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# PIERS 2025 Abu Dhabi

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

Preliminary Program

May 4–8, 2025
Abu Dhabi, UAE

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## Wednesday PM, May 7, 2025

## Thursday AM, May 8, 2025



## Thursday PM, May 8, 2025

# 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

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# PhotonIcs & Electromagnetics Research Symposium
# May 4–8, 2025
# Abu Dhabi, UAE

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### PIERS 2025 ABU DHABI General Chairs

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Ravikiran Saripalli, Technology Innovation Institute

Hugo Enrique Hernandez-Figueroa, University of Campinas (UNICAMP)

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### (Metamaterials, Plasmonics and Complex Media)

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Chun-Yu Lu, Technology Innovation Institute

Mehmet C. Onbasli, Koc University

Junsuk Rho, Pohang University of Science and Technology (POSTECH)

Ravikiran Saripalli, Technology Innovation Institute

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### (Optics and Photonics)

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Karim Elayoubi, Technology Innovation Institute

Mahmoud A. Gaafar, Technology Innovation Institute

Ajey Jacob, Information Sciences Institute, USC

Guillaume Matras, Technology Innovation Institute

Antaryami Mohanta, Technology Innovation Institute

David Z. Pan, University of Texas, Austin

Pier Paolo Pompa, Italian Institute of Technology

Jun Qian, Zhejiang University

Mahmoud Rasras, New York University — Abu Dhabi

Iman S. Roqan, King Abdullah University of Science and Technology (KAUST)

Jaime Viegas, Khalifa University

Yating Wan, King Abdullah University of Science and Technology

Zheng Zhang, UC Santa Barbara

## PIERS 2025 ABU DHABI Subcommittee 4
### (Antennas and Microwave Technologies)

Lutfi Albasha, American University of Sharjah (Chair)

Sheng Sun, University of Electronic Science and Technology of China (Chair)

Zubair Akhter, Technology Innovation Institute

Fernando Albarracin-Vargas, Technology Innovation Institute — TII

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Merouane Debbah, Khalifa University

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Sami Muhaidat, Khalifa University

Mihai Sanduleanu, Khalifa University of Science and Technology

Atif Shamim, King Abdullah University of Science and Technology

Paschalis C. Sofotasios, Khalifa University

## PIERS 2025 ABU DHABI Subcommittee 5
### (Remote Sensing, Imaging, Inverse Problems and Artificial Intelligence)

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## PIERS 2025 ABU DHABI Subcommittee 6
### (Quantum Science and Technology)

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Frederico Brito, Technology Innovation Institute

Kadir Durak, Ozyegin University

Khaled Elbassioni, Khalifa University

Hichem Eleuch, University of Sharjah

James A. Grieve, Technology Innovation Institute

Ashraf Khalil, Zayed University

Alper Kiraz, Koc University

Hasan Nayfeh, IBM

Saurabh Ray, NYU — Abu Dhabi

Rene Reimann, Technology Innovation Institute

Hisham Sati, NYU — Abu Dhabi

Muhammad Shafique, NYU — Abu Dhabi

Berihu Teklu, Khalifa University

## PIERS 2025 ABU DHABI Focus Track 1
### (Electromagnetics and Photonics for Medical Applications)

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Anna Maria Pappa, Khalifa Universe of Science and Technology

Raed M. Shubair, NYU — Abu Dhabi

Mehmet Burçin ÜNLÜ, Ozyegin University

## PIERS 2025 ABU DHABI Focus Track 2
### (Electromagnetics and Photonics Education for the 21st Century)

Mohamed-Slim Alouini, King Abdullah University of Science and Technology (Chair)

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Weng Cho Chew, Purdue University

Sailing He, Royal Institute of Technology; Zhejiang University

Evgeny Lonshakov, Technology Innovation Institute

Jan Machac, Czech Technical University

Leung Tsang, University of Michigan

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# SYMPOSIUM VENUE

The 2025 PhotonIcs & Electromagnetics Research Symposium, will be held in Abu Dhabi from 4 to 8 May 2025, at the Abu Dhabi National Exhibition Centre (ADNEC).

Address: ADNEC Centre Abu Dhabi, Khaleej Al Arabi Street, P. O. Box 5546, Abu Dhabi, United Arab Emirates.

# REGISTRATION

The PIERS technical sessions will begin at 16:00 on Sunday, May 4, 2025. You may come to register during 8:30–18:30 on Sunday, May 4, 2025, at the registration desks at the ADNEC. Registration is also available from 8:00–18:00 on May 5–8, 2025.

The on-site registration fee is USD 730, and the reduced registration fee for a student is USD 490 (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

The Symposium Reception will be organized on Sunday, May 4 from 19:00 to 21:00 at the conference site, ADNEC. The tickets are free and handed out on a first-come-first-served basis. Please make reservation in advance for the reception by April 15, 2025.

## Symposium Banquet

The Symposium Banquet will be on Wednesday, May 7 from 20:00 to 23:00. The banquet venue is TBD and that transportation from ADNEC to the banquet and back will be provided. A limited number of banquet tickets will be available. For all participants, the price will be USD 80 per person after April 1, 2025. Please make reservation and pay in advance for the banquet by April 1, 2025.

# PIERS ONLINE

Information on PIERS 2025 ABU DHABI and future PIERS is posted at www.piers.org.

# GUIDELINE FOR PRESENTERS

## Onsite Oral Presentations

- **LOAD and TEST Presentation Files in Advance:**
  All Oral Presenters must load and test presentation files in the PIERS OFFICE no later than 12 hours before the scheduled talk. Presenters are not allowed to detach the session computer and attach their own notebook/laptop to the LCD projector in session rooms.
- **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

- Onsite poster presentation: A0 format (Width: 841 mm x Height: 1189 mm) is strongly suggested.
- 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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- Technology Innovation Institute, UAE
- Zhejiang University
- The Electromagnetics Academy at Zhejiang University
- Gulf University for Science and Technology

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- IEEE Photonics Society
- The Electromagnetics Academy

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**Exhibitors:**

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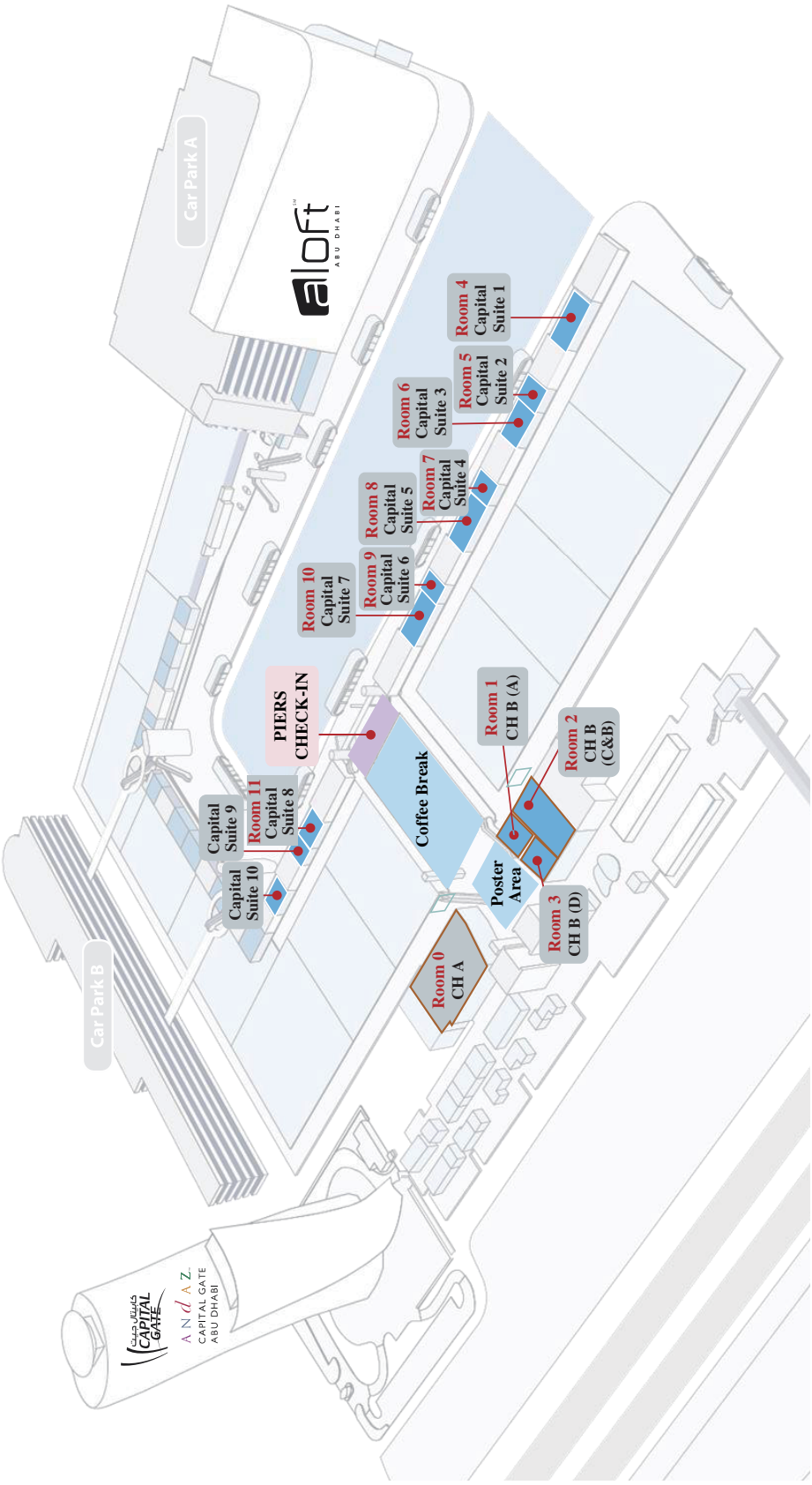
# MAP OF CONFERENCE SITE



# HOT TOPICS IN PHOTONICS AND ELECTROMAGNETICS

**Sunday PM, May 4, 2025**

**Room 0 - xxx**

**Organized and Chaired by Sailing He**

to be updated...

# GENERAL INFORMATION

## LANGUAGE

The official language for the Symposium is English.

## CURRENCY AND CREDIT CARDS

United Arab Emirates currency is Emirati Dirham with its monetary unit AED. The exchange rate is 1 USD for about 3.67 AED. Credit cards and cash are acceptable for payments. International credit cards are acceptable in almost all shops, restaurants etc..

## TAXI

Usually, a taxi is available along the roadsides, while you wave for it. However, on main streets it is only available at taxi stops or in front of a hotel.

## BUSINESS OPENING HOURS

- **Government and Bank Hours**
  Opening hours: (4.5 days) 08:00 – 16:00, from Monday to Thursday; 08:00 – 12:00, Friday.
- **Malls and Markets**
  Operating hours: generally 10:00 – 23:00, from Monday to Sunday.
- **Emirates Post**
  Opening hours: usually 08:00 – 20:00, from Monday to Friday.
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  Opening hours: 24 hours a day, seven days a week.

## ELECTRICITY

In Abu Dhabi, the standard outlets provide AC of 220 V/50 Hz.

# PIERS 2025 ABU DHABI TECHNICAL PROGRAM

## Session 0P0
## Opening Ceremony 16:00-17:00

**Sunday PM, May 4, 2025**

**Room 0 - CH A**

Organized by Ibrahim (Abe) M. Elfadel

00:00 Welcome Note from General Chairs
*Ibrahim (Abe) M. Elfadel* (*Khalifa University*); *Ravikiran Saripalli* (*Technology Innovation Institute*); *Hugo Enrique Hernandez-Figueroa* (*University of Campinas (UNICAMP)*); *Sailing He* (*Royal Institute of Technology & Zhejiang University*);

00:00 Overview of the Technical Program
*Boon S. Ooi* (*King Abdullah University of Science and Technology*);

00:00 Overview of the Social Program
*Ibrahim (Abe) M. Elfadel* (*Khalifa University*);

00:00 Welcome Address by VIP 1
();

00:00 Welcome Address by VIP 2
();

## Session 0P1
## Hot Topics in Photonics and Electromagnetics (BY INVITATION ONLY)

**Sunday PM, May 4, 2025**

**Room 0 - CH A**

Organized by Sailing He

00:00 Hot Topic Tailoring Light Beyond the Textbook
*Andrew Forbes* (*University of the Witwatersrand*);

00:00 Hot Topic Singular Dispersion Equation: Breaking Diffraction Limit in Dielectrics
*Renmin Ma* (*Peking University*);

00:00 Hot Topic Nanotechnology for Vision Restoration
*Guglielmo Lanzani* (*Istituto Italiano di Tecnologia*);

00:00 Hot Topic Terahertz Photonics on a Chip
*Mona Jarrahi* (*University of California-Los Angeles (UCLA)*);

00:00 Hot Topic Full-spectrum Reconfigurable Intelligent Surfaces (RIS): Advancing Communication, Sensing, and Localization from Microwave to Optical
*Qammer H. Abbasi* (*University of Glasgow*);

## Session 1A1
## Metasurfaces for Wireless Communications and Sensing 1

**Monday AM, May 5, 2025**

**Room 1 - CH B (A)**

Organized by Jorge Ricardo Mejia-Salazar, Jhonattan Córdoba Ramírez
Chaired by Jorge Ricardo Mejia-Salazar, Jhonattan Córdoba Ramírez

00:00 Keynote Artificial Intelligence-aided Understanding of Metasurfaces
*Osvaldo N. Oliveira, Jr.* (*University of Sao Paulo*); *Jorge Ricardo Mejia-Salazar* (*National Institute of Telecommunications (Inatel)*);

00:00 Invited On the Compromise between Performance and Efficiency in RIS-aided Communication Systems
*Pedro Henrique Cardoso de Souza* (*National Institute of Telecommunications — Inatel*); *M. Khazaee* (*National Institute of Telecommunications — Inatel*); *Luciano Leonel Mendes* (*National Institute of Telecommunications — Inatel*);

00:00 A Liquid Crystal Assisted RIS for Two-dimensional Beam Tailoring in the mm-Wave/THz Band
*Antonello Andreone* (*University of Naples "Federico II"*); *Marco Castriota* (*University of Calabria*); *Antonio Ferraro* (*NANOTEC, National Research Council (CNR)*); *Vincenzo Galdi* (*Universita degli Studi di Salerno*); *Michele Giocondo* (*NANOTEC, National Research Council (CNR)*); *Muhammad Fayyaz Kashif* (*Università degli Studi di Napoli Federico II*); *Zahra Mazaheri* (*Università di Napoli Federico II*); *Francesco Pio Monaco* (*MANTID srl*); *Gian Paolo Papari* (*Università di Napoli Federico II*); *Roberto Parente* (*MANTID srl*); *Junaid Yaseen* (*Università di Napoli Federico II*); *Daniele Riccio* (*Università di Napoli Federico II*);

00:00 Next-generation Programmable Holographic Metasurface Antenna
*Abdul Jabbar* (*Glasgow Caledonian University*); *Mostafa Elsayed* (*University of Glasgow*); *Masood Ur-Rehman* (*University of Glasgow*); *Muhammad Ali Imran* (*University of Glasgow*); *Hadi Larijani* (*Glasgow Caledonian University*); *Qammer H. Abbasi* (*University of Glasgow*); *Muhammad Usman* (*Glasgow Caledonian University*);

00:00 Invited 2-bit Reconfigurable Metasurfaces Based on Two-layer Jerusalem Crosses for Frequency and Polarization Control
*William Orivaldo Faria Carvalho* (*National Institute of Telecommunications (Inatel)*); *Osvaldo N. Oliveira, Jr.* (*University of Sao Paulo*); *Jorge Ricardo Mejia-Salazar* (*National Institute of Telecommunications (Inatel)*);

00:00 An Overview of High Impedance Surface Antenna: Design and Analysis
*Ahmad T. Almutawa* (*Abdullah Al Salem University*);

00:00 Ultra-thin Angularly Stable Polarization Conversion Metasurface for Millimeter-wave Applications
*Hisham Khalil* (*The University of Lahore*); *Umair Rafique* (*University of Oulu*); *Hijab Zahra* (*Macquarie University*); *Shobit Agarwal* (*Indian Institute of Technology, Ropar*); *Syed Muzahir Abbas* (*Macquarie University Sydney*);

00:00 Metamaterial Circular Polarizer Using Double Layer Split-Ring Resonator
*Farman Ali Mangi* (*University of Electronic Science and Technology of China*); *Fatima Ghulam Kakepoto* (*Zhejiang Normal University*); *Syed Muzahir Abbas* (*Macquarie University Sydney*);

00:00 A Novel 1-bit Reconfigurable Transmitarray Antenna with 2-D Wide-angle Scanning Performance
*Yu Cheng* (*Zhejiang University*); *Xiaoli Zhi* (*Zhejiang University*); *Ke Huang* (*Zhejiang University*); *Wei Jiang* (*Zhejiang University*); *Li-Xin Ran* (*Zhejiang University*);

00:00 Designing Advanced Optical Payloads for Satellite Communication Using Metasurfaces and Comparative Analysis with Classical Systems
*Mohammed Tariqul Islam* (*Ansys Optics, Ansys software PVT LMT*);

## Session 1A2
## Acoustic Metamaterials and Metasurfaces 1

**Monday AM, May 5, 2025**

**Room 2 - CH B (C&B)**

Organized by Yun Lai, Ying Wu

Chaired by Yun Lai, Ying Wu

00:00 Invited Phononic Skyrmions: A New Horizon to Structure Acoustic and Elastic Waves?
*Badreddine Assouar* (*Université de Lorraine*); *Liyun Cao* (*Université de Lorraine, CNRS, Institut Jean Lamour*);

00:00 Invited Braiding Rule of Boundary Majorana-like Zero Mode
*Qiyun Ma* (*Wuhan University*); *Hailong He* (*Wuhan University*); *Meng Xiao* (*Wuhan University*); *Zhengyou Liu* (*Wuhan University*);

00:00 Invited Elastic Spin-orbit Interaction and Chirality-induced Phonon Spin Selectivity
*Jie Ren* (*Tongji University*);

00:00 Invited Cyclic Evolution of Synergized Spin and Orbital Angular Momenta
*Xiujuan Zhang* (*Nanjing University*); *Lei Liu* (*Nanjing University*); *Xiao-Chen Sun* (*Nanjing University*); *Yuan Tian* (*Nanjing University*); *Ming-Hui Lu* (*Nanjing University*); *Yan-Feng Chen* (*Nanjing University*);

00:00 Invited Topological Phononics Arising from Fluid-solid Interactions
*Haiyan Fan* (*Southeast University*); *Tuo Liu* (*Institute of Acoustics, Chinese Academy of Sciences*); *Jie Zhu* (*Tongji University*); *Xiang Zhang* (*University of Hong Kong*);

