Xinqun Liu (*National University of Defense Technology*); *Jiajun Bai* (*National University of Defense Technology*); *Tao Li* (*National Innovation Institute of Defense Technology (NIIDT)*); *Jinlin Peng* (*National Innovation Institute of Defense Technology (NIIDT)*);

00:00 Sea Surface Chlorophyll-a Concentration Retrieval from HY-1C Satellite Based on Deep Neural Network
Guiying Yang (*Ocean University of China*); *Qing Xu* (*Hohai University*); *Xiaobin Yin* (*Ocean University of China*); *Yongcun Cheng* (*Beijing PIESAT Information Technology Co., Ltd.*);

00:00 An Intelligent Head Posture Recognition Pillow
Yuxin Jiang (*Zhejiang University*); *Shiqi Zhu* (*Zhejiang University*); *Yinger Zhang* (*Zhejiang University*); *Zhengjie Huang* (*Zhejiang University*); *Jingxin Tang* (*Zhejiang University*); *Jiangtao Huangfu* (*Zhejiang University*);

00:00 The Capabilities of Geoinformation Monitoring Systemtechnology for Ecological Environmental Monitoring
Ferdenant A. Mkrtchyan (*Kotelnikov Institute of Radioengineering and Electronics, Fryazno Branch, RAS*);

00:00 The Role of the Plane Wave Excitations in the Number of Degrees of Freedom and Resolution for Scattering Strip Objects
Ehsan Akbari Sekehravani (*Universita degli studi della Campania Luigi Vanvitelli*); *Giovanni Leone* (*Universita degli studi della Campania Luigi Vanvitelli*); *Rocco Pierri* (*Universita degli studi della Campania Luigi Vanvitelli*);

00:00 A Numerical Analysis of Bistatic Scattering from High-winds Sea Surfaces
Yunyao Lin (*Guilin University of Technology*); *Ying Yang* (*Nanjing University of Science and Technology*); *Kun-Shan Chen* (*Guilin University of Technology*);

00:00 Hyperspectral Remote Sensing of Aerosol Parameters from Space
Jian Xu (*National Space Science Center, Chinese Academy of Sciences*); *L. Rao* (*National Space Science Center, Chinese Academy of Sciences*); *Z. Zhang* (*National Space Science Center, Chinese Academy of Sciences*); *Y. Wang* (*National Space Science Center, Chinese Academy of Sciences*); *E. Shi* (*National Space Science Center, Chinese Academy of Sciences*); *Adrian Doicu* (*German Aerospace Center (DLR)*); *D. Efremenko* (*German Aerospace Center (DLR)*);

00:00 Empiric Bayesian Inversion of Two Evaporation Duct Parameters From Synthetic Phased-Array Observations
Ted Rogers (*University of California San Diego*); *Peter Gerstoft* (*University of California San Diego*);

00:00 Laser-induced Charge Jump Signal Tracked by the Diamond Nitrogen Vacancy Center
Yanan Lu (*Tsinghua University*); *Dongling Deng* (*Tsinghua University*);

00:00 Continuous Variable Transmitter for Quantum Key Distribution Integrated in Indium Phosphide Platform
David Alvarez Outerelo (*University of Vigo*); *Marcos Troncoso Costas* (*University of Vigo*); *Francisco J. Diaz-Otero* (*Universidad de Vigo*); *Omar Guillan-Lorenzo* (*University of Vigo*); *Javier Fraile Pelaez* (*University of Vigo*);

00:00 Impact of the Nanotubes Diameter of $\mathbf{Sm_{0.12}Bi_{0.88}FeO_3}$ on Their Magnetic Properties
Paweł Głuchowski (*Nanoceramics Inc.*); *Daniela Kujawa* (*Nanoceramics Inc.*); *Andrius Pakalniškis* (*Vilnius University*); *Justinas Januškevičius* (*Vilnius University*); *Zivilė Stankevičiūtė* (*Vilnius University*); *Aivaras Kareiva* (*Vilnius University*); *Anna N. Morozovska* (*Institute of Physics NAS of Ukraine*); *D. Karpinsky* (*Namangan Engineering-Construction Institute*);

00:00 Fusion of fMRI Multimodal Dynamic Functional Connectivity Data Using a Two-stream Separable 3D Network Aids the Diagnosis of Autism Spectrum Disorder
Renzhou Gui (*Tongji University*); *Shuai Liu* (*Tongji University*); *Aobo Zhang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 A Novel Low-Dropout Regulator with Dynamically-biased Current and Super Source Follower
Jin Jie Wu (*Tongji University*); *Yuan Yang Du* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 A Novel Bandgap Voltage Reference Source with High Power Supply Rejection
Min Ye (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 The Examining of MRET Activated Water Effect in the TgCRND8 Transgenic Amyloid Mice Models
Igor V. Smirnov (*Global Quantech, Inc.*);

Session 3P1a
Polaritonics in Natural Materials and Metamaterials

Wednesday PM, July 5, 2023

Room Club E

Organized by Yingjie Wu, Jiahua Duan

Chaired by Yingjie Wu

00:00 Polariton Smith-Purcell Emission
Leila Rocio Prelat (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*); *Eduardo J. C. Dias* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*); *F. Javier García de Abajo* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*);

00:00 Optimization of Particle-light Scattering for Maximal Polariton Excitation
Eduardo J. C. Dias (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*); *F. Javier García de Abajo* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*);

00:00 Gate-tunable Negative Refraction of Mid-infrared Po-
Invited laritons
Hai Hu (*CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology*); *Na Chen* (*CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology*); *Hanchao Teng* (*CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology*); *Renwen Yu* (*Stanford University*); *Mengfei Xue* (*The Institute of Physics, Chinese Academy of Sciences*); *Ke Chen* (*CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology*); *Yuchuan Xiao* (*CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology*); *Yunpeng Qu* (*CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology*); *De-Bo Hu* (*National Center for Nanoscience and Technology*); *Jianing Chen* (*Institute of Physics, Chinese Academy of Science*); *Zhipei Sun* (*Aalto University*); *Peining Li* (*Huazhong University of Science and Technology*); *F. Javier García de Abajo* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*); *Qing Dai* (*National Center for Nanoscience and Technology*);

00:00 Hyperbolic Polaritons Interacting with Molecules
Invited
Alexey Yu. Nikitin (*Donostia International Physics Center (DIPC)*);

00:00 Transverse Polaritonic Hypercrystals
Invited
Hanan Herzig Sheinfux (*ICFO*); *Minwoo Jung* (*Cornell University*); *Lorenzo Orsini* (*ICFO*); *Matteo Ceccanti* (*ICFO*); *Aditya Mahalanabish* (*Cornell University*); *Daniel Martinez-Cercós* (*ICFO*); *Iacopo Torre* (*ICFO*); *David Barcons Ruiz* (*ICFO*); *Eli Janzen* (*Kansas State University*); *James H. Edgar* (*Kansas State University*); *Valerio Pruneri* (*ICFO*); *Gennady Shvets* (*Cornell University*); *Frank H. L. Koppens* (*ICFO — The Institute of Photonics Sciences (Barcelona)*);

00:00 Image Polaritons in van der Waals Crystals
Invited
Min Seok Jang (*Korea Advanced Institute of Science and Technology*);

00:00 Phonon Polariton Metamaterials
Keynote
Luis Martin-Moreno (*Universidad de Zaragoza*);

00:00 Hyperbolic Polaritonics in Bulk Natural Crystals
Invited
Guangwei Hu (*Nanyang Technological University*);

Session 3P1b
AI in Nanophotonic and Metamaterials Design

Wednesday PM, July 5, 2023

Room Club E

Organized by Mehdi Keshavarz-Hedayati

Chaired by Mehdi Keshavarz-Hedayati

00:00 Topology for the Classification and Design of Disordered Metasurfaces
Tristan Madeleine (*University of Southampton*); *Nina Podoliak* (*University of Southampton*); *Oleksandr Buchnev* (*University of Southampton*); *Giampaolo D'Alessandro* (*University of Southamtpon*); *Jacek Brodzki* (*University of Southampton*); *Malgosia Kaczmarek* (*University of Southampton*);

00:00 Feature-based Inverse Modeling of Nanophotonic Devices
Francesco Ferranti (*Vrije Universiteit Brussel*);

00:00 AI-driven Design of Ultra-stretchable Metamaterial
Amir Ghasemi (*Durham University*); *Rui Fang* (*Durham University*); *Dagou A. Zeze* (*Durham University*); *Mehdi Keshavarz Hedayati* (*Durham University*);

00:00 High-baudrate SiP and InP Modulators for Future Artificial Intelligence Photonic-assisted Hardware
Oskars Ozolins (*Riga Technical University*); *Armands Ostrovskis* (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*); *Benjamin Krüger* (*Keysight Technologies Deutschland GmbH*); *Fabio Pittalà* (*Keysight Technologies Deutschland GmbH*); *Mahdieh Joharifar* (*KTH Royal Institute of Technology*); *Richard Schatz* (*Royal Institute of Technology (KTH)*); *Di Che* (*Nokia Bell Labs*); *Yasuhiro Matsui* (*Coherent*); *Thomas Dippon* (*Keysight Technologies Deutschland GmbH*); *Michael Koenigsmann* (*Keysight Technologies Deutschland GmbH*); *Yuchuan Fan* (*RISE Research Institutes of Sweden*); *Marek Chacinski* (*Royal Institute of Technology (KTH)*); *Urban Westergren* (*KTH Royal Institute of Technology*); *Lu Zhang* (*Zhejiang University*); *Haik Mardoyan* (*Nokia Bell Labs*); *Sandis Spolitis* (*Riga Technical University*); *Sergei Popov* (*KTH Royal Institute of Technology*); *Xianbin Yu* (*Zhejiang University*); *Markus Gruen* (*Keysight Technologies Deutschland GmbH*); *Vjaceslavs Bobrovs* (*Riga Technical University*); *Hadrien Louchet* (*VPI Photonics GmbH*); *Xiaodan Pang* (*KTH Royal Institute of Technology*);

00:00 Deep Learning Enabled Inverse Design of Multifunctional Metasurfaces
Wei Ma (*Zhejiang University*);

00:00 Routing, Switching and Computing Using Electromagnetic Waves
Victor Pacheco-Pena (*Newcastle University*);

00:00 Optical Metasurface Design via Machine Learning and Genetic Algorithm
Lei Xu (*Nottingham Trent University*);

00:00 Waves for AI: From ELM and RC to Deep Neural Networks
Ali Momeni (*Swiss Federal Institute of Technology in Lausanne (EPFL)*); *Romain Fleury* (*Swiss Federal Institute of Technology in Lausanne (EPFL)*);

Session 3P2
Organic, Perovskite, and Quantum Dot Optoelectronics 3

Wednesday PM, July 5, 2023

Room Club D

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

Chaired by Wallace C. H. Choy

00:00 Cadmium Free ZnSe Quantum Dots and Device Analysis
Invited for Blue QLED
Haizheng Zhong (*Beijing Institute of Technology*);

00:00 Efficient Perovskite Solar Cells and Light-emitting
Invited Diodes
Jingbi You (*Institute of Semiconductors, Chinese Academy of Sciences*);

00:00 Energy Landscaping in Layered Perovskite Emitters
Keynote
Tze Chien Sum (*Nanyang Technological University*);

00:00 Multidentate Ligands for Enhanced Bandgap Stability
Invited in Red and Blue Perovskite LEDs: Current Progress and Future Directions
Yasser Hassan (*Qatar University*);

00:00 Organic Photodetectors for Biometric Monitoring and
Invited Machine Learning-promoted Intelligent Detection
Bing-Huang Jiang (*Ming Chi University of Technology*); *Chih-Ping Chen* (*Ming Chi University of Technology*);

00:00 All-in-one Process for Color Tuning and Patterning of
Invited Perovskite Quantum Dot Light-emitting Diodes
Jung-Yong Lee (*Korea Advanced Institute of Science and Technology (KAIST)*);

00:00 Micro- and Nanopatterning of Halide Perovskites with
Invited Crystal Engineering for Emerging Photoelectronics
Beomjin Jeong (*Yonsei University*); *Hyowon Han* (*Yonsei University*); *Cheolmin Park* (*Yonsei University*);

00:00 Strategies for Improving the Performance of Sn-based
Invited Perovskite Solar Cells
Feng Yan (*The Hong Kong Polytechnic University*);

00:00 Recent Advances in Organic Solar Cell Technology
Keynote
Gang Li (*Hong Kong Polytechnic University*);

00:00 Defect Engineering of Metal-halide Perovskites for Next-
Invited generation Optoelectronic Devices
Hobeom Kim (*Gwangju Institute of Science and Technology (GIST)*);

00:00 Exploring Intersystem Crossing in Rashba Band Struc-
Invited tures towards Harvesting Light-emitting Excitons Based on 2D-superlattice Perovskite
Bin Hu (*University of Tennessee*);

00:00 Unraveling the Origin of Spectral Instability of Per-
Invited ovskite Light-emitting Diodes and Pioneering Deep-blue Emissive Quasi-2D Perovskites
Dong Ha Kim (*Ewha Womans University*);

00:00 Ultra-stable and Efficient Perovskite Light-emitting
Invited Diodes
Dawei Di (*Zhejiang University*);

00:00 Ultralow-voltage Operation of Light-emitting Diodes
Yaxiao Lian (*Zhejiang University*); *Dongchen Lan* (*Zhejiang University*); *Shiyu Xing* (*Zhejiang University*); *Bingbing Guo* (*Zhejiang University*); *Zhixiang Ren* (*Zhejiang University*); *Runchen Lai* (*Zhejiang University*); *Chen Zou* (*Zhejiang University*); *Baodan Zhao* (*Zhejiang University*); *Richard H. Friend* (*University of Cambridge*); *Dawei Di* (*Zhejiang University*);

Session 3P3a
FocusSession.SC3: Optical Microscopy for Quantitative Imaging and Metrology 2

Wednesday PM, July 5, 2023

Room Club C

Organized by Xuewen Chen, Marek Piliarik

00:00 Invited — Compact Microscopic System for Long-term 3D Imaging and Quantitative Analysis of Organoids
Yuting Yang (*Shanghai Jiao Tong University*);

00:00 Invited — Plasmon-enhanced Fluorophores for Superresolution Microscopy: Opportunities and Challenges
Niklas Hansen (*J. Heyrovský Institute of Physical Chemistry Czech Academy of Sciences*); *Miroslav Hekrdla* (*J. Heyrovský Institute of Physical Chemistry Czech Academy of Sciences*); *David Roesel* (*J. Heyrovský Institute of Physical Chemistry Czech Academy of Sciences*); *Soumya Frederick* (*J. Heyrovský Institute of Physical Chemistry Czech Academy of Sciences*); *Khalillulah Umar* (*J. Heyrovský Institute of Physical Chemistry Czech Academy of Sciences*); *Jakub Čopák* (*Institute of Chemistry and Biochemistry Czech Academy of Sciences*); *Marek Kindermann* (*Institute of Chemistry and Biochemistry Czech Academy of Sciences*); *Petr Cígler* (*Institute of Chemistry and Biochemistry Czech Academy of Sciences*); *Vladimíra Petráková* (*J. Heyrovský Institute of Physical Chemistry Czech Academy of Sciences*);

00:00 Invited — Quantitative Phase Imaging at the Nanoscale Using Interferometric Scattering Microscope
Marek Piliarik (*Institute of Photonics and Electronics ASCR*);

00:00 — A Combination of Interferometric Scattering Microscopy and Raman Spectroscopy with a Single-molecule Sensitivity Reveals the Dynamics of Plasmon-driven Reactions
David Palounek (*Institute of Photonics and Electronics of the CAS*); *I. Kopal* (*Institute of Photonics and Electronics of the CAS*); *M. Vala* (*Institute of Photonics and Electronics of the CAS*); *Marek Piliarik* (*Institute of Photonics and Electronics ASCR*);

00:00 Invited — Exploring Phase Spatial Resolution Limit in Quantitative Phase Microscopy
Renjie Zhou (*The Chinese University of Hong Kong*); *Nansen Zhou* (*The Chinese University of Hong Kong*);

00:00 Invited — Single-molecule Fluorescence Multiplexing by Multiparameter Spectroscopic Detection of Nanostructured FRET Labels
Allison H. Squires (*University of Chicago*); *Jiachong Chu* (*University of Chicago*); *Ayesha Ejaz* (*University of Chicago*);

00:00 Invited — Beam Shaping and Measurement Based on All-integrated Reconfigurable Meshes — A New Tool for Microscopy
Peter Banzer (*University of Graz*); *J. Bütow* (*University of Graz*); *V. Sharma* (*University of Graz*); *D. Brandmüller* (*University of Graz*); *J. S. Eismann* (*Max Planck Institute for the Science of Light*);

00:00 Keynote — Interferometric Scattering Detection and Microscopy
Vahid Sandoghdar (*Max-Planck-Institute for the Science of Light*);

00:00 — Discriminative Non-destructive Testing from Different Chip Layers by Photoacoustic Remote Sensing
Jijing Chen (*Tianjin University*); *Yihan Pi* (*Tianjin University*); *Jiao Li* (*Tianjin University*); *Zhen Tian* (*Tianjin University*);

00:00 — Multiscale Modeling and Analysis for High-fidelity Interferometric Scattering Microscopy
Shupei Lin (*Huazhong University of Science and Technology*); *Pu Zhang* (*Huazhong University of Science and Technology*); *Marek Piliarik* (*Institute of Photonics and Electronics of the CAS*); *Xuewen Chen* (*Huazhong University of Science and Technology*);

Session 3P3b
Optica Fiber Sensing and Instrument

Wednesday PM, July 5, 2023

Room Club C

Organized by Dengwei Zhang

Chaired by Dengwei Zhang

00:00 Invited — Fiber Optic Devices for High-resolution Refractive Index Sensing
S. Pevec (*University of Maribor*); *M. Njegovec* (*University of Maribor*); *J. Javornik* (*University of Maribor*); *Denis Donlagic* (*University of Maribor*);

00:00 Invited — Nanoprinted On-chip Hollow-core Waveguides: A Novel Platform for Integrated Gas Sensing
Markus A. Schmidt (*Institute of Photonic Technology*);

00:00 — Two-stage Preamplification for φ-OTDR Distributed Acoustic Sensing
Leonardo Rossi (*IMM Institute*); *Lun-Kai Cheng* (*TNO*); *Wim De Jong* (*TNO*); *Rob Jansen* (*TNO*); *Gabriele Bolognini* (*Consiglio Nazionale delle Ricerche, IMM Institute*);

00:00 — Optical Fibers Shape Sensing Accuracy under Different Uncertainty Sources: A Monte Carlo Experiment
Francesco Falcetelli (*Università degli Studi di Bologna*); *Leonardo Rossi* (*IMM, National Research Council*); *Filippo Bastianini* (*SOCOTEC Photonics*); *Gabriele Bolognini* (*IMM, National Research Council*); *Raffaella Di Sante* (*University of Bologna*);

00:00 Mid-infrared Optical Fiber Sensors for Non-invasive Identification of (Bio)chemicals
Jean-Luc Adam (*Universite de Rennes 1*); *Catherine Boussard-Plédel* (*University of Rennes 1*); *Xiang Hua Zhang* (*Université de Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes) — UMR 6226*);

00:00 Evaluation Study on Remote Radiation Sensor Using Long Liquid Light Guide
Jae Hyung Park (*Chung-Ang University*); *Jinhong Kim* (*Chung-Ang University*); *Siwon Song* (*Chung-Ang University*); *Seunghyeon Kim* (*Chung-Ang University*); *Bongsoo Lee* (*Chung-Ang University*);

00:00 Optical Fiber Sensing Probe for Asphaltene Monitoring in Crude Oil
V. Sarakatsianos (*Institute of Electronic Structure and Laser (IESL), Foundation for Research and Technology — Hellas (FORTH)*); *E. Antoniou* (*Technical University of Crete*); *E. Chamilaki* (*Technical University of Crete*); *Maria Konstantaki* (*Foundation for Research and Technology-Hellas (FORTH)*); *N. Pasadakis* (*Technical University of Crete*); *Stavros Pissadakis* (*Institute of Electronic Structure and Laser (IESL)*);

00:00 Predicted Useful Life-time of an Optical Silica Fiber Intended for Space Applications
Ephraim Suhir (*Portland State University*);

00:00 Plasmonic SnO_2 Nanocomposite with Segregated Ag Particles for Gas Sensor Application
Peter I. Gaiduk (*Belarusian State University*);

Session 3P4a
Power Electronics

Wednesday PM, July 5, 2023

Room Club B

Organized by Jiri Lettl

Chaired by Jiri Lettl

00:00 High-efficiency and High-power-density Semiconductor Converters
Jiri Lettl (*Czech Technical University in Prague*); *Tomas Kupka* (*Czech Technical University in Prague*); *Pavel Skarolek* (*Czech Technical University in Prague*); *Jiri Frint* (*Czech Technical University in Prague*);

00:00 Time Variable Dead-time in GaN Based Bridgeless Converter
Pavel Skarolek (*Czech Technical University in Prague*); *Jiri Lettl* (*Czech Technical University in Prague*);

00:00 Output Power Change Analysis at Temperature Variation in Case of Synchronous Bi-directional DC/DC Converter Using Wide Band Gap Devices
Kusuma Priya Krovi (*Czech Technical University in Prague*); *Pavel Skarolek* (*Czech Technical University in Prague*); *Jan Bauer* (*Czech Technical University in Prague*); *Jiri Lettl* (*Czech Technical University in Prague*);