00:00 Acoustic Leaky-wave Antenna Based on Phononic Crystals
*Keqiang Lyu* (*King Abdullah University of Science and Technology (KAUST)*); *Ying Wu* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Invited Acoustic Metagratings: From Principle to Applications
*Jun Mei* (*South China University of Technology*);

00:00 Invited Three-dimensional Double-zero-index Medium
*Changqing Xu* (*Nanjing Normal University*); *Hong Chen Chu* (*Nanjing University*); *Zeguo Chen* (*Hong Kong Baptist University*); *Jinjie Shi* (*Nanjing University*); *Guancong Ma* (*Baptist University of Hongkong*); *Ying Wu* (*King Abdullah University of Science and Technology (KAUST)*); *Yun Lai* (*Nanjing University*);

## Session 1A3
## Advanced Photonic Technologies for Spectroscopic Applications 1

**Monday AM, May 5, 2025**

**Room 3 - CH B (D)**

Organized by Simone Borri, Weixiong Zhao, Wei Dong Chen

Chaired by Simone Borri, Weixiong Zhao

00:00 Portable Laser-flash Photolysis Faraday Rotation Spectrometer for Measuring Atmospheric Total OH Reactivity
*Weijun Zhang* (*Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy of Sciences*); *Bo Fang* (*Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy Sciences*); *Weixiong Zhao* (*Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy of Sciences*); *Nana Wei* (*Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy Sciences*);

00:00 Invited Cavity Enhanced Absorption Spectroscopy for High Precision Measurement of Greenhouse Gases
*Kun Liu* (*Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences*); *Wei Dong Chen* (*Université du Littoral Côte d'Opale*); *Xiaoming Gao* (*Anhui Institutes of Physical Science, Chinese Academy of Sciences*);

00:00 Development of UAV Atmospheric Composition and Aerosol Detection System
*Weixiong Zhao* (*Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy of Sciences*); *Jiacheng Zhou* (*Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy of Sciences*); *Haiyue Zhai* (*Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy of Sciences*); *Shichuan Ni* (*Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy of Sciences*); *Weidi Wang* (*Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy of Sciences*); *Bo Fang* (*Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy Sciences*); *Weihua Cui* (*Anhui Institute of Optics and Fine Mechanics, Chinese Academy Sciences*); *Weijun Zhang* (*Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy of Sciences*); *Wei Dong Chen* (*Université du Littoral Côte d'Opale*);

00:00 Two-channel Sensing of $NO_2$ and Particulate Matter (PM)
*Gaoxuan Wang* (*Universite du Littoral Cote d'Opale*); *Lingshuo Meng* (*Université du Littoral Côte d'Opale*); *Benjamin Hanoune* (*Universite de Lille1*); *Suzanne Crumeyrolle* (*Université de Lille1*); *Qian Gou* (*Chongqing University*); *Wei Dong Chen* (*Université du Littoral Côte d'Opale*);

00:00 Carbon Dioxide Sensing Based on Off-axis Integrated Cavity Absorption Spectroscopy Combined with the Informer and Multilayer Perceptron Models
*Kehao Zhang* (*Nanchang Hangkong University*); *Tao Wu* (*Nanchang Hangkong University*); *Linlin Shen* (*Shezhen University*); *Qiang Wu* (*Northumbria University*); *Wei Dong Chen* (*Université du Littoral Côte d'Opale*); *Xingdao He* (*Nanchang Hangkong University*);

00:00 Invited Precise and Sensitive Cavity-enhanced Spectroscopy for Gas Analysis
*Jin Wang* (*University of Science and Technology of China*); *Yan Tan* (*University of Science and Technology of China*); *Yan-Dong Tan* (*University of Science and Technology of China*); *Cun-Feng Cheng* (*University of Science and Technology of China*); *Shui-Ming Hu* (*University of Science and Technology of China*);

00:00 Invited Monitoring Greenhouse and Pollutant Gases Emission by Ultra-long Open-air Path Dual-comb Spectroscopy
*Ruo-Can Zhao* (*University of Science and Technology of China*); *Yu Wang* (*University of Science and Technology of China*); *Chong Wang* (*University of Science and Technology of China*); *Yuli Han* (*University of Science and Technology of China*); *Xiang-Hui Xue* (*University of Science and Technology of China*);

00:00 Invited Near Infrared Imaging for Clinical Applications
*Jingjing Jiang* (*University Hospital and University of Zurich*);

00:00 Suppression of Dye Fluorescence Quenching via Strong Coupling
*Ilya V. Doronin* (*NL Dukhov All-Russian Scientific Research Institute of Automation*);

00:00 Invited New Environmental Monitoring Technology and Its Application in Air Quality Research and Management
*Zhi Ning* (*City University of Hong Kong*);

00:00 Sensing and Analysis of Atmospheric Aerosols Using Novel Compact Cavity Enhanced Extinction Spectrometer
*Salma Jose* (*National Institute of Technology Calicut*); *Dhilbar Muhammed* (*National Institute of Technology Calicut*); *M. K. Ravi Varma* (*National Institute of Technology Calicut*);

00:00 Invited Miniaturized Optofluidic Spectrometers for Widespread Screening Applications
*Pietro Malara* (*Istituto Nazionale di Ottica (INO)*); *Saverio Avino* (*Istituto Nazionale di Ottica (INO)*); *Antonio Giorgini* (*Istituto Nazionale di Ottica (INO)*); *Gianluca Gagliardi* (*CNR, Istituto Nazionale di Ottica (INO)*);

00:00 Intelligent O+E Band Hybrid Optical Amplifier: Machine Learning Approach
*Mohammad Mansoor Khan* (*Indian Institute of Information Technology Guwahati*); *Krishna Sarma* (*Indian Institute of Technology Guwahati*); *Kaisar Ali* (*Indian Institute of Technology Guwahati*);

## Session 1A4
## Topologically Structured Waves 1

**Monday AM, May 5, 2025**

**Room 4 - Capital Suite 1**

Organized by Yijie Shen, Bo Wang

Chaired by Yijie Shen, Bo Wang

00:00 Quantum Topology Takes Shape
Keynote
*Andrew Forbes* (*University of the Witwatersrand*);

00:00 Towards Customized Control of Optical Skyrmions
Invited
*Zhenwei Xie* (*Shenzhen University*);

00:00 From Polarization-hologram Entangled State to Quantum Holographic Eraser Using Metasurfaces
Invited
*Jensen Li* (*University of Exeter*);

00:00 Topology with Spatiotemporally Sculptured Light
Invited
*Qiwen Zhan* (*University of Shanghai for Science and Technology*);

00:00 Spatiotemporal Light Field Manipulation via Photonic Crystal Slabs
Invited
*Lei Shi* (*Fudan University*);

00:00 Photonic Landau Levels in an Astigmatic Frequency-degenerate Laser
*Zhaoyang Wang* (*Tsinghua University*); *Jing Pan* (*Tsinghua University*); *Yuan Meng* (*Tsinghua University*); *Xing Fu* (*Tsinghua University*); *Yijie Shen* (*Nanyang Technological University*); *Qiang Liu* (*Tsinghua University*);

00:00 Brownian-Bridge Assisted Orbital Angular Momentum Mode Demodulation for Turbulence-resilient Free-space Communication
*Ramzil Galiev* (*Technology Innovation Institute*); *Ravikiran Saripalli* (*Technology Innovation Institute*); *Mariam Al Khateri* (*Technology Innovation Institute*); *Rashed Al Blooshi* (*Technology Innovation Institute*); *Faheem Ahmad* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Pseudospin-mediated Vortex Generation in Dirac-like Photonic Lattices
Invited
*Daohong Song* (*Nankai University*);

## Session 1A5
## Functional Nanomaterials for Optical Sensing and Imaging 1

**Monday AM, May 5, 2025**

**Room 5 - Capital Suite 2**

Organized by Pier Paolo Pompa

Chaired by Pier Paolo Pompa

00:00 Light Transducers for Cell Photo Stimulation
Keynote
*Guglielmo Lanzani* (*Istituto Italiano di Tecnologia*);

00:00 Solid-state Synthesized Poly(3,4-propylenedioxythiophene)/$LaFeO_3$ Composite; Structure, Properties and Application as Potential Electrode Materials for Sensing CECs
Invited
*Thabo J. Mahlaka* (*University of South Africa, Florida Science Campus*); *Unathi T. Sidwaba* (*University of South Africa, Florida Science Campus*); *Titus A. M. Msagati* (*University of South Africa, Florida Science Campus*);

00:00 Novel Molecular Tools for Scalable Recordings of Neuronal Activity in vivo
Invited
*Kiryl D. Piatkevich* (*Westlake University*);

00:00 2D-Material Based Nanocomposite for Cancer the Ranostic Applications
Invited
*Manash R. Das* (*CSIR-North East Institute of Science and Technology*);

00:00 Sustainable Optical Biosensing with Bioinspired Tools and Nanomaterials: From Paper- to Thread-based Microfluidic Analytical Devices
Invited
*Elisa Michelini* (*University of Bologna*); *Maria Maddalena Calabretta* (*University of Bologna*); *Denise Gregucci* (*University of Bologna*); *Faisal Nazir* (*University of Bologna*); *Emanuela Maiorano* (*University of Bologna*); *Caterina Cambrea* (*University of Bologna*);

00:00 Light-based Smart Technologies: From Laser Surgery to Enhanced Biosensing
Invited
*Azhar Zam* (*New York University in Abu Dhabi*);

00:00 NIR-II Fluorescence Imaging for Biomedical Applications
Invited
*Jun Qian* (*Zhejiang University*);

00:00 Shape-memory Photonic Crystal Sensors for Ethanol Detection
*Matin S. Ashurov* (*Westlake University*); *Pavlos G. Savvidis* (*Westlake University*);

00:00 Two-photon Polymerized Nature-inspired 3D SERS Platforms for Sensitive Low-concentration Detection
*Soha Yousuf* (*New York University*); *Azhar Zam* (*New York University*);

## Session 1A6
## Ultrafast and Nonlinear Nanophotonics 1

**Monday AM, May 5, 2025**

**Room 6 - Capital Suite 3**

Organized by Sergey Makarov, Mihail I. Petrov, Andrey A. Bogdanov, Costantino De Angelis

Chaired by Sergey Makarov, Costantino De Angelis

00:00 Superscattering via Friedrich-Wintgen Mechanism and Its Applications
*Adrià Canós Valero* (*University of Graz*); *Hadi K. Shamkhi* (*ITMO University*); *Anton S. Kuprianov* (*Jilin University*); *Thomas Weiss* (*University of Graz*); *Vjaceslavs Bobrovs* (*Riga Technical University*); *Yuri S. Kivshar* (*Australian National University*); *Aleksandr Sergeevich Shalin* (*Moscow Institute of Physics and Technology*);

00:00 Giant Nonlinear All-optical Modulation in Halide Perovskite Nanostructures
*Sergey Makarov* (*ITMO University*);

00:00 Optical Bistability with Record-low Q-factor and Footprint
*Shi-Wei Chu* (*National Taiwan University*);

00:00 Imaging of Vaterite-based Drug Delivery Capsules in Vitro and in Vivo
*Pavel B. Ginzburg* (*ITMO University*); *Hani Barhom* (*Tel Aviv University*); *Andrey Machnev* (*Tel Aviv University*); *Andrey Ushkov* (*Tel Aviv University*); *Denis Kolchanov* (*Tel Aviv University*); *Pavel Bezrukov* (*Tel Aviv University*);

00:00 Nonlinear Quantum Optics: From Photonic Chips to the Nanoscale
*Alexander S. Solntsev* (*University of Technology Sydney*);

00:00 Ultrafast Additive-free Dopamine Detection at $\mathbf{10^{-8}}$ mM with Integrated Artificial Intelligence Vision Hardware
*N. Li* (*King Abdullah University of Science and Technology (KAUST)*); *Qizhou Wang* (*King Abdullah University of Science and Technology (KAUST)*); *Z. He* (*King Abdullah University of Science and Technology (KAUST)*); *Arturo Burguete-Lopez* (*King Abdullah University of Science and Technology (KAUST)*); *Andrea Fratalocchi* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Intrinsic Nonlinear Geometric Phase of Second-harmonic Generation in Zincblende Crystal Films and Metasurfaces
*Luca Carletti* (*University of Brescia*); *Davide Rocco* (*CNR-INO and University of Brescia*); *Maria Antonietta Vincenti* (*University of Brescia*); *Domenico De Ceglia* (*University of Brescia*); *Costantino De Angelis* (*University of Brescia*);

00:00 Non-linear Optical Mapping of Twist Angle in Two-dimensional Transition Metal Dichalcogenide Heterobilayers
*Sotiris Psilodimitrakopoulos* (*Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas*); *Leonidas Mouchliadis* (*Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas*); *George Miltos Maragkakis* (*Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas*); *George Kourmoulakis* (*Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas*); *Andreas Lemonis* (*Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas*); *George Kioseoglou* (*Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas*); *Emmanuel Stratakis* (*Institute of Electronic Structure and Laser, Foundation for Research and Technology (FORTH)*);

00:00 Overview of Nonlinear Photonics Platforms at the Telecom C-band
*Ksenia P. Dolgaleva* (*University of Ottawa*);

00:00 Metabricks & Metatricks for Enhancing and Improving Vibrational Spectroscopy and Photocatalysis
*Ivano Alessandri* (*University of Brescia*);

00:00 High-resolution Optical Second-harmonic Spectroscopy in Antiferromagnet $\mathbf{Cr_2O_3}$
*Victor V. Pavlov* (*Ioffe Institute*);

00:00 Nonlinear Generation of Orbital Angular Momentum in Metasurfaces
*L. Coudrat* (*Université Paris Cité & CNRS*); *C. Lecasble* (*Université Paris Cité & CNRS*); *R. Que* (*Université Paris Cité & CNRS*); *A. Gerini* (*Université Paris Cité & CNRS*); *M. Morassi* (*Université Paris Saclay & CNRS*); *A. Lemaître* (*Université Paris Saclay & CNRS*); *N. Efremidis* (*University of Crete and Foundation for Research and Technology*); *Aloyse Degiron* (*Université Paris Cité & CNRS*); *Giuseppe Leo* (*CNRS, Université de Paris*);

00:00 Intrinsically Chiral Exciton Polaritons in a Monolayer Semiconductor
*Ivan Iorsh* (*Queen's University*); *M. J. Wurdack* (*Stanford University*); *I. Staude* (*Friedrich Schiller University Jena*); *Yuri S. Kivshar* (*Australian National University*); *Elena A. Ostrovskaya* (*The Australian National University*);

00:00 Polarization-controlled Lasing in Few-layer $MoTe_2$ Coupled with an Optical Metasurface Supporting Quasi-trapped Modes
*Valentyn S. Volkov* (*Emerging Technologies Research Center, XPANCEO*); *A. N. Toksumakov* (*Emerging Technologies Research Center, XPANCEO*); *A. V. Shesterikov* (*Moscow Institute of Physics and Technology*); *F. M. Maksimov* (*Moscow Institute of Physics and Technology*); *M. K. Tatmyshevskiy* (*Moscow Institute of Physics and Technology*); *Mikhail Yu. Gubin* (*Moscow Institute of Physics and Technology*); *R. V. Kirtaev* (*Emerging Technologies Research Center, XPANCEO*); *Elena I. Titova* (*Moscow Institute of Physics and Technology*); *Dmitry I. Yakubovsky* (*Mocsow Institute of Physics and Technology*); *Elena S. Zhukova* (*Moscow Institute of Physics and Technology*); *S. M. Burdin* (*Moscow Institute of Physics and Technology*); *Sergey M. Novikov* (*Moscow Institute of Physics and Technology*); *Alexander I. Chernov* (*Moscow Institute of Physics and Technology*); *D. A. Ghazaryan* (*Moscow Institute of Physics and Technology*); *Aleksey V. Arsenin* (*Emerging Technologies Research Center, XPANCEO*); *A. V. Prokhorov* (*Emerging Technologies Research Center, XPANCEO*);

## Session 1A7
## Organic and Inorganic Optoelectronic Devices 1

**Monday AM, May 5, 2025**

**Room 7 - Capital Suite 4**

Organized by Wallace C. H. Choy

Chaired by Wallace C. H. Choy

00:00 Keynote Leading the Future of Next-generation Vivid Displays with Nanocrystalline Perovskite Emitters
*Tae-Woo Lee* (*Seoul National University*);

00:00 Invited Vertically Phase Separated Photomultiplication-type OPDs with Ultrafast Dynamic Characteristics
*Han Young Woo* (*Korea University*);

00:00 Invited Strategies for Highly Efficient Organic Photovoltaics for Indoor Use
*Jae Won Shim* (*Korea University*);

00:00 Invited Photophysics of Perovskite Nano-emitters
*Tze Chien Sum* (*Nanyang Technological University*);

00:00 Invited High Open-circuit Voltage in Perovskite/Organic Tandem Solar Cells with Multi-functional Hole-selective Layer
*Jung Geon Son* (*Ulsan National Institute of Science and Technology (UNIST)*); *Shahid Ameen* (*Ulsan National Institute of Science and Technology (UNIST)*); *Bong Soo Kim* (*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 Green-processable Semiconducting Polymers for Photovoltaics
*Taiho Park* (*Pohang University of Science and Technology (POSTECH)*);

00:00 Invited Morphology Studies of Organic and Perovskite Solar Cells Using Grazing-incidence Scattering Techniques
*Xinhui Lu* (*The Chinese University of Hong Kong*);

00:00 Invited Nanoscale Additive Manufacturing for Photonic Anti-counterfeiting Labels
*Ji Tae Kim* (*Korea Advanced Institute of Science and Technology (KAIST)*);

00:00 Invited Quantum Rods Based Light-emitting Diodes
*Abhishek Kumar Srivastava* (*Hong Kong University of Science and Technology*);

## Session 1A8
## Terahertz and Mid Infrared Science and Technology

**Monday AM, May 5, 2025**

**Room 8 - Capital Suite 5**

Organized by Mauro Fernandes Pereira, Stefan Wabnitz

Chaired by Mauro Fernandes Pereira, Stefan Wabnitz

00:00 Self-seeded Single-longitudinal-mode Brillouin Fiber Laser
*Yi Liu* (*Taiyuan University of Technology*); *Yajun You* (*North University of China*); *Wenjun He* (*North University of China*); *Sha Liu* (*North University of China*); *Yuan Liu* (*North University of China*); *Wen Wang* (*North University of China*); *Xinyue Fang* (*North University of China*);

00:00 Terahertz and Mid Infrared Functionalities and Detection: From Theory to Devices
*Mauro Fernandes Pereira* (*Khalifa University*); *Humaira Zafar* (*Khalifa University*); *Apostolos Apostolakis* (*Institute of Physics of the Czech Academy of Siences*); *Vladimir L. Vaks* (*ITMO University*);

00:00 Development of Record Devices for MIR Photonics
*Humaira Zafar* (*Khalifa University*); *Mauro Fernandes Pereira* (*Khalifa University*);

00:00 Metallic Metasurfaces with Zero Reflectivity for Terahertz and Mid Infrared Radiation
*Binglei Zhang* (*Microsystem and Terahertz Research Center*); *Yang Liu* (*Microsystem and Terahertz Research Center*); *Yi Luo* (*Microsystem and Terahertz Research Center*); *Feodor V. Kusmartsev* (*Loughborough University*); *Anna Kusmartseva* (*Loughborough University*);

00:00 A Widely Tunable MIR Laser for Chemical Kinetics and Environmental Monitoring Applications
*Mohammad Khaled Shakfa* (*Khalifa University*); *Ali Elkhazraji* (*King Abdullah University of Science and Technology*); *Marco Marangoni* (*Politecnico di Milano*); *Aamir Farooq* (*King Abdullah University of Science and Technology*);

00:00 THz Characterisation of Semiconductors with Different Doping Levels Using a Combined Time-domain Spectrometer/Ellipsometer
*Zahra Mazaheri* (*Università di Napoli Federico II*); *Can Koral* (*Università della Basilicata*); *Gian Paolo Papari* (*Università di Napoli Federico II*); *Antonello Andreone* (*University of Naples "Federico II"*);

00:00 Dermatological Applications of Millimeter Wave Energy — Initial *in-vivo* and *ex-vivo* Data with Histology
*Chris Paul Hancock* (*Bangor University*);

00:00 Airborne THz Spectrometer for Detection of Air Pollu-
Invited tants
*Candida Moffa* (*Sapienza University of Rome*); *Alessandro Curcio* (*Sapienza University of Rome*); *Camilla Merola* (*Sapienza University of Rome*); *Daniele Francescone* (*Sapienza University of Rome*); *Marco Magi* (*Sapienza University of Rome*); *Massimiliano Coppola* (*Sapienza University of Rome*); *Lucia Giuliano* (*Sapienza University of Rome*); *Mauro Migliorati* (*Sapienza University of Rome*); *Massimo Reverberi* (*Sapienza University of Rome*); *Leonardo Mattiello* (*Sapienza University of Rome*); *Massimo Petrarca* (*Sapienza University of Rome*);

00:00 Recent Progresses of Mid-infrared Solid-state Lasers Directly-pumped by LDs
*Jiawei Guo* (*Southwest Institute of Technical Physics*); *Xinyang Wu* (*Xinjiang University*); *Jia Cheng* (*Southwest Institute of Technical Physics*); *Xinyu Wang* (*Changchun Institute of Applied Chemistry, Chinese Academy of Sciences*); *Juhong Han* (*Southwest Institute of Technical Physics*); *He Cai* (*Southwest Institute of Technical Physics*); *Dongdong Wang* (*Southwest Institute of Technical Physics*); *Jiao Yang* (*Southwest Institute of Technical Physics*); *Di Song* (*Southwest Institute of Technical Physics*); *Jiaqi Wang* (*Southwest Institute of Technical Physics*); *Shuyan Song* (*Changchun Institute of Applied Chemistry, Chinese Academy of Sciences*); *You Wang* (*Southwest Institute of Technical Physics*);

00:00 Terahertz Mapping to Recover Hidden Layers in Pictorial Materials
*Candida Moffa* (*Sapienza University of Rome*); *Daniele Francescone* (*Sapienza University of Rome*); *Alessandro Curcio* (*Sapienza University of Rome*); *Anna Candida Felici* (*Sapienza University of Rome*); *Massimo Petrarca* (*Sapienza University of Rome*);

## Session 1A9a
## Oral Presentations for Best Student Paper Awards — SC1: CEM, EMC, Scattering & EM Theory

**Monday AM, May 5, 2025**

**Room 9 - Capital Suite 6**

00:00 Manipulating Wave-field and Information States in Disordered Scattering Spaces
*Jinyan Ma* (*Zhejiang University*); *Da Li* (*Zhejiang University*); *Ruifeng Li* (*Zhejiang University*); *Erping Li* (*Zhejiang University*);

00:00 Impact of Shear Waves on the $Q$-factor of Acoustic Bound States in the Continuum
*Iman A. Madkhali* (*King Abdullah University of Science and Technology*); *Mohamed Farhat* (*King Abdullah University of Science and Technology (KAUST)*); *Ying Wu* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 An Inverse Modelling Technique Based on Semi-supervised Invertible Neural Network for Microwave Components
*Ze-Ming Wu* (*Shanghai Jiaotong University*); *Zheng Li* (*Shanghai Jiao Tong University*); *Hai-Biao Chen* (*Shanghai Jiaotong University*); *Xiaochun Li* (*Shanghai Jiao Tong University*); *Jun-Fa Mao* (*Shanghai Jiao Tong University*);

00:00 Study of Stimulus-responsive Superhydrophobic Electromagnetic Shielding Fabrics
*Gege Hang* (*Xi'an Polytechnic Universit*); *Zhe Liu* (*Xi'an Polytechnic University*);

00:00 Backward-wave Gyro-oscillator Based on the Use of a Rectilinear Electron Beam
*Ekaterina M. Novak* (*Institute of Applied Physics, RAS*); *Andrei V. Savilov* (*Institute of Applied Physics, RAS*);

00:00 A Novel Computational Architecture for the Method of Moments Optimized by Out-of-Order Execution and SIMD
*Xiao Jie Lu* (*Tongji University*); *Yuan Yang Du* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

## Session 1A9b
## Advanced Nummerical Methods in Computational Electromagnetics 1

**Monday AM, May 5, 2025**

**Room 9 - Capital Suite 6**

Organized by Mei Song Tong, Gaobiao Xiao

Chaired by Mei Song Tong

00:00 A Novel Horn Antenna Approach to Detecting the 21 cm Global Signa
*Iman O. Farhat* (*University of Malta*); *Kristian Zarb Adami* (*University of Oxford*);

00:00 A Direct Domain Decomposition Solver with Multi-level Skeletonization and Higher-order Absorbing Boundary Condition
*Jiaqing Lu* (*The Ohio State University*); *Jin-Fa Lee* (*The Ohio State University*);

00:00 Inverse Design of Photonic Devices with Statistical Learning-based Global Optimization Algorithms
*M. Elsawy* (*Université Côte d'Azur*); *A. Gobé* (*Université Côte d'Azur*); *G. Leroy* (*Université Côte d'Azur*); *Stephane Lanteri* (*Cote d'Azur University, Inria, CNRS, LJAD*);

00:00 Replicating Blackbody Radiation with Classical Electromagnetism
*Mohammad Marvasti* (*University of Quebec at Outaouais*); *Halim Boutayeb* (*INRS — Energie, Materiaux et Telecommunications*);

00:00 A Physical-based Perspective for Understanding and Utilizing Spatial Resources of Wireless Channels
*Hui Xu* (*Southeast University*); *Junwei Wu* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

00:00 Scattering Center Model for Coated Targets above Dielectric Rough Surfaces by Forward Parametric Modeling Method
*Zhengqiu Tian* (*Wuhan University*); *Si-Yuan He* (*Wuhan University*); *Zhihao Cai* (*Wuhan University*); *Xiaoyi Wang* (*Wuhan University*);

## Session 1A10a
## Oral Presentations for Best Student Paper Awards — SC4: Antennas and Microwave Technologies

**Monday AM, May 5, 2025**

**Room 10 - Capital Suite 7**

00:00 Multifunctional Conformal Reconfigurable Holographic Metasurface
*Xinyu Zhang* (*Xidian University*); *Wei Hu* (*Xidian University*); *Tao Hong* (*Xidian University*);

00:00 A Miniaturized High-gain Ultra-wideband Antipodal Vivaldi Antenna with Circular Reflectors
*Jing Jing Cao* (*Tongji University*); *Ajay K. Poddar* (*Synergy Microwave Corporation*); *Ulrich L. Rohde* (*Synergy Microwave Corporation*); *Mei Song Tong* (*Tongji University*);

00:00 High-gain Circularly Polarized Foldable Reflectarray for 3U CubeSat
*Khamis Hassan Ali* (*Khalifa University*); *Omar Samir Hassan* (*Khalifa University*); *Mohamed A. Abou-Khousa* (*Khalifa University*);

00:00 Width-independent and Robust Multimode Interference Waveguides Based on Anomalous Bulk States
*Lei Liu* (*Nanjing University*); *Xiujuan Zhang* (*Nanjing University*); *Ming-Hui Lu* (*Nanjing University*); *Yan-Feng Chen* (*Nanjing University*);

00:00 Experimental Demonstration of Microwave Energy Harvesting Metasurface
*C. Abdul Varis* (*National Institute of Technology Calicut*); *Amogh Suseelan* (*National Institute of Technology Calicut*); *P. V. Arjun* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*);

00:00 Modeling of Transparent Mesh Technology — Wideband Dispersion Model from Scattering Matrix
*Amira Merainani* (*Nantes Universite, CNRS, IETR UMR 6164*); *Yann Mahe* (*Nantes Universite, CNRS, IETR UMR 6164*); *Mohammed El-Gibari* (*Lunam Universite, Universite de Nantes*); *Tchanguiz Razban-Haghighi* (*LUNAM, IETR UMR 6164*);

## Session 1A10b
## Remote Sensing of Water and Energy Cycle

**Monday AM, May 5, 2025**

**Room 10 - Capital Suite 7**

Organized by Rajat Bindlish

00:00 Monitoring Reservoir Water Storage Levels Using Spaceborne GNSS-R Systems' Level-1 Observations
*Mohammad Al-Khaldi* (*The Ohio State University*); *Joel T. Johnson* (*The Ohio State University*); *Steven K. Chan* (*NASA Jet Propulsion Laboratory, California Institute of Technology*); *George Hajj* (*NASA Jet Propulsion Laboratory, California Institute of Technology*);

00:00 Algorithm Improvement for the NASA Soil Moisture Active Passive Mission during the Third Extension Phase from 2024–2026
*Simon H. Yueh* (*California Institute of Technology*); *Mario Julian Chaubell* (*California Institute of Technology*); *Xiaolan Xu* (*California Institute of Technology*); *Huanting Huang* (*California Institute of Technology*); *Tianlin Wang* (*California Institute of Technology*); *Akiko Hayashi* (*California Institute of Technology*); *Dara Entekhabi* (*Massachusetts Institute of Technology*); *Rajat Bindlish* (*National Aeronautics and Space Administration*); *Andreas Colliander* (*California Institute of Technology*); *Narendra Narayan Das* (*Michigan State University*);

00:00 On The Strengths and Weaknesses of GNSS-R Systems for Sensing Soil Moisture Dynamics: A Case Study Using Commercial SmallSats
*Mohammad Al-Khaldi* (*The Ohio State University*); *Joel T. Johnson* (*The Ohio State University*); *Dustin Horton* (*The Ohio State University*); *Darren S. McKague* (*University of Michigan*); *Rajat Bindlish* (*NASA's Goddard Space Flight Center*); *Dorina Twigg* (*University of Michigan*); *Anthony Russel* (*University of Michigan*); *Jeonghwan Park* (*NASA Goddard Space Flight Center*);

00:00 Land Agriculture Information System: A Coupled Hydrology and Crop Modeling Framework for Agriculture
*Rajat Bindlish* (*NASA's Goddard Space Flight Center*); *Pang-Wei Liu* (*NASA's Goddard Space Flight Center*); *Jessica Erlingis* (*NASA's Goddard Space Flight Center*); *Meijian Yang* (*Columbia University*); *Shahryar Ahmad* (*NASA's Goddard Space Flight Center*); *James Geiger* (*NASA's Goddard Space Flight Center*); *Luke Monhollon* (*Columbia University*); *Sujay Kumar* (*NASA's Goddard Space Flight Center*); *Alex C. Ruane* (*Columbia University*); *Zhengwei Yang* (*National Agricultural Statistics Service*); *Gary Feng* (*Genetics and Sustainable Agricultural Research Unit*); *Yanbo Huang* (*Genetics and Sustainable Agricultural Research Unit*);

00:00 Comparative Analysis of Application of Inverse Laplace Transform for Estimation of Water Content in Sludge by Time-domain NMR
*Cengiz Okay* (*Marmara University*); *Selda M. Hocaoglu* (*Climate Change and Life Sciences*); *Hande Gulcan* (*Climate Change and Life Sciences*); *Irfan Basturk* (*Climate Change and Life Sciences*); *"cSebnem Aynur* (*Climate Change and Life Sciences*); *Georgy V. Mozzhukhin* (*Gebze Technical University*); *Pavel Kupriyanov* (*Gebze Technical University*); *Galina S. Kupriyanova* (*Immanuel Kant Baltic Federal University*); *Ivan G. Mershiev* (*Baltic Federal University by Immanuel Kant*); *Bulat Rameev* (*Gebze Technical University*);

00:00 Remote RF Sensing System for Detection of Explosives by $^{14}$N NQR Technique in Large-volume Checkpoints
*Georgy V. Mozzhukhin* (*Gebze Technical University*); *Pavel Kupriyanov* (*Gebze Technical University*); *Eren Doğan* (*Gebze Technical University*); *Cengiz Okay* (*Marmara University*); *Hacer Ipek* (*Gebze Technical University*); *Bektaş Çolak* (*Gebze Technical University*); *Sinan Kazan* (*Gebze Technical University*); *Maksut Maksutoğlu* (*Gebze Technical University*); *N. Güneş Saribaş* (*Gebze Technical University*); *Bulat Rameev* (*Gebze Technical University*);

00:00 L-band Radar Backscattering of Vegetation Using Fast Hybrid Multiple Scattering Theory Method (FHMSTM) of Full Wave Simulations
*Tien-Hao Liao* (*National Taipei University of Technology*); *Haokui Xu* (*University of Michigan*); *Jongwoo Jeong* (*University of Michigan*); *Zhenming Huang* (*University of Michigan*); *Yunwei Han* (*University of Michigan*); *Leung Tsang* (*University of Michigan*);

## Session 1A0
## Poster Session 1

**Monday AM, May 5, 2025**
**8:30 AM - 12:30 AM**
**Room Poster Area**

00:00 Magnon-manipulated Entanglement between Macroscopic Mechanical Oscillator and Mechanical Rotor
*Jingyu Liu* (*Great Bay University*); *Shirong Lin* (*Great Bay University*);

00:00 A 1.21-V 0.33-ppm/°C Bandgap Voltage Reference with a Multiple-segment Curvature Compensation Function
*Yulin Li* (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Yan Wen* (*Southwest Jiaotong University*);

00:00 Application of Conductive Plastics for the Manufacture of Horn
*K. S. Kharlamp'ev* (*National Research University "Moscow Power Engineering Institute"*); *Kirill Sergeyevich Sychev* (*National Research University "Moscow Power Engineering Institute"*); *I. A. Gromov* (*National Research University "Moscow Power Engineering Institute"*); *Nikita S. Maximov* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Handling of Addition and Subtraction Singularities in Surface Triangular
*Jiaming Yang* (*Southwest University of Science and Technology*); *Jin Wang* (*AVIC Chengdu Aircraft Industrial (Group) Co., Ltd.*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 Discovery and Analysis of Modeling of High Contrast Magnetic Materials Using Partial Element Equivalent Circuit Method
*Xiaoping Li* (*Southwest University of Science and Technology*); *Xu Wang* (*DeTooLIC Technology Co., Ltd.*); *Qiusen He* (*Zhejiang University*); *Yin Sun* (*DeTooLIC Technology Co., Ltd.*); *Jun Fan* (*Southwest University of Science and Technology*); *Shufang Li* (*Beijing University of Posts and Telecommunications*); *Qiangming Cai* (*Southwest University of Science and Technology*);

00:00 The Quantum Optical Transition Properties of ZnO in a Infinite Square Well Potential System
*Su Ho Lee* (*Dong University*); *M. K. Choi* (*Dong-A University*); *He Rie Park* (*Dong-A University*);

00:00 Simulation of Orthogonal Mode Scattering Characteristics of Electromagnetic Vortex Waves
*Xinger Cheng* (*University of Chinese Academy of Sciences*); *Zhuo Zhang* (*Aerospace Information Research Institute, Chinese Academy of Sciences*);

00:00 End-to-end Inverse Design Framework for Visible Broadband Achromatic Metalens
*Yushu Zhang* (*King Abdullah University of Science and Technology*); *Qizhou Wang* (*King Abdullah University of Science and Technology (KAUST)*); *Arturo Burguete-Lopez* (*King Abdullah University of Science and Technology (KAUST)*); *Sergei Rodionov* (*King Abdullah University of Science and Technology (KAUST)*); *Andrea Fratalocchi* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Frequency-domain Interpretation of Time-varying-based Negative Capacitor
*Silvio Hrabar* (*University of Zagreb*); *Juraj Bartolic* (*University of Zagreb*); *Saša Ilijić* (*University of Zagreb*);

00:00 Band Gap Topology Based on Euler Number
*Wenwen Liu* (*The University of Hong Kong*);

00:00 High-efficiency Achromatic Broadband Bifocal Metalens in the Mid-infrared via Topological Inverse Design
*Abdallah M. Ali* (*The American University in Cairo*); *Mohamed A. Swillam* (*University of Toronto*);

00:00 Coherent Signal DOA Estimation Method Based on Asynchronous Space-Time-Coding Metasurface
*Dong-Fang Guan* (*National University of Defense Technology*); *Guanchao Chen* (*National University of Defense Technology*); *Xiaolong Su* (*National University of Defense Technology*); *Ziyang Gu* (*National University of Defense Technology*); *Zhangbiao Yang* (*National University of Defense Technology*); *Zhen Liu* (*National University of Defense Technology*);

00:00 Possible Basic Idea of Fueled Motor with Hydrogen Fuels Packed in Single Wall Carbonnano Tube Storage and Mechanics
*Diyar Bajalan* (*Technische Universität Wien*);

00:00 Deep Learning for Mitigating Turbulence in FSO: Experimental Study with Orbital Angular Momentum Modes
*Mariam Al Khateri* (*Technology Innovation Institute*); *Ramzil Galiev* (*Technology Innovation Institute*); *Rashed Al Blooshi* (*Technology Innovation Institute*); *Faheem Ahmad* (*Technology Innovation Institute*); *Ravikiran Saripalli* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 An Efficient Optimization Method for Light-guiding Microstructure Design Based on Deep Learning
*Jun Jie Yuan* (*Tongji University*); *Ya Ming Xie* (*Tongji University*); *Guo Chun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Highly Ytterbium-doped Optical Fibers Based on Multicomponent Silicate Glasses for Fiber Lasers and Amplifiers
*Denis S. Lipatov* (*Institute of Chemistry of High Purity Substances of RAS*); *A. N. Abramov* (*Institute of Chemistry of High Purity Substances of RAS*); *A. S. Lobanov* (*Institute of Chemistry of High Purity Substances of RAS*); *F. V. Afanasyev* (*Institute of Chemistry of High Purity Substances of RAS*); *E. K. Mikhailov* (*Prokhorov General Physics Institute of the Russian Academy of Sciences, Dianov Fiber Optics Research Center*); *T. S. Zaushitsyna* (*Prokhorov General Physics Institute of the Russian Academy of Sciences, Dianov Fiber Optics Research Center*); *A. A. Rybaltovsky* (*Prokhorov General Physics Institute of the Russian Academy of Sciences, Dianov Fiber Optics Research Center*); *M. M. Bubnov* (*Prokhorov General Physics Institute of the Russian Academy of Sciences, Dianov Fiber Optics Research Center*); *Mikhail E. Likhachev* (*Fiber Optics Research Center, Russian Academy of Sciences*);