00:00 Limiting the Interference of Semiconductor Converters on the Power Supply Network Using Tuned Filters
Petr Kořínek (*Skybergtech s.r.o.*); *Lubomír Musálek* (*CTU FS*); *Jaroslav Novák* (*CTU FS*);

00:00 Comparison of Estimation Techniques for Railway Traction Vehicle Wheel Slip Control
Petr Pichlik (*Czech Technical University in Prague*); *Jiri Zdenek* (*Czech Technical University in Prague*); *Jiri Lettl* (*Czech Technical University in Prague*);

00:00 A Hybrid Electromagnetic-triboelectric Nanogenerator as a Self-powered Sensor for Moving Directions
Snezana M. Djuric (*University of Novi Sad*); *Jelena M. Bjelica* (*University of Novi Sad*); *Nikola M. Djuric* (*University of Novi Sad*);

00:00 THD Analysis of Converter Power Station 25 kV 50 Hz
Ladislav Cerman (*University of Pardubice*); *Ondřej Sadílek* (*University of Pardubice*); *Vlastimil Hebelka* (*University of Pardubice*);

00:00 Efficiency Analysis of the 25 kV/50 Hz Traction Network with Static Frequency Converters
Ladislav Mlynařík (*University of Pardubice*); *Vlastimil Hebelka* (*University of Pardubice*); *Jaroslav Novák* (*University of Pardubice*); *Ondřej Sadílek* (*University of Pardubice*); *Jiri Lettl* (*Czech Technical University in Prague*);

00:00 Wireless Energy System with Three-dimensional Transmitting Coil for Capsule Endoscope
Liangmengcheng Zhu (*University of Science and Technology of China*);

Session 3P4b
State-of-the-Art Terahertz Science and Technology

Wednesday PM, July 5, 2023

Room Club B

Organized by Massimo Petrarca

Chaired by Massimo Petrarca

00:00 Study of Paraffin-embedded Lung Cancer Tumor Using Terahertz Splicing Spectroscopy
Huimin Wang (*China University of Petroleum (East China)*); *Bin Wang* (*China University of Petroleum*); *Lanchang Xing* (*China University of Petroleum*); *Muzhi Gao* (*China University of Petroleum (East China)*); *Jianqin Deng* (*Ceyear Technologies Co., Ltd*); *Chuan Li* (*The Affiliated Hospital of Qingdao University*); *Linlin Qu* (*The Affiliated Hospital of Qingdao University*); *Shihong Shao* (*The Affiliated Hospital of Qingdao University*);

00:00 A Novel Particle in Liquid Biosensor Based on Terahertz Spoof Surface Plasmon Polariton Transmission Line
Muzhi Gao (*China University of Petroleum (East China)*); *Jianqin Deng* (*41st Institute of China Electronic Technology Group Corporation*); *Bin Wang* (*China University of Petroleum*); *Lanchang Xing* (*China University of Petroleum*); *Linlin Qu* (*The Affiliated Hospital of Qingdao University*); *Dawei Jiang* (*China University of Petroleum (East China)*); *Gaoyang Zhu* (*Shandong University of Science and Technology*);

00:00 Terahertz Continuous-waves Spectroscopy (THz-CW): A Reliable High-resolution Approach Applied to the Cultural Heritage Field for the Characterization of Coloring Materials
Candida Moffa (*Sapienza University of Rome*); *Fernando Piamonte Magboo Jr.* (*Sapienza University of Rome*); *Luigi Palumbo* (*Sapienza University of Rome*); *Anna Candida Felici* (*Sapienza University of Rome*); *Massimo Petrarca* (*Sapienza University of Rome*);

00:00 THz Transition from Fano Resonances to Bound States
Invited in the Continuum in 3D Printed Photonic Structures
Mauro Missori (*Institute for Complex Systems, National Research Council (ISC-CNR)*); *Laura Pilozzi* (*Institute for Complex Systems, National Research Council (ISC-CNR)*); *Claudio Conti* (*University Sapienza*);

00:00 Single-shot Ultrafast Imaging with Terahertz Waves
Invited
Junliang Dong (*Institut National de la Recherche Scientifique (INRS-EMT)*); *Pei You* (*Institut National de la Recherche Scientifique (INRS-EMT)*); *Alessandro Tomasino* (*Institut National de la Recherche Scientifique (INRS-EMT)*); *Aycan Yurtsever* (*Institut National de la Recherche Scientifique (INRS-EMT)*); *Roberto Morandotti* (*Institut National de la Recherche Scientifique (INRS-EMT)*);

00:00 Comb Emission of a THz QCL Characterized by Fourier
Invited Transform Analysis over Different Current Regimes
Francesco Cappelli (*CNR-INO, Istituto Nazionale di Ottica*); *A. Sorgi* (*CNR-INO, Istituto Nazionale di Ottica*); *R. Eramo* (*CNR-INO, Istituto Nazionale di Ottica*); *Paolo De Natale* (*CNR-INO, Istituto Nazionale di Ottica*); *E. Riccardi* (*NEST, CNR — Istituto Nanoscienze and Scuola Normale Superiore*); *V. Pistore* (*NEST, CNR — Istituto Nanoscienze and Scuola Normale Superiore*); *M. S. Vitiello* (*NEST, CNR — Istituto Nanoscienze and Scuola Normale Superiore*); *Luigi Consolino* (*INO, Istituto Nazionale di Ottica — CNR*);

00:00 On the THz Radiation Mechanisms at the Base of On-
Invited axis Emission in Relativistic Laser-plasma Interactions
Alessandro Curcio (*INFN LNF*);

Session 3P5
FocusSession.SC3: Advanced Photonic Technologies for Spectroscopic Applications 2

Wednesday PM, July 5, 2023

Room Club A

Organized by Wei Dong Chen, Vincenzo Spagnolo, Ulrike Willer

Chaired by Wei Dong Chen, Ulrike Willer

00:00 Simultaneous Measurements of NO_2 and Particulate Matter Using Broadband Cavity-enhanced Absorption Spectrometer
Gaoxuan Wang (*Universite du Littoral Cote d'Opale*); *Qian Gou* (*Chongqing University*); *Lingshuo Meng* (*Université du Littoral Côte d'Opale*); *Benjamin Hanoune* (*Universite de Lille1*); *Suzanne Crumeyrolle* (*Université de Lille1*); *Thomas Fagniez* (*Universite du Littoral Cote d'Opale*); *Cécile Coeur* (*Universite du Littoral Cote d'Opale*); *Rony Akiki* (*ENVEA*); *Wei Dong Chen* (*Universite du Littoral Cote d'Opale*);

00:00 Development of a Multi-platform OF-CEAS Instrument
Invited for In-situ Measurements of Atmospheric Trace Gases
Valéry Catoire (*CNRS-Université Orléans-CNES*); *Patrick Jacquet* (*CNRS-Université Orléans-CNES*);

00:00 Trace-molecule Detection below the ppt Level with
Invited Doubly-resonant Cantilever-enhanced Photoacoustic Spectroscopy
Jacopo Pelini (*CNR-INO — Istituto Nazionale di Ottica*); *Zhen Wang* (*The Chinese University of Hong Kong*); *Mario Siciliani De Cumis* (*ASI Agenzia Spaziale Italiana — Centro di Geodesia Spaziale*); *Iacopo Galli* (*CNR-INO, Istituto Nazionale di Ottica*); *Wei Ren* (*The Chinese University of Hong Kong*); *Paolo De Natale* (*CNR-INO, Istituto Nazionale di Ottica*); *Simone Borri* (*CNR-INO, Istituto Nazionale di Ottica*);

00:00 Design and Experimental Verification of New Optical Sensors and Mid-IR Retroreflectors and Their Field Testing and Applications to High Precision Spectroscopy
Vladislav I. Sevostianov (*Princeton University*); *Nathan P. Li* (*Princeton University*); *Josh Collins* (*Intelligent Material Solutions*); *Paul Guiguizian* (*Intelligent Material Solutions*); *Gregg Harrison* (*Intelligent Material Solutions*); *Mark A. Zondlo* (*Princeton University*);

00:00 Single-mode Interband Cascade Lasers with a Wide Tun-
Invited ing Range Based on V-coupled Cavity
Rui Q. Yang (*University of Oklahoma*); *Jian-Jun He* (*Zhejiang University*);

00:00 Laser Ablation: Fundamentals and Applications in En-
Invited vironment, Medicine and Materials Science
Cristian Focsa (*Université de Lille 1*);

00:00 Keynote — Saturated-absorption CAvity Ring-down (SCAR) Spectroscopy for Molecular Detection in Real-world Applications down to ppq Sensitivity
Saverio Bartalini (*CNR — INO, Istituto Nazionale di Ottica*); *Pablo Cancio Pastor* (*CNR-INO — Istituto Nazionale di Ottica*); *M. G. Delli Santi* (*CNR-INO — Istituto Nazionale di Ottica*); *Iacopo Galli* (*CNR-INO, Istituto Nazionale di Ottica*); *G. Giusfredi* (*PpqSense S.r.l.*); *Pasquale Maddaloni* (*CNR-INO, Istituto Nazionale di Ottica*); *Davide Mazzotti* (*CNR-INO, Istituto Nazionale di Ottica*); *Paolo De Natale* (*CNR-INO, Istituto Nazionale di Ottica*);

00:00 Invited — Spectroscopic Measurements of Pollution and Climate — Some Recent Developments
M. K. Ravi Varma (*National Institute of Technology Calicut*);

00:00 Invited — Gas Spectroscopy Approaches Exploiting Tuning Fork-based Light Detectors for Both Contact and Non-contact Sensing
Angelo Sampaolo (*University and Politecnico of Bari*); *Pietro Patimisco* (*Universita degli Studi di Bari and Politecnico di Bari*); *Andrea Zifarelli* (*Universita degli Studi di Bari and Politecnico di Bari*); *Giansergio Menduni* (*Politecnico and University of Bari*); *Marilena Giglio* (*University and Politecnico of Bari*); *Hongpeng Wu* (*Shanxi University*); *Lei Dong* (*Shanxi University*); *Vincenzo Spagnolo* (*University and Politecnico of Bari*);

00:00 Invited — Precise Control of Mid-IR QCL Frequency Combs for High Resolution Gas Spectroscopy
Gerard Wysocki (*Princeton University*);

00:00 Invited — Around the "Atmospheric World" under a Balloon: A Long-duration Observation of the Equatorial Tropopause with the Pico-SDLA Tunable Diode Laser Spectrometers
Melanie Ghysels-Dubois (*Université de Reims*); *Georges Ddurry* (*UFR Sciences Exactes et Naturelles*); *Nadir Amarouche* (*INSU Division Technique*); *Emmanuel Riviere* (*Université de Reims*); *Fabien Frérot* (*INSU Division Technique*); *Jean-Christophe Samake* (*INSU Division Technique*); *Albert Hertzog* (*CNRS, Laboratoire de Météorologie Dynamique*); *Riwal Plougonven* (*CNRS, Laboratoire de Météorologie Dynamique*);

00:00 Invited — Agricultural Greenhouse Gas Emissions through Open-path Laser Spectroscopy
Mark A. Zondlo (*Princeton University*);

00:00 Invited — Mid-IR Spectroscopy with a Cryo-cooled Multipass Cell for Rare Isotopic Species in Environmental Applications
Bela Tuzson (*Laboratory for Air Pollution/Environmental Technology*); *A. Nataraj* (*Laboratory for Air Pollution/Environmental Technology*); *Michele Gianella* (*Laboratory for Air Pollution/Environmental Technology*); *Jerome Faist* (*ETH Zurich*); *Lukas Emmenegger* (*Laboratory for Air Pollution/Environmental Technology*);

00:00 Multi-mode Fiber Evanescent Field Sensor for Measurement of Liquids Based on Spectral Modal Interference Pattern
Maryam Maleki (*Clausthal University of Technology*); *Günter Flachenecker* (*Fraunhofer Heinrich Hertz Institute*); *Wolfgang Schade* (*Fraunhofer Heinrich Hertz Institute*); *Ulrike Willer* (*Clausthal University of Technology*);

00:00 Direct Measurement of HO_2 Radical Concentration Using Cavity-enhanced Absorption Spectroscopy in the Near-infrared Spectral Region
Minh-Nhut Ngo (*Université du Littoral Côte d'Opale*); *Tong Nguyen-Ba* (*Université du Littoral Côte d'Opale*); *Christa Fittschen* (*Université de Lille*); *Coralie Schoemaecker* (*Université de Lille*); *Melanie Ghysels-Dubois* (*Université de Reims*); *Wei Dong Chen* (*Université du Littoral Côte d'Opale*);

Session 3P6a
Optical Metasurfaces for Novel Applications

Wednesday PM, July 5, 2023

Room Terrace 2A

Organized by Tao Li

Chaired by Tao Li

00:00 Invited — Metasurface-enabled Multifunctional Holographic Display
Cheng Zhang (*Huazhong University of Science and Technology*);

00:00 Invited — Tailoring the Optical Lineshapes of Metasurfaces
Xiaoying Zheng (*Fudan University*); *Jing Lin* (*Fudan University*); *Xiyue Zhang* (*Fudan University*); *Qiu Meng* (*Fudan University*); *Shiyi Xiao* (*Fudan University*); *Qiong He* (*Fudan University*); *Lei Zhou* (*Fudan University*);

00:00 Invited — Metalenses for Emerging Virtual Reality and Augmented Reality
Haowen Liang (*Sun Yat-Sen University*);

00:00 Invited — Multi-dimensional Dielectric Metasurfaces Driven by Advanced Nanofabrication
Yue Qiang Hu (*Hunan University*);

00:00 Invited — Planar Wide-angle-imaging Camera Enabled by Metalens Array
Ji Chen (*Southeast University*);

00:00 Smith-purcell Radiation from Highly Mobile Carriers in 2D Quantum Materials
Wu Lin (*Singapore University of Technology and Design (SUTD)*);

00:00 Transparent Materials with Diffuse Reflection
Hong Chen Chu (*Nanjing University*); *Xiang Xiong* (*Nanjing University*); *Tongtong Song* (*Nanjing University*); *Ru-Wen Peng* (*Nanjing University*); *Mu Wang* (*Nanjing University*); *Yun Lai* (*Nanjing University*);

00:00 Large-scale Achromatic Flat Lens by Light Coherence Optimization
Xingjian Xiao (*Nanjing University*); *Yunwei Zhao* (*Nanjing University*); *Xin Ye* (*Nanjing University*); *Chen Chen* (*Nanjing University*); *Xinmou Lu* (*Southern University of Science and Technology*); *Yansen Rong* (*Southern University of Science and Technology*); *Junhong Deng* (*Southern University of Science and Technology*); *Guixin Li* (*Southern University of Science and Technology*); *Shi-Ning Zhu* (*Nanjing University*); *Tao Li* (*Nanjing University*);

00:00 Chip-scale Metalens Microscope for Wide-field and Depth-of-field Imaging
Xin Ye (*Nanjing University*); *Xiao Qian* (*Nanjing University*); *Xingjian Xiao* (*Nanjing University*); *Chen Chen* (*Nanjing University*); *Shi-Ning Zhu* (*Nanjing University*); *Tao Li* (*Nanjing University*);

Session 3P6b
Metasurfaces and 2D Metamaterials in Microwave Region

Wednesday PM, July 5, 2023

Room Terrace 2A

Organized by Jian Jia Yi, Shah Nawaz Burokur

Chaired by Jian Jia Yi

00:00 Design of Metagratings for Manipulating Wavefronts
Z. Tan (*Xi'an Jiaotong University*); *J. Yi* (*Xi'an Jiaotong University*); *Badreddine Ratni* (*Paris Nanterre University*); *Shah Nawaz Burokur* (*Paris Nanterre University*);

00:00 Dual-band Maximal Intrinsic Chirality Empowered by a Pair of Boud States in the Continuum
Xin Qi (*Tongji University*); *Yong Sun* (*Tongji University*); *Hong Chen* (*Tongji University*); *Chao Wu* (*Tongji University*);

00:00 Local Design and Global Optimization of Cloak Using Neural Network
Zheng Zhen (*Zhejiang University*); *Bin Zheng* (*Zhejiang University*); *Chao Qian* (*Zhejiang University*); *Huan Lu* (*Zhejiang University*); *J. Q. Chen* (*China Aeronautical Establishment*); *Y. N. B. Han* (*China Aeronautical Establishment*); *S. Q. Zhang* (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*);

00:00 Spectroscopic Study of the Excitonic Structure in Monolayer MoS2 under Multi-variate Physical and Chemical Stimuli
Viktor Bender (*Humboldt-Universitat zu Berlin*); *Tobias Bucher* (*Friedrich-Schiller-Universitat Jena*); *Nasim Mohammed* (*Friedrich Schiller University Jena*); *Yuxuan Xie* (*Friedrich Schiller University Jena*); *Isabelle Staude* (*Friedrich-Schiller-Universitat Jena*); *Falk Eilenberger* (*Friedrich Schiller University*); *Kurt Busch* (*Max-Born Institute for Nonlinear Optics and Short Pulse Spectroscopy*); *Thomas Pertsch* (*Friedrich-Schiller-Universitat*); *Bayarjargal N. Tugchin* (*Friedrich Schiller University Jena*);

00:00 Design of Non-resonant High-transmission Metasurfaces with Ultra-wide Bandwidth and Flexible Operating Frequencies in Microwave Region
Xiaojing Li (*Tongji University*); *Wuan Zheng* (*Tongji University*); *Tong Hao* (*Tongji University*);

00:00 Transmission Meta-cloak of Multi-layer Metasurfaces in X-band
Ruichen Li (*Zhejiang University*); *Bin Zheng* (*Zhejiang University*); *Peng Li* (*China Aeronautical Establishment*); *Yajing Han* (*China Aeronautical Establishment*); *Hongsheng Chen* (*Zhejiang University*);

00:00 Design of Switchable Frequency Selective Rasorber Based on Embedded Diamond Resonator
Yi Li (*Xidian University*); *Peng Ren* (*Xidian University*); *Ruijie Chen* (*Xidian University*); *Zheng Xiang* (*Xidian University*);

Session 3P7
Physical and Topological Properties of Waves in Complex Media 2

Wednesday PM, July 5, 2023

Room Terrace 2B

Organized by Igor Tsukerman, Andrei V. Lavrinenko

Chaired by Igor Tsukerman, Andrei V. Lavrinenko

13:30 Keynote Electromagnetic Phenomena at Time Interfaces in Bianisotropic Media
M. H. Mostafa (*Aalto University*); *M. S. Mirmoosa* (*Independent Researcher*); *Sergei A. Tretyakov* (*Aalto University*);

14:00 Invited Photonic Network Meta-crystals: From Non-Abelian Topology to Hedgehog Surface States
Che Ting Chan (*The Hong Kong University of Science and Technology*);

14:20 Invited A Semi-analytical Theory for Photonic Materials Structured in Space and Time
Carsten Rockstuhl (*Karlsruhe Institute of Technology*); *A. Lamprianidis* (*Karlsruhe Institute of Technology*); *P. Garg* (*Karlsruhe Institute of Technology*); *D. Beutel* (*Karlsruhe Institute of Technology*);

14:40 Reflecting a Microwave Pulse with a Fast, Photodiode Controlled Time-boundary in a Microstrip Line
Thomas R. Jones (*Purdue University*); *Alexander V. Kildishev* (*Purdue University*); *Dimitrios Peroulis* (*Purdue University*);

14:55 Continuum of Bound States in a Non-Hermitian Model
Invited
Yidong Chong (*Nanyang Technological University*); *Qiang Wang* (*Nanyang Technological University*); *C. Zhu* (*Nanyang Technological University*); *X. Zheng* (*Nanyang Technological University*); *H. Xue* (*Nanyang Technological University*); *B. Zhang* (*Nanyang Technological University*);

15:15 Chirality-induced Topological Phase in Plasmonic Metasurfaces
Leeju Singh (*Ariel University*); *Maayan Fox* (*Ariel University*); *Yuri Gorodetski* (*Ariel University*);

16:00 Topological Photonics in Lattices of Sub-wavelength Resonators
Sergey E. Skipetrov (*Université Grenoble Alpes, CNRS, LPMMC*); *Pierre Wulles* (*Université Grenoble Alpes, CNRS, LPMMC*);

16:15 Low-symmetrical Topological Graphene Metasurfaces with Quantum Valley and Spin Hall Effects
Long Chen (*Southeast University*); *Zhihao Lan* (*University College London*); *Xiong Wei Wu* (*Southeast University*); *Qian Ma* (*Southeast University*); *Jianwei You* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

16:30 Nonlinearities, Fast and Slow, and How to Enhance
Keynote Them, Intrinsically or Extrinsically
Jacob B. Khurgin (*Johns Hopkins University*);

17:00 Time-reversal Asymmetry in Nonlinear Metasurfaces
Invited
S. Boroviks (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *Andrei Kiselev* (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *Karim Achouri* (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *Olivier J. F. Martin* (*Swiss Federal Institute of Technology Lausanne (EPFL)*);

17:20 Topological Photonics as a Tool for Precision Measurement of Mechanical Forces
R. Sato (*Technical University of Denmark*); *C. V. Bertelsen* (*Technical University of Denmark*); *M. Dimaki* (*Technical University of Denmark*); *W. E. Svendsen* (*Technical University of Denmark*); *Andrei V. Lavrinenko* (*Technical University of Denmark*);