00:00 Modeling of Pulse Wave Signals for a Blood Pressure Monitor with a Remote Photoplethysmography Sensor
*Andrey Petrovich Tarasov* (*Moscow Regional Research and Clinical Institute ("MONIKI")*); *Dmitry Alekseevich Rogatkin* (*Moscow Regional Research and Clinical Institute ("MONIKI")*);

00:00 Advanced Multi-mode Microscopy Enabled by Metaoptics
*Isma Javed* (*Information Technology University of the Punjab*); *Aqib Raza Shah* (*Information Technology University of the Punjab*); *Afzaal Ahmad* (*University of Glasgow*); *Qammer H. Abbassi* (*University of Glasgow*); *Muhammad Zubair* (*University of Glasgow*); *Muhammad Qasim Mehmood* (*Information Technology University (ITU)*);

00:00 New Bessel-Bessel-Gaussian Beams with High Rotation Speed
*Alexey A. Kovalev* (*Samara State Aerospace University, Image Processing Systems Institute of the Russian Academy of Science*); *Evgeny G. Abramochkin* (*Lebedev Physical Institute*); *Elena Sergeevna Kozlova* (*Samara National Research University*); *Victor V. Kotlyar* (*NRC Kurchatov Institute*);

00:00 Impact of Doping on the Performance of Graphene-Silicon Optoelectronic Devices
*Ying Luo* (*University of Electronic Science and Technology of China*);

00:00 Neutron Generator Based on Electron Cyclotron Resonance Gasdynamic Ion Source for Multipurpose Operation (GISMO)
*Vadim A. Skalyga* (*Federal Research Center A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *I. V. Izotov* (*Federal Research Center A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *S. V. Golubev* (*Federal Research Center A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *A. V. Polyakov* (*Federal Research Center A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *S. V. Razin* (*Federal Research Center A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *D. M. Smagin* (*Federal Research Center A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *S. S. Vybin* (*Federal Research Center A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Development of Improved Gyrotron-based System for CVD Diamond Synthesis
*S. A. Bogdanov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *A. L. Vikharev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *A. V. Aktanaev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Mikhail Yu. Glyavin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *A. M. Gorbachev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *S. A. Goryachev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *M. V. Kamenskiy* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *M. V. Morozkin* (*Institute of Applied Physics, Russian Academy of Sciences*); *A. A. Orlovskiy* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Mikhail D. Proyavin* (*Institute of Applied Physics, Russian Academy of Sciences*); *Dmitry I. Sobolev* (*Institute of Applied Physics, Russian Academy of Sciences*);

00:00 Terahertz Band-pass and Notch Waveguide Filters
*Vladislav Yur'evich Zaslavsky* (*Institute of Applied Physics, Russian Academy of Sciences*); *Yu. V. Rodin* (*Institute of Applied Physics, RAS*); *Alexey V. Palitsin* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Mikhail D. Proyavin* (*Institute of Applied Physics, Russian Academy of Sciences*); *A. A. Orlovskiy* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 A Study of Nonreciprocal Passive Intermodulation in RF Coaxial Isolators
*Liping Wei* (*Southwest Jiaotong University*); *Qiuyan Jin* (*Southwest Jiaotong University*); *Yankai Ma* (*Southwest Jiaotong University*);

00:00 Wideband Bowtie-inspired Meander Antenna for Millimeter-wave Wireless Back-haul and Versatile Multi-band Applications
*Akhtar Khan* (*Tongji University*); *Wen Tao Yuan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Utilization of Circular Waveguide Structure for Experimentally Characterizing Dielectric Material Properties
*Junas Haidi* (*Institut Teknologi Bandung*); *Budi Syihabuddin* (*Institut Teknologi Bandung*); *Hartuti Mistialustina* (*Universitas Sangga Buana*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Design and Experimental Validation of 2.4 GHz Crossover-free $\mathbf{8 \times 8}$ Butler Matrix
*Muhammad Manzil Karama* (*Institut Teknologi Bandung*); *Zulfi* (*Institut Teknologi Bandung*); *Rezki Benedikto Renwarin* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Algorithm for Discrete Message Receiving in MIMO Antennas Using a Memory Model
*Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Anvar Maratovich Ibragimov* (*National Research University "MPEI"*); *Evgeniy P. Smirnov* (*JSC "VNIIRT"*);

00:00 Analysis of the Characteristics of the Irregularities of the Junction of the NRD Waveguide Made of Different Materials
*V. V. Krutskikh* (*National Research University "Moscow Power Engineering Institute"*); *Andrei N. Ushkov* (*National Research University "Moscow Power Engineering Institute"*); *D. S. Chukashov* (*National Research University "Moscow Power Engineering Institute"*); *A. Yu. Trofimov* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Alexei A. Komarov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Tuned Oscillator Yttrium Iron Garnet Resonator
*Nikita S. Maximov* (*National Research University "Moscow Power Engineering Institute"*); *S. I. Gorbunov* (*National Research University "Moscow Power Engineering Institute"*); *Kirill Sergeyevich Sychev* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *P. M. Vetoshko* (*V.I. Vernadsky Crimean Federal University*); *A. N. Kuzmichev* (*Russian Quantum Center*);

00:00 Design of Printed Broadband Antenna Arrays
*Egor Dmitrievich Malev* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Valery A. Permyakov* (*Moscow Power Engineering Institute (Technical University)*); *A. A. Komarov* (*National Research University "Moscow Power Engineering Institute"*); *B. L. Kogan* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Cross-shaped DGS Mutual Coupling Mitigation Approach in mmWave MIMO Antenna Array
*Raiymbek Nurgali* (*Nazarbayev University*); *Jawad Ahmad* (*Nazarbayev University*); *Sultangali Arzykulov* (*Nazarbayev University*); *Mohammad S. Hashmi* (*Indraprastha Institute of Information Technology Delhi*);

00:00 A Novel Design of a 5.8 GHz Bandpass Filter for RF Energy Harvesting Applications
*Ahmed Bakkali* (*Abdelmalek Essaadi University*); *Jamal Zbitou* (*Abdelmalek Essaadi University*); *Mohammed El Gibari* (*Lunam Universite, Universite de Nantes*); *Aziz Oukaira* (*Moncton University*); *Samira Khoulji* (*Abdelmalek Essaadi University*);

00:00 A Bandpass Filter with Improved Isolation Using Split-Ring Resonator
*Eugene A. Ogbodo* (*University of Hertfordshire*); *Brian Waikya* (*University of Hertfordshire*); *Ifeanyi N. Ogbodo* (*University of Hertfordshire*); *Azunka N. Ukala* (*University of Hertfordshire*);

00:00 Dual-band Common Aperture Circularly Polarized Microstrip Planar Array Antenna with High Frequency Selectivity and Solation
*Yingyu Liu* (*The Ninth Academy of China Aerospace Science and Technology Corporation*); *Daowei Wu* (*Xi'an Microelectronics Technology Institute*); *Pengsen Wang* (*Xi'an Microelectronics Technology Institute*);

00:00 Integrated Filtering Antenna Power Divider for 5G Networks: A Co-design Approach to Enhanced Miniaturisation
*Eugene A. Ogbodo* (*University of Hertfordshire, College Lane*); *Alpha Mpango* (*University of Hertfordshire*); *Azunka N. Ukala* (*University of Hertfordshire, College Lane*);

00:00 Experimental Analysis of 13.56 MHz Magnetically Coupled Resonant Wireless Energy Transfer System
*Bihong Zhan* (*China Ship Development and Design Center*);

00:00 An Improved Module of Bidirectional Feature Pyramid Network Based on YOLOv11 for Underwater Object Detection
*Ziyi Yuan* (*Shanghai University of Engineering Science*); *Shujia Yan* (*Shanghai University of Engineering Science*); *Chunyu Yao* (*Evaluating and Examining Center of State-Funded Construction Projects*); *Chenggang Dai* (*Shanghai University of Engineering Science*); *Mei Song Tong* (*Tongji University*); *Fei Wu* (*Shanghai University of Engineering Science*);

00:00 Characterization of Polyhedral Corner Reflectors with General Polarimetric Correlation Pattern Interpretation Tool
*Hao-Liang Li* (*National University of Defense Technology*); *Hao-Chen Dong* (*National University of Defense Technology*); *Si-Wei Chen* (*National University of Defense Technology*);

00:00 Protocol for Generating Non-Gaussian Quantum Entangled States Using a Quantum Frequency Comb
*Hongbin Song* (*The Chinese University of Hong Kong*); *Hidehiro Yonezawa* (*Optical Quantum Control Research Team RIKEN Center for Quantum Computing*); *Guofeng Zhang* (*The Hong Kong Polytechnic University*);

00:00 Research and Design of Programmable High Voltage Pulse Generator for Electrical Discharge Machining
*Yue Pan* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Meng Xiang* (*Southwest University of Science and Technology*); *Li Xie* (*Southwest University of Science and Technology*); *Qichao Chen* (*Southwest University of Science and Technology*); *Qiuyue Xu* (*Southwest University of Science and Technology*); *Gaohua Xiong* (*Southwest University of Science and Technology*);

00:00 A Two-step Isothermal Annealing Method for Preparing Fe-based Nanocrystalline Materials of Fluxgate Sensors
*Yu Zhao Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 The Utility Model Relates to a Piecewise Curvature Compensated Bandgap Reference Circuit
*Haihong Qi* (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Xiaolong Chen* (*Southwest Jiaotong University*);

00:00 The Voltage Gain Design for UAV Wireless Charging Based on Z-source Inverter
*Tianqi Zhao* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Guozheng Zhang* (*Southwest University of Science and Technology*); *Huanfa Yi* (*Southwest University of Science and Technology*); *Huanjian Li* (*Southwest University of Science and Technology*); *Qianjiang Zhang* (*Southwest University of Science and Technology*);

00:00 A Microwave Low-power and Low-phase-noise CMOS VCO with Integrated Low Dropout Regulator and Bandgap Reference
*Xuanbin Jiang* (*Guangzhou University*); *Lin Peng* (*Guangzhou University*); *Guangyu Zhong* (*Guangzhou University*); *Yicong Li* (*Guangzhou University*); *Liang Yuan* (*Guangzhou University*); *Rui Ma* (*Guangzhou University*); *Yukai Feng* (*Guangzhou University*); *Wen Liang Lin* (*Guangzhou University*); *Zhihong Lin* (*Guangzhou University*);

00:00 Hidden Chua-circuit Design and It's Real-time Application
*Vivek Bhatt* (*National Institute of Technology Manipur*); *Ashish Ranjan* (*National Institute of Technology Manipur*);

00:00 Author's Conception of Fractal Elements, Detector, Sensors, Fractal Radio Devices (Fractal Metasurfaces, Fractal Reconfigurable Intelligent Surfaces), and Fractal Radio Systems
*Alexander Alekseevich Potapov* (*Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences*);

## Session 1P1a
## Metasurfaces for Wireless Communications and Sensing 2

**Monday PM, May 5, 2025**

**Room 1 - CH B (A)**

Organized by Jorge Ricardo Mejia-Salazar, Jhonattan Córdoba Ramírez

Chaired by Jorge Ricardo Mejia-Salazar, Jhonattan Córdoba Ramírez

00:00 Invited NOMA Wireless Communications System Assisted by Beyond-diagonal RIS
*Diana Laura Fernandez Duarte* (*National Institute of Telecommunications*); *Victoria Dala Pegorara Souto* (*National Institute of Telecommunications in Brazil*); *Richard Demo Souza* (*Federal University of Santa Catarina*);

00:00 Invited Design, Implementation, and Deployment of Sub-THz Reconfigurable Intelligent Surfaces
*Qi Luo* (*University of Hertfordshire*); *Yihan Ma* (*University of Hertfordshire*); *Ziwei Zhang* (*Chang'an University*); *Liang Dai* (*Chang'an University*);

00:00 Invited Design of Materials and Devices for Random Light-material Interactions and Their Application in True Random Number Generators
*Hocheon Yoo* (*Gachon University*);

00:00 Invited AI-driven Optimization Enhances LSPR Device Performance by Integrating Genetic Algorithms and Neural Networks for Advanced Biosensing Applications
*F. A. N. De Freitas* (*Universidade Federal de Minas Gerais (UFMG)*); *A. V. R. Portes* (*Universidade Federal de Minas Gerais (UFMG)*); *Jhonattan Córdoba Ramírez* (*Universidade Federal de Minas Gerais*);

00:00 Multipole Analysis of Metasurfaces Exhibiting Toroidal Resonances
*J. J. Hernández-Sárria* (*National Institute of Telecommunications (Inatel)*); *Jéssica Abranches Pinto Ribeiro* (*National Institute of Telecommunications (Inatel)*); *Luciano Leonel Mendez* (*National Institute of Telecommunications*); *Jorge Ricardo Mejia-Salazar* (*National Institute of Telecommunications (Inatel)*);

00:00 Invited Multi-tone Optical Source Design and Dynamic Spectrum Assignment for Next-generation Passive Optical Networks Using Photonic Integrated Structures
*Neil Guerrero Gonzalez* (*Universidad Nacional de Colombia*);

## Session 1P1b
## Deep Learning in Electromagnetics Research 1

**Monday PM, May 5, 2025**

**Room 1 - CH B (A)**

Organized by Willie John Padilla, Kebin Fan

00:00 Inverse Scattering for the Schrödinger Equation Using Automatic Differentiation and Gradient-Based Optimization
*Mikhail S. Lytaev* (*St. Petersburg Federal Research Center of the Russian Academy of Sciences*);

00:00 Terahertz Spoof Surface Plasmon Polaritons Prediction via Deep Learning
*Vahid Najafy* (*Tarbiat Modares University*); *Bijan Abbasi-Arand* (*Tarbiat Modarres University*); *Maryam Hesari-Shermeh* (*Tarbiat Modares University*);

00:00 A Novel PPO-based Method for Automatically Designed EBG Structure
*Bing-Han Xie* (*Shanghai Jiao Tong University*); *Xiaochun Li* (*Shanghai Jiao Tong University*); *Ze-Ming Wu* (*Shanghai Jiaotong University*); *Ken Ning* (*Shenzhen University*);

00:00 Incident Angle Insensitive Metamaterial Absorber for IoT Energy Harvesting: Design, Features, and Potential Enhancements
*P. P. Irfana* (*National Institute of Technology Calicut*); *K. J. Suja* (*National Institute of Technology Calicut*); *M. S. Arjunan* (*National Institute of Technology Calicut*);

00:00 Physics-informed Neural Networks for Multiphysics Modeling of Integrated Photonics Devices Based on Phase-change Materials
*Aleksandr S. Shorokhov* (*Samsung Research*);

00:00 Using AI to Improve Electromagnetics Education: Lessons Learned from an Initial Test of AristAI
*Yang Shao* (*University of Illinois*); *Xu Chen* (*University of Illinois*);

**Session 1P2a**
**Acoustic Metamaterials and Metasurfaces 2**

**Monday PM, May 5, 2025**

**Room 2 - CH B (C&B)**

Organized by Yun Lai, Ying Wu

Chaired by Yun Lai, Ying Wu

00:00 Invited Dual-channel Amplitude-phase Encrypted Acoustic Holograms by Metamaterials
*Haohan Zeng* (*Southeast University*); *Haiyan Fan* (*Southeast University*); *Yifan Zhu* (*Southeast University*); *Hui Zhang* (*Southeast University*);

00:00 Acoustic Pancharatnam-Berry Metasurfaces
*Wanyue Xiao* (*City University of Hong Kong*); *Wenjian Kuang* (*Hong Kong Polytechnic University*); *Sibo Huang* (*City University of Hong Kong*); *Shanjun Liang* (*Hong Kong Polytechnic University*); *Din Ping Tsai* (*City University of Hong Kong*); *Shubo Wang* (*City University of Hong Kong Shenzhen Research Institute*);

00:00 Invited Acoustic Meta-devices with Ultra-broadband Functionalities
*Chenkai Liu* (*Nanjing University*); *Jinjie Shi* (*Nanjing University*); *Yun Lai* (*Nanjing University*);

00:00 Machine Learning Driven Inverse Design of Broadband Acoustic Superscattering
*Lijuan Fan* (*King Abdullah University of Science and Technology (KAUST)*); *Ying Wu* (*King Abdullah University of Science and Technology (KAUST)*);

**Session 1P2b**
**Recent Advances in Optical Metasurfaces 1**

**Monday PM, May 5, 2025**

**Room 2 - CH B (C&B)**

Organized by Cheng Zhang, Fei Ding

Chaired by Fei Ding

00:00 Metasurface Holographic Displays Toward High Space-bandwidth Products
*Jin Li* (*Beihang University*); *Xiaoxun Li* (*National Institute of Extremely-Weak Magnetic Field Infrasturcture*); *Shuo Sun* (*China Jiliang University*); *Yi Zhang* (*National Institute of Extremely-Weak Magnetic Field Infrasturcture*); *Shunpu Li* (*Shenzhen Technology University*);

00:00 Invited Turning Earth Abundant Metals Optically Active: From Meta-nanoparticles to Disorder Metasurfaces
*Changxu Liu* (*University of Exeter*);

00:00 Invited Polarization-entangled Photon Pair Generation from an Epsilon-near-zero Metasurface
*Yuanmu Yang* (*Tsinghua University*);

00:00 Metalens with Tilted Structures for High-efficiency Focusing at Large-angle Incidences
*Yue Wang* (*Nanjing University*); *Chen Chen* (*Nanjing University*); *Shengjie Wu* (*Nanjing University*); *Xin Ye* (*Nanjing University*); *Shi-Ning Zhu* (*Nanjing University*); *Tao Li* (*Nanjing University*);

00:00 On-chip Multiplexed Metasurface for Guided Wave Radiation
*Jitao Ji* (*Nanjing University*); *Zhizhang Wang* (*Nanjing University*); *Shi-Ning Zhu* (*Nanjing University*); *Tao Li* (*Nanjing University*);

00:00 Metamaterials for Controlling Electromagnetic Waves in Near- and Far-field Domains
*Min Li* (*Anhui Agriculture University*); *Dashuang Liao* (*Anhui Medical University*); *Zuojia Wang* (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*);

00:00 Invited Helical Photonics with Resonant Metasurfaces
*Kirill Koshelev* (*Australian National University*);