17:35 Understanding Acoustic Bound States in the Continuum from a Topological Perspective
Francesc Alzina (*Catalan Institute of Nanoscience and Nanotechnology (ICN2)*);

17:50 Topology Optimization of Periodic Media and Devices
Invited for Wave-phenomena
Rasmus Ellebæk Christiasen (*Technical University of Denmark*);

Session 3P8a
Quantum Science and Technology with EM Relevance

Wednesday PM, July 5, 2023

Room South Room 220

Organized by Weng Cho Chew, Thomas E. Roth

Chaired by Paolo Rocca, Thomas E. Roth

00:00 Validation of the Full-wave Projector-based Hamiltonian Analysis of Port-driven Microwave Resonators
Soomin Moon (*Purdue University*); *Thomas E. Roth* (*Purdue University*);

00:00 Device Studies for Quantum Information Technology
Hai-Zhi Song (*Southwest Institute of Technical Physics*); *Zichang Zhang* (*University of Electronic Science and Technology of China*); *Qian Dai* (*Southwest Institute of Technical Physics*); *You Wang* (*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*);

00:00 Quantum Computing Techniques for Phased Array Antennas
Luca Tosi (*ELEDIA Research Center (ELEDIA@UniTN — University of Trento)*); *Paolo Rocca* (*University of Trento*);

00:00 Genuine Quantum Thermal Machine in Single Nonequi-
Invited librium EM Bath
Mauro Antezza (*Universite de Montpellier*);

00:00 Numerical Analysis of Scattering of Non-classical Lights
Dong-Yeop Na (*Purdue University*); *Jie Zhu* (*Purdue University*); *Weng Cho Chew* (*Purdue University*);

00:00 An ADHIE-TDDFT Method for the EM/QM Co-simulation of Coupled 1-D Nanowires
Maxim Torreele (*Ghent University*); *Pieter Decleer* (*Ghent University*); *Dries Vande Ginste* (*Ghent University*);

00:00 Operative Approach to Quantum Electrodynamics in Dispersive Dielectric Objects Based on a Polarization Modal Expansion
Carlo Forestiere (*Universita degli Studi di Napoli Federico II*); *G. Miano* (*Universita degli Studi di Napoli Federico II*);

00:00 Quantum Mechanical Simulation of Open Quantum Systems
Guan-Hua Chen (*The University of Hong Kong*);

00:00 Lorenz Gauge vs Coulomb Gauge: What is the Difference in Quantum Electromagnetics?
Weng Cho Chew (*Purdue University*); *Dong-Yeop Na* (*Purdue University*); *Aiyin Y. Liu* (*University of Illinois*);

Session 3P9
Advanced Numerical Methods and Techniques in Computational Electromagnetics 2

Wednesday PM, July 5, 2023

Room South Room 221

Organized by Mei Song Tong, Maokun Li, Gaobiao Xiao

Chaired by Mei Song Tong, Gaobiao Xiao

00:00 Polarizability of a Semiconductor Nanoparticle as a Generalized Network Function
Zi Wang (*Illinois Institute of Technology*); *Thomas T. Y. Wong* (*Illinois Institute of Technology*);

00:00 Wide-angle Metasurface Polarization Converter Based on Corner-truncated Square Patch
Xiaoyi Wang (*Ecole Polytechnique de Montreal*); *Guo-Min Yang* (*Fudan University*); *Mei Song Tong* (*Tongji University*);

00:00 A 2-bit Reconfigurable Metasurface Element with Integrated Phase Shifters
Weiran Li (*Fudan University*); *Xiaocha Liu* (*Fudan University*); *Guo-Min Yang* (*Fudan University*); *Ya-Qiu Jin* (*Fudan University*);

00:00 Ionospheric Effects and Correction of Earth Low Band Spaceborne Downward-looking Radar Signals
Yunlong Dong (*Fudan University*); *Hongxia Ye* (*Fudan University*);

00:00 Computation of the Physical Optics Integral on T-spline Surfaces
Ruoming Zhang (*Zhejiang University*); *Han Wang* (*Zhejiang University*); *Yuhao Shen* (*Zhejiang University*); *Xirun Yin* (*Zhejiang University*); *Lizhen Yang* (*Zhejiang University*); *Yuxuan Li* (*Zhejiang University*); *Hai Lin* (*Zhejiang University*);

00:00 Solving Drift Diffusion Equations on Non-uniform Spatial and Temporal Domains
Ergun Simsek (*University of Maryland Baltimore County*); *Ishraq Md Anjum* (*University of Maryland Baltimore County*); *Curtis R. Menyuk* (*University of Maryland Baltimore County*);

00:00 Comprehensive Analysis of a Slow Wave Structure for an X-band MILO
Sofia Bertolami (*University of Roma "Tor Vergata"*); *Lorenzo Valletti* (*University of Rome "Tor Vergata"*); *Stefano Fantauzzi* (*University of Rome "Tor Vergata"*); *Franco Di Paolo* (*University of Roma "Tor Vergata"*);

00:00 Rapid Prediction of Wide Angular Optical Responses from Composite Plasmonic Nanoparticles
Ting Wan (*Nanjing University of Posts and Telecommunications*); *Zhengwen Liao* (*Nanjing University of Posts and Telecommunications*); *Shihao Ma* (*Nanjing University of Posts and Telecommunications*); *Shang Li* (*Nanjing University of Posts and Telecommunications*); *Xuechun Wang* (*Nanjing University of Posts and Telecommunications*);

00:00 GPU Acceleration of Method of Moment (MoM) Code Using OpenACC
G. Akshaya (*Indian Institute of Science*); *Yoginder Kumar Negi* (*Indian Institute of Science*); *N. Balakrishnan* (*Indian Institute of Science*);

00:00 Tridiagonal Preconditioner for Volume Electric Field Integral Equation Solution
Yoginder Kumar Negi (*Indian Institute of Science*); *N. Balakrishnan* (*Indian Institute of Science*);

00:00 High-efficiency and High-resolution Diffraction Grating in the Near-IR Region
Yiming Liu (*Huawei Technologies Co., Ltd.*); *Konstantin Biloshenko* (*Huawei Technologies Co., Ltd.*); *Emil Aslanov* (*Huawei Technologies Co., Ltd.*); *Fernando Muñoz Fernandez* (*Huawei Technologies Co., Ltd.*);

00:00 An SIE-GSTC Solver for Simulation of Three-dimensional Mono- and Bi-anisotropic Metasurfaces
Sebastian Celis Sierra (*King Abdullah University of Science and Technology (KAUST)*); *Ran Zhao* (*King Abdullah University of Science and Technology (KAUST)*); *Hakan Bagci* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Augmented Müller Equations for Low-frequency Modeling of Penetrable Objects
Li Zhang (*Tongji University*); *Ajay K. Poddar* (*Synergy Microwave Corp*); *Ulrich L. Rohde* (*Synergy Microwave Corp*); *Mei Song Tong* (*Tongji University*);

00:00 Utilization of Multiple Huygens Surfaces in Ray Tracing Scenarios Involving Diffractions
Han Na (*Technical University of Munich*); *Thomas F. Eibert* (*Technical University of Munich*);

00:00 Investigation of Convergence Improvement to Speed-up of Full-wave Electromagnetic Field Analysis Solver Based on Parallel FEM
Amane Takei (*University of Miyazaki*); *H. Kawai* (*Toyo University*);

00:00 Static Surface Mode Expansion for the Full-Wave Scattering from Penetrable Objects
Carlo Forestiere (*Universita degli Studi di Napoli Federico II*); *G. Gravina* (*Universita degli Studi di Napoli Federico II*); *G. Miano* (*Universita degli Studi di Napoli Federico II*); *Guglielmo Rubinacci* (*Universita degli Studi di Napoli Federico II*); *A. Tamburrino* (*Italian Air Force*);

00:00 Effect of Lightning Channel Inclination on the Current Flowing in Different Parts of the Steel Reinforced Concrete Building during a Direct Stroke to the Building
Vinoda Shivanand (*Indian Institute of Science*);

00:00 Analysis of a Circular Waveguide Coated with Magnetized Ferrite Layer
Mariam Hossam Mohammed Helmi (*The British University in Egypt*); *Hassan Ragheb* (*The British University in Egypt*);

00:00 Energy-flow Analysis of Bearing Currents in Electrical Machines
Dimitri Delkov (*Heilbronn University of Applied Sciences*); *Hannes Toepfer* (*Technische Universitat Ilmenau*); *Jürgen Ulm* (*Heilbronn University of Applied Sciences*);

00:00 Hierarchical Pattern Exploitation for Fast Solving Finite Periodic Arrays Scattering Problems
Yuyang Hu (*Shanghai Jiao Tong University*); *Yu Zhao* (*Xidian University*); *Gaobiao Xiao* (*Shanghai Jiao Tong University*);

00:00 Physics-informed Graph Residual Learning for Solving Combined Field Integral Equations of 3D PEC Targets
Tao Shan (*Tsinghua University*); *Maokun Li* (*Tsinghua University*); *Fan Yang* (*Tsinghua University*); *Shenheng Xu* (*Tsinghua University*);

00:00 Fast Calculations of Bands of Vector Electromagnetic Waves in 3D Periodic Structures Using Broadband Green's Function-Multiple Scattering Theory (BBGF-MST)
Tien-Hao Liao (*National Taipei University of Technology*); *Leung Tsang* (*University of Michigan*); *Shurun Tan* (*Zhejiang University/University of Illinois at Urbana-Champaign Institute*); *Xiaolan Xu* (*California Institute of Technology*); *Xuyang Bai* (*Zhejiang University*);

00:00 Scattering Analysis from Lossy Dielectric Cylinder Buried in a Dielectric Half-space Using the Extended Method of Auxiliary Sources
Hichem Naamen (*Ecole Nationale d'ingénieurs de Tunis*); *Ajmi Ben Hadj Hammouda* (*University of Monastir*); *Taoufik Aguili* (*University of Tunis El Manar (UTM)*);

00:00 Scattering by Large Size Cylinders Analysis via the Extended Method of Auxiliary Sources in Conjunction with the Partial Coupling
Hichem Naamen (*Ecole Nationale d'ingénieurs de Tunis*); *Ajmi Ben Hadj Hammouda* (*University of Monastir*); *Taoufik Aguili* (*University of Tunis El Manar (UTM)*);

Session 3P10a
Inverse Scattering Problems: Theory and Applications in Imaging and Design

Wednesday PM, July 5, 2023

Room South Room 222

Organized by Loreto Di Donato, Martina Teresa Bevacqua

Chaired by Loreto Di Donato, Martina Teresa Bevacqua

00:00 Electromagnetic Breast Imaging and Uncertainty Quantification with Bayesian Neural Networks
Valentin Noel (*Universite Paris-Saclay*); *Thomas Rodet* (*Université Paris-Saclay*); *Dominique Lesselier* (*UMR8506 (CNRS, Centrale Supélec, University Paris-Sud), Université Paris-Saclay*);

00:00 Microwave Linear Imaging: Sampling and Resolution in Layered Background Medium
Maria Antonia Maisto (*Universita degli Studi della Campania "Luigi Vanvitelli"*); *Mehdi Masoodi* (*Università degli Studi della Campania Luigi Vanvitelli*); *Raffaele Solimene* (*Universita degli Studi della Campania "Luigi Vanvitelli"*);

00:00 A Multifrequency Finite-Element Variable-Exponent Inversion Method for Microwave Imaging Applications
Valentina Schenone (*University of Genoa*); *Alessandro Fedeli* (*University of Genoa*); *Claudio Estatico* (*University of Genoa*); *Matteo Pastorino* (*University of Genoa*); *Andrea Randazzo* (*University of Genoa*);

00:00 3D Full Wave Electromagnetic Modeling of Label-free Optical Microscopes
Yingying Qin (*UiT The Arctic University of Norway*); *Krishna Agarwal* (*UiT — The Arctic University of Norway*);

00:00 Tomographic Reconstruction of Weakly Scattering Cells from a Single Defocused Digital Hologram
Sunaina Rajora (*Indian Institute of Technology Delhi*); *Mansi Butola* (*Indian Institute of Technology Delhi*); *Kedar Khare* (*Indian Institute of Technology Delhi*);

00:00 A Multi-frequency Newton-type Iterative Scheme to Recover a Rough Surface Separating Two Dielectric Media
Ahmet Sefer (*King Abdullah University of Science and Technology (KAUST)*); *Ali Yapar* (*Istanbul Technical University*); *Hakan Bagci* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 The Virtual Experiments in Electromagnetic Inverse Scattering: Understanding Actual Opportunities and Challenges
Loreto Di Donato (*University of Catania*); *M. Bevacqua* (*University "Mediterranea" of Reggio Calabria*); *L. Crocco* (*National Research Council*); *T. Isernia* (*University "Mediterranea" of Reggio Calabria*);

00:00 Recent Advances on System-by-Design Global Optimization Methods as Applied to Biomedical Microwave Imaging
Francesco Zardi (*University of Trento*); *Marco Salucci* (*University of Trento*); *Paolo Rocca* (*University of Trento*); *Giacomo Oliveri* (*University of Trento*);

00:00 Research on Enhancing the Reconstruction of Strong Scatterers through an Iterative Domain Decomposition Technique
Yuyue Zhang (*National University of Singapore*); *Tiantian Yin* (*National University of Singapore*); *Xudong Chen* (*National University of Singapore*);

00:00 Neural Born Iterative Method for Solving 2D Inverse Scattering Problems
Tao Shan (*Tsinghua University*); *Maokun Li* (*Tsinghua University*); *Fan Yang* (*Tsinghua University*); *Shenheng Xu* (*Tsinghua University*);

00:00 Physically Inspired Learning-based Microwave Imaging under Limited Aperture
Zeming Qian (*Hangzhou Dianzi University*); *Xiaotian Zhang* (*Hangzhou Dianzi University*); *Kuiwen Xu* (*Hangzhou Dianzi University*); *Rencheng Song* (*Hefei University of Technology*);

Session 3P10b
Direct and Inverse Scattering in Complex Geometry Media

Wednesday PM, July 5, 2023

Room South Room 222

Organized by Matteo Pastorino, Giuseppe Schettini

00:00 Inverse Design of Microwave Post-wall Waveguides-based Filters
Alexandre Khuchua (*Free University of Tbilisi*); *Mikheil Iashvili* (*Free University of Tbilisi*); *Arkadi Akopian* (*Iowa State University*); *Koki Watanabe* (*Fukuoka Institute of Technology*); *Daniel Erni* (*University of Duisburg-Essen, Campus Duisburg*); *Vakhtang Jandieri* (*University of Duisburg-Essen*);

00:00 Inverse Algorithm Applied on an Antireflective Metasurface to Enhance the Transmitted Wave for Ground Penetrating Radar Applications
Simon Marcellin (*Avignon Université — INRAE*); *S. Arhab* (*Avignon Université — INRAE*); *O. Lombard* (*Avignon Université — INRAE*); *G. Lefeuve-Mesgouez* (*Avignon Université — INRAE*);

00:00 Improved Field Transmission toward an Implanted De-
Invited vice
Ludovica Tognolatti (*Roma Tre University*); *Cristina Ponti* (*Roma Tre University*); *Giuseppe Schettini* (*Roma Tre University*);

00:00 Quantitative Imaging of Buried Targets through a
Invited Variable-exponent Finite-element Approach
Valentina Schenone (*University of Genoa*); *Alessandro Fedeli* (*University of Genoa*); *Claudio Estatico* (*University of Genoa*); *Matteo Pastorino* (*University of Genoa*); *Andrea Randazzo* (*University of Genoa*);

00:00 Machine Learning Approach to Enhanced Resolution of
Invited Inverse Scattering for Cancer Detection
Sandra Costanzo (*University of Calabria*); *Alexandra Flores* (*University of Calabria*); *Giovanni Buonanno* (*University of Calabria*);

Session 3P11
Recent Advancements in EM Technologies for Medicine

Wednesday PM, July 5, 2023

Room South Room 223

Organized by Lorenzo Crocco, Jan Vrba, Jr.

Chaired by Lorenzo Crocco, Jan Vrba, Jr.

00:00 A New Approach to Design a Hyperthermia Applicator for Focused Intracranial Heating of Childhood Brain Tumors
M. Zanoli (*Chalmers University of Technology*); *Hana Dobsicek Trefna* (*Chalmers University of Technology*);

00:00 Design of a Sierpinski Fractal Antenna for Breast Tumors Diagnosis
Isabella Porcu (*University of Cagliari*); *Claudia Macciò* (*University of Cagliari*); *Giacomo Muntoni* (*University of Cagliari*); *Alessandro Fanti* (*University of Cagliari*);

00:00 2D Numerical Dataset for Microwave SVM-based Brain Stroke Classification
Tomas Pokorny (*Czech Technical University in Prague*); *Ondrej Fiser* (*Czech Technical University in Prague*); *Tomáš Dřížďal* (*Czech Technical University in Prague*); *Jan Vrba, Jr.* (*Czech Technical University in Prague*);

00:00 Monitoring of Liver RF Ablation Using UWB Radar: A Numerical Study
Jakub Kollar (*Czech Technical University in Prague*); *Tomáš Dřížd'al* (*Czech Technical University in Prague*); *Marek Novak* (*Czech Technical University in Prague*); *Ondrej Fiser* (*Czech Technical University in Prague*);

00:00 Microwave Thermal Ablation: Advancements and Fu-
Invited ture Perspectives
K. Vidjak (*Sapienza University of Rome*); *F. Liporace* (*Sapienza University of Rome*); *Marta Cavagnaro* (*Sapienza University of Rome*);

00:00 The Power of Numerical Simulations in Advancing Treatment Planning during Microwave Hyperthermia
Ksenia Kulakova (*Czech Technical University in Prague*); *Jan Vrba, Jr.* (*Czech Technical University in Prague*); *Tomáš Dřížd'al* (*Czech Technical University in Prague*);

00:00 Microwave Thermometry of Brain Tumors: A 2D Computational Feasibility Study
Jan Redr (*Czech Technical University in Prague*); *Jan Vrba, Jr.* (*Czech Technical University in Prague*); *Tomáš Dřížď'al* (*Czech Technical University in Prague*); *Roberta Palmeri* (*National Research Council*); *Rosa Scapaticci* (*Institute for Electromagnetic Sensing of the Environment*); *Lorenzo Crocco* (*National Research Council*);

00:00 A Microwave Imaging 3D Stroke Monitoring Device: Ex-
Invited perimental Validation and Realistic Head Models
Jorge Alberto Tobon Vasquez (*Politecnico di Torino*); *David Orlando Rodriguez-Duarte* (*Politecnico di Torino*); *Cristina Origlia* (*Politecnico di Torino*); *Martina Gugliermino* (*Politecnico di Torino*); *Rosa Scapaticci* (*Institute for Electromagnetic Sensing of the Environment*); *Lorenzo Crocco* (*National Research Council*); *Francesca Vipiana* (*Politecnico di Torino*);

00:00 Use of EM Technology for Inducing Therapeutic Mod-
Invited erate Hyperthermia in Cancer Treatment: Status and Ongoing Developments
Hans Crezee (*Amsterdam University Medical Centers*);

00:00 Novel Microwave Antenna for Deep Tissue Heating
Matouš Brunát (*Czech Technical University in Prague*); *David Vrba* (*Czech Technical University in Prague*);

00:00 Dielectric Characterization of Interstitial Fluid Phantoms for Hypoxia Monitoring at Microwave Frequencies
Nadia Muhammad Hussain (*University of Galway*); *Bilal Amin* (*University of Galway*); *Martin O'Halloran* (*University of Galway*); *Muhammad Adnan Elahi* (*University of Galway*);

00:00 Dielectric Permittivity Analysis of Healthy and Fatty Liver in Microwave Range
Clément Buisson (*PROTISVALOR*); *Lourdes Mounien* (*Aix Marseille University*); *Flavie Sicard* (*Aix Marseille University*); *Jean François Landrier* (*Aix Marseille University*); *Erwan Selingue* (*NeuroSpin, CEA-Saclay*); *Françoise Geffroy* (*NeuroSpin, CEA-Saclay*); *Victoria Tishkova* (*Aix Marseille University*); *Pierre Sabouroux* (*Aix-Marseille University*);

00:00 Microwave Breast Cancer Screening, Early Detection
Invited and Classification — SAFE Clinical Study
Aleksandar Janjic (*Mitos Medical Technologies*); *Ibrahim Akduman* (*Istanbul Technical University*); *Mehmet Cayoren* (*Istanbul Technical University*);

00:00 Applicator for Microwave Regional Hyperthermia: Comparison of Three Different Models
Milan Babak (*Czech Technical University in Prague*); *Jan Vrba* (*Czech Technical University in Prague*);

00:00 Comparison of Different Antenna Elements for Microwave Medical Imaging
Milan Babak (*Czech Technical University in Prague*); *Jan Vrba* (*Czech Technical University in Prague*);

Session 3P12
Josephson Transmission Line and Travelling-Wave Parametric Amplifiers

Wednesday PM, July 5, 2023

Room South Room 224

Organized by Eugene Kogan

Chaired by Eugene Kogan

00:00 The Effect of Thermal Fluctuations on the Process of Interaction of the Kink with Heterogeneous Region of the System
Jacek Gatlik (*Pedagogical University of Krakow*); *Tomasz Dobrowolski* (*Pedagogical University of Krakow*);

00:00 Shock Waves in the Josephson Transmission Line
Eugene Kogan (*Bar-Ilan University*);

00:00 The Kinks and the Solitons in the Discrete Josephson Transmission Line
Eugene Kogan (*Bar-Ilan University*);

00:00 Random Number Generation Utilizing Timing Jitters of Single-Flux-Quantum Propagation
Yoshinao Mizugaki (*The University of Electro-Communications*); *Kenta Sato* (*The University of Electro-Communications*); *Hiroshi Shimada* (*University of Electro-Communications*); *Takeshi Onomi* (*Fukuoka Institute of Technology*);

00:00 Transmission Lines in VLSI Complexity Single Flux
Keynote Quantum Systems
Tahereh Jabbari (*University of Rochester*); *Eby G. Friedman* (*University of Rochester*);

00:00 Dissipative Quantum Models for Flux-driven Parame-
Invited tric Amplification in Dispersive Josephson Transmission Lines
Michael Haider (*Technical University of Munich*);

00:00 Experimental Characterization of RF-SQUIDs Based Josephson Traveling Wave Parametric Amplifier Exploiting Resonant Phase Matching Scheme
Luca Fasolo (*Istituto Nazionale di Ricerca Metrologica (INRiM)*); *Luca Oberto* (*Istituto Nazionale di Ricerca Metrologica (INRiM)*); *Alessio Verna* (*Istituto Nazionale di Ricerca Metrologica (INRiM)*); *Emanuele Enrico* (*Istituto Nazionale di Ricerca Metrologica (INRiM)*);

00:00 Topological Amplification in a Josephson Junction Ar-
Invited ray with a Global Four-wave Mixing Pump
Tomas Ramos (*IFF-CSIC*);

00:00 Photon-Instanton Collider Implemented by a Supercon-
Invited ducting Circuit: Splitting a Single Photon
Amir Burshtein (*Tel-Aviv University*); *Moshe Goldstein* (*Tel Aviv University*);

00:00 Quantum Information Processing with 1D Josephson
Invited Metamaterials
Archana Kamal (*Yale University*);

00:00 Superconductor-insulator Transition in Two- and Three-dimensional Percolation System with Josephson Junctions
Yakov M. Strelniker (*Bar-Ilan University*); *Emma Mogilko* (*Bar-Ilan University*); *Leonid Burlachkov* (*Bar-Ilan University*); *Aviad Frydman* (*Bar-Ilan University*); *Shlomo Havlin* (*Bar-Ilan University*);

00:00 Josephson Traveling Wave Parametric Amplifiers as
Invited Quantum Source of Entangled Photons for Microwave Quantum Radar Applications
Emanuele Enrico (*Istituto Nazionale di Ricerca Metrologica (INRIM)*); *Luca Fasolo* (*Istituto Nazionale di Ricerca Metrologica (INRIM)*); *Patrizia Livreri* (*University of Palermo*);

00:00 Josephson Transmission Lines for Analog Quantum Simulations
Roman Kuzmin (*University of Wisconsin-Madison*);

00:00 Harmonic Generation in a One-dimensional Josephson Medium
Searbhán Gearóid Ó Peatáin (*Lancaster University*); *J. M. Williams* (*National Physical Laboratory*); *S. Kafanov* (*Lancaster University*); *Yu. A. Pashkin* (*Lancaster University*);

00:00 Low-energy Collective Charge Excitations in High-T_c
Invited Cuprate Superconductors
Vyacheslav M. Silkin (*Donostia International Physics Center (DIPC)*); *D. V. Efremov* (*IFW Leibniz Institute for Solid State and Materials Research*);

Session 3P13
Poster Session 5

Wednesday PM, July 5, 2023
8:00 AM - 12:00 AM
Room Forum Hall Foyer 1

00:00 NNBL 8226 Artificial Network Calibration
Leszek Nowosielski (*Military University of Technology*); *Bartosz Dudziński* (*Military University of Technology*); *Rafał Przesmycki* (*Military University of Technology*); *Marek Bugaj* (*Military University of Technology*);

00:00 A Stationary Charge Density and Radiation at Infinite Speed of Light
Namik Yener (*Istanbul Gedik University*);

00:00 Compact Broadband Circularly Dichroic Spectrometer
Yu-Cheng Liang (*National Sun Yat-sen University*); *Yi Chen* (*National Yang Ming Chiao Tung University*); *Chun-Ta Wang* (*National Sun Yat-sen University*); *Shie-Chang Jeng* (*National Yang Ming Chiao Tung University*); *Chao-Kuei Lee* (*National Sun-Yat-Sen University*);

00:00 Accurate Solutions of Volume Integral Equations Based on Nyström-like Point-matching Scheme
Dun Ting Zhang (*Tongji University*); *Bao Qi Wang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Trans-dimensional MT Inversion Based Physical Parameter Domain Tree Structure
Shengqi Tian (*Central South University*); *Rongwen Guo* (*Central South University*);

00:00 A Gesture Segmentation Algorithm Based on CSI-quotient Distance
Jiapeng Hu (*Chongqing University of Posts and Telecommunications*); *Wei He* (*Chongqing University of Posts and Telecommunications*); *Yue Jin* (*Chongqing University of Posts and Telecommunications*);

00:00 Electromagnetic Signature of Hilbert Curve-based Chipless RFID Tags Using Numerical Analysis
Mohammad Nasrat Zaqum (*Macquarie University*); *Ali Lalbakhsh* (*Macquarie University*); *Hatem Rmili* (*King Abdulaziz University*);

00:00 Research on Scattering Characteristics of Swarm Targets
Jing-Yue Sun (*Beijing Institute of Technology*); *Kun-Yi Guo* (*Beijing Institute of Technology*); *Xin-Qing Sheng* (*Beijing Institute of Technology*);

00:00 Observation of Multiple Rotons and Multidirectional Roton-like Dispersion Relations in Acoustic Metamaterials
Zhenxiao Zhu (*Southern University of Science and Technology*); *Zhen Gao* (*Southern University of Science and Technology*);

00:00 Unveiling the Behaviour of 4-Aminobenzenethiol Using a Combination of Interferometric Scattering Microscopy and Raman Spectroscopy
Ivan Kopal (*Institute of Photonics and Electronics of the CAS*); *David Palounek* (*Institute of Photonics and Electronics of the CAS*); *M. Vala* (*Institute of Photonics and Electronics of the CAS*); *Marek Piliarik* (*Institute of Photonics and Electronics of the CAS*);

00:00 Polarization-multiplexed Metalens Doublet Enabling Three-dimensional Varifocal Device and Alignment-guiding Hologram
Joonkyo Jung (*KAIST*); *Hyeonhee Kim* (*KAIST*); *Jonghwa Shin* (*Korea Advanced Institute of Science and Technology (KAIST)*);

00:00 Continuous Control of Terahertz Second-harmonic Phase in Metasurface
Chen Wang (*Tsinghua University*); *Yongzheng Wen* (*Tsinghua University*); *Shiqiang Zhao* (*Tsinghua University*); *Kaixin Yu* (*Tsinghua University*); *Ji Zhou* (*Tsinghua University*);

00:00 Acoustic Metamaterials Based on Superlattice Vortex Domains and Their Performance Tuning
Zheng Si Zheng (*Zhejiang University*);

00:00 Terahertz Super-resolution Targets Classifier Based on Machine Learning
Jin Zhao (*Peking University*); *Ming-Zhe Chong* (*Peking University*); *Yue-Yi Zhang* (*Peking University*); *Zong-Kun Zhang* (*Peking University*); *Pu-Kun Liu* (*Peking University*);

00:00 The Spatial Light Modulator-based OAM Shuffle Optical Vortex Hopping Scheme Protecting against Regression Prediction of Artificial Intelligence
Yao-Tang Chang (*Kao Yuan University*); *Xuan-Wen Guo* (*Data Science Consultant*); *Chin-Shun Chuang* (*Kao Yuan University*); *Ching-Liang Chang* (*Taiwan Semiconductor Manufacturing Co., Ltd. (TSMC)*);

00:00 Propagation Losses Algorithm for Indoor Wireless Sensor Network
Romualds Beļinskis (*Riga Technical University*); *Nikolajs Bogdanovs* (*Riga Technical University*); *Jurijs Titovičs* (*Riga Technical University*); *Aleksandrs Ipatovs* (*Riga Technical University*); *Jānis Klūga* (*Riga Technical University*); *Dmitrijs Čulkovs* (*Riga Technical University*);

00:00 Programmable Delay Line Based High-speed PPM Modulator with 50 ps Time Resolution
Pauls Eriks Sics (*Riga Technical University*); *Oskars Selis* (*Riga Technical University*); *Sandis Migla* (*Riga Technical University*); *Maris Zeltins* (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*); *Viktors Kurtenoks* (*Eventech LTD*); *Arturs Aboltins* (*Riga Technical University*);

00:00 Magnetic Field Effect on the Lasing Threshold of GaAs Nanowires on Iron Substrate
Gyanan Aman (*University of Cincinnati*); *Mykhaylo Lysevych* (*The Australian National University*); *Hark Hoe Tan* (*The Australian National University*); *Chennupati Jagadish* (*The Australian National University*); *Heidrun Schmitzer* (*Xavier University*); *Martin Fränzl* (*University of Leipzig*); *Marc Cahay* (*University of Cincinnati*); *Hans-Peter Wagner* (*University of Cincinnati*);

00:00 Performance Analysis of Hybrid Raman-EDFA Amplifier in WDM Transmission Systems
Dmitrijs Prigunovs (*Riga Technical University*); *Patriks Morevs* (*Riga Technical University*); *Mareks Parfjonovs* (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*); *Ricards Kudojars* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Analyzing Water Body Indicies for Coastal Semantic Segmentation
Conor O'Sullivan (*The ADAPT SFI Research Centre*); *Seamus Coveney* (*Envo-Geo Environmental Geoinformatics*); *Xavier Monteys* (*Geological Survey Ireland*); *Soumyabrata Dev* (*The ADAPT SFI Research Centre*);

00:00 A TE/TM Polarization-independent Frequency Upconversion Based on Polarization Coupling
Tingting Ding (*Shanghai University of Engineering Science*); *Yongzhi Tang* (*Shanghai Jiao Tong University*); *Shu Jia Yan* (*Shanghai University of Engineering Science*); *Xianfeng Chen* (*Shanghai Jiao Tong University*); *Mei Song Tong* (*Tongji University*);

00:00 Tracking Rotational and Conformational Dynamics of Single Molecules Using Scattered Light
Milan Vala (*Institute of Photonics and Electronics, Czech Academy of Sciences*); *Ivan Kopal* (*Institute of Photonics and Electronics, Czech Academy of Sciences*); *Marek Piliarik* (*Institute of Photonics and Electronics ASCR*);

00:00 Encryption and Eavesdropping in Underwater Wireless Optical Communication
Amir Handelman (*Holon Institute of Technology*);

00:00 Analysis of Excitation of 2D-nanostructures by a Quantum Field under Conditions of Nonlinearity
Irina A. Tereshchenko (*Lomonosov Moscow State University*); *Olga V. Tikhonova* (*Lomonosov Moscow State University*);

00:00 Visible Band Integrating Nephelometer for Aerosol Scattering Measurements
Ravi Varma (*National Institute of Technology Calicut*);

00:00 A Compact Hemisphere Shape Antenna with Reconfigurable Pattern for UAVs in 5G Applications
Chi-Che Hsieh (*National Formosa University*); *Wen-Chung Liu* (*National Formosa University*);

00:00 Liquid Crystal based Ku-band Phase Shifter Using 3D Printed Frame
Seunggo Nam (*Korea Electronics Technology Institute*); *Sehwan Choi* (*Korea Electronics Technology Institute*); *Ho-Jun Lee* (*Korea Electronics Technology Institute*);

00:00 Inkjet-printed and Photonically Sintered Antennas Based on Copper Nanoparticles
Matthias Paul (*University of Applied Sciences Vienna*); *Rudolf Oberpertinger* (*University of Applied Sciences Vienna*); *Christoph Mehofer* (*University of Applied Sciences Vienna*); *Markus Wellenzohn* (*University of Applied Sciences Vienna*);

00:00 Investigating Different Methods for Generating a FMCW Signal on a Software Defined Radio
Aishwarya Vasudevan (*Fraunhofer IMS*); *Sebastian Böller* (*Fraunhofer Institute for Microelectronic Circuits and Systems (IMS)*); *Mirco Meiners* (*Hochschule Bremen*); *Anton Grabmaier* (*Fraunhofer Institute for Microelectronic Circuits and Systems (IMS)*);

00:00 The Modeling of Space-to-frequency Mapping Leaky-wave Antenna Array with Controllable Radiation Elements
Yiming Zhang (*Zhejiang University*); *Yuanqing Yao* (*Zhejiang University*); *Yuxi Liu* (*South China Normal University*); *Sailing He* (*Royal Institute of Technology & Zhejiang University*);

00:00 A Novel Multiphysics Simulation Method for Packaging Analysis of Chips Based on MOOSE
Peng Rui Zhang (*Tongji University*); *Yi Ming Liu* (*Tongji University*); *Jin Di Ouyang* (*Tongji University*); *Ming Chu Chen* (*Tongji University*); *Jun Cheng Gao* (*Tongji University*); *Yuan Yang Du* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 A Multiband Microstrip Patch Antenna with Mandelbrot Fractal Structure
Rui Hao Xi (*Tongji University*); *Yuan Chu Xu* (*Tongji University*); *Dan Ni Lin* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Surface Roughness Effects of Fabrication Technology on Metallic Waveguide in D-band for 6G RF Communications
Dang-Oh Kim (*Korea Advanced Institute of Science and Technology*); *Sang-Min Oh* (*Korea Advanced Institute of Science and Technology*); *Ju-Yong Lee* (*Korea Advanced Institute of Science and Technology*); *Dong-Ho Cho* (*Korea Advanced Institute of Science and Technology (KAIST)*);

00:00 A Novel Contactless Power Supply Device Based on Electromagnetic Induction
Rong Song (*Shanghai University of Engineering Science*); *Shu Jia Yan* (*Shanghai University of Engineering Science*); *Peng Wu* (*Shanghai University of Engineering Science*); *Mei Song Tong* (*Tongji University*);

00:00 Design of TE_{01}/TE_{02} Dual-mode Output Window for X/Ku Dual-band Gyroklystron
Xiaoyan Wang (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jinyong Fang* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jiangniu Wu* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Kai Peng* (*Aerospace Information Research Institute, Chinese Academy of Sciences*);

00:00 Electro-optic Probe-based Antenna Measurement System for 5G Mobile Terminal End-fire Radiation Antenna
In-June Hwang (*Korea Research Institute of Standards and Science*); *Young-Pyo Hong* (*Korea Research Institute of Standards and Science*); *Dong-Joon Lee* (*Korea Research Institute of Standards and Science*);

00:00 Design of Reconfigurable Microstrip Antenna with DGS for 5G Applications
Jyosri M. Karra (*North Carolina A&T State University*); *Abdullah Eroglu* (*Purdue University*);

00:00 Analysis and Design of a Harmonically Tuned RF Power Amplifier with Dual-band Output Network
Antra Saxena (*Nazarbayev University*); *Deepayan Banerjee* (*Indraprastha Institute of Information Technology Delhi*); *Mohammad S. Hashmi* (*Indraprastha Institute of Information Technology Delhi*);

00:00 A Flexible and Stretchable Transmission Line of Spoof Surface Plasmon Polaritons at Microwave Frequencies
Jiaxuan Wei (*Southeast University*); *Weihan Li* (*Southeast University*); *Wen Xuan Tang* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

00:00 Performance Evaluation of UAV Based NOMA for 6G Networks
Neelam Mounika (*National Institute of Technology Warangal*); *Anuradha Sundru* (*National Institute of Technology Warangal*);

00:00 Microwave Tomographic Imaging of Impenetrable Objects
Gregory Samelsohn (*Shamoon College of Engineering*);

00:00 A Sub-1 GHz Wearable Radar Sensor for Artery Detection
Chia-Hung Chang (*National Yunlin University of Science and Technology*); *Wei-Wen Hu* (*National Formosa University*); *Ching-Hsiang Yang* (*National Yunlin University of Science and Technology*); *Chi-Sen Tai* (*National Yunlin University of Science and Technology*); *Cheng-Yu Yu* (*National Yunlin University of Science and Technology*); *Ji-Yuan Li* (*National Yunlin University of Science and Technology*); *Jing Lu* (*National Yunlin University of Science and Technology*);

00:00 Determination of the Best Channel for Remote Sensing Inversion of Thermal Infrared Surface Temperature Based on FY-3D MERSI-II Data
Minghao Sun (*Hebei GEO University*); *Guofei Shang* (*Hebei GEO University*); *Xia Zhang* (*Hebei GEO University*);

00:00 Efficient Discrimination of Small Target with Low-velocity from Sea Clutter
Inoh Choi (*Korea Maritime and Ocean University*); *Sangbin Cha* (*Pukyong National University*); *Sewon Yoon* (*Pukyong National University*); *Sanghong Park* (*Pukyong National University*);

00:00 NeSDeepNet: A Fusion Framework for Multi-step Forecasting of Near-surface Air Pollutants
Prasanjit Dey (*Technological University Dublin*); *Soumyabrata Dev* (*The ADAPT SFI Research Centre*); *Bianca Schoen-Phelan* (*Technological University Dublin*);

00:00 Dependence of Radar Penetration Depth on Roughness of Soil Surface
Chenhao Zeng (*Guilin University of Technology*); *Ying Yang* (*Nanjing University of Science and Technology*); *Kun-Shan Chen* (*Guilin University of Technology*);

00:00 Sensor Data Analysis and Fusion for GPS-free Drone Flight
Gregoire Issassis (*BURES-SUR-YVETTE*); *Petr Marcoň* (*Brno University of Technology*); *Jiři Janoušek* (*Brno University of Technology*);

00:00 Similarity Measurement of HAR Multi-sensor Data for Siamese Neural Networks
Lun Ma (*Chang'an University*); *Xin Liu* (*Chang'an University*); *Daihe Wang* (*Chang'an University*); *Yue Yang* (*Chang'an University*); *Guisheng Liao* (*Xidian University*); *Luntan Li* (*Chang'an University*);

00:00 Real-time Laser-induced Charge Jump Signal Tracked by the Diamond NV Center
Yanan Lu (*Tsinghua University*);

00:00 Demonstration of Quantum Clock Synchronization Based on Sagnac Effect of Frequency Entangled Photons
Yiwei Zhai (*Shaanxi University of Science & Technology*); *Wang Li* (*Shaanxi University of Science & Technology*);

00:00 Boron Nitride: A Two-dimensional Material for Quantum Technologies
Yong P. Chen (*Purdue University and Aarhus University*);

00:00 A Filter Approach to Attenuate the Effects of Venous Effects in Task-based fMRI Data
Renzhou Gui (*Tongji University*); *Aobo Zhang* (*Tongji University*); *Shuai Liu* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 A Novel LCR Impedance Detection System with Low Cost and High Precision Based on Microcontroller Unit
Ya Ming Xie (*Tongji University*); *Guo Chun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 A Low-power Crystal Oscillator with Adjustable Drive Current
Lei Zhao (*Tongji University*); *Ji Yuan Duan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Influence of Grain Size on Magnetic Properties of $LaMnO_3$ Nanocrystals and Nanoceramics
Robert Tomala (*Institute of Low Temperature and Structure Research, PAS*); *Dmitry Karpinsky* (*Namangan Engineering-Construction Institute*); *Paweł Głuchowski* (*Nanoceramics Inc.*); *Daniela Kujawa* (*Nanoceramics Inc.*); *Yuriy Gerasymchuk* (*Institute of Low Temperature and Structure Research, PAS*); *Maciej Ptak* (*Institute of Low Temperature and Structure Research, PAS*); *Wieslaw Strek* (*Institute of Low Temperature and Structure Research, PAS*); *Anna Lukowiak* (*Institute of Low Temperature and Structure Research, PAS*);

00:00 Invited Building Uncooled Infrared Camera Based on One Atom Thick Graphene
Debashis Chanda (*University of Central Florida*);

00:00 Comparison of Predictive Torque Control with Direct Torque Control in the Case of AC Motor Drive Fed by a Three-phase Bridge Voltage Source Inverter
Pavel Karlovsky (*Czech Technical University in Prague*); *Jiri Lettl* (*Czech Technical University in Prague*);

Session 4A1a
Thermal Metamaterials and Devices

Thursday AM, July 6, 2023

Room Club E

Organized by Ying Li, Jian Xiong

Chaired by Ying Li

00:00 Far-field Photonic Spin Texture of Thermal Radiation from a Non-isothermal Nano-antenna
Parry Y. Chen (*Ben-Gurion University*); *Roy Ayash* (*Ben-Gurion University*); *Chinmay Khandekar* (*Purdue University*); *Yonatan Sivan* (*Ben-Gurion University*); *Z. Jacob* (*Ben-Gurion University*);

00:00 Tunable Liquid-solid Hybrid Thermal Metamaterials
Peng Jin (*Fudan University*);

00:00 Excitation and Control of Plasmons Using Thermal Effects
Eduardo J. C. Dias (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*); *Renwen Yu* (*The Barcelona Institute of Science and Technology*); *F. Javier García de Abajo* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*);

00:00 Near-field Heat Exchange Driven by the Acoustic Vibration Modes between Polar Materials at the Atomic Scale
Philippe Ben-Abdallah (*Universite Paris-Sud 11*);