00:00 Trimer Metasurfaces for Highly Sensitive Biomedical Sensors
*Mahmoud M. R. Elsawy* (*Université Côte d'Azur*); *Hao Wang* (*NYU Langone Health*); *Arash Nemati* (*NYU Langone Health*); *Stephane Lanteri* (*Cote d'Azur University, Inria, CNRS, LJAD*); *Haogang Cai* (*NYU Langone Health*);

00:00 Inverse-design Metalens for Incoherent μLED Emission Coupling
*Liming Chen* (*Futurewei Technologies*); *Pingfan Wu* (*Futurewei Technologies*);

00:00 Invited Light Manipulation via Near-field Coupling Control in Plasmonic Metasurface
*Xiaoying Zheng* (*Fudan University*); *Yifei Wang* (*Fudan University*); *Qiong He* (*Fudan University*); *Lei Zhou* (*Fudan University*);

**Session 1P3**
**Free-Electron-Driven Photonic Platforms**

**Monday PM, May 5, 2025**

**Room 3 - CH B (D)**

Organized by Xihang Shi, Ido Kaminer

Chaired by Xihang Shi, Sunchao Huang

00:00 Free-space Optical Modulation of Continuous Free-electron Beams
*Cruz I. Velasco* (*ICFO — Institut de Ciencies Fotoniques, 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 Quantum Nanophotonics with Free Electrons
Keynote
*F. Javier García de Abajo* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*);

00:00 Interaction of Free Electrons and Photons in Photonic
Invited Integrated Circuits
*Yujia Yang* (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *J.-W. Henke* (*Max Planck Institute of Multidisciplinary Sciences*); *A. S. Raja* (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *F. J. Kappert* (*Max Planck Institute of Multidisciplinary Sciences*); *G. Huang* (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *G. Arend* (*Max Planck Institute of Multidisciplinary Sciences*); *Z. Qiu* (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *A. Feist* (*Max Planck Institute of Multidisciplinary Sciences*); *R. N. Wang* (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *A. Tusnin* (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *A. Tikan* (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *C. Ropers* (*Max Planck Institute of Multidisciplinary Sciences*); *T. J. Kippenberg* (*Swiss Federal Institute of Technology Lausanne (EPFL)*);

00:00 Free Electron Topological Bound State Induced by
Invited Twisted Light Beam
*Yiming Pan* (*ShanghaiTech University*); *Ruoyu Yin* (*Bar-Ilan University*); *Yongcheng Ding* (*University of the Basque Country UPV/EHU*); *Huaiqiang Wang* (*Nanjing Normal Universit*); *Daniel Podolsky* (*Technion*); *Bin Zhang* (*Shanghai Tech Universit*);

00:00 Free-electron Pumping Surface Plasmon Polariton Amplification
*Dongdong Zhang* (*Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences*); *Ye Tian* (*Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences*);

00:00 Chiral Optical Vortex Emission from the Interactions between Free Electrons with Bound States in the Continuum
*Zihan Wang* (*Peking University*); *Jing Li* (*Peking University*); *Wu Wen* (*Peking University*); *Haoyu Mo* (*Peking University*); *Qingyao Liang* (*Peking University*); *Yunquan Liu* (*Peking University*);

00:00 Band Engineering of Multiple-quantum-well for Brighter Scintillation with Low-energy Electron Beam Irradiation
*Jing Li* (*Peking University*); *Xin Jin* (*Peking University*); *Wu Wen* (*Peking University*); *Haoyu Mo* (*Peking University*); *Qingyao Liang* (*Peking University*); *Yuhan Jiang* (*Peking University*); *Yunquan Liu* (*Peking University*);

00:00 Multicolor X-ray Generation and Manipulation from
Invited Free Electron-driven van der Waals Heterostructures
*Sunchao Huang* (*University of Electronic Science and Technology of China*); *Ruihuan Duan* (*Nanyang Technological University*); *Nikhil Pramanik* (*Nanyang Technological University*); *Michael Go* (*Nanyang Technological University*); *Chris Boothroyd* (*Nanyang Technological University*); *Zheng Liu* (*Nanyang Technological University*); *Yubing Gong* (*University of Electronic Science and Technology of China*); *Liang Jie Wong* (*Nanyang Technological University*);

00:00 Tunable X-ray Radiation from Quantum Free-electron
Invited Radiation
*Xihang Shi* (*Solid State Institute and Faculty of Electrical & Computer Engineering*); *Michael Shentcis* (*Solid State Institute and Faculty of Electrical & Computer Engineering*); *Yaniv Kurman* (*Solid State Institute and Faculty of Electrical & Computer Engineering*); *Liang Jie Wong* (*Nanyang Technological University*); *F. Javier García de Abajo* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*); *Ido Kaminer* (*Solid State Institute and Faculty of Electrical & Computer Engineering*);

00:00 A Tunable and Enhanced Smith-Purcell Radiation in
Invited Photonic Crystal Structure
*Ping Zhang* (*University of Electronic Science and Technology of China*); *Yixin Peng* (*University of Electronic Science and Technology of China*); *Shengpeng Yang* (*University of Electronic Science and Technology of China (UESTC)*); *Sunchao Huang* (*University of Electronic Science and Technology of China*); *Yuan Zheng* (*University of Electronic Science and Technology of China*); *Shaomeng Wang* (*University of Electronic Science and Technology of China*); *Yubin Gong* (*University of Electronic Science and Technology of China*);

00:00 Cherenkov and Transition Radiations from Hollow Elec-
Invited tron Beams
*Daria Yu. Sergeeva* (*National Research Nuclear University "MEPhI"*); *Alexey A. Tishchenko* (*National Research Nuclear University "MEPhI"*);

00:00 Free-electron Resonance Transition Radiation via Brewster Randomness
*Zheng Gong* (*Zhejiang University*); *Xiao Lin* (*Zhejiang University*);

00:00 Abraham-Lorentz Force and Beam Evolution in Compton Backscattering
*Dmitrii V. Gavrilenko* (*National Research Nuclear University MEPhI*); *Alexey A. Tishchenko* (*National Research Nuclear University MEPhI*);

00:00 Resonant Diffraction Radiation from a Dimer of Particles Immersed in Medium
*Daria Yu. Sergeeva* (*National Research Nuclear University "MEPhI"*); *Alexey A. Tishchenko* (*National Research Nuclear University "MEPhI"*);

## Session 1P4a
## Optics for Quantum Applications

**Monday PM, May 5, 2025**

**Room 4 - Capital Suite 1**

Organized by James A. Grieve, Rene Reimann

00:00 Electrodynamically Levitated Accelerometer for Inertial Navigation
*Hitheswar Prasad* (*Technology Innovation Institute*); *Dmitrii Grigorev* (*Technology Innovation Institute*); *Karsten Pyka* (*Technology Innovation Institute*); *Rene Reimann* (*Technology Innovation Institute*);

00:00 Nanometric Spinning Rotor Gauge for Pressure Sensing
*Philip Verwegen* (*Technology Innovation Institute*); *Konstantin Katamadze* (*Technology Innovation Institute*); *Dmitrii Grigorev* (*Technology Innovation Institute*); *Rene Reimann* (*Technology Innovation Institute*);

00:00 Hysteresis Trajectories in Quantum Rydberg Atomic Gases
*Jun Zhang* (*University of Science and Technology of China*); *Enze Li* (*University of Science and Technology of China*); *Ya-Jun Wang* (*University of Science and Technology of China*); *Baosen Shi* (*University of Science and Technology of China*); *Dong-Sheng Ding* (*University of Science and Technology of China*);

00:00 Quantum Super-resolution Microscopy
*Konstantin Katamadze* (*Technology Innovation Institute*); *T. Luo* (*Technology Innovation Institute*); *S. Vintskevich* (*Technology Innovation Institute*); *B. Bantysh* (*Technology Innovation Institute*); *R. Reimann* (*Technology Innovation Institute*);

00:00 Ground-based Characterization of an Optical Tracking Telescope for Quantum Key Distribution
*Gianluca De Santis* (*Technology Innovation Institute*); *Alessandro Grosso* (*Technology Innovation Institute*); *Konstantin Kravtsov* (*Technology Innovation Institute*); *Sana Amairi-Pyka* (*Technology Innovation Institute*); *James A. Grieve* (*Technology Innovation Institute*);

00:00 On-chip Multiplexed Quantum Random Number Generator
*Jaideep Singh* (*Technology Innovation Institute*); *Karen Sloyan* (*Technology Innovation Institute*); *Sujith Chandran* (*Technology Innovation Institute*); *James A. Grieve* (*Technology Innovation Institute*);

00:00 A Study of Polarization Mode Dispersion on Broadband Entanglement-based Quantum Communications
*Vadim Rodimin* (*Technology innovation Institute*); *Konstantin Kravtsov* (*Technology Innovation Institute*); *Rui Ming Chua* (*Technology innovation Institute*); *Gianluca De Santis* (*Technology Innovation Institute*); *Aleksei Ponasenko* (*Technology innovation Institute*); *Yury Kurochkin* (*Technology innovation Institute*); *Alexander Ling* (*Technology innovation Institute*); *James A. Grieve* (*Technology Innovation Institute*);

## Session 1P4b
## The Classical and Quantum Theory of Electromagnetic Fields

**Monday PM, May 5, 2025**

**Room 4 - Capital Suite 1**

Organized by Mohammad Sajjad Mirmoosa
Chaired by Mohammad Sajjad Mirmoosa

00:00 Invited From Negative-impedance Elements to Electromagnetics of 'Active Negative Materials'
*Silvio Hrabar* (*University of Zagreb*);

00:00 Interpreting the Evolution of Electromagnetic Sources in Homogeneous Fields via Lorentz Transformations
*Ivanina Ilieva* (*Karlsruhe Institute of Technology*); *Ivan Fernandez-Corbaton* (*Karlsruhe Institute of Technology*);

00:00 Superluminal Spot as a Source of Supershort Flashes of Coherent Radiation
*Alexandra I. Baranova* (*National Research Nuclear University "MEPhI"*); *Alexey A. Tishchenko* (*National Research Nuclear University "MEPhI"*);

00:00 Invited Nanoscale Radiative Heat Transfer in Nonlocal and Topological Systems
*Svend-Age Biehs* (*Carl von Ossietzky Universitat*);

00:00 Electromagnetically Induced Transparency in Relativistic Plasma
*Wei-Min Wang* (*Renmin University of China*); *Tie-Huai Zhang* (*Institute of Physics, Chinese Academy of Sciences*); *Yu-Tong Li* (*Institute of Physics, Chinese Academy of Sciences*);

00:00 Invited Quantum Coherence Uncertainty of Optical Fields
*M. Hanhisalo* (*University of Eastern Finland*); *Mohammad Sajjad Mirmoosa* (*University of Eastern Finland*); *Tero Setälä* (*University of Eastern Finland*); *Ł. Rudnicki* (*University of Eastern Finland*); *Andreas Norrman* (*University of Eastern Finland*);

00:00 Invited Imitating a Material Response through DC-biased Spatiotemporal Modulation
*Grigorii A. Ptitcyn* (*University of Pennsylvania*); *Diego Martinez Solís* (*Universidade de Vigo*); *Mohammad Sajjad Mirmoosa* (*University of Eastern Finland*); *Nader Engheta* (*University of Pennsylvania*);

## Session 1P5
## Functional Nanomaterials for Optical Sensing and Imaging 2

**Monday PM, May 5, 2025**

**Room 5 - Capital Suite 2**

Organized by Pier Paolo Pompa

Chaired by Pier Paolo Pompa

00:00 Tamm Plasmon Resonance as Optical Fingerprint of Silver/Bacteria Interaction
*S. Normani* (*Istituto Italiano di Tecnologia*); *P. Bertolotti* (*Istituto Italiano di Tecnologia*); *F. Marangi* (*Istituto Italiano di Tecnologia*); *G. Lanzani* (*Politecnico di Milano*); *F. Scotognella* (*DISAT, Politecnico di Torino*); *Giuseppe Maria Paterno* (*Istituto Italiano di Tecnologia*);

00:00 Invited CRSIPR/Cas12a Powered on Optical Fiber for Point-of-care Detection of Multiple Cytokines
*Siyi Zou* (*The Chinese University of Hong Kong*); *Guozhen Liu* (*The Chinese University of Hong Kong*);

00:00 Invited Atomistic Modeling of the Detection and Identification of Biomolecules by Molecular Plasmonics
*Stefano Corni* (*University of Padua*);

00:00 Smartphone-integrated YOLOv$_4$-CNN for Rapid and Accurate Colorimetric Antioxidant Analysis in Saliva at Point-of-care
*Youssef Amin* (*Istituto Italiano di Tecnologia (IIT)*); *Paola Cecere* (*Istituto Italiano di Tecnologia (IIT)*); *Tania Pomili* (*Istituto Italiano di Tecnologia (IIT)*); *Pier Paolo Pompa* (*Italian Institute of Technology*);

00:00 Sensitivity-enhanced Competitive Lateral Flow Immunoassays Using Polycaprolactone Electrospun Stacking Pads: A Novel Approach for Estrous Detection in Whole Blood
*Helena Torné-Morató* (*Istituto Italiano di Tecnologia*); *Lucia Pesenti* (*Istituto Italiano di Tecnologia*); *V. Tripathi* (*Istituto Italiano di Tecnologia*); *Pier Paolo Pompa* (*Italian Institute of Technology*);

00:00 Invited 2D Materials and Imaging: From Immune Interactions to Cell Labeling
*Lucia Gemma Delogu* (*Khalifa University of Science & Technology*);

00:00 Invited Will There be a New Age for Biosensor Designs as Exemplified for Detection of Viruses in Humans, Plants and Insects
*Subhankar Sahu* (*Université de Strasbourg*); *Christophe Ritzenthaler* (*Université de Strasbourg*); *Rabah Boukherroub* (*Univ. Lille, CNRS, Centrale Lille, Univ. Polytechnique Hauts-de-France, UMR 8520-IEM*); *Sabine Szunerits* (*Univ. Lille, CNRS, Centrale Lille, Univ. Polytechnique Hauts-de-France, UMR 8520-IEM*);

00:00 Carbon Dots Interactions with the Immune System: From Imaging to Biomedical Applications
*Roberta Cagliani* (*Khalifa University of Science & Technology*); *Linda Giro* (*University of Padua*); *Laura Fusco* (*University of Padua*); *Arianna Gazzi* (*University of Padua*); *Francesca Arcudi* (*Northwestern University*); *Maurizio Prato* (*INSTM UdR Trieste, University of Trieste*); *Lucia Gemma Delogu* (*Khalifa University of Science & Technology*);

00:00 Invited Advancing Superconducting Single-photon Detectors by Nanophotonic Strategies
*Cesare Soci* (*Nanyanag Technological University*);

00:00 Invited Polymeric Bragg Stacks as Holistic Optical Sensors for Molecular Recognition
*Paola Lova* (*University of Genova*);

## Session 1P6
## Ultrafast and Nonlinear Nanophotonics 2

**Monday PM, May 5, 2025**

**Room 6 - Capital Suite 3**

Organized by Sergey Makarov, Mihail I. Petrov, Andrey A. Bogdanov, Costantino De Angelis

Chaired by Sergey Makarov, Costantino De Angelis

00:00 Exciton-polariton Driven Self-phase Modulation in Planar Perovskite Waveguide Slabs
*Nikita Glebov* (*Ecole Polytechnique Federale de Lausanne*); *Mikhail Masharin* (*Ecole Polytechnique Federale de Lausanne*); *Alexey V. Yulin* (*ITMO University*); *A. O. Mikhin* (*ITMO University*); *M. R. Miah* (*Bilkent University*); *Hilmi Volkan Demir* (*Bilkent University*); *Dmitry N. Krizhanovskii* (*University of Sheffield*); *Vasily Kravtsov* (*ITMO University*); *Anton Samusev* (*Technische Universität Dortmund*); *Sergey Makarov* (*ITMO University*);

00:00 Addressing Ultrafast Electron Dynamics of Photocurrents Induced by Optical Pulses in Plasmonic Nanogaps
*Javier Aizpurua* (*University of the Basque Country UPV/EHU*); *A. G. Borisov* (*Institut des Sciences Moleculaires d'Orsay*);

00:00 Tunable Nanostructuring for van der Waals Materials
*Gleb I. Tselikov* (*Emerging Technologies Research Center, XPANCEO*); *Anton A. Minnekhanov* (*Emerging Technologies Research Center, XPANCEO*); *Georgy A. Ermolaev* (*Emerging Technologies Research Center, XPANCEO*); *Gleb V. Tikhonowski* (*Emerging Technologies Research Center, XPANCEO*); *Ivan S. Kazantsev* (*Emerging Technologies Research Center, XPANCEO*); *Ivan A. Kruglov* (*Emerging Technologies Research Center, XPANCEO*); *Alexander V. Syuy* (*Emerging Technologies Research Center, XPANCEO*); *Aleksey V. Arsenin* (*Emerging Technologies Research Center, XPANCEO*); *Valentyn S. Volkov* (*Emerging Technologies Research Center, XPANCEO*);

00:00 Nonlinear Optics and Ultrafast Carrier Dynamics in 2D Materials
*F. Javier García de Abajo* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*);

00:00 Soft Organic Materials for Photonics
*Rajadurai Chandrasekar* (*University of Hyderabad*);

00:00 Advances in Topology Optimization for Integrated Optics and Meta-photonics
*Antonio Cala Lesina* (*Leibniz University Hannover*);

00:00 The Interplay of Exciton-polaritons and Phonons in Low-dimensional Semiconductor Systems
*Anton Samusev* (*Technische Universität Dortmund*);

00:00 Third Harmonic Generation of Visible Light from Silicon-based High-contrast Nonlocal Metasurfaces Supporting Quasi-bound States in the Continuum
*Paolo Franceschini* (*University of Brescia*); *Andrea Tognazzi* (*National Institute of Optics — National Research Council (INO-CNR)*); *Evgenii Menshikov* (*University of Brescia*); *Ivano Alessandri* (*University of Brescia*); *Alfonso C. Cino* (*University of Palermo*); *Domenico De Ceglia* (*University of Brescia*); *Leonid Yu. Beliaev* (*Technical University of Denmark*); *Radu Malureanu* (*Technical University of Denmark*); *Osamu Takayama* (*Technical University of Denmark*); *Andrei V. Lavrinenko* (*Technical University of Denmark*); *Costantino De Angelis* (*University of Brescia*);

00:00 Modelling and Exploiting Concurrent Second- and Third-order Nonlinearities in Nanophotonic Waveguides
*Mohammed F. Saleh* (*Heriot-Watt University*); *Simone Lauria* (*Heriot-Watt University*); *Mahmoud Almassri* (*Heriot-Watt University*);