00:00 Non-reciprocity and Breakdown of Detailed Balance in Near-field Thermal Radiation
Svend-Age Biehs (*Carl von Ossietzky Universitat*);

00:00 Experimental Realization of Topological Edge States in Pure Diffusion Systems
Hao Hu (*Nanjing University of Aeronautics and Astronautics*); *Yihao Yang* (*Zhejiang University*); *Baile Zhang* (*Nanyang Technological University*); *Yu Luo* (*Nanyang Technological University*);

00:00 Thermal Metamaterials in Heat Conduction, Radiation and Thermomechanical Manipulation
Qingxiang Ji (*Harbin Institute of Technology*); *Muamer Kadic* (*University Bourgogne Franche-Comte*); *Jun Liang* (*Beijing Institute of Technolog*); *Changguo Wang* (*Harbin Institute of Technology*);

00:00 Metasurface-induced Nanoscale Inhomogeneity for Hot-electrons-assisted Photo-thermoelectric Devices
Jingxuan Wei (*University of Electronic Science and Technology of China*);

00:00 Non-reciprocity in Macroscopic Heat Transfer
Ying Li (*Zhejiang University*); *Ran Ju* (*Zhejiang University*); *Pei-Chao Cao* (*Zhejiang University*); *Dong Wang* (*Zhejiang University*); *Minghong Qi* (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*);

Session 4A1b
Plasmonic Metamaterials and Their Applications

Thursday AM, July 6, 2023

Room Club E

Organized by Wen Xuan Tang, Bin Yang

Chaired by Xuanru Zhang, Xinyu Li

00:00 Engineering Two-dimensional Plasmonic Nanosheets Arrays as Spacer for Enhanced Solar Membrane Distillation of Seawater
Edison Huixiang Ang (*Nanyang Technological University, National Institute of Education*);

00:00 Leaky-wave-enabled Anti-parity-time Plasmonics
Yumeng Yang (*Zhejiang University*); *Ying Li* (*Zhejiang University*); *Er Ping Li* (*Zhejiang University — UIUC Institute*); *Hongsheng Chen* (*Zhejiang University*); *Fei Gao* (*Zhejiang University*);

00:00 Deep-subwavelength Resonances and Sensing Applications of Spoof Localized Surface Plasmons
Xuanru Zhang (*Southeast University*);

00:00 Deep Learning Algorithm Enabled Highly-Precise and Broadband Full-Stokes Polarimeters
Xiu Yang (*Sichuan University*); *Yidong Hou* (*Sichuan University*);

00:00 Microwave Plasmonic Exceptional Points for Enhanced Sensing
Zhen Liao (*Hangzhou Dianzi University*);

00:00 Third-order Nonlinear Optical Susceptibility of Polyaniline and Silver Nanoparticle Metafluids
G. Guercio (*Université Paris Cité*); *M. Lafitte* (*Univ. Bordeaux*); *V. Ponsinet* (*CNRS, Universite de Bordeaux*); *Olivier Mondain-Monval* (*Université de Bordeaux*); *Giuseppe Leo* (*CNRS, Université de Paris*); *A. Baron* (*CNRS, Universite de Bordeaux*);

00:00 A Flexible and Stretchable Transmission Line of Spoof Surface Plasmon Polaritons at Microwave Frequencies
Jiaxuan Wei (*Southeast University*); *Weihan Li* (*Southeast University*); *Xiaoyang Zhou* (*Southeast University*); *Wen Xuan Tang* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

Session 4A2a
Advanced Optical and Digital Signal Processing in Optical Communication Networks

Thursday AM, July 6, 2023

Room Club D

Organized by Mingming Tan, Tianhua Xu

Chaired by Feng Wen

00:00 Invited Reducing Equalization-enhanced Phase Noise via Carrier Phase Recovery in the Presence of Variable Matched-filter Bandwidth
Xingwen Yi (*Sun Yat-Sen University*); *Huaiyin Wang* (*Sun Yat-Sen University*); *Jing Zhang* (*University of Electronic Science and Technology of China*);

00:00 Invited Multi-Point-to-Point Optical Access with Reliable Bandwidth Guarantee for Latency Sensitive Applications
Jinlong Wei (*Peng Cheng Laboratory*);

00:00 Invited Electro-optic Tunable Laser Cavity with Nanosecond Switching Speed Based on Silicon Nitride-organic Hybrid Waveguide
Shengpeng Zhang (*University of Electronic Science and Technology of China*); *Yixin Chen* (*University of Electronic Science and Technology of China*); *Lianghai Dong* (*University of Electronic Science and Technology of China*); *Kaixin Chen* (*University of Electronic Science and Technology of China*); *Chen Liu* (*Huawei Technologies Co., Ltd.*); *Jieyun Wu* (*University of Electronic Science and Technology of China*);

00:00 Impact of Crosstalk on Mode-division Multiplexing (MDM)-based Multi-beamforming System
Yansong Mo (*University of Electronic Science and Technology of China*); *Feng Wen* (*University of Electronic Science and Technology of China*); *Jie Gu* (*Southwest China Research Institute of Electronic Equipment*); *Kun Qiu* (*University of Electronic Science and Technology of China*);

00:00 A Chebyshev Spectral Method for Nonlinear Fourier Transform
Vishal K. Vaibhav (*Indian Institute of Technology Delhi*);

00:00 Design and Analysis of HPCF Sensor Model for Different Milk Sensing
Ravindra Kumar Sharma (*Singhania University*); *Sunil Sharma* (*Rajasthan Technical University*); *Ajay Kumar Bairwa* (*Doordarshan Kendra Jaipur*); *Bibhu Dash* (*University of the Cumberlands*); *Meraj F. Ansari* (*University of the Cumberlands*); *Nikhitha Yathiraju* (*University of the Cumberlands*);

00:00 Wavelength-division Multiplexing Channel Equalization through Semiconductor Optical Amplifier (SOA)-driven Reservoir Computing
Yinke Yang (*University of Electronic Science and Technology of China*); *Rui Zhang* (*University of Electronic Science and Technology of China*); *Huiwen Luo* (*University of Electronic Science and Technology of China*); *Feng Yang* (*Lab of Holographic Optical Sensing, Marolabs Co., Ltd.*); *Bao-Jian Wu* (*University of Electronic Science and Technology of China*); *Kun Qiu* (*University of Electronic Science and Technology of China*); *Feng Wen* (*University of Electronic Science and Technology of China*);

Session 4A2b
Nanophotonics, Biophotonics and Advanced Photonic Materials 1

Thursday AM, July 6, 2023

Room Club D

00:00 Nanostructures for Photocatalysis — From Regular to Dendritic Architectures
Z. Fusco (*Australian National University*); *A. Riaz* (*Australian National University*); *Christin David* (*Friedrich-Schiller Universität Jena*); *F. J. Beck* (*Australian National University*);

00:00 Super-Plackian Behavior in Nanostructures. Application to Photoluminescence
Agustin Pérez-Madrid (*University of Barcelona*); *I. Santamaría-Holek* (*Universidad Nacional Autónoma de México, Campus Juriquilla*);

00:00 Comparative Study of the Performance of Plasmonic Nanoantenna for Fluorescence Enhancement in On-chip Photonic Technologies
Jose Luis Montaño-Priede (*Donostia International Physics Center (DIPC)*); *Mario Zapata-Herrera* (*CFM (CSIC-UPV/EHU)*); *Rubén Esteban* (*CFM (CSIC-UPV/EHU)*); *Nerea Zabala* (*University of the Basque Country UPV-EHU*); *Javier Aizpurua* (*Donostia International Physics Center (DIPC) and Centro Mixto de Física de Materiales (CSIC-UPV/EHU)*);

00:00 Dielectric Mie Voids: Confining Light in Air
Mario Hentschel (*University of Stuttgart*); *Kirill L. Koshelev* (*Australian National University*); *Florian Sterl* (*University of Stuttgart*); *Steffen Both* (*University of Stuttgart*); *Julian Karst* (*University of Stuttgart*); *Lida Shamsafar* (*University of Stuttgart*); *Thomas Weiss* (*University of Graz*); *Yuri S. Kivshar* (*Australian National University*); *Harald W. Giessen* (*University of Stuttgart*);

00:00 Sub-femtoliter Refractive Index Sensing Using Mie Voids
Serkan Arslan (*University of Stuttgart*); *Hannah Tran* (*University of Stuttgart*); *Julian Karst* (*University of Stuttgart*); *Lida Shamsafar* (*University of Stuttgart*); *Thomas Weiss* (*University of Stuttgart*); *Harald W. Giessen* (*University of Stuttgart*); *Mario Hentschel* (*University of Stuttgart*);

00:00 Metasurface Empowered Lithium Niobate Optical Phased Array with an Enlarged Field-of-view
Zhizhang Wang (*Nanjing University*); *Wange Song* (*Nanjing University*); *Yuxin Chen* (*Nanjing University*); *Bin Fang* (*Nanjing University*); *Jitao Ji* (*Nanjing University*); *Haoran Xin* (*Nanjing University*); *Shining Zhu* (*Nanjing University*); *Tao Li* (*Nanjing University*);

Session 4A3
Light-matter Interaction in Nanophotonics 2

Thursday AM, July 6, 2023

Room Club C

Organized by Lian Shen, Mikhail Y. Shalaginov, Huaping Wang

Chaired by Lian Shen, Mikhail Y. Shalaginov

00:00 Invited High Quality Nanocavities through Multimodal Confinement of Hyperbolic Polaritons in Hexagonal Boron Nitride
Hanan Herzig Sheinfux (*ICFO*); *Lorenzo Orsini* (*ICFO*); *Minwoo Jung* (*Cornell University*); *Iacopo Torre* (*ICFO*); *Matteo Ceccanti* (*ICFO*); *Rinu Maniyara* (*ICFO*); *David Barcons Ruiz* (*ICFO*); *Alexander Hötger* (*Technische Universitat Munchen*); *Ricardo Bertini* (*ICFO*); *Sebastián Castilla* (*ICFO*); *Niels C. H. Hesp* (*ICFO*); *Eli Janzen* (*Kansas State University*); *Alexander Holleitner* (*Technische Universitat Munchen*); *Valerio Pruneri* (*ICFO*); *James H. Edgar* (*Kansas State University*); *Gennady Shvets* (*Cornell University*); *Frank H. L. Koppens* (*ICFO — The Institute of Photonics Sciences (Barcelona)*);

00:00 Invited Reconfigurable Meta-optics Based on Phase-change Materials
Mikhail Y. Shalaginov (*Massachusetts Institute of Technology*); *Fan Yang* (*Massachusetts Institute of Technology*); *Yifei Zhang* (*Massachusetts Institute of Technology*); *Hung-I Lin* (*Massachusetts Institute of Technology*); *Sensong An* (*University of Massachusetts Lowell*); *Cosmin Popescu* (*Massachusetts Institute of Technology*); *Myungkoo Kang* (*University of Central Florida*); *Kathleen A. Richardson* (*University of Central Florida*); *Juejun Hu* (*Massachusetts Institute of Technology*); *Tian Gu* (*Massachusetts Institute of Technology*);

00:00 Terahertz Single-mode Quantum Cascade Lasers Emitted from Topological Cavities
Song Han (*Zhejiang University*); *Jieyuan Cui* (*Nanyang Technological University*); *Yunda Chua* (*Nanyang Technological University*); *Yongquan Zeng* (*University of Leeds*); *Qi Jie Wang* (*Nanyang Technological University*);

00:00 Multiple Brillouin Zone Winding of Topological Edge States for Slow Light Applications
Fujia Chen (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*); *Wen-Yan Yin* (*Zhejiang University*); *Yihao Yang* (*Zhejiang University*);

00:00 Gain-assistant Amplitude Modulation of Hyperbolic Metamaterials
Lu Song (*Zhejiang University*); *Tong Cai* (*Airforce Engineering University*); *Jiangang Liang* (*Air Force Engineering University*); *Lian Shen* (*Zhejiang University*);

00:00 Manipulate Merging Bound States in the Continuum on a Quasi-flat Band without Breaking Symmetry
Xin Qi (*Tongji University*); *Yong Sun* (*Tongji University*); *Hong Chen* (*Tongji University*); *Yufei Wang* (*Institute of Semiconductors, CAS*); *Wanhua Zheng* (*Institute of Semiconductors, CAS*);

00:00 Effect of Gold Nanoparticle Interaction with Silicon Nitride Waveguides for Biosensing Applications
Kyle Preston (*SiPhox Inc.*); *Ebrahim Al Johani* (*SiPhox Inc.*); *Sarat Gundavarapu* (*SiPhox Inc.*); *Cole Chapman* (*SiPhox Inc.*); *Guojun Chen* (*SiPhox Inc.*); *Michael Dubrovsky* (*SiPhox Inc.*); *Diedrik Vermeulen* (*SiPhox Inc.*);

00:00 Topology-optimized Hybrid Structure for Enhancing Single-photon Sources Emission and Coupling
Yifei Hua (*Zhejiang University*); *Huaping Wang* (*Zhejiang University*); *Lian Shen* (*Zhejiang University*);

00:00 Generation of Perfect Composite Vortex Beam Using All-dielectric Geometric Metasurface
Jicheng Wang (*Jiangnan University*); *Bolun Zhang* (*Jiangnan University*); *Kaixiang Cheng* (*Jiangnan University*);

00:00 Directional Dipole-matter Interactions
Yuhan Zhong (*Zhejiang University*); *Chan Wang* (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*); *Xiao Lin* (*Zhejiang University*);

00:00 Photonic Crystal Cavities for GeV&SnV Diamond
Invited
Aleksey V. Akimov (*Russian Quantum Center*);

Session 4A4a
Liquid Crystals and Related Technologies

Thursday AM, July 6, 2023

Room Club B

Organized by Seiji Fukushima, Hirotsugu Kikuchi

Chaired by Seiji Fukushima

00:00 Hole-patterned Electrode Liquid Crystal Lens with Optically Compensated Bend Modes
Jui-En Lee (*National Yang Ming Chiao Tung University*); *Yu-Kai Hong* (*National Yang Ming Chiao Tung University*); *Jui-Wen Pan* (*National Yang Ming Chiao Tung University*); *Shie-Chang Jeng* (*National Yang Ming Chiao Tung University*);

00:00 Light Beam Steering Demonstration by Using Liquid Crystal Loaded Metasurface
Takato Teshima (*Kagoshima University*); *Seiji Fukushima* (*Kagoshima University*); *Tsutomu Nagayama* (*Kagoshima University*); *Toshio Watanabe* (*Kagoshima University*); *Hirotsugu Kikuchi* (*Kyushu University*);

00:00 Voltage Tunable Beam-splitter Using Long-period Waveguide Gratings
Rajat Chauhan (*Indian Institute of Technology Roorkee*); *Vipul Rastogi* (*Indian Institute of Technology Roorkee*); *Uma Shankar Tripathi* (*Instruments Research & Development Establishment*);

00:00 Observation of Electrical Control of Branched Flow of Light
Shan-Shan Chang (*Xiamen University*); *Ke-Hui Wu* (*Xiamen University*); *Lujian Chen* (*Xiamen University*); *Peng Chen* (*Nanjing University*); *Huanyang Chen* (*Xiamen University*); *Jian-Hua Jiang* (*Soochow University*); *Yan-Qing Lu* (*Nanjing University*); *Jinhui Chen* (*Xiamen University*);

00:00 Design of a Broadband Flat Metasurface Lens by Using One-dimensional Meander Microstrip-line Structures
Izumi Suhara (*Kagoshima University*); *Tsutomu Nagayama* (*Kagoshima University*); *Seiji Fukushima* (*Kagoshima University*); *Toshio Watanabe* (*Kagoshima University*);

00:00 Lattice Orientation of Photo-patterned Blue Phase Liq-
Invited uid Crystal
Masanori Ozaki (*Osaka University*); *Kazuma Nakajima* (*Osaka University*); *Shogo Mitsuhashi* (*Osaka University*); *Yuji Tsukamoto* (*Osaka University*);

00:00 Fluid-infiltrated On-axis Ultra-compact Reconfigurable Intelligent Surface for Application of Free Space Optical Communication
Ramna Khalid (*Information Technology University (ITU) of the Punjab*); *Muhammad Zubair* (*Information Technology University (ITU)*); *Muhammad Qasim Mehmood* (*Information Technology University (ITU)*);

Session 4A4b
Subwavelength Nanostructure Metasurface for Optical Filters, Sensors, Nonlinear Optics, and Solar Energy Harvesting

Thursday AM, July 6, 2023

Room Club B

Organized by Junpeng Guo

00:00 Ellipsometric Modeling and Reflectance Analysis of Plasmonic Indium Nanoparticles
Haotian Zhang (*Fudan University*); *Lei Peng* (*Fudan University*); *Yuting Yang* (*Fudan University*); *Xiaojie Sun* (*Fudan University*); *Songyou Wang* (*Fudan University*); *Rongjun Zhang* (*Fudan University*); *Liangyao Chen* (*Fudan University*); *Young Pak Lee* (*Hanyang University*); *Yu-Xiang Zheng* (*Fudan University*);

00:00 Hybrid Metal-dielectric Subwavelength Structure Narrow Linewidth Optical Filter
Rong He (*Fudan University*); *Cheng Chen* (*Fudan University*); *Rongjun Zhang* (*Fudan University*); *Liangyao Chen* (*Fudan University*); *Junpeng Guo* (*University of Alabama in Huntsville*);

00:00 Luminescence Mechanism of Ligand-induced Interface States in Silicon Quantum Dots
Jian Zhou (*Fudan University*); *Fengyang Ma* (*Fudan University*); *Riyi Yang* (*Fudan University*); *Kai Chen* (*Fudan University*); *Wuyan Zhao* (*Fudan University*); *Chong Qiao* (*Nanyang Institute of Technology*); *Wan-Sheng Su* (*National Taiwan Science Education Center*); *Ming Lu* (*Fudan University*); *Yu-Xiang Zheng* (*Fudan University*); *Rongjun Zhang* (*Fudan University*); *Liangyao Chen* (*Fudan University*); *Songyou Wang* (*Fudan University*);

00:00 Absorbers and Emitters of Micro-nano Structured Thin Films for Green Energy Applications
Yu-Xiang Zheng (*Fudan University*); *Mengyu Gao* (*Fudan University*); *Haotian Zhang* (*Fudan University*); *Yuting Yang* (*Fudan University*); *Lei Peng* (*Fudan University*); *Xiaojie Sun* (*Fudan University*); *Songyou Wang* (*Fudan University*); *Rongjun Zhang* (*Fudan University*); *Liangyao Chen* (*Fudan University*);

00:00 Inverse Design of Hybrid Metal-dielectric Guided Mode Resonance Optical Filters Based on Deep Neural Networks
Ruoyu Shen (*Fudan University*); *Rong He* (*Fudan University*); *Junpeng Guo* (*University of Alabama in Huntsville*);

Session 4A5a
Metasurfaces 1

Thursday AM, July 6, 2023

Room Club A

Chaired by Peng Mei

00:00 Implementing Index Modulation on Intelligent Spatiotemporal Metasurfaces
Xiaoyue Zhu (*Zhejiang University*);

00:00 Fulfilling Index Modulation on Intelligent Spatiotemporal Metasurfaces
Hongsheng Chen (*Zhejiang University*);

00:00 Characterizations of Millimeter-wave Reconfigurable Intelligent Surfaces in the Near-field Region
Peng Mei (*Aalborg University*); *Gert Frolund Pedersen* (*Aalborg University*); *Shuai Zhang* (*Aalborg University*);

00:00 Confining Acoustic Field via Metacage Based on Phase
Invited Gradient Metasurfaces
Yue Gao (*Soochow University*); *Yadong Xu* (*Soochow University*);

00:00 Realization of Programmable Chessboard Mushroom-type Metasurface for Beamforming Applications
Abdelghafour Abraray (*Instituto de Telecomunicacoes*); *Ricardo A. M. Pereira* (*Instituto de Telecomunicacoes*); *Keivan Kaboutari* (*University of Aveiro*); *Stanislav Maslovski* (*University of Aveiro*);

00:00 Intelligent Metasurface System for Automatic Tracking of Multiple Targets and Wireless Communications Based on Computer Vision
Weihan Li (*Air Force Engineering University*); *Wen Xuan Tang* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

00:00 Assessment and Optimization of Disordered Distribution Reflecting Metasurfaces for Computational Imaging
Aobo Li (*Queen's University Belfast*); *Mengran Zhao* (*Queen's University Belfast*); *Babar Abbasi* (*Queen's University Belfast*); *Okan Yurduseven* (*Queen's University Belfast*);

Session 4A5b
Recent Advances on Artificial Electromagnetic Materials and Applications

Thursday AM, July 6, 2023

Room Club A

Organized by Yungui Ma, Sailing He

Chaired by Yungui Ma, Sailing He

00:00 Bending Waveguides for In-plane Superlens and Dispersionless Coupling
Invited
Wange Song (*Nanjing University*); *Tao Li* (*Nanjing University*);

00:00 Optical Imaging Based on Metasurfaces
Invited
Shu-Ming Wang (*Nanjing University*);

00:00 Topological Classification of Topological Gapped Systems via Machine Learning
Invited
Yang Long (*Nanyang Technological University*); *Baile Zhang* (*Nanyang Technological University*);

00:00 A Road toward Zero-spacing Photonic Waveguides and Circuits
Tongtong Song (*Nanjing University*); *Yun Lai* (*Nanjing University*);

00:00 High-speed Duplex FSO System Assisted by a Wide-field-of-view Metalens
Nan He (*Zhejiang University*); *Tingbiao Guo* (*Zhejiang University*); *Jiahan Tian* (*Zhejiang University*); *Ji Du* (*Zhejiang University*); *Yi Jin* (*Zhejiang University*); *Sailing He* (*Royal Institute of Technology & Zhejiang University*);

Session 4A8
Quantum Chip

Thursday AM, July 6, 2023

Room South Room 220

Organized by Xian-Min Jin

Chaired by Xian-Min Jin

00:00 Theoretical Design Ge/Si Quantum Wells towards Si-based Spin Qubits
Invited
Jun-Wei Luo (*Institute of Semiconductors, Chinese Academy of Sciences*);

00:00 Quantum Control in Circuit Quantum Electrodynamics via Shortcuts to Adiabaticity
Xi Chen (*University of the Basque Country*);

00:00 Density Matrix Exponentiation and Its Applications
Invited
Dawei Lu (*Southern University of Science and Technology*);

00:00 Neural-network-assisted Quantum Magnetometry: Theory and Experiment
Invited
Yue Ban (*Basque Research and Technology Alliance (BRTA)*);

00:00 Dragging Photocurrent with Propagating Sound Waves
Invited
Cheng Zhang (*Fudan University*);

00:00 Recent Advances in Quantum Artificial Intelligence
Invited
Dong-Ling Deng (*Tsinghua University*);

00:00 Towards the Hybrid Photonic-atomic Chip Platform
Invited Based on a GaN-on-sapphire Chip
Guo-Yong Xiang (*University of Science and Technology of China, CAS*);

00:00 Environmental Effect on Topological Phase in Superconducting Quantum Chips
Invited
Yu-Xi Liu (*Tsinghua University*);

00:00 Deterministically Fabricated Integrated Quantum Photonic Circuits Based on Semiconductor Quantum Dots
Invited
Shulun Li (*Technische Universität*); *Yuhui Yang* (*Technische Universität*); *Peter Schnauber* (*Technische Universität*); *Johannes Schall* (*Technische Universität*); *Martin Von Helversen* (*Technische Universität*); *Chirag Palekar* (*Technische Universität*); *Hanqing Liu* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Leo Roche* (*Technische Universität*); *Sven Rodt* (*Technische Universität*); *Hai-Qiao Ni* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Yu Zhang* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Zhichuan Niu* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Stephan Reitzenstein* (*Technische Universitat Berlin*);

00:00 Topology-optimized Computing Optical Chip: From Classical to Quantum
Lu He (*Beijing Instiute of Technology*); *Xiangdong Zhang* (*Beijing Computational Science Research Center*);

00:00 Quantum Photonic Integrated Circuits
Invited
Klaus D. Jöns (*Paderborn University*);

Session 4A9a
Analytical and Numerical Methods for Forward Scattering and Propagation

Thursday AM, July 6, 2023

Room South Room 221

Organized by Cristina Ponti, Andrea Randazzo

Chaired by Cristina Ponti, Andrea Randazzo

00:00 A Neural Network Based Algorithm for Multi-scale Roughness Parameters, Soil Moisture and Emission Retrieval Using the Numerical Maxwell Model 3-D Simulations
Mouna Mezni (*Université de la Manouba*); *Lilia Bennaceur Farah* (*Université El Manar*); *Ibtissem Hosni* (*Université El Manar*); *Imed Riadh Farah* (*Manouba University*);

00:00 A 2-D Green's Function for Microwave Imaging in an Elliptically-layered Cylindrical PEC Enclosure
Andrea Randazzo (*University of Genoa*); *Alessandro Fedeli* (*University of Genoa*); *Valentina Schenone* (*University of Genoa*); *Matteo Pastorino* (*University of Genoa*);

00:00 Nonreflecting Boundary Condition for the Free Schrödinger Equation in 2D
Samardhi Yadav (*Indian Institute of Technology Delhi*); *Vishal Vaibhav* (*Indian Institute of Technology Delhi*);

00:00 Modeling Interference of Scattered and Incident Waves in Light Scattering Problems with Gaussian Beams
Jonas Gienger (*Physikalisch-Technische Bundesanstalt*);

00:00 Directional Near-field Coupling beyond Polarization Locking in Parallel-plate Waveguides
Chan Wang (*Zhejiang University*); *Yuhan Zhong* (*Zhejiang University*); *Dashuang Liao* (*Zhejiang University*); *Huaping Wang* (*Zhejiang University*); *Liqiao Jing* (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*); *Xiao Lin* (*Zhejiang University*);

00:00 Sensitivity Simulation of Ultrasound Backscatter and Varying Cancellous Bone Microstructural Parameters
Xingxing Chou (*Shaanxi University of Science and Technology*); *Jin Wang* (*Shaanxi University of Science and Technology*);

00:00 CWA Modeling of a Matching Layer in a On-body Coupling System
Ludovica Tognolatti (*Roma Tre University*); *Cristina Ponti* (*Roma Tre University*); *Giuseppe Schettini* (*Roma Tre University*);

Session 4A9b
Novel Mathematical Methods in Electromagnetic

Thursday AM, July 6, 2023

Room South Room 221

Organized by Kazuya Kobayashi, Yury V. Shestopalov

Chaired by Kazuya Kobayashi

00:00 Plane Wave Diffraction by a Slit in an Infinite Plate with Fractional Boundary Conditions
Takashi Nagasaka (*Ashikaga University*); *Keigo Yoshinari* (*Chuo University*); *Kazuya Kobayashi* (*Chuo University*);

00:00 Fine Structure in Resonance Spectra of Optical Microcavities
M. P. van Exter (*Leiden University*); *C. Koks* (*Leiden University*);

00:00 Validation of Computational Models of Wireless Devices by Comparing Measured and Simulated One-port Quantities due to Near-field Perturbations
Peter Horvath (*Budapest University of Technology and Economics*); *Jozsef Pavo* (*Budapest University of Technology and Economics*); *Zsolt Badics* (*Tensor Research LLC*); *Balint Peter Horvath* (*Budapest University of Technology and Economics*);

00:00 Near Force-free Magnetic Field Characterization via Contact Topology and Functorial Constructions
Peter Robert Kotiuga (*Boston University*);

00:00 Bullseye Passive Metasurface for Penetrating Transmission through Opaque Materials
Sinuhe Perea-Puente (*King's College London*); *Francisco J. Rodríguez Fortuño* (*King's College London*);

Session 4A10a
Polarimetric Synthetic Aperture Radar in Ocean Remote Sensing Applications

Thursday AM, July 6, 2023

Room South Room 222

Organized by Jian Yang, Yanlei Du

Chaired by Yanlei Du

00:00 Classification of Coastal Wetlands by Reflection Symmetry Decomposition Using Quad-PolSAR through Convolutional Neural Networks
Shuaiying Zhang (*National Satellite Ocean Application Service*); *Yue Zhang* (*China University of Petroluem (East China)*); *Wentao An* (*National Satellite Ocean Application Service*);

00:00 Numerical Study on Polarimetric SAR Imaging Response to Ocean Current
Yanlei Du (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Xiaofeng Yang* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Junjun Yin* (*University of Science and Technology Beijing*); *Jian Yang* (*Tsinghua University*);

00:00 Harbor Detection in Polarimetric SAR Images Based on Context Features
Chun Liu (*Northwestern Polytechnical University*); *Y. Luo* (*Northwestern Polytechnical University*); *S. Liu* (*Northwestern Polytechnical University*); *Y. Chen* (*Northwestern Polytechnical University*);

00:00 PolSAR Ship Detection with the Information Reconstruction-based Polarimetric Covariance Matrix
Xinyu Xu (*Shanghai Jiao Tong University*); *Tao Zhang* (*Shanghai Jiao Tong University*); *Zenghui Zhang* (*Shanghai Jiao Tong University*); *Weiwei Guo* (*Tongji University*); *Wenxian Yu* (*Shanghai Jiao Tong University*);

00:00 Ocean Wave Parameters Retrieval from Polarimetric SAR Images
Yawei Zhao (*National Key Laboratory of Microwave Imaging Technology*); *Jinsong Chong* (*National Key Lab of Microwave Imaging Technology*); *Xuan Jin* (*National Key Laboratory of Microwave Imaging Technology*);

00:00 Ship Detection Based on Polarimetric SAR Gradient and Complex Wishart Classifier
Junjun Yin (*University of Science and Technology Beijing*); *Jian Yang* (*Tsinghua University*);

00:00 Multi-feature Dimension Reduction GP-PNF Based Ship Detection of Polarimetric SAR
Chenghui Cao (*First Institute of Oceanography, Ministry of Natural Resources*); *Xi Zhang* (*First Institute of Oceanography, Ministry of Natural Resources*); *Genwang Liu* (*First Institute of Oceanography, Ministry of Natural Resources*); *Jun-Min Meng* (*First Institute of Oceanography of State Oceanic Administration*);

00:00 Iceberg Detection Using L-band Compact Polarimetric SAR
Genwang Liu (*First Institute of Oceanography, Ministry of Natural Resources*); *Xi Zhang* (*First Institute of Oceanography, Ministry of Natural Resources*); *Chenghui Cao* (*First Institute of Oceanography, Ministry of Natural Resources*); *Jun-Min Meng* (*First Institute of Oceanography of State Oceanic Administration*);

Session 4A10b
Advances in Random Medium Scattering Theory and Microwave Remote Sensing

Thursday AM, July 6, 2023

Room South Room 222

Organized by Shurun Tan, Yanlei Du

Chaired by Shurun Tan, Yanlei Du

00:00 Exceptional-point Sensors Enhanced by Noise
Zhipeng Li (*National University of Singapore*); *Chenhui Li* (*National University of Singapore*); *Cheng-Wei Qiu* (*National University of Singapore*);

00:00 Disturbing Variability in Microwave Emission from Non-Gaussian Height Distributed Rough Surface
Ying Yang (*Nanjing University Of Science And Technology*); *Kun-Shan Chen* (*Guilin University of Technology*);

00:00 Research on a Fast Echo Simulation Method of Spaceborne Bi-SAR in Sea Scene
Yuhua Guo (*State Key Laboratory of Space-Ground Integrated Information Technology*); *Zhilong Zhao* (*State Key Laboratory of Space-Ground Integrated Information Technology*); *Yao Zhang* (*State Key Laboratory of Space-Ground Integrated Information Technology*); *Wenning Gao* (*State Key Laboratory of Space-Ground Integrated Information Technology*); *Huanyin Yue* (*Institute of UAV Application Research, Tianjin and CAS*); *Xin Liu* (*State Key Laboratory of Space-Ground Integrated Information Technology*); *Zhenghuan Xia* (*Beijing Institute of Satellite Information Engineering*); *Shichao Jin* (*State Key Laboratory of Space-Ground Integrated Information Technology*); *Fuzhan Yue* (*State Key Laboratory of Space-Ground Integrated Information Technology*);

00:00 Fast Hybrid Method (FHM) for Full-wave Simulations of Forests and Vegetation Fields in Microwave Remote Sensing of Soil Moisture at L-band
Jongwoo Jeong (*University of Michigan*); *Leung Tsang* (*University of Michigan*); *Andreas Colliander* (*California Institute of Technology*); *Simon H. Yueh* (*California Institute of Technology*);

00:00 On the Spatial Ergodicity of Sea Clutter Spatiotemporal Correlation
Yanlei Du (*Aerospace Information Research Institute, Chinese Academy of Sciences*);

00:00 Layered Soil Remote Sensing with Multi-channel Passive Microwave Observations and Physics Driven Artificial Intelligence
Xuyang Bai (*Zhejiang University*); *Shurun Tan* (*Zhejiang University/University of Illinois at Urbana-Champaign Institute*);

00:00 Characterization of Vegetated Land Surface Emission at L-band Using Radiative Transfer Theory with an Accelerated Iterative Approach
Qikai Chen (*Zhejiang University*); *Shurun Tan* (*Zhejiang University/University of Illinois at Urbana-Champaign Institute*);

Session 4A11
Electromagnetic Modeling and Inversion and Application

Thursday AM, July 6, 2023

Room South Room 223

Organized by Jianhua Li, Ganquan Xie

00:00 Novel GLHUA Electromagnetic Invisible Cloak Created by a Transformation from Negative Space to Positive Space and in Cloak without Exceeding Light Speed Propagation
Feng Xie (*GL Geophysical Laboratory*); *Jianhua Li* (*GL Geophysical Laboratory*); *Lee Xie* (*GL Geophysical Laboratory*); *Ganquan Xie* (*GL Geophysical Laboratory, Lawrence Berkeley Laboratory*);

00:00 New N Dimensional Maxwell Equations
Feng Xie (*GL Geophysical Laboratory*); *Jianhua Li* (*GL Geophysical Laboratory*); *Lee Xie* (*GL Geophysical Laboratory*); *Ganquan Xie* (*GL Geophysical Laboratory, Lawrence Berkeley Laboratory*);

00:00 Experiments and Modeling of a Near-field Millimeter Wave Vector Microscope
Thibaut Auriac (*IES, Université de Montpellier, CNRS*); *Jeremy Raoult* (*Universite de Montpellier*);

00:00 Verification of the JUICE Spacecraft Magnetic Cleanliness and Emitted Field Modelling
Stefan Engelke (*Airbus — Defence and Space*); *Klaus Bubeck* (*Airbus — Defence and Space*); *Manuel A. Baroni* (*European Space Agency — European Space Research and Technology Centre*); *Zoltan Kiss* (*European Space Agency — European Space Research and Technology Centre*); *Sam Verstaen* (*European Space Agency — European Space Research and Technology Centre*); *Jörg Lange* (*Airbus — Defence and Space*); *Markus Faust* (*Airbus — Defence and Space*);

00:00 Discussion on Physical Space Issues
Shandong Zhao (*Dayuling Super Sciences Computational Center*);

00:00 Computerized Wisdom Acupuncture and Thinking Mind Health Using GL ElectroMagnetic Sesmic Boltzman Modeling and Inversion
Feng Xie (*GL Geophysical Laboratory*); *Jianhua Li* (*GL Geophysical Laboratory*); *Lee Xie* (*GL Geophysical Laboratory*); *Hao Qian* (*Dayuling Super Scientific Computing Center*); *Junyi Li* (*Dayuling Super Scientific Computing Center*); *Jianpeng Zuo* (*Dayuling Super Scientific Computing Center*); *Shandong Zhao* (*Dayuling Super Sciences Computational Center*); *Ganquan Xie* (*GL Geophysical Laboratory, Lawrence Berkeley Laboratory*);

00:00 Fast Splitting Line Determination Assisted by Genetic Algorithms in 2D Meshing for Modeling and Simulation of Electromagnetic Materials
Shi-Gu Cao (*HKUST Shenzhen-Hong Kong Collaborative Innovation Research Institute*); *Linzhirui Wang* (*Shenzhen Inequation Technology Co., Ltd.*);

00:00 Alternative Analysis and Calculation of Optical Doppler Effect and the Discussion of Time and Space
Shandong Zhao (*Dayuling Super Sciences Computational Center*); *Tieqi Wang* (*Dayuling Super Sciences Center*); *Xiao Wang* (*Dayuling Super Sciences Computational Center*);

00:00 Inversion by Aftershocks to Investigate Earthquake
Ganquan Xie (*GL Geophysical Laboratory, Lawrence Berkeley Laboratory*); *Lee Xie* (*GL Geophysical Laboratory*); *Ernie Majer* (*Lawrence Berkeley National Laboratory*); *Feng Xie* (*GL Geophysical Laboratory*); *Jianhua Li* (*GL Geophysical Laboratory*); *Micheal Oristaglio* (*Yale University*); *Jian Sheng Liu* (*Wang Cheng Second High School*); *Yongyou Sun* (*Wang Cheng Second High School*);

00:00 Three-dimensional Electrical Structure of the Crust-mantle in the Southern Section of the Longmenshan and Its Relation to the Lushan Earthquake
Gang Zhang (*Southwest University of Science and Technology*); *Xueben Wang* (*Chendu Technology University*); *Yushu Tang* (*Southwest University of Science and Technology*); *Yu Ma* (*Southwest University of Science and Technology*); *Xinhai Zhang* (*Southwest University of Science and Technology*); *Dewei Li* (*Chendu Technology University*); *Chunmei Huang* (*Sichuan Earthquake Bureau*); *Xuelin Cai* (*Chendu Technology University*);

00:00 Electromagnetic and Seismic Exploration on Global and Local Earthquake in the World
Lee Xie (*GL Geophysical Laboratory*); *Ernest Majer* (*Lawrence Berkeley National Laboratory*); *Jianhua Li* (*GL Geophysical Laboratory*); *Feng Xie* (*GL Geophysical Laboratory*); *Gang Zhang* (*Southwest University of Science and Technology*); *Xueben Wang* (*Chendu Technology University*); *Micheal Oristaglio* (*Yale University*); *Jiaqi Liu* (*Harbin Institute of Technology*); *Hong Liu* (*Institute of Geogolgy and Geophysics, Chinese Academy of Sciences*); *Daxin Zuo* (*GL Geophysical Laboratory*); *Tieqi Wang* (*Dayuling Super Sciences Center*); *Jianpeng Zuo* (*Dayuling Super Scientific Computing Center*); *Youmin Li* (*Geophysical and Geology Institute, Chinese Academy of Sciences*); *Jianshu Luo* (*Jiaodong Scietific and Technology University*); *Shi-Gu Cao* (*HKUST Shenzhen-Hong Kong Collaborative Innovation Research Institute*); *Oleg Kravchenko* (*Federal Research Center, Computer Science and Control*); *Bin Mao* (*Qiaoyi Town People's Committee*); *Xianwei Zhou* (*Beijing Scientific Technology University*); *Huizhu Yang* (*Tsinghua University*); *Y. Z. Guo* (*Wuhan City Committee*); *Qihua Deng* (*Dongting Lake Research Institute*); *Aiqing Wu* (*Yangtze River Water Conservancy Committee*); *Qing Xie* (*Zexing Technology Company*); *Gang Long* (*Sichuan Ganzi Tibetan Autonomous Prefecture*); *Jing Li* (*Dayuling Super Sciences Center*); *Mohd Noh Karsiti* (*Universiti Teknologi PETRONAS*); *Genhua Shi* (*GL Geophysical Laboratory*); *Hanping Chin* (*GL Geophysical Laboratory*); *Ganquan Xie* (*GL Geophysical Laboratory, Lawrence Berkeley Laboratory*);

Session 4P1a
Recent Advances in Electromagnetic Metamaterial for Novel Features and Applications

Thursday PM, July 6, 2023

Room Club E

Organized by Tie Jun Cui, Jianwei You

Chaired by Jianwei You, Qian Ma

00:00 A Terahertz High-intensity Temperature-switching Plasmonic Metasurface Based on FW-BIC
Qun Ren (*Tianjin University*); *Xiaoman Wang* (*Tianjin University*); *Xiuyu Wang* (*Tianjin University*); *Yuxin Lang* (*Tianjin University*);

00:00 Higher Dimensional Topological States in Metamaterials
Invited
Shaojie Ma (*Fudan University*);

00:00 Artificial Neural Network for DOA Estimation via Space-time-coding Metasurfaces
Xiao Qing Chen (*Southeast University*); *Lei Zhang* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

00:00 Metal Handwritten Digits Classification Based on X-band Diffractive Deep Neural Network
Ze Gu (*Southeast University*); *Qian Ma* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

00:00 A Programmable Diffractive Deep Neural Network Based on a Digital-coding Metasurface Array
Qian Ma (*Southeast University*); *Che Liu* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

00:00 Advances in Human Target Sensing with Wireless Signals
Xinyu Li (*Southeast University*); *Siqi Huang* (*Southeast University*); *Jun Ming Hou* (*Southeast University*); *Che Liu* (*Southeast University*); *Jianwei You* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

00:00 Artificial Neural Networks Based on Programmable Spoof Plasmonic Metamaterials
Xinxin Gao (*City University of Hongkong*); *Qian Ma* (*Southeast University*); *Tie Jun Cui* (*Southeast University*); *Chi Hou Chan* (*City University of Hongkong*);

00:00 Fast Design of Metasurface-based Microwave Absorber Using the Neuro-TF Approach
Yuheng Tu (*Southeast University*); *Jianan Liu* (*Southeast University*); *Tian Qiu* (*Southeast University*); *Yunlang Cai* (*Southeast University*); *Jianan Zhang* (*Southeast University*); *Jianwei You* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

00:00 Toward Electromagnetic Near-field Mutual Coupling Suppression with Active Janus Sources
Bo Xue (*City University of Hong Kong*); *Alex M. H. Wong* (*City University of Hong Kong*);

00:00 Topological Antichiral Surface States in a Magnetic
Invited Weyl Photonic Crystal
Zhen Gao (*Southern University of Science and Technology*);

Session 4P1b
Terahertz and Infrared Metamaterials, Devices and Applications

Thursday PM, July 6, 2023

Room Club E

Organized by Su Xu, Quan Xu

00:00 Terahertz Absorptance in MoS_2/Graphene Nanoribbon Heterostructures
Omnia Samy (*United Arab University*); *Taiichi Otsuji* (*Tohoku University*); *Amine El Moutaouakil* (*United Arab University*);

00:00 Detection of Biological Sample by Using Terahertz Technology
Nagendra Prasad Yadav (*Hubei Polytechnic University*); *Guozhen Hu* (*Hubei Polytechnic University*); *Rakesh Kumar Singh* (*SIET Prayagraj Uttar Pradesh*);