00:00 Quasi-deterministic Single-photon Source at Mid-infrared Frequencies Using a Cascaded Quantum System
*Jake Iles-Smith* (*The University of Sheffield*); *Mark Kamper Svendsen* (*Max Planck Institute for the Structure and Dynamics of Matter and Center for Free-Electron Laser Science & Department of Physics*); *Angel Rubio* (*Universidad del Pais Vasco*); *Martijn Wubs* (*Technical University of Denmark*); *Nicolas Stenger* (*Technical University of Denmark*);

00:00 Van der Waals Heterostructure Metasurfaces
*Luca Sortino* (*Ludwig-Maximilians-Universität München*);

00:00 Transition Metal Dichalcogenides for High-index Nanophotonics, Nonlinear Optics, and Strong Light-matter Coupling
*Timur O. Shegai* (*Chalmers University of Technology*);

00:00 Optomechanics with Light-matter Bose-Einstein Condensates
*Anton V. Zasedatelev* (*Aalto University School of Science*);

00:00 Waveguide-integrated 2D Materials for Efficient and Ultrafast All-optical Modulation
*Haitao Chen* (*National University of Defense Technology*); *Hongyuan Cao* (*Zhejiang University*); *Qingwei Zhou* (*National University of Defense Technology*); *Daoxin Dai* (*Zhejiang University*);

00:00 Ultracompact Nonlinear Platforms Based on van der Waals Semiconductors for Classical and Quantum States of Light
*Chiara Trovatello* (*Politecnico di Milano*);

## Session 1P7
## Organic and Inorganic Optoelectronic Devices 2

**Monday PM, May 5, 2025**

**Room 7 - Capital Suite 4**

Organized by Wallace C. H. Choy

Chaired by Wallace C. H. Choy

00:00 Invited Defect Engineering in Perovskites for Optoelectronic Devices: Use of Perovskite Polytypes
*Hobeom Kim* (*Gwangju Institute of Science and Technology (GIST)*);

00:00 External Fluorescence Governing the Open-circuit Voltage Dynamics in Organic Solar Cells
*Francisco Bernal-Texca* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*); *Jordi Martorell* (*ICFO-Institut de Ciencies Fotoniques*);

00:00 Invited Design Strategies for High Definition and Highly Efficient Quantum Dot Light-emitting Diodes with Deformable Formfactors
*Moon Kee Choi* (*UNIST*);

00:00 Invited Non-destructive Photopatterning of Electronic Materials
*Bong Soo Kim* (*Ulsan National Institute of Science and Technology (UNIST)*);

00:00 Tailoring Perovskite Surfaces for Durable and Efficient Light-emitting Diodes
*Tae-Hee Han* (*Hanyang University*);

00:00 Invited Spacer Structures of Perovskite Nanomaterials for Efficiency and Stability of Light Emtting Diodes
*Wallace C. H. Choy* (*The University of Hong Kong*);

00:00 Invited Advancing Organic Solar Cells and Inorganic Perovskite/Organic Tandem Solar Cells Approaching 26%
*Gang Li* (*Hong Kong Polytechnic University*); *Yu Han* (*The Hong Kong Polytechnic University*); *Jiehao Fu* (*The Hong Kong Polytechnic University*); *Jiaming Huang* (*The Hong Kong Polytechnic University*); *Zhiwei Ren* (*The Hong Kong Polytechnic University*);

00:00 Invited The Treatment of Self-assembled Monolayers for Stable Inverted Perovskite Solar Cells
*Feng Yan* (*The Hong Kong Polytechnic University*);

00:00 Invited Atomic-scale Microstructure of Lead Halide Perovskite Thin Films
*Mathias Uller Rothmann* (*Xianhu Laboratory*);

00:00 Development of Non-fullerene Acceptors for OPV
Invited
*Yun-Hi Kim* (*Gyeongsang National University*);

00:00 Hole Transfer Layer Control for Efficient and Thermally
Invited Stable Perovskite Solar Cells
*Dong Suk Kim* (*Ulsan National Institute of Science and Technology (UNIST)*);

00:00 Pure Blue Emission Halide Perovskite Light Emitting
Invited Diodes Based on Single Bromide Composition
*Byungha Shin* (*KAIST*);

00:00 Direct Optical Lithography of Colloidal Luminescent
Invited Nanocrystals with Ligand Engineering
*Himchan Cho* (*Korea Advanced Institute of Science and Technology (KAIST)*);

## Session 1P8a
## SC4&SC3&SC2: Meeting of Minds for Cross-continental Collaboration in Photonics and Electromagnetics 1

**Monday PM, May 5, 2025**

**Room 8 - Capital Suite 5**

Organized by Hugo Enrique Hernandez-Figueroa, Pavel A. Belov, Boon S. Ooi, Sailing He, Andrew Forbes

Chaired by Hugo Enrique Hernandez-Figueroa, Pavel A. Belov

00:00 Energy Consumption Optimization Strategy for Edge Computing Networks Based on UAV-assisted
*Chenwei Feng* (*Xiamen University of Technology*); *Yangbin Huang* (*Xiamen University of Technology*); *Silei Li* (*Xiamen University of Technology*);

00:00 Wireless Charging for AA Battery with a Curved Receiving Coil
*Nikita A. Olekhno* (*ITMO University*); *E. D. Demeshko* (*ITMO University*); *A. A. Mineev* (*ITMO University*); *D. A. Chernomorov* (*ITMO University*); *O. I. Burmistrov* (*ITMO University*); *S. S. Ermakov* (*ITMO University*); *Alina D. Rozenblit* (*ITMO University*); *P. S. Seregin* (*ITMO University*); *A. A. Dmitriev* (*ITMO University*);

00:00 Coupling Regimes in Optical Systems with Essential Retardation
*Alexey A. Dmitriev* (*ITMO University*); *Mikhail V. Rybin* (*ITMO University*);

00:00 Tuneable Photonics Based on Phase Change Materials
*Artem D. Sinelnik* (*ITMO University*);

00:00 Improving Breast MRI at 1.5 T with Wireless Coils
*Viktor M. Puchnin* (*ITMO University*); *Alexey P. Slobozhanyuk* (*ITMO University*); *Alena V. Shchelokova* (*ITMO University*);

00:00 Hyperspectral Terahertz Focal-plane Array Based on
Invited Plasmonic Photoconductive Nanoantennas
*Mona Jarrahi* (*University of California-Los Angeles (UCLA)*);

## Session 1P8b
## THz Communication System and Devices

**Monday PM, May 5, 2025**

**Room 8 - Capital Suite 5**

Organized by Tetsuya Kawanishi

Chaired by Tetsuya Kawanishi

00:00 Room Temperature Detection of Incoherent Terahertz
Keynote Radiation at the Fundamental Limits through Plasmonic Photomixing
*Mona Jarrahi* (*University of California-Los Angeles (UCLA)*);

00:00 A Multiband Circularly Polarized SIW-horn Antenna for Sub-theraherz Frequencies
*David Pouhè* (*Reutlingen University of Applied Sciences*); *Umit Ucar* (*Reutlingen University*);

00:00 **8** × **8** Element Circularly Polarized Array Antenna in the 300-GHz Band
*Seiji Nishi* (*Waseda University*); *Kazuhiko Tamesue* (*Waseda University*); *Toshio Sato* (*Waseda University*); *Takuro Sato* (*Waseda University*); *Tetsuya Kawanishi* (*Waseda University*);

00:00 A THz Si-based Luneburg Lens Multi-beam Antenna
*Muhib Ullah* (*Zhejiang University*); *Xidong Wu* (*Zhejiang University*);

00:00 On the Design of Beamforming Network-based Multi-beam Antennas for THz Communications
*Zulfi* (*Institut Teknologi Bandung*); *Nachwan Mufti Adriansyah* (*Telkom University*); *Joko Suryana* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Design of Antenna-coupled Electrode Electro-optic Modulator Operating in THz-band for Beyond 5G Wireless Systems
*Shunsuke Nakamori* (*Mie University*); *Mitsuki Masamoto* (*Mie University*); *Yui Otagaki* (*Mie University*); *Hiroshi Murata* (*Mie University*);

00:00 A Demonstration of a 300-GHz Backhaul Link Using a Lensed Patch Antenna and an OFDM Transceiver
*Kazuhiko Tamesue* (*Waseda University*); *Seiji Nishi* (*Waseda University*); *Toshio Sato* (*Waseda University*); *Takuro Sato* (*Waseda University*); *Tetsuya Kawanishi* (*Waseda University*);

00:00 Photonics-based 300 GHz Transceiver Using SFP+ Module and UTC-PD
*Shintaro Hisatake* (*Gifu University*); *Towa Ono* (*Gifu University*); *Kotaro Matsushima* (*Gifu University*); *Shinya Ochi* (*Gifu University*); *Wataru Kumazawa* (*Gifu University*); *Ayumu Yabuki* (*SoftBank Corp.*); *Isao Morohashi* (*National Institute of Information and Communications Technology (NICT)*); *Atsushi Kanno* (*Nagoya Institute of Technology*); *Norihiko Sekine* (*National Institute of Information and Communications Technology*); *Junichi Nakajima* (*SoftBank Corp.*);

00:00 THz Communication System at 2 THz-band Using Optical Comb-based Transmitter: Towards High Bit Rate Transmission
*Isao Morohashi* (*National Institute of Information and Communications Technology (NICT)*); *Kazuhiro Kobayashi* (*Tokyo Metropolitan University*); *Yoshihisa Irimajiri* (*National Institute of Information and Communications Technology*); *Akira Kawakami* (*National Institute of Information and Communications Technology*); *Norihiko Sekine* (*National Institute of Information and Communications Technology*);

## Session 1P9
## Advanced Nummerical Methods in Computational Electromagnetics 2

**Monday PM, May 5, 2025**

**Room 9 - Capital Suite 6**

Organized by Mei Song Tong, Gaobiao Xiao

Chaired by Mei Song Tong

00:00 A 3-D Large-scale Electromagnetic Simulator with Pseudospectral Time-Domain Method for Scattering and Radar Sounding Applications
*Weiliang Li* (*Chinese Academy of Sciences, National Space Science Center*); *Yang Lei* (*Chinese Academy of Sciences, National Space Science Center*); *Marco Mastrogiuseppe* (*Link Campus University*); *Maria Carmela Raguso* (*California Institute of Technology*);

00:00 On Application of Weyl Formalism to Model the Ordinary and Extraordinary Mode Coupling in a Magnetized Plasma
*Egor D. Gospodchikov* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Pavel A. Chuvakin* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Alexey A. Balakin* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Alexander G. Shalashov* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*);

00:00 Invited Low-frequency Electromagnetic Scattered Fields of Seabed Buried Metal Targets with the Equivalent Surface Current Method
*Xiaoshuai Wang* (*Northwestern Polytechnical University*); *Jinhong Wang* (*Northwestern Polytechnical University*); *Binfeng Yang* (*Air Force Engineering University*);

00:00 Study on Universal Approximators for the EFVIE Solution of 3-D Inhomogeneous Dielectric Objects
*Jiyuan Wang* (*Beijing Institute of Technology*); *Xinyue Lou* (*Beijing Institute of Technology*); *Xiao-Min Pan* (*Beijing Institute of Technology*);

00:00 Crack Detection in Structural Materials Utilizing DGS-based Sensor Systems
*Sukrith Sunil* (*Amrita Vishwa Vidyapeetham*); *S. K. Sourabh* (*Amrita Vishwa Vidyapeetham*); *Simla Simson* (*Amrita Vishwa Vidyapeetham*); *Adithya Krishna Menon* (*Amrita Vishwa Vidyapeetham*); *M. P. Hariprasad* (*Amrita Vishwa Vidyapeetham*); *Sreedevi K. Menon* (*Amrita Vishwa Vidyapeetham*);

00:00 A Parametric Optimization Algorithm Based on the U-Net for Two-dimensional Electromagnetic Reconstruction
*Hao Ran Yang* (*Shanghai Normal University*); *Chunxia Yang* (*Shanghai Normal University*); *Mei Song Tong* (*Tongji University*);

00:00 Constitutive Method for Electromagnetic Negative Refractive Index Lenses Using a Two-dimensional Meander Microstrip-line Unit Cell Structure
*Tsutomu Nagayama* (*Kagoshima University*); *Josei Mori* (*Kagoshima University*); *Seiji Fukushima* (*Kagoshima University*); *Toshio Watanabe* (*Kagoshima University*);

00:00 Numerical and Analytical Approaches for the Identification of Synchronous Machines' Higher-order Models Parameters via SSFR Tests
*Farid Leguebedj* (*National Polytechnic School, ENP*); *Djamel Boukhetala* (*National Polytechnic School, ENP*);

00:00 Efficient Analysis of Near-field EM Scattering from Complex Targets Coated with Anisotropic Media
*Xiaoyi Wang* (*Wuhan University*); *Zhengqiu Tian* (*Wuhan University*); *Si-Yuan He* (*Wuhan University*);

00:00 Fully-featured Inverse Design Tool for Si Photonics from Open-source Components
*Anton N. Sofronov* (*Samsung Research*); *Dina Yakovleva* (*Samsung Research*);

00:00 Spiral Scanning of a Charged Particle Beam
*Mikayel Ivanyan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*);

00:00 Electrical-thermal Co-simulation of Semiconductor Devices Using Discontinuous Galerkin Methods
*Tianxiang Song* (*Shanghai Jiao Tong University*); *Ping Li* (*University of Electronic Science and Technology of China*); *Liang Chen* (*King Abdullah University of Science and Technology (KAUST)*); *Ming Dong* (*Technology Innovation Institute*);

00:00 Opimization of Material Parameters for Maximum Electromagnetic Absorption
*Salih Nişanci* (*Turkish German University*); *Ali Yapar* (*Istanbul Technical University*); *Mohamed Hadidy* (*RheinMain University of Applied Sciences*);

00:00 Invited An Effective Transferable Neural Network Method for Electromagnetic Scattering Problems
*Yang Liu* (*Institute of Applied Physics and Computational Mathematics*); *Zhequan Shen* (*Beihang University*); *Liyong Zhu* (*Beihang University*);

00:00 Accurate Solutions of Time-domain Electric Field Integral Equations for Transient Electromagnetic Analysis of Penetrable Objects
*Zhi Dian Yuan* (*Tongji University*); *Wen Tao Yuan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Machine Learning-driven Design and Characterization of Integrated Superconducting Plasmonic Metasurfaces
*Soham A. Gadre* (*University of Glasgow*); *Kaveh Delfanazari* (*University of Glasgow*);

## Session 1P10
## Remote Sensing of Water and Energy Cycles

**Monday PM, May 5, 2025**

**Room 10 - Capital Suite 7**

Organized by Hui Lu, Jiancheng Shi

Chaired by Hui Lu, Jiancheng Shi

00:00 Quantitative Precipitation Estimation and Prediction Using Geostationary Satellite Observations and a Lifelong Learning Scheme
*Haonan Chen* (*Colorado State University*);

00:00 Generation of Hourly, 0.01°, All-weather Hemispherical Land Surface Temperature over Qinghai-Tibetan Plateau Based on Geostationary and Polar-orbiting Satellite Data
*Hua Li* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Qiang Na* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Biao Cao* (*Beijing Normal University*); *Qinhuo Liu* (*Aerospace Information Research Institute, Chinese Academy of Sciences*);

00:00 Overview of the Global LAnd Surface Satellite (GLASS) ET and Soil Moisture Products
*Shunlin Liang* (*The University of Hong Kong*); *Yunjun Yao* (*Beijing Normal University*); *Yufang Zhang* (*Northwestern Polytechnical University*);

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

00:00 The Importance of the Initial Spatial Resolution in Soil Moisture Map Downscaling
*Jingyao Zheng* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Nemesio Rodriguez-Fernandez* (*CESBIO*); *Tianjie Zhao* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jiancheng Shi* (*National Space Science Center, Chinese Academy of Sciences*);

00:00 A Spatio-temporal Seamless Daily Soil Moisture Product Derived from SMOS L-band Observations Spanning over a Decade
*Yu Bai* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Li Jia* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Tianjie Zhao* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Zhiqing Peng* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jiancheng Shi* (*National Space Science Center, Chinese Academy of Sciences*);

00:00 Modeling and Satellite Observations on Water Cycle over the Tibet Plateau
*Jiancheng Shi* (*National Space Science Center, Chinese Academy of Sciences*);

00:00 High Resolution Soil Moisture Data Derived from UAV-based Radiometer Observations
*Hui Lu* (*Tsinghua University*);

00:00 Enhanced Cloud Water Path Estimation Utilizing Geostationary Satellite Infrared Data
*Gegen Tana* (*National Space Science Center, Chinese Academy of Sciences*); *Lesi Wei* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Huazhe Shang* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jian Xu* (*National Space Science Center, Chinese Academy of Sciences*); *Dabin Ji* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jiancheng Shi* (*National Space Science Center, Chinese Academy of Sciences*); *Husi Letu* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Chong Shi* (*Aerospace Information Research Institute, Chinese Academy of Sciences*);

00:00 Advancing Cloud Classification over the Tibetan Plateau: A New Algorithm Reveals Seasonal and Diurnal Variations
*Husi Letu* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Fangling Bao* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Ri Xu* (*University of Gothenburg*); *Deliang Chen* (*Institute of Tibetan Plateau Research, Chinese Academy of Sciences*); *Tandong Yao* (*Tsinghua University*); *Lesi Wei* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Chong Shi* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jiancheng Shi* (*National Space Science Center, Chinese Academy of Sciences*);

00:00 Quantitative Precipitation Estimation in the Nam Co Basin with X-band Dual-polarization Weather Radar
*Yingying Chen* (*Institute of Tibetan Plateau Research, Chinese Academy of Sciences*); *Run Han* (*Institute of Tibetan Plateau Research, Chinese Academy of Sciences*); *Xiaoyan Ling* (*Institute of Tibetan Plateau Research, Chinese Academy of Sciences*); *Kun Yang* (*Tsinghua University*);

00:00 An Integrated Multi-scale Soil Moisture and Temperature Observatory on the Tibetan Plateau
*Lixin Dong* (*Key Laboratory of Radiometric Calibration and Validation for Environmental Satellites*); *Lizheng Wang* (*Chang'an University*); *Shihao Tang* (*National Satellite Meteorological Center, CMA*); *Lin Chen* (*Key Laboratory of Radiometric Calibration and Validation for Environmental Satellites*); *Na Xu* (*Key Laboratory of Radiometric Calibration and Validation for Environmental Satellites*);

00:00 Spatiotemporal Super-resolution of Weather Radar Observations Using Bidirectional Deformable Convolutional LSTM
*Yonghua Zhang* (*Guangdong Meteorological Service Center*); *Jianxing Wu* (*Pearl River Comprehensive Technology Center of Pearl Water Resources Commission, MWR*); *Yi Zhang* (*Guangzhou Meteorological Integrated Security Center*); *Ping Zhu* (*Guangdong Meteorological Service Center*); *Haonan Chen* (*Colorado State University*); *Ping Shen* (*Guangdong Emergency Early Warning Release Center*); *Zhecheng Wu* (*China Datacom Corporation Limited*);