00:00 Hybrid Bound States in the Continuum in Terahertz Metasurfaces
Longqing Cong (*Southern University of Science and Technology*);

00:00 Laser Fabrication of Mid-infrared Anti-reflection Microstructures
Xiang-Chao Sun (*Jilin University*); *Jia-Xin Zheng* (*Jilin University*); *Xue-Qing Liu* (*Jilin University*);

00:00 Manipulating Terahertz Spoof Surface Plasmon Polaritons Based on Gradient Metallic Pillars
Xiaoqiang Su (*Shanxi Datong University*); *Lijuan Dong* (*Shanxi Datong University*); *Lixiang Liu* (*Shanxi Datong University*); *Yunlong Shi* (*Shanxi Datong University*);

00:00 Terahertz Mie-resonant Metasurface
Quanlong Yang (*Central South University*);

00:00 Integrated On-chip Terahertz Spoof Surface-plasmon-polariton Devices
Ying Zhang (*Yunnan Normal University*);

00:00 Ultraflexible Coatings with Low Reflectance in the Visible and Near-infrared Spectral Band
Yan Wang (*Changchun University of Technology*);

00:00 Terahertz All-optical Imprint Devices Based on Phase Change Films
Zhen Tian (*Tianjin University*);

00:00 Research of Active Terahertz Chiral Metasurface
Meng Liu (*Shandong University of Science and Technology*);

00:00 Manipulation of the Nonlinear Plasmonic Bound State in the Continuum of Metasurfaces
Qun Ren (*Tianjin University*);

Session 4P2
Optical Fiber, Laser, Sensors, Nano-optics and Others

Thursday PM, July 6, 2023
Room Club D

00:00 Spin Hall Angle of $L1_2$-Ordered Antiferromagnetic Mn_3Ir Assessed by Terahertz Emission Spectroscopy
Huiling Mao (*Tokyo Institute of Technology*); *Yuta Sasaki* (*NIMS*); *Yuta Kobayashi* (*Kyoto University*); *Shinji Isogami* (*NIMS*); *Teruo Ono* (*Kyoto University*); *Takahiro Moriyama* (*Kyoto University*); *Yukiko K. Takahashi* (*NIMS*); *Kihiro T. Yamada* (*Tokyo Institute of Technology*);

00:00 First Light at the Israeli THz Superradiant Free Electron Laser
Ariel Nause (*Ariel University*);

00:00 Analysis of Phase Noise in Waveguide-integrated Optical Test Structures in Silicon Photonics
Vijayalakshmi Surendranath Shroff (*University of Paderborn*); *Christian Kress* (*University of Paderborn*); *M. Bahmanian* (*University of Paderborn*); *J. Christoph Scheytt* (*University of Paderborn*);

00:00 AIE Fluorophores for Laser and Random Laser Operation
Lech Sznitko (*Wroclaw University of Science and Technology*); *Kamila Lupinska* (*Wroclaw University of Science and Technology*);

00:00 Photocatalytic Coenzyme Regeneration in a Microfluidic Reactor for Artificial Photosynthesis of Glucose
Fengjia Xie (*The Hong Kong Polytechnic University*); *Yujiao Zhu* (*The Hong Kong Polytechnic University*); *Chi Chung Tsoi* (*The Hong Kong Polytechnic University*); *Huaping Jia* (*The Hong Kong Polytechnic University*); *Xuming Zhang* (*The Hong Kong Polytechnic University*);

00:00 On the Scaling of Perovskite Solar Modules: The Role of Interface Engineering by 2D Materials
Sara Pescetelli (*University of Rome Tor Vergata*); *Antonio Agresti* (*University of Rome Tor Vergata*); *H. Pazniak* (*University of Rome Tor Vergata*); *E. Leonardi* (*University of Rome Tor Vergata*); *F. Bonaccorso* (*University of Rome Tor Vergata*); *E. Kymakis* (*University of Rome Tor Vergata*); *Aldo Di Carlo* (*University of Rome Tor Vergata*);

00:00 Generation of Isolated-attosecond Pulses from Water Window to keV Hard X-ray
Hsu-Hsin Chu (*National Central University*);

00:00 Localized Spectral Modes Generated in the Random Raman Laser Based on Multimode Fiber
Artem E. Kirik (*Novosibirsk State University*); *Ilya D. Vatnik* (*Novosibirsk State University*); *Dmitry V. Churkin* (*Novosibirsk State University*);

00:00 Evolution Investigation of Solitons in Fiber Lasers with Time-stretch Dispersive Fourier Transform Technique
Yanrong Song (*Beijing University of Technology*); *Youshuo Cui* (*Beijing University of Technology*); *Jin-Rong Tian* (*Beijing University of Technology*);

00:00 Ultrafast Electron Dynamics of Graphene Quantum Dots: High Harmonic Generation
Suresh Gnawali (*Georgia State University*); *Vadim Apalkov* (*Georgia State Univ*);

00:00 Inverse Design of Light-matter Interactions
Robert Bennett (*University of Glasgow*);

00:00 TMDC-based Topological Nanospaser: Single and Double Threshold Behavior and Ultrafast Pulse Pumping
Dalton C. Hunley (*Georgia State University*); *S. Azar Oliaei Motlagh* (*Georgia State University*); *Rupesh Ghimire* (*Georgia State University*); *Fatemeh Nematollahi* (*Georgia State University*); *Vadym Apalkov* (*Georgia State University*); *Jhih-Sheng Wu* (*National Chiao Tung University*);

Session 4P3
Nanophotonics, Biophotonics and Advanced Photonic Materials 2

Thursday PM, July 6, 2023
Room Club C

00:00 60-GHz Range, +16-dBm High-power Narrow-band Photoreceiver Module
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*); *Kouichi Akahane* (*National Institute of Information and Communications Technology*);

00:00 Optical Beamforming Concepts for Wide-swath Synthetic Aperture Radar Systems
Josef Ydreborg (*German Aerospace Centre (DLR)*); *Sigurd Huber* (*German Aerospace Centre (DLR)*); *Gerhard Krieger* (*German Aerospace Center (DLR)*);

00:00 Detection of a Terahertz Wireless Signal Using Photonics-based System with Electro-optic Polymer Device
Kota Miyake (*Gifu University*); *Hiroki Murakami* (*Gifu University*); *Takahiro Kaji* (*National Institute of Information and Communications Technology (NICT)*); *Atsushi Kanno* (*National Institute of Information and Communications Technology (NICT)*); *Isao Morohashi* (*National Institute of Information and Communications Technology (NICT)*); *Akira Otomo* (*National Institute of Information and Communications Technology (NICT)*); *Hiroki Kishikawa* (*Tokushima University*); *Takeshi Yasui* (*Tokushima University*); *Shintaro Hisatake* (*Gifu University*);

00:00 Simple Fiber-wireless System in 130-GHz Band Using Optical Phase Modulator
Pham Tien Dat (*National Institute of Information and Communications Technology*); *Kouichi Akahane* (*National Institute of Information and Communications Technology*);

00:00 2D Mono Detection Spatially Super-resolved Microwave Imaging for Radar Applications
Isahar Gabay (*Bar-Ilan University*); *Zeev Zalevsky* (*Bar-Ilan University*);

00:00 Feasibility Study of Artificial Compound Eye Using Optical Fibers
Heng Jiang (*The Hong Kong Polytechnic University*); *Yu Du* (*The Hong Kong Polytechnic University*); *Chi Chung Tsoi* (*The Hong Kong Polytechnic University*); *Xuming Zhang* (*The Hong Kong Polytechnic University*);

00:00 Diffuse Optical Imaging Using Optimized Regularization Parameters through U-curve Method
Nian-Du Wu (*National Central University*); *Min-Chun Pan* (*National Central University*);

00:00 Computer Aided Diagnosis in Colorectal Cancer by Deep Learning Based on Ultrahigh Magnification Endoscopic Images
Changjiang Zhou (*Research Center for Intelligent Sensing, Zhejiang Lab*); *Wenwu Zhu* (*Zhejiang Center for Medical Device Evaluation*); *Xiaorong Xu* (*Research Center for Intelligent Sensing, Zhejiang Lab*); *Liqiang Wang* (*Zhejiang University*); *Weiming Qi* (*Zhejiang Center for Medical Device Evaluation*); *Qing Yang* (*Zhejiang University*);

00:00 Thermal Wavefront Shaping: Application in Fluorescent Microscopy
Hadrien M. L. Robert (*Sorbonne Université*); *Chang Liu* (*Sorbonne Université*); *Nadja Rutz* (*ETH Zürich*); *Giulia Faini* (*Sorbonne Université*); *Anis Aggoun* (*Sorbonne Université*); *Filippo Del Bene* (*Sorbonne Université*); *Gilles Tessier* (*Sorbonne Université*); *Romain Quidant* (*ETH Zürich*); *Pascal Berto* (*Sorbonne Université*);

00:00 Low Loss All-oxide Plasmon-assisted Electro-optic Modulator
Dhruv Fomra (*University of Maryland*); *Md. Sojib* (*Virginia Commonwealth University*); *Vitality Avrutin* (*Virginia Commonwealth University*); *Umit Ozgur* (*Virginia Commonwealth University*); *Amit K. Agrawal* (*National Institute of Standards and Technology*); *Henri J. Lezec* (*National Institute of Standards and Technology*); *Nathaniel Kinsey* (*Virginia Commonwealth University*);

00:00 The Use of Surface Characterization Techniques in Photonics
Hendrik C. Swart (*University of the Free State*);

00:00 Coordination Defects and Their Respective Role on the Photoinduced Changes in Ge-Sb-Se and Related Chalcogenide Thin Films
Tomas Halenkovic (*University of Pardubice*); *Virginie Nazabal* (*Universite de Rennes 1*); *Magdaléna Kotrla* (*University of Pardubice*); *Marion Baillieul* (*University of Pardubice*); *Jan Gutwirth* (*University of Pardubice*); *Petr Nemec* (*University of Pardubice*);

00:00 Tunable Optical Properties of Amorphous Al-doped Ga_2O_3 Films Prepared by Plasma Enhanced ALD
Weiming Liu (*Fudan University*); *Xudan Zhu* (*Fudan University*); *Junbo He* (*Fudan University*); *Xin Chen* (*Shanghai Institute of Technical Physics, Chinese Academy of Science*); *Shuang Liu* (*Fudan University*); *Hong Zhou* (*Fudan University*); *Yifan Ding* (*Fudan University*); *Nuoqi Wang* (*Fudan University*); *Rongjun Zhang* (*Fudan University*);

00:00 Reveal the Modulation Effects of Monolayer h-BN on Optical Properties of the Graphene/h-BN/MoS_2 Heterostructures
Xudan Zhu (*Fudan University*); *Junbo He* (*Fudan University*); *Weiming Liu* (*Fudan University*); *Jiahao Li* (*Fudan University*); *Yuxiang Zheng* (*Fudan University*); *Songyou Wang* (*Fudan University*); *Liangyao Chen* (*Fudan University*); *Junhao Chu* (*Shanghai Institute of Technical Physics, Chinese Academy of Sciences*); *Rongjun Zhang* (*Fudan University*);

00:00 Inverse Opal Photonic Crystals: Fabrication and Raman Enhancement Properties
Matin S. Ashurov (*Westlake University*); *Sergey O. Klimonsky* (*Lomonosov Moscow State University*); *Alexey V. Kavokin* (*Westlake University*);

00:00 Novel Ultra-thin Silicon Photonic Devices for Mid-infrared
Rongxiang Guo (*Tianjin University*); *Qi He* (*Tianjin University*); *Tiegen Liu* (*Tianjin University*); *Zhenzhou Cheng* (*Tianjin University*);

00:00 Mid-infrared Photonic Crystal Structure Based On-chip Spectrometer
Lipeng Xia (*ShanghaiTech University*); *Yuhan Sun* (*ShanghaiTech University*); *Ting Li* (*ShanghaiTech University*); *Peiji Zhou* (*ShanghaiTech University*); *Yi Zou* (*ShanghaiTech University*);

00:00 New Integrated Photonic Devices Based on Transformation Optics
Dingshan Gao (*Huazhong University of Science and Technology*); *Shuyi Li* (*Huazhong University of Science and Technology*); *Lifeng Cai* (*Huazhong University of Science and Technology*); *Jianji Dong* (*Huazhong University of Science and Technology*); *Xinliang Zhang* (*Huazhong University of Science and Technology*);

Session 4P4a
Photonic Topological Meta-materials and Meta-crystals 2

Thursday PM, July 6, 2023

Room Club B

Organized by Biao Yang, Shaojie Ma

Chaired by Biao Yang, Shaojie Ma

00:00 Strong Coupling Augmentation of Sensing at the Exceptional Points
Jingming Chen (*Southern University of Science and Technology*); *Zhen Gao* (*Southern University of Science and Technology*);

00:00 All-angle Reflectionless Negative Refraction of Topological Surface Waves
Yachao Liu (*Shenzhen University*);

00:00 Phase Manipulation of Electromagnetic Waves Achieved by Photonic Crystals
Xiao Zhang (*Nanjing University*); *Chengpeng Liang* (*Nanjing University*); *Li Liang* (*Nanjing University*); *Longzhen Fan* (*Nanjing University*); *Yin Poo* (*Nanjing University*);

00:00 Antichiral Surface States in Time-reversal-invariant Photonic Semimetals
Jian-Wei Liu (*Sun Yat-Sen University*); *Fu-Long Shi* (*Sun Yat-Sen University*); *Ke Shen* (*Sun Yat-Sen University*); *Xiao-Dong Chen* (*Sun Yat-Sen University*); *Ke Chen* (*Sun Yat-Sen University*); *Wenjie Chen* (*Sun Yat-Sen University*); *Jian-Wen Dong* (*Sun Yat-Sen University*);

00:00 Photonic Anomalous Floquet Higher-order Topological Insulators
Weiwei Zhu (*National University of Singapore*);

Session 4P4b
Metamaterials, Plasmonics and Complex Media

Thursday PM, July 6, 2023

Room Club B

00:00 Controlling the Light Diffraction through a Single Subwavelength Metallic Slit via Phase Gradient
Songsong Li (*Soochow University*); *Yanyan Cao* (*Soochow University*); *Yadong Xu* (*Soochow University*);

00:00 Asymmetric Acoustic Metagrating Enabled by Parity-time Symmetry
Jiaqi Quan (*Soochow University*); *Yanyan Cao* (*Soochow University*); *Yadong Xu* (*Soochow University*);

00:00 PT Phases Transition in One-dimensional Finite Periodic PT-symmetric Systems
Jeng Yi Lee (*National Dong Hwa University*); *Pai-Yen Chen* (*University of Illinois at Chicago*);

00:00 A Low-cost, Stable, and Accurate Electromagnetic Characterization of 3D Printing Filaments Using 3D-printed Waveguides for Microwave Applications
Ozgur Eris (*Middle East Technical University*); *Ozlem Aydin Civi* (*Middle East Technical University*); *Ozgür Ergül* (*Middle East Technical University*);

00:00 Computational Design and Analysis of Beam-generating Shells with Elliptical Cavities Made of Near-Zero-Index Materials
Ozgur Eris (*Middle East Technical University*); *Ozgur Ergul* (*Middle East Technical University*);

00:00 Achieving TE-polarized Transformation-invariant Metamaterials
Zhengjie Huang (*Zhejiang University*); *Yu Luo* (*Nanyang Technological University*); *Yinger Zhang* (*Zhejiang University*); *Jingxin Tang* (*Zhejiang University*); *Xinyu Hong* (*Zhejiang University*); *Dexin Ye* (*Zhejiang University*);

00:00 Plasmonic Nanopixels for Scalable Optical Displays
Jialong Peng (*National University of Defense Technology*);

00:00 Low-energy Free Electron Interaction with Illuminated Planar Surfaces: Recoil and Quantum Phenomena
Adamantios P. Synanidis (*The Barcelona Institute of Science and Technology*); *P. André D. Gonçalves* (*The Barcelona Institute of Science and Technology*); *Claus Ropers* (*Max Planck Institute for Multidisciplinary Sciences*); *F. Javier García de Abajo* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*);

00:00 Plasmonic Enhancement of Gold Nanostructures for Solar Photocatalysis
Xuming Zhang (*The Hong Kong Polytechnic University*);

00:00 Reflectivity Spectra Study on Nano-scale Epitaxial Aluminum Films on Various Substrates
Yu-Hsun Wu (*National Yang Ming Chiao Tung University*); *Thi-Hien Do* (*National Yang Ming Chiao Tung University*); *Sheng-Di Lin* (*National Yang Ming Chiao Tung University*);

00:00 Anthropomorphic Abdominal Aortic Aneurysm Artificial Circulatory System for Medical Device Testing: 3D Reconstruction from CT Scans
Sofia Aversa (*University of Galway*); *Bilal Amin* (*University of Galway*); *Nuno P. Silva* (*University of Galway*); *Muhammad Adnan Elahi* (*National University of Ireland Galway*);

00:00 Chiral String Model for Nuclear Activity in Lightning Leader Plasma
Geert Cornelis Dijkhuis (*Convectron N. V.*);

Session 4P5a
Active and Reconfigurable Metasurfaces: Fundamentals and Applications

Thursday PM, July 6, 2023

Room Club A

Organized by Fuli Zhang

00:00 Active Broadband Terahertz Deflection Metasurface Based on Liquid Crystal Elastomer
Youwen An (*Tianjin University*); *Jianqiang Gu* (*Tianjin University*); *Wei Zhang* (*Southern University of Science and Technology*); *Dan Luo* (*Southern University of Science and Technology*);

00:00 An Ultrabroadband Reconfigurable Polarization Conversion Metasurface
Heng Yang (*Soochow University*); *Yuan He* (*Tongji University*); *Mei Song Tong* (*Tongji University*); *Yunjing Zhang* (*Soochow University*);

00:00 Epsilon-Near-Zero Coupled Surface Lattice Resonances as a Nonlinear Perceptron
Dhruv Fomra (*University of Maryland*); *Adam Ball* (*Virginia Commonwealth University*); *Amit K. Agrawal* (*National Institute of Standards and Technology*); *Henri J. Lezec* (*National Institute of Standards and Technology*); *Nathaniel Kinsey* (*Virginia Commonwealth University*);

00:00 A Wide-angle Programmable Metasurface Design Scheme for Millimeter-wave Radar Systems
Lu Liu (*Jimei University*); *Yi Fei Huang* (*Southeast University*); *Hao Chi Zhang* (*Southeast University*);

00:00 Tuning the Exotic Transport Properties of Twisted Bilayer Composites
Kenneth Morgan Golden (*University of Utah*);

00:00 Electrically Tunable Structural Color Filter Using a Phase Change Material
Ram Prakash S (*Indian Institute of Technology Roorkee*); *Rajesh Kumar* (*IIT Roorkee*); *Anirban Mitra* (*Indian Institute of Technology Roorkee*);

Session 4P5b
Metasurfaces 2

Thursday PM, July 6, 2023

Room Club A

00:00 Acoustic Metasurfaces for Ventilated Soundproofing and Configurable Camouflage
Chenkai Liu (*Nanjing University*); *Jinjie Shi* (*Nanjing University*); *Xiaozhou Liu* (*Nanjing University*); *Johan Christensen* (*IMDEA Materials Institute*); *Nicholas X. Fang* (*University of Hong Kong*); *Yun Lai* (*Nanjing University*);

00:00 Geometric Phase in Phase Gradient Metasurfaces
Yanyan Cao (*Soochow University*); *Lu Xu* (*Soochow University*); *Yadong Xu* (*Soochow University*);

00:00 Patch-type Electromagnetic Wave Focusing Metasurface for Wireless Power Transfer in Bio-Implantable Devices
Wonwoo Lee (*Soongsil University*); *Semin Jo* (*Soongsil University*); *Hojin Lee* (*Soongsil University*);

00:00 Tunable Asymmetric Transmission Enabled by the Acoustic Metasurface and Zero-index Metamateials
Zhongming Gu (*Tongji University*); *Xu Wang* (*Tongji University*); *Yong Li* (*Tongji University*); *Jie Zhu* (*Tongji University*);

00:00 An Ultrasparse Dissipated-sound Metacage Enabled by Acoustic Metasurfaces
Houyou Long (*Nanjing University*); *Ying Cheng* (*Nanjing University*); *Desheng Ding* (*Southeast University*); *Xiaojun Liu* (*Nanjing University*);

00:00 Ultrasound Metasurface for Subwavelength Focusing and Thermal Effect
Jiajie He (*Fudan University*); *Chuanxin Zhang* (*Fudan University*); *Xue Jiang* (*Fudan University*); *Dean Ta* (*Fudan University*);

00:00 Spatiotemporal Acoustic Communication by a Single Sensor via Rotating Surface
Chuanxin Zhang (*Fudan University*); *Jiajie He* (*Fudan University*); *Xue Jiang* (*Fudan University*); *Dean Ta* (*Fudan University*);

00:00 Heterogeneous Transfer Learning Enable Diverse Metasurface Design
Jie Zhang (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*); *Chao Qian* (*Zhejiang University*);

00:00 Silver-silica Metasurface for Refractometric Sensing Applications in the Terahertz Band
Arslan Asim (*Dalhousie University*); *Michael Cada* (*Dalhousie University*); *Yuan Ma* (*Dalhousie University*);

Session 4P8a
Quantum Measurement and Metrology

Thursday PM, July 6, 2023

Room South Room 220

Organized by Dawei Lu, Nanyang Xu

Chaired by Ying Dong, Dawei Lu

00:00 Quantum Sensing Using Color Centers in Silicon Carbide
Junfeng Wang (*Sichuan University*);

00:00 Progress of Strontium Lattice Clock at USTC
Jie Li (*University of Science and Technology of China*); *Xing-Yang Cui* (*University of Science and Technology of China*); *Zhi-Peng Jia* (*University of Science and Technology of China*); *De-Quan Kong* (*University of Science and Technology of China*); *Hai-Wei Yu* (*University of Science and Technology of China*); *Xian-Qing Zhu* (*University of Science and Technology of China*); *Xiao-Yong Liu* (*University of Science and Technology of China*); *De-Zhong Wang* (*University of Science and Technology of China*); *Xin-Yun Huang* (*University of Science and Technology of China*); *Ming-Yi Zhu* (*University of Science and Technology of China*); *Yu-Meng Yang* (*University of Science and Technology of China*); *Xiang-Pei Liu* (*University of Science and Technology of China*); *Xiao-Ming Zhai* (*University of Science and Technology of China*); *Peng Liu* (*University of Science and Technology of China*); *Xiao Jiang* (*University of Science and Technology of China*); *Ping Xu* (*University of Science and Technology of China*); *Hanning Dai* (*University of Science and Technology of China*); *Yu-Ao Chen* (*University of Science and Technology of China*); *Jian-Wei Pan* (*University of Science and Technology of China*);

00:00 Entanglement-enhanced Quantum Metrology in Colored Noise by Quantum Zeno Effect
Xinyue Long (*Southern University of Science and Technology*);

00:00 High Precison Free-space Time-frequency Transfer for Global Networks of Optical Clocks
Qi Shen (*University of Science and Technology of China*); *Jian-Yu Guan* (*University of Science and Technology of China*); *Ji-Gang Ren* (*University of Science and Technology of China*); *Ting Zeng* (*University of Science and Technology of China*); *Lei Hou* (*University of Science and Technology of China*); *Min Li* (*University of Science and Technology of China*); *Yuan Cao* (*University of Science and Technology of China*); *Sheng-Kai Liao* (*University of Science and Technology of China*); *Juan Yin* (*University of Science and Technology of China*); *Cheng-Zhi Peng* (*University of Science and Technology of China*); *Hai-Feng Jiang* (*University of Science and Technology of China*); *Qiang Zhang* (*University of Science and Technology of China*); *Jian-Wei Pan* (*University of Science and Technology of China*);

00:00 Microwave Electric Fields Sensing Based on Rydberg Atoms
Linjie Zhang (*Shanxi University*);

00:00 The New Schemes of Exhibiting Quantum Advantage via Quantum Correlations
Changliang Ren (*Hunan Normal University*);

00:00 Magnetic Field Detection Based on Nitrogen-vacancy Center in Diamond
Bing Chen (*Hefei University of Technology*);

Session 4P8b
Quantum Science and Technology

Thursday PM, July 6, 2023

Room South Room 220

00:00 Environment-modified Three-body Energy Transfer
Madeline C. Waller (*University of Glasgow*); *Robert Bennett* (*University of Glasgow*);

00:00 Local Optical Spin in Paraxial and Non-paraxial Light
Ben W. Butler (*University of Glasgow*);

00:00 MW-Magnon Systems for Quantum Transduction Applications
Bulat Rameev (*Gebze Technical University*);

00:00 Ultrafast Optical Pulse Compression in the Kerr Medium with Distributed Gain and Dispersion
Yingjia Li (*Shanghai University*); *Koushik Paul* (*University of the Basque Country UPV/EHU*); *Xi Chen* (*University of the Basque Country*);

00:00 FEM Modelling of Magnetostatic Modes in Hybrid Quantum Magnonic Systems
Maksut Maksutoğlu (*Gebze Technical University*); *Elif Avinca* (*Gebze Technical University*); *Farkhad Zainullin* (*Gebze Technical University*); *Kamil Çinar* (*Gebze Technical University*); *S. Çiğdem Yorulmaz* (*Gebze Technical University*); *Sergiy Tarapov* (*Gebze Technical University*); *Fikret Yildiz* (*Gebze Technical University*); *Bulat Rameev* (*Gebze Technical University*);

00:00 Molecular Thermometry for Cryogenic Temperatures
Victoria Esteso (*Istituto Nazionale di Ottica*); *R. Duquennoy* (*National Institute of Optics (CNR-INO)*); *R. C. Ng* (*Catalan Institute of Nanoscience and Nanotechnology (ICN2)*); *Maja Colautti* (*National Institute of Optics, CNR-INO*); *P. Lombardi* (*European Lab Nonlinear Spect LENS*); *Guillermo Arregui* (*Catalan Institute of Nanoscience and Nanotechnology (ICN2)*); *E. Chavez-Angel* (*Catalan Institute of Nanoscience and Nanotechnology (ICN2)*); *C. M. Sotomayor-Torres* (*Catalan Institute of Nanotechnology*); *P. D. Gacria* (*Instituto de Ciencia de Materiales de Madrid*); *Michael Hilke* (*McGill University*); *Costanza Toninelli* (*National Institute of Optics, CNR-INO*);

00:00 Contacless Macroscopic Quantum Sensing through Free-electron Decoherence
Cruz I. Velasco (*ICFO — Institut de Ciencies Fotoniques, The Barcelona Institute of Science and Technology*); *Valerio Di Giulio* (*ICFO — Institut de Ciencies Fotoniques, The Barcelona Institute of Science and Technolog*); *F. Javier García de Abajo* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*);

00:00 Cryogenic Microwave Signal Multiplexer Using Active Superconductor Transmission Lines
Sasan Razmkhah (*University of Southern California*); *Pascal Febvre* (*University Savoie Mont Blanc*); *Massoud Pedram* (*University of Southern California*);

Session 4P9
Computational Electromagnetics, Hybrid Methods and EMC

Thursday PM, July 6, 2023

Room South Room 221

00:00 Physics-informed Machine Learning Models for Electromagnetic Wave Propagation in Railway Environments
Xingqi Zhang (*University College Dublin*);

00:00 New Numerical Flux Enabled Discontinuous Galerkin Time Domain Method for Bi-isotropic Media
Qiang Ren (*Beihang University*);

00:00 Several Equivalent Boundary Conditions for Two-dimensional Material and Metasurface Simulation
Na Liu (*Xiamen University*); *Guoxiong Cai* (*Xiamen University*); *Ruichen Luo* (*Xiamen University*); *Yujia Wen* (*Xiamen University*); *Tingting Shen* (*Xiamen University*); *Qing Huo Liu* (*Eastern Institute of Technology*);

00:00 The PML Implementation of Electromagnetic Waves in Hyperbolic Media
Na Liu (*Xiamen University*); *Yansheng Gong* (*Xiamen University*); *Ruichen Luo* (*Xiamen University*); *Guoxiong Cai* (*Xiamen University*); *Huanyang Chen* (*Xiamen University*);

00:00 Research and Application of Hybrid Algorithm Based on High Order FDTD and HIE-FDTD
Tao Liu (*Xidian University*); *Le Xu* (*Xidian University*); *Ting-Jun Liu* (*Xidian University*); *Yong Yang* (*Beijing Institute of Spacecraft Environment Engineering*); *Xiao-Wei Shi* (*Xidian University*);

00:00 Path Planning for Cellular-connected UAV Using Parabolic Equation-based Radio Wave Propagation Models
Hao Qin (*University College Dublin*); *Zhaozhou Wu* (*University College Dublin*); *Xingqi Zhang* (*University College Dublin*);

00:00 Experimental Study on the Blow-off Kinetics of Bluff Body Stabilized Premixed Flame Utilizing High-speed Optical Measurements
Yi Gao (*Shanghai Jiao Tong University*);

00:00 Plane Wave Diffraction by Uniaxial Chiral Slabs
Giovanni Riccio (*University of Salerno*); *Gianluca Gennarelli* (*Institute for Electromagnetic Sensing of Environment, National Research Council*); *Flaminio Ferrara* (*Universita degli Studi di Salerno*); *Rocco Guerriero* (*University of Salerno*); *Francesco Chiadini* (*University of Salerno*);

00:00 Simulation of the Scattering Parameters of a Rectangular Waveguide Filled with Different Dielectric Samples
Nicole Vorhauer-Huget (*Otto-von-Guericke University Magdeburg*); *Lucas Briest* (*Otto-von-Guericke University Magdeburg*); *Akshat Pharasher* (*Otto-von-Guericke University Magdeburg*); *Mathias Magdowski* (*Otto-von-Guericke-University*);

00:00 Simulation of Pulses Propagation in Passive Transmission Lines Using Mattis-Bardeen Theory
Lucas Iwanikow (*Université Savoir Mont-Blanc*); *Pascal Febvre* (*University Savoie Mont Blanc*);

00:00 Inverse Filtering Signal Identification and Localization in a 2D Electromagnetic Reverberating Cavity
Alexandros Papamatthaiou (*ISAE-SUPAERO*); *Daniel Opoka* (*ISAE-SUPAERO*);

00:00 Feasibility Analysis of the Prediction of High Power Electromagnetic Environment from Antenna Current Response
Chuanbao Du (*Northwest Institute of Nuclear Technology*); *Congguang Mao* (*Northwest Institute of Nuclear Technology*); *Zheng Liu* (*Northwest Institute of Nuclear Technology*); *Xin Nie* (*Northwest Institute of Nuclear Technology*); *Wei Wu* (*Northwest Institute of Nuclear Technology*);

00:00 Strategy to Design Resistive FSSs Considering Effect of Dielectric Substrates for Circuit-analog Microwave Absorbers
Jin-Bong Kim (*Korea Institute of Materials Science*); *Hong-Kyu Jang* (*Korea Institute of Materials Science*); *Jaecheol Oh* (*Korea Institute of Materials Science*);

00:00 RF-front-end Hardware Perturbation Caused by Millimeter Waves
Benjamin Saggin (*Univ Montpellier*); *Jeremy Raoult* (*Univ Montpellier*);

00:00 Novel Design of Wideband Microwave Absorber Based on Aramid Paper Honeycomb Structure
Ye Han (*Nanjing University of Posts and Telecommunications*); *Jiayue Chen* (*Nanjing University of Posts and Telecommunications*); *Qi Li* (*Nanjing University of Posts and Telecommunications*); *Wenquan Che* (*South China University of Technology*); *Quan Xue* (*South China University of Technology*);

00:00 Performance Investigation on Tunable EM Wave Absorber Composed of Varactor Diode-loaded Open Ring Resonator
Budi Syihabuddin (*Institut Teknologi Bandung*); *Mohammad Ridwan Effendi* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 A Near Perfect Solar Selective Metamaterials Absorber for High Efficiency Solar Energy Harvesting
Buxiong Qi (*Lanzhou University*); *Wenqiong Chen* (*Lanzhou University*); *Jingwei Zhang* (*Lanzhou University*); *Zhong-Lei Mei* (*Lanzhou University*);

Session 4P10
Remote Sensing, Inverse Problems, Imaging, GPR, Radar and Sensing

Thursday PM, July 6, 2023
Room South Room 222

00:00 Efficient 3D Joint Inversion Enhanced by Deep Learning Techniques
Yanyan Hu (*University of Houston*); *Xiaolong Wei* (*University of Houston*); *Xuqing Wu* (*University of Houston*); *Jiajia Sun* (*University of Houston*); *Jiefu Chen* (*University of Houston*); *Yueqin Huang* (*Cyentech Consulting LLC*);

00:00 An Analytical Method for Electromagnetic Field in Planar-stratified Medium
Decheng Hong (*Jilin University*);

00:00 A Study on Detectable Diameter of a Metal Cylinder Embedded in Concrete Structures Using Doppler Sensors
Taisei Watanabe (*Aoyama Gakuin University*); *Saburou Hiraoka* (*Konica Minolta, Inc.*); *Osamu Hashimoto* (*Aoyama Gakuin University*); *Ryosuke Suga* (*Aoyama Gakuin University*);

00:00 A Hidden Knowledge in Long-term EMF Monitoring of EMF RATEL Monitoring Network
Nikola Djuric (*University of Novi Sad*); *Tamara Skoric* (*University of Novi Sad*); *Dragan Kljajic* (*University of Novi Sad*); *Vidak Otasevic* (*Regulatory Agency for Electronic Communications and Postal Services (RATEL)*); *Snezana M. Djuric* (*University of Novi Sad*);

00:00 An Approach of the Electric Field Strength Prediction Using Time Series Analysis
Nikša Jakovljević (*University of Novi Sad*); *Nikola M. Djuric* (*University of Novi Sad*); *Dragan Kljajic* (*University of Novi Sad*); *Tamara Skoric* (*University of Novi Sad*); *Vidak Otasevic* (*Regulatory Agency for Electronic Communications and Postal Services (RATEL)*);

00:00 Support Vector Machine to Recognize Hand Motions Using Body Worn Flexible Antenna
Subham Ghosh (*National Institute of Technology Silchar*); *Banani Basu* (*National Institute of Technology*); *Marami Das* (*Gauhati Medical College Hospital*);

00:00 Compensation Effect in the Conductive Polar Ionosphere
George V. Jandieri (*VSB — Technical University of Ostrava*); *Nino F. Mchedlishvili* (*Georgian Technical University*); *Nika K. Tugushi* (*Georgian Technical University*);

00:00 Some Peculiarities of the Angular Spectrum of Radio Waves Scattered in the Polar Ionospheric Plasma
George V. Jandieri (*VSB — Technical University of Ostrava*); *Sophio Q. Barnovi* (*Georgian Technical University*); *Salome E. Mukhashavria* (*Georgian Technical University*);

00:00 Quantitative Evaluation of Component Content in Hydrate-bearing Artificial Sediment with Clay
Xiaoxiao Li (*China University of Petroleum (East China)*); *Bin Wang* (*China University of Petroleum*); *Lanchang Xing* (*China University of Petroleum*); *Muzhi Gao* (*China University of Petroleum (East China)*); *Jianqin Deng* (*41st Institute of China Electronic Technology Group Corporation*); *Xinmin Ge* (*China University of Petroleum (East China)*); *Zhoutuo Wei* (*China University of Petroleum (East China)*); *Chuan Li* (*The Affiliated Hospital of Qingdao University*); *Linlin Qu* (*The Affiliated Hospital of Qingdao University*); *Shihong Shao* (*The Affiliated Hospital of Qingdao University*);

00:00 Solving Combined Field Integral Equations of 3D PEC Targets with Physics-informed Multipole Graph Residual Learning
Tao Shan (*Tsinghua University*); *Maokun Li* (*Tsinghua University*); *Fan Yang* (*Tsinghua University*); *Shenheng Xu* (*Tsinghua University*);

00:00 Design and Analysis of Rotary Absolute Encoders Based on Back-magnetic TMR Sensors
Bo-Ruei Huang (*National Tsing Hua University*); *Pei Jen Wang* (*National Tsing Hua University*);

00:00 Design and Analysis of Linear Incremental Encoder Based on Back Magnetic TMR Sensors
Poyang Chen (*National Tsing Hua University*); *P. J. Wang* (*National Tsing Hua University*);

00:00 Development and Characterisation of a Stent-like Z-shaped Wireless Implantable Sensor for Aneurysm Size Detection
Nuno P. Silva (*University of Galway*); *Bilal Amin* (*University of Galway*); *Eoghan Dunne* (*National University of Ireland Galway*); *Martin O'Halloran* (*University of Galway*); *Muhammad Adnan Elahi* (*National University of Ireland Galway*);

00:00 Experiment Results Interpretation of the Moving Medium with Stationary Boundary Remote Sensing
Kirill Zeyde (*University of Genoa*);

00:00 On Improved Z-R Realtion Derived from Czech Distrometer Data
Maria Kovalchuk (*University of Pardubice*); *Aneta Zikesova* (*University of Pardubice*); *Ahmad Albakawe* (*University of Pardubice*); *Ondrej Fiser* (*University of Pardubice*);

Session 4P11a
Substrate Integrated Waveguide Based Circuits and Systems

Thursday PM, July 6, 2023

Room South Room 223

Organized by Arvind Kumar

Chaired by Arvind Kumar

00:00 Design of a Highly Compact Self-multiplexing Antenna with SIW Technology for Quadband Applications
Sounik Kiran Kumar Dash (*SRM Institute of Science and Technology*); *Qingsha S. Cheng* (*Southern University of Science and Technology*); *Lei Wang* (*Heriot-Watt University*);

00:00 Low Cross-polarization over Full Bandwidth of SIW Cavity-backed Slot Antenna
Arvind Kumar (*Visvesvaraya National Institute of Technology*); *A. G. Keskar* (*Visvesvaraya National Institute of Technology*); *D. Chaturvedi* (*SRM University AP*);

00:00 A Millimeter Wave Coupler with Arbitrary Coupling Coefficient Based on Novel SIW Topology
Yu Fei Pan (*Guangzhou University*); *Ye Yang* (*City University of Hong Kong*);

00:00 Substrate Integrated Waveguide Fed Stacked DRA for 5G NR FR2 Applications
Sidhartha Kumar Sahu (*Indian Institute of Technology Guwahati*); *Rakhesh Singh Kshetrimayum* (*Indian Institute of Technology Guwahati*); *Soibam Aruna Chanu* (*Indian Institute of Technology Guwahati*); *Ramesh Kumar Sonkar* (*Indian Institute of Technology Guwahati*);

00:00 Design and Analysis of Wearable Monopole Antenna Sensor
K. M. Divya Chaturvedi (*SRM University*); *T. Ganesh* (*SRM University*); *Arvind Kumar* (*Visvesvaraya National Institute of Technology*);

00:00 Slotted Rectangular Microstrip Patch Antenna for Breast Cancer Detection
Sakshi Sharma (*SRM University*); *K. M. Divya Chaturvedi* (*SRM University-AP*);

00:00 A Compact Strain-induced SiGe PN Phase Shifter for High-speed on Chip Interconnects
Simran Kumari (*Indian Institute of Technology Guwahati*); *Dhiman Kakati* (*Indian Institute of Technology Guwahati*); *Soibam Aruna Chanu* (*Indian Institute of Technology Guwahati*); *Rashmi Netam Satish* (*Indian Institute of Technology Guwahati*); *Ramesh Kumar Sonkar* (*Indian Institute of Technology Guwahati*);

00:00 Photonic Crystal Based Asymmetric Parallel Waveguide Design Optimization for Hybrid WMDM Applications
Rashmi Netam Satish (*Indian Institute of Technology Guwahati*); *Soibam Aruna Chanu* (*Indian Institute of Technology Guwahati*); *Simran Kumari* (*Indian Institute of Technology Guwahati*); *Shamshad Alam* (*Indian Institute of Technology Guwahati*); *Basani Shiva Ganesh* (*Indian Institute of Technology Guwahati*); *Ramesh Kumar Sonkar* (*Indian Institute of Technology Guwahati*);

00:00 Wideband Circularly Polarized Rectangular Dielectric Resonator Antenna Using Inverted U-shaped Ground Plane for Sub 6 GHz and Upper Mid-bands 5G Applications
Rajkishor Kumar (*Vellore Institute of Technology*); *Avinash Chandra* (*Vellore Institute of Technology*); *Divya Chaturvedi* (*SRM University AP*);

Session 4P11b
Antennas, Array, Theory and Applications 2

Thursday PM, July 6, 2023

Room South Room 223

00:00 Rectangular Microstrip Slot Antenna with EBG Structure for Wearable WLAN/WiMAX Applications
Masum Imran Laskar (*National Institute of Technology Silchar*); *Barun Dhabal* (*National Institute of Technology Silchar*); *Banani Basu* (*National Institute of Technology Silchar*); *Arnab Nandi* (*National Institute of Technology Silchar*);

00:00 Performance Characterisation of Microstrip Antenna when Utilised for RF Power Harvesting in Manufacturing Environments
Azunka N. Ukala (*University of Hertfordshire, College Lane*); *Martin Thomas* (*University of Hertfordshire, College Lane*); *Tiffany Cao* (*University of Hertfordshire, College Lane*); *Eugene A. Ogbodo* (*University of Hertfordshire, College Lane*);

00:00 Towards Net Zero — A Hybrid Energy Harvesting System for Sustainable Wireless Sensor Networks in Industrial Applications (Part 1 Review)
Azunka N. Ukala (*University of Hertfordshire, College Lane*); *Uchenna Kesieme* (*University of Hertfordshire, College Lane*); *Eugene A. Ogbodo* (*University of Hertfordshire, College Lane*); *Tiffany Cao* (*University of Hertfordshire, College Lane*);

00:00 Geodesic $\boldsymbol{H}$-plane Horn Antennas Design Based on a Ray-tracing Technique
Mingzheng Chen (*KTH Royal Institute of Technology*); *Francisco L. Mesa* (*Universidad de Sevilla*); *Oscar Quevedo-Teruel* (*KTH Royal Institute of Technology*);

00:00 Localized Bessel Beams for Near-field Focused Antenna Arrays in Biomedical Contexts
Sandra Costanzo (*University of Calabria*); *Giovanni Buonanno* (*University of Calabria*);

00:00 Tolerance Analysis of Near-field Arrays for Biomedical Applications
Sandra Costanzo (*University of Calabria*); *Giovanni Buonanno* (*University of Calabria*);

00:00 A Compact, High Efficiency Van Atta Array
András Eszes (*PPKE-ITK*); *Zsolt Szabo* (*PPKE-ITK*);