00:00 A Fusion Method for High Spatial-temporal Resolution Total Precipitable Water in All-weather Condition over the Tibet Plateau Based on Multi-source Satellites Remote Sensing Data
*Dabin Ji* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Qixiang Sun* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Husi Letu* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Jiancheng Shi* (*National Space Science Center, Chinese Academy of Sciences*);

00:00 Rebuild of Liquid Cloud Profiles Based on an Analytical Cloud Profiling Model
*Huazhe Shang* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Husi Letu* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Lesi Wei* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Run Ma* (*Sichuan University of Science & Engineering*); *Yutong Wang* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Zhaoxin Cai* (*Meteorological Bureau of Shanxi Province*); *Shuai Yin* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Chong Shi* (*Aerospace Information Research Institute, Chinese Academy of Sciences*);

## Session 1P0
## Poster Session 2

**Monday PM, May 5, 2025**
**13:30 PM - 18:30 PM**
**Room Poster Area**

00:00 Einstein Box: The Photon-in-a-box Description Using the Four-vector Formalism
*Manuel Fiolhais* (*University of Coimbra*);

00:00 A Curvature-compensated Based on Subthreshold MOSFETs Low-power Bandgap Reference
*Yuhang Xia* (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Yan Wen* (*Southwest Jiaotong University*);

00:00 A Fast Algorithm for Scattering Analysis of Multiple Moving Objects by a Tailored MLFMA and CRWG Basis Functions
*Yu-Rui Jia* (*Southwest University of Science and Technology*); *Yuan Zhang* (*University of Electronic Science and Technology of China*); *Tao Liu* (*Sichuan Jiuzhou Electric Group Co., Ltd.*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Liping Wang* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 A Direct Solver with GPU Parallel Acceleration Block LU Decomposition for Electromagnetic Scattering/Radiation Problems
*Haonan He* (*Southwest University of Science and Technology*); *Jin Wang* (*AVIC Chengdu Aircraft Industrial (Group) Co., Ltd.*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Zhi-Hao Deng* (*Southwest University of Science and Technology*); *Jiaming Yang* (*Southwest University of Science and Technology*); *Weiyu Xia* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *"nobreakspace* (); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 A Comparative Study of Different Magnetic Gap Modeling Methods Based on PEEC
*Qiwen Yan* (*Southwest University of Science and Technology*); *Xiaoping Li* (*Southwest University of Science and Technology*); *Xu Wang* (*DeTooLIC Technology Co., Ltd.*); *Qiusen He* (*Zhejiang University*); *Yin Sun* (*DeTooLIC Technology Co., Ltd.*); *Jun Fan* (*Southwest University of Science and Technology*); *Shufang Li* (*Beijing University of Posts and Telecommunications*); *Qiangming Cai* (*Southwest University of Science and Technology*);

00:00 Non-periodic Bursts Scheme in Radar Pulse Train for UAV Drone Detection by Multi-function Radar
*Paweł Kabacik* (*Wrocław University of Science and Technology*); *Pawel Biernacki* (*Wroclaw University of Technology*); *S. Gmyrek* (*Wroclaw University of Technology*); *D. Sysak* (*Wroclaw University of Technology*);

00:00 Rainfall Variability in Saudi Arabia: A Case Study of Solar and Atmospheric Influences in Gizan Region
*Hadeel A. Alamoudi* (*King Abdulaziz University*); *Abdullrahman H. Maghrabi* (*King Abdulaziz City for Science and Technology*); *Aied S. Alruhaili* (*King Abdulaziz University*);

00:00 Nanoimprinted Quantum Dot Topological Laser with Multiple Corner States
*Qiang Zhang* (*Shenzhen University*); *Rui Duan* (*University of Macau*); *Baile Zhang* (*Nanyang Technological University*); *Handong Sun* (*University of Macau*);

00:00 Impact of Substrate in All-dielectric Metasurfaces for Generalized Brewster Effect and Photonic Spin-hall Effect in Terahertz Wave
*Junqing Shi* (*The Hong Kong University of Science and Technology (Guangzhou)*); *Haitao Li* (*The Hong Kong University of Science and Technology (Guangzhou)*); *Xiaoxiao Wu* (*The Hong Kong University of Science and Technology (Guangzhou)*);

00:00 Multiband Terahertz Spiral Metasurface for Detection of Malaria with Enhanced Sensitivity
*Afzaal Ahmad* (*University of Glasgow*); *Muhammad Zubair* (*University of Glasgow*); *Jalil Ur Rehman Kazim* (*University of Glasgow*); *Muhammad Ali Imran* (*University of Glasgow*); *Qammer H. Abbasi* (*University of Glasgow*);

00:00 Study of a Gas Discharge Supported by 69 μm FEL Radiation
*A. P. Veselov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *A. V. Sidorov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Vitaliy V. Kubarev* (*Budker Institute of Nuclear Physics, Russian Academy of Science, Siberian Branch*); *A. V. Vodopyanov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *O. A. Shevchenko* (*Budker Institute of Nuclear Physics, Russian Academy of Science, Siberian Branch*); *Ya. I. Gorbachev* (*Budker Institute of Nuclear Physics, Russian Academy of Science, Siberian Branch*);

00:00 High-harmonic THz Gyrotron Based on Excitation of a Surface Plasmon Polariton Wave
*Vasiliy V. Gerasimov* (*Budker Institute of Nuclear Physics SB RAS*); *Valeria D. Kukotenko* (*Budker Institute of Nuclear Physics SB RAS*); *Ekaterina M. Novak* (*Institute of Applied Physics RAS*); *Andrei V. Savilov* (*Institute of Applied Physics, RAS*);

00:00 Research on a 3D Fiber Bragg Grating Accelerometer with Miniature and Integrated Structure Based on Composite Circular Hinge
*Lina Yue* (*Wuhan University of Technology*); *Jinding Guo* (*Wuhan University of Technology*); *Qiuming Nan* (*Wuhan University of Technology*); *Ai Zhou* (*Wuhan University of Technology*); *Juntao Wang* (*Wuhan University of Technology*); *Sheng Li* (*Wuhan University of Technology*);

00:00 Targeting 100 Gbps Inter-satellite Links: Mm-wave vs Free Space Optics
*Xavier Artiga* (*Centre Tecnologic de Telecomunicacions de Catalunya (CTTC/CERCA)*);

00:00 Stimulated Brillouin Scattering Based Microwave Signal Generation and Frequency Down Conversion
*Sha Zhu* (*Beijing University of Technology*); *Linwei Jin* (*Beijing University of Technology*); *Kunpeng Zhai* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Ninghua Zhu* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Edwin Yue-Bun Pun* (*City University of Hong Kong*);

00:00 High-precision In-situ Sensor for Dissolved Methane Isotope ($\boldsymbol{\delta^{13}}$C) Measurement in the Deep Sea Based on Off-axis Integrated Cavity Output Spectroscopy
*Mingsi Gu* (*Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences*); *Kun Liu* (*Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences*); *Xiaoming Gao* (*Anhui Institutes of Physical Science, Chinese Academy of Sciences*);

00:00 Human Vascular Analysis Based on Laser Speckle Contrast Imaging for Dermatology Applications
*Aqeel Ur Rehman* (*Information Technology University of the Punjab (ITU)*); *Ramna Khalid* (*Information Technology University (ITU) of the Punjab*); *Humberto Cabrera* (*The Abdus Salam International Centre for Theoretical Physics*); *Qammer H. Abbassi* (*University of Glasgow*); *Muhammad Zubair* (*University of Glasgow*); *Muhammad Qasim Mehmood* (*Information Technology University (ITU)*);

00:00 Experimental Observation of Spin-orbit Conversion in a Vector Optical Vortex
*Vladislav Dmitrievich Zaitsev* (*Samara National Research University*); *Sergey S. Stafeev* (*NRC Kurchatov Institute*); *Victor V. Kotlyar* (*Image Processing Systems Institute — Branch of the Federal Scientific Research Centre "Crystallography and Photonics" of RAS*);

00:00 Fiber Optical Sensors Solutions for Structural Health Monitoring of Concrete Constructions
*Nauris Silkans* (*Riga Technical University*); *Janis Braunfelds* (*Riga Technical University*); *Ugis Senkans* (*Riga Technical University*); *Martins Suta* (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*);

00:00 Two Coupled DOPO on a Photonic Chip as an Elementary Cell for All-optical Integrated Coherent Ising Machine
*Alexander Konstantinovich Vorobyev* (*Russian Quantum Center*); *Andrei N. Danilin* (*Russian Quantum Center*); *Timur R. Yunusov* (*Russian Quantum Center*); *Artem E. Shitikov* (*Russian Quantum Center*); *Dmitry A. Chermoshentsev* (*Russian Quantum Center*); *Igor A. Bilenko* (*Russian Quantum Center*);

00:00 The Theory of a Gyrotron with an Arbitrary Resonator Cross-section and Fixed Axial Field Structure
*Andrey A. Ananichev* (*Institute of Applied Physics of the RAS*); *Andrey S. Zuev* (*Federal Research Center "Institute of Applied Physics RAS"*); *Andrey Pavlovich Fokin* (*Federal Research Center A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Mikhail Yu. Glyavin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 High-voltage Pulse Power Supplies for Powerful Sub-THz/THz Gyrotrons
*Boris Z. Movshevich* (*Institute of Applied Physics of the RAS*); *Andrey A. Ananichev* (*Institute of Applied Physics of the RAS*); *Mikhail Yu. Glyavin* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Design of W-band Sub-gigawatt Power Level Relativistic Gyrotron for High-gradient Accelerator Applications
*Vladislav Yur'evich Zaslavsky* (*Institute of Applied Physics, Russian Academy of Sciences*); *Nikolai Yu. Peskov* (*Institute of Applied Physics, Russian Academy of Sciences*); *K. A. Leshcheva* (*Institute of Applied Physics, Russian Academy of Sciences*); *Vladimir N. Manuilov* (*Institute of Applied Physics RAS*); *Andrey V. Arzhannikov* (*Budker Institute of Nuclear Physics RAS*); *D. A. Nikiforov* (*Budker Institute of Nuclear Physics, Russian Academy of Sciences*); *A. E. Levichev* (*Budker Institute of Nuclear Physics, Russian Academy of Sciences*); *Stanislav L. Sinitsky* (*Budker Institute of Nuclear Physics Russian Academy of Sciences*);

00:00 Analysis Methodology on Interference Impact of Fixed Service on 5G in 6 GHz Frequency Band
*Guntis Ancans* (*Riga Technical University*); *Arnis Ancans* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 A Novel Low-cost Resonant Cavity Sensor for Detection of Directional Displacements
*Yu Kun Liu* (*Tongji University*); *Yaming Xie* (*Tongji University*); *Guo Chun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 FDTD Analysis of Rice with Food Cover for Uniform Heating in Microwave Oven
*Gai Tokoro* (*National Institute of Technology, Kisarazu College*); *Rin Satoh* (*National Institute of Technology, Kisarazu College*); *Hiroto Jujo* (*National Institute of Technology, Kisarazu College*); *Takanobu Ohno* (*National Institute of Technology, Kisarazu College*); *Kosei Tanii* (*National Institute of Technology, Kisarazu College*); *Satoko Iida* (*National Institute of Technology, Kisarazu College*);

00:00 A Wide Band Slot Filter Antenna with Gain Enhancement
*Tong Li Yuan* (*Southwest University of Science and Technology*); *Chao Zou* (*Southwest University of Science and Technology*); *Tong Su* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Zhen-Yong Du* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yixiang Li* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 Hybrid Mirror Antenna Simulation
*K. S. Kharlamp'ev* (*National Research University "Moscow Power Engineering Institute"*); *Kirill Sergeyevich Sychev* (*National Research University "Moscow Power Engineering Institute"*); *I. A. Gromov* (*National Research University "Moscow Power Engineering Institute"*); *Nikita S. Maximov* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Anton A. Novikov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 A Low Profile Shared-aperture Omnidirectional Vertical Polarization Antenna
*Haonan Huang* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Liping Wang* (*Southwest University of Science and Technology*); *Meiying Li* (*Southwest University of Science and Technology*); *Chao Zou* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 Optimization of Geometric Structure of an Extended Antenna Field
*Alexey Mikhailovich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *S. V. Orobchenko* (*National Research University "Moscow Power Engineering Institute"*); *Alexei A. Komarov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Directional Antenna Element Design for Emitting UWB Signals
*Vitaliy Vladislavovich Trubetskoy* (*Moscow Technical University of Communications and Informatics (MTUCI)*); *A. M. Ignatov* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *R. G. Riazantsev* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Enhancing NFC Reader Communication Range with Retransmission Coils
*Yulia Grigorovich* (*ITMO University*); *Ildar Yusupov* (*ITMO University*); *Anton Kharchevskii* (*Tel Aviv University*); *Mikhail Udrov* (*ITMO University*);

00:00 A Novel Miniature Circular Eye-inspired UHF RFID Tag Antenna Design
*Zakaria Errachidi* (*Abdelmalek Essaadi University*); *Jamal Zbitou* (*Abdelmalek Essaadi University*); *Mohammed El Gibari* (*Nantes University/IETR*); *Mohammad Mashagbeh* (*University of Jordan*); *Noha Chahboun* (*Abdelmalek Essaadi University*);

00:00 An Anti-jamming Beamforming Method Based on Time-modulated Digital Coding Metasurface
*Dong-Fang Guan* (*National University of Defense Technology*); *Ziyang Gu* (*National University of Defense Technology*); *Yusheng Yang* (*National University of Defense Technology*); *Shijian Yu* (*National University of Defense Technology*); *Guanchao Chen* (*National University of Defense Technology*); *Zhangbiao Yang* (*National University of Defense Technology*);

00:00 ***H***-plane Coupling Reduction of a MIMO Array Utilizing Electric-magnetic Coupling Resonance
*Shengyuan Luo* (*Anhui University*); *Yingsong Li* (*Anhui University*);

00:00 Synergistic Mechatronics Antenna Design for Optimised Vehicle-to-Vehicle Communication in Future Intelligent Transport Networks
*Ahtsham UI Haq* (*University of Hertfordshire*); *Eugene A. Ogbodo* (*University of Hertfordshire, College Lane*); *Azunka N. Ukala* (*University of Hertfordshire, College Lane*);

00:00 Radar Sensing with Harmonic Detection Tags
*Bo-Jie Li* (*National Taipei University of Technology*); *Guan-Yu Chen* (*National Taipei University of Technology*); *Wei-Chen Cheng* (*National Taipei University of Technology*); *Hung-Kai Liao* (*National Taipei University of Technology*); *Jwo-Shiun Sun* (*National Taipei University of Technology*);

00:00 Deep Learning Based Approach for Realtime Drone Detection and Classification
*Anuj Abraham* (*Technology Innovation Institute*); *Santosh Sanjeev* (*Technology Innovation Institute*); *Sultan Abughazal* (*Technology Innovation Institute*); *Qingjie Yang* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Sub-femtofarad Capacitance Wireless Readout Enabled by Critical Points of Non-Hermitian Systems
*Ke Yin* (*Sichuan University*); *Kaihao Tang* (*Sichuan University*); *Lu Tan* (*Sichuan University*); *Huacheng Zhu* (*Sichuan University*); *Yang Yang* (*Sichuan University*);

00:00 Atmospheric Influence on Quantum Key Distribution on the Earth-Space Channel in the Subterahertz Frequency Range
*Ilya V. Lesnov* (*Institute of Applied Physics of the RAS*); *Vyacheslav F. Vdovin* (*Institute of Applied Physics of the RAS*); *Maria V. Efimova* (*Institute of Applied Physics of the RAS*);

00:00 Research on Permanent Magnet Synchronous Motor Control Based on Improved Genetic Optimization Fuzzy PI Algorithm
*Gaohua Xiong* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Huanfa Yi* (*Southwest University of Science and Technology*); *Yang Li Liu* (*Southwest University of Science and Technology*); *Yue Pan* (*Southwest University of Science and Technology*);

00:00 Modeling and Design of a Floating-point Reciprocal Solver Circuit Combining Lookup Tables and Newton's Iteration Method
*Bo Wang* (*Tongji University*); *Yuan Yang Du* (*Tongji University*); *Yu Zhao Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 A Variable On-time Buck Converter with High Efficiency and Fast Transient Response
*Wei Wang* (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Xiaolong Chen* (*Southwest Jiaotong University*);

00:00 An Improved Multiple Weighted Adaptive Kalman — Genetic Algorithm for Online State of Charge Estimation of Lithium-ion Batteries
*Gang Long* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*);

00:00 A Silicon-based MmW Power Amplifier Integrated with a Digital Power Detection Loop for Power Efficiency Enhancement
*Guangqiang Liu* (*Guangzhou University*); *Lin Peng* (*Guangzhou University*); *Rui Ma* (*Guangzhou University*); *Yukai Feng* (*Guangzhou University*); *Yanan Bao* (*Jincheng Research Institute of Opto-mechatronics Industry*); *Xuanbin Jiang* (*Guangzhou University*); *Liang Yuan* (*Guangzhou University*); *Gang Wu* (*Guangzhou University*); *Yicong Li* (*Guangzhou University*); *Zhihong Lin* (*Guangzhou University*);

00:00 Magnetic and Thermal Characterization of $Fe_{50}Co_{40}Ni_{10}$ Nanoalloys Obtained by High Energy Mechanical Alloying
*T. Gouasmia* (*Kasdi Merbah University*); *N. Loudjani* (*Brothers Mentouri University*); *M. Bououdina* (*Prince Sultan University*);

00:00 The Impact of Implemented 4-bit SIPO Shift Registers on Modern Electronic Systems
*Hussain Muteb Alrasheedi* (*Prince Sattam Bin Abdulaziz University*); *Muteb Ayed Alanazi* (*Prince Sattam Bin Abdulaziz University*);

## Session 2A1
## Chiral Metaphotonics 1

**Tuesday AM, May 6, 2025**

**Room 1 - CH B (A)**

Organized by Maxim V. Gorkunov, Yuri S. Kivshar

Chaired by Maxim V. Gorkunov, Yuri S. Kivshar

00:00 Invited Laser-Induced Graphene for Terahertz Metasurface Applications
*Xudong Wu* (*Beijing Institute of Technology*); *Bowen Deng* (*Beijing Institute of Technology*); *Zongyuan Wang* (*Beijing Institute of Technology*); *Bin Hu* (*Beijing Institute of Technology*);

00:00 Invited Spectral Features of a Microcavity with a Chiral Liquid Crystal Layer with Tangential-conical Boundary Conditions
*Pavel S. Pankin* (*Harbin Engineering University*);

00:00 Invited Maximally Chiral BIC Metasurfaces: From Tailored Chirality to Nonlinear Polaritonics
*Andreas Tittl* (*Ludwig-Maximilians-Universität München*);

00:00 Invited Dynamic Light Manipulation by Geometric Phase Metasurface Incorporated to Tamm Plasmon Polariton Structure
*Rashid Gelmedinovich Bikbaev* (*Kirensky Institute of Physics, Federal Research Center-Krasnoyarsk Scientific Center, Siberian Branch Russian Academy of Science*); *Yuri V. Konov* (*Kirensky Institute of Physics, Federal Research Center-Krasnoyarsk Scientific Center, Siberian Branch Russian Academy of Science*); *Dmitrii A. Pykhtin* (*Kirensky Institute of Physics, Federal Research Center-Krasnoyarsk Scientific Center, Siberian Branch Russian Academy of Science*); *Ivan Vladimirovich Timofeev* (*Kirensky Institute of Physics, Federal Research Center KSC SB RAS*);

00:00 Invited High-Q Chiral Perfect Absorbers in the Visible Region: Two Related But Different Approaches
*Young Chul Jun* (*Ulsan National Institute of Science and Technology*);

00:00 Chiral Optical Cavities Using Metasurfaces of Highly Electromagnetically Chiral Scatterers
*Lukas Rebholz* (*Karlsruhe Institute of Technology*); *Carsten Rockstuhl* (*Karlsruhe Institute of Technology*); *Ivan Fernandez-Corbaton* (*Karlsruhe Institute of Technology*);

00:00 Invited All-dielectric Mid-infrared Metasurfaces for Enhanced Linear and Chiral Spectroscopy
*Ivan S. Sinev* (*Ecole Polytechnique Federale de Lausanne*); *Felix Ulrich Richter* (*Ecole Polytechnique Federale de Lausanne*); *Ivan Toftul* (*Australian National University*); *Nikita Glebov* (*Ecole Polytechnique Federale de Lausanne*); *Kirill L. Koshelev* (*Australian National University*); *Longfang Ye* (*Xiamen University*); *Ming Lun Tseng* (*National Yang Ming Chiao Tung University*); *Yuri S. Kivshar* (*Australian National University*); *Hatice Altug* (*Institute of Bioengineering, Ecole Polytechnique Federale de Lausanne*);

00:00 Generation of Twisted Electromagnetic Beam with Angular Momentum upon Reflection from Magnetized Plasma
*E. D. Gospodchikov* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Alexander G. Shalashov* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*);

00:00 Invited Ultrafast Molecular Chirality: A Topological Connection
*Olga Smirnova* (*Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy*);

## Session 2A2
## Recent Advances in Optical Metasurfaces 2

**Tuesday AM, May 6, 2025**

**Room 2 - CH B (C&B)**

Organized by Cheng Zhang, Fei Ding

Chaired by Fei Ding

00:00 Metasurfaces for Imaging, Sensing and Display
Keynote
*Junsuk Rho* (*Pohang University of Science and Technology (POSTECH)*);

00:00 Single-piece Full-stokes Polarimetric Metasurface
*Meiyan Pan* (*Ji Hua Laboratory*); *Yue Qiang Hu* (*Hunan University*); *Huigao Duan* (*Hunan University*);

00:00 Enhanced Optical Absorption through Nanocavity
Invited Structures: Advancements in Photonic Applications
*Murali Gedda* (*King Abdullah University of Science and Technology*); *Haomin Song* (*King Abdullah University of Science and Technology*); *Anil Reddy Pininti* (*King Abdullah University of Science and Technology*); *Omar Alkhazragi* (*King Abdullah University of Science and Technology (KAUST)*); *Hendrik Faber* (*King Abdullah University of Science and Technology*); *Xiaoguang Tu* (*Marvell Semiconductor Pte Ltd.*); *Husam N. Alshareef* (*King Abdullah University of Science and Technology*); *Stefaan De Wolf* (*King Abdullah University of Science and Technology*); *Boon S. Ooi* (*King Abdullah University of Science and Technology*); *Thomas D. Anthopoulos* (*King Abdullah University of Science and Technology*); *Qiaoqiang Gan* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Nonlinear Infrared Imaging by Employing Four-wave
Invited Mixing on Silicon Individual Resonators and Metasurfaces
*Ze Zheng* (*Nottingham Trent University*); *Gabriel Sanderson* (*Nottingham Trent University*); *Cuifeng Ying* (*Nottingham Trent University*); *Mohsen Rahmani* (*Nottingham Trent University*); *Lei Xu* (*Nottingham Trent University*);

00:00 Optical Metasurfaces for Continuous Cell Monitoring,
Invited Molecular Diagnostics, and 3D Biomedical Imaging
*Inki Kim* (*Sungkyunkwan University (SKKU)*);

00:00 Meta-waveguide Photocurrent Detection of Valley-
Invited selective Emission
*Haoran Ren* (*Monash University*);

00:00 MEMS Tunable Meta-optics for High-efficiency Dy-
Invited namic Light Field Manipulation
*Chao Meng* (*University of Southern Denmark*); *Paul Conrad Vaagen Thrane* (*University of Southern Denmark*); *Fei Ding* (*University of Southern Denmark*); *Sergey I. Bozhevolnyi* (*University of Southern Denmark*);

00:00 Deep Subwavelength Scale Programmable Metasurface
Invited Colour Routers
*Cheng Chi* (*Beijing Institute of Technology*);

00:00 Transparent Matte Surfaces: Concept and Applications
Invited
*Hongchen Chu* (*Nanjing University*); *Xiang Xiong* (*Nanjing University*); *Ru-Wen Peng* (*Nanjing University*); *Mu Wang* (*Nanjing University*); *Yun Lai* (*Nanjing University*);

00:00 High-performance Achromatic Flat Lens
Invited
*Jingen Lin* (*Sun Yat-Sen University*); *Jinbei Chen* (*Sun Yat-Sen University*); *Haowen Liang* (*Sun Yat-Sen University*); *Juntao Li* (*Sun Yat-Sen University*);

## Session 2A3
## Tunable Photonics

**Tuesday AM, May 6, 2025**

**Room 3 - CH B (D)**

Organized by Mikhail V. Rybin, Daniil Litvinov

Chaired by Mikhail V. Rybin, Artem D. Sinelnik

00:00 Non-Hermitian Physics in Cavity Magnonics Systems via Phase Engineering
*Xin Huang* (*Great Bay University*); *Shirong Lin* (*Great Bay University*);

00:00 A Rudin-shapiro Sequential $MoSe_2$ Based Nanophotonic Broad Angle and Broad Band Near Perfect Visible Spectrum Absorber
*Safayat-Al Imam* (*Bangladesh University of Engineering and Technology*); *Khandakar Mohammad Ishtiak* (*Bangladesh University of Engineering and Technology*); *Quazi D. M. Khosru* (*Bangladesh University of Engineering and Technology*);

00:00 Tunable Epsilon Near Zero Polymers and Related Non-
Invited linear Optical Performances
*Hui Ye* (*Zhejiang University*); *Qili Hu* (*Zhejiang University*); *Hongqi Liu* (*Zhejiang University*); *Chencan Han* (*Zhejiang University*);

00:00 All-optically Reconfigurable Nonlinear Metasurfaces
Invited
*Costantino De Angelis* (*University of Brescia*);

00:00 Semiconductor Platforms for Nonlinear and Tunable Op-
Invited tical Metasurfaces
*L. Coudrat* (*Université Paris Cité & CNRS*); *Giorgio Guercio* (*Université Paris Cité*); *R. Que* (*Université Paris Cité & CNRS*); *A. Gerini* (*Université Paris Cité & CNRS*); *M. Morassi* (*Université Paris Saclay & CNRS*); *A. Lemaître* (*Université Paris Saclay & CNRS*); *Jean-Michel Gerard* (*CEA/INAC/SP2M*); *Costantino De Angelis* (*University of Brescia*); *Giuseppe Della Valle* (*Politecnico di Milano*); *Aloyse Degiron* (*Université Paris Cité & CNRS*); *Giuseppe Leo* (*CNRS, Université de Paris*);

00:00 Active Materials-enabled Metasurfaces with Tunable Properties
Invited
*Jin Hui Shi* (*Harbin Engineering University*); *Zheng Zhu* (*Harbin Engineering University*); *Yuxiang Li* (*Harbin Engineering University*); *Chunying Guan* (*Harbin Engineering University*);

00:00 Factors Influencing the Results of Non-destructive Verification of Intermediate States in Ge-Sb-Te Thin Films
*Mariya Evgenievna Fedyanina* (*National Research University of Electronic Technology*); *Victoria Borisovna Pestova* (*National Research University of Electronic Technology*); *Alexey Anatolyevich Sherchenkov* (*National Research University of Electronic Technology*); *Dmitry Lvovich Goroshko* (*Institute of Automation and Control Processes Far Eastern Branch, Russian Academy of Science*); *Yuri Vladimirovich Vorobyov* (*National Research University of Electronic Technology*); *Evgeny Pavlovich Kitsyuk* (*Scientific-Manufacturing Complex "Technological Centre"*); *Petr Ivanovich Lazarenko* (*National Research University of Electronic Technology*);

00:00 Chalcogenides in Photonics: From Chalcogenide Glasses to 2D Chalcogenides
Invited
*Alexander V. Kolobov* (*Herzen State Pedagogical University of Russia*);

00:00 Reconfigurable Integrated Photonic Devices Based on Phase-change Materials
Invited
*Petr Ivanovich Lazarenko* (*National Research University of Electronic Technology*); *Vadim Kovalyuk* (*Moscow State Pedagogical University*); *Aleksey I. Prokhodtsov* (*National Research University of Electronic Technology*); *Pavel An* (*National University of Science and Technology "MISIS"*); *Alexander Golikov* (*National Research University of Electronic Technology*); *Alexey Nevzorov* (*National Research University of Electronic Technology*); *Ivan S. Sinev* (*Ecole Polytechnique Federale de Lausanne*); *Evgenii V. Menshikov* (*ITMO University*); *Eugenii Pavlovich Kitsyuk* (*Scientific-Manufacturing Complex "Technological Centre"*); *Sergey A. Kozyukhin* (*Institute of General and Inorganic Chemistry*); *Vyacheslav Svetukhin* (*Scientific-Manufacturing Complex "Technological Centre"*); *G. Goltsman* (*Moscow State Pedagogical University*);

00:00 Reconfigurable Meta-optics Based on Phase-change Materials
Invited
*Mikhail Y. Shalaginov* (*Massachusetts Institute of Technology*);

00:00 Active Nanophotonic Structures Based on Atomically Thin Semiconductors
*Alexey Ustinov* (*Friedrich Schiller University Jena*); *Duk-Yong Choi* (*Australian National University*); *Angela Barreda* (*University Carlos III of Madrid*); *Giancarlo Soavi* (*Friedrich-Schiller-Universitat Jena*); *Thomas Pertsch* (*Friedrich-Schiller-Universitat*); *Isabelle Staude* (*Australian National University*);

## Session 2A4a
## Topologically Structured Waves 2

**Tuesday AM, May 6, 2025**

**Room 4 - Capital Suite 1**

Organized by Yijie Shen, Bo Wang

Chaired by Yijie Shen, Bo Wang

00:00 Topological Structured Waves in Material Processing
Invited
*Allam Srinivasa Rao* (*Chiba University*); *Takashige Omatsu* (*Chiba University*);

00:00 Topological Water-wave Structures Manipulating Particles
Invited
*Bo Wang* (*Henan University*); *Zhiyuan Che* (*Fudan University*); *Cheng Cheng* (*Fudan University*); *Caili Tong* (*Henan University*); *Lei Shi* (*Fudan University*); *Yijie Shen* (*Nanyang Technological University*); *Konstantin Y. Bliokh* (*RIKEN*); *Jian Zi* (*Fudan University*);

00:00 Bilayer and Trilayer Plasmonic Twistronics: Skyrmion Bags and Skyrmion Bag Superlattices
*Julian Schwab* (*University of Stuttgart*); *Alexander Neuhaus* (*University of Duisburg-Essen*); *Pascal Dreher* (*University of Duisburg-Essen*); *Shai Tsesses* (*Technion-Israel Institute of Technology*); *Anant Mantha* (*University of Stuttgart*); *Florian Mangold* (*University of Stuttgart*); *Bettina Frank* (*University of Stuttgart*); *Guy Bartal* (*Technion-Israel Institute of Technology*); *Frank-J. Meyer zu Heringdorf* (*University of Duisburg-Essen*); *Timothy J. Davis* (*University of Stuttgart*); *Harald W. Giessen* (*University of Stuttgart*);

00:00 Spintwistronics: Photonic Bilayer Topological Lattices Tuning Extreme Spin-orbit Interactions
Invited
*Peng Shi* (*Shenzhen University*); *Xinxin Gou* (*Shenzhen University*); *Qiang Zhang* (*Shenzhen University*); *Yijie Shen* (*Nanyang Technological University*); *Xiao-Cong Yuan* (*Shenzhen University*);

00:00 Intrinsically Static Three-dimensional Spin Topology of Structured Lights
Invited
*Peng Shi* (*Shenzhen University*);

00:00 Vortex and Skyrmion Lattices
Invited
*Xiujuan Zhang* (*Nanjing University*);

## Session 2A4b
## Photonic Resonances and Bound States in the Continuum

**Tuesday AM, May 6, 2025**

**Room 4 - Capital Suite 1**

Organized by Emiliano Rezende Martins

Chaired by Emiliano Rezende Martins

00:00 Resonant Integrated Metal-dielectric-metal Structures for Semi-guided Waves
*Evgeni A. Bezus* (*Image Processing Systems Institute of the Russian Academy of Sciences*); *A. I. Kashapov* (*Image Processing Systems Institute, NRC "Kurchatov Institute" and Samara National Research University*); *Dmitry A. Bykov* (*Image Processing Systems Institute, NRC "Kurchatov Institute"*); *Leonid L. Doskolovich* (*Image Processing Systems Institute, NRC "Kurchatov Institute" and Samara National Research University*);

00:00 All-optical Computation of the Divergence Operator by Layered Metal-dielectric Structure
*Artem I. Kashapov* (*Image Processing Systems Institute, NRC "Kurchatov Institute" and Samara National Research University*); *Evgeni A. Bezus* (*Image Processing Systems Institute, NRC "Kurchatov Institute"*); *Dmitry A. Bykov* (*Image Processing Systems Institute, NRC "Kurchatov Institute"*); *Leonid L. Doskolovich* (*Image Processing Systems Institute, NRC "Kurchatov Institute"*);

00:00 Finding the Number of Parameters Required to Obtain a Bound State in the Continuum
*Dmitry A. Bykov* (*Image Processing Systems Institute, NRC "Kurchatov Institute"*); *A. A. Mingazov* (*Image Processing Systems Institute, NRC "Kurchatov Institute*); *E. A. Bezus* (*Image Processing Systems Institute, NRC "Kurchatov Institute"*); *Leonid L. Doskolovich* (*Image Processing Systems Institute, NRC "Kurchatov Institute"*);

00:00 Robust Photonic Resonances and Bound States in the
Invited Continuum
*Emiliano Rezende Martins* (*University of São Paulo*);

00:00 Extending the Spatial Bandwidth Product of Quadratic
Invited Metalens through Fourier Ptychographic Microscopic Imaging
*Zihao Zhao* (*Sun Yat-sen University*); *Haowen Liang* (*Sun Yat-sen University*);

00:00 Non-Hermitian Singularities in Mie Resonators
Invited
*Fan Zhang* (*Harbin Engineering University*); *Nikolay S. Solodovchenko* (*ITMO University*); *Hangkai Fan* (*ITMO University*); *Mikhail E. Bochkarev* (*ITMO University*); *Kirill B. Samusev* (*ITMO University*); *Mingzhao Song* (*Harbin Engineering University*); *Mikhail F. Limonov* (*ITMO University*); *Yuri S. Kivshar* (*Australian National University*); *Andrey A. Bogdanov* (*Harbin Engineering University*);

## Session 2A5
## Optical Fiber Sensors for Medical and Industrial Applications 1

**Tuesday AM, May 6, 2025**

**Room 5 - Capital Suite 2**

Organized by Antonello Cutolo

00:00 Poly(3,4-propylenedioxythiophene) Modified Glassy Carbon Electrode for Trace Determination of Diclofenac Sodium in Aqueous Environments
*Thabo J. Mahlaka* (*University of South Africa, Florida Science Campus*); *Unathi T. Sidwaba* (*University of South Africa, Florida Science Campus*); *Titus A. M. Msagati* (*University of South Africa, Florida Science Campus*);

00:00 Fabrication and Sensing Characteristics of Metal-filled or Coated Microstructured Fiber
*Shuguang Li* (*Yanshan University*); *Ying Guo* (*Yanshan University*); *Junbo Lou* (*Northeastern University*); *Tonglei Cheng* (*Northeastern University*);

00:00 High-resolution AWGs
*Gabriella Cincotti* (*University Roma Tre*);

00:00 Real-time Phase-OTDR Signal Processing on FPGA for Enhanced Fiber Optic Sensing
*M. Hamza Öncüer* (*Insigma Engineering*); *Rüstem Ağaoğlu* (*Insigma Engineering*); *Ibrahim Ölçer* (*Insigma Engineering*); *Fatih Üstüner* (*Istanbul Ticaret University*);

00:00 Optical Fiber Sensors for Safety and Security: Trans-
Invited portations, Production Plants and Environment
*Armando Laudati* (*Optosmart srl*); *Salvatore Cozzolino* (*Optosmart srl*); *Carlo Giannini* (*Optosmart srl*); *Michele Giordano* (*Institute for Polymers, Composites and Biomaterials (CNR)*); *Andrea Cusano* (*University of Sannio*); *Giovanni Breglio* (*Optosmart srl*);

00:00 Optical Fiber Based Devices: From Biosensing to Ultra-
Invited sound Applications
*Barbara Rossi* (*University of Naples Federico II*); *Martino Giaquinto* (*University of Sannio*); *Maria Alessandra Cutolo* (*University of Sannio*); *Andrea Cusano* (*University of Sannio*); *Giovanni Breglio* (*University of Naples Federico II*);

00:00 New Perspectives in Photonic Integrated Biosensors
Invited Based on Dielectric and Plasmonic Metasurfaces
*Vito Mocella* (*Institute of Applied Sciences & Intelligent Systems, National Research Council, CNR-ISASI*); *Silvia Romano* (*Institute of Applied Sciences & Intelligent Systems, National Research Council, CNR-ISASI*); *Gianluigi Zito* (*Institute of Applied Sciences & Intelligent Systems, National Research Council, CNR-ISASI*); *Bruno Miranda* (*Institute of Applied Sciences & Intelligent Systems, National Research Council, CNR-ISASI*); *Aida Seifalinezhad Mamaghani* (*Institute of Applied Sciences & Intelligent Systems, National Research Council, CNR-ISASI*); *Karen Caicedo* (*Institute of Applied Sciences & Intelligent Systems, National Research Council, CNR-ISASI*); *Ivo Rendina* (*Institute of Applied Sciences & Intelligent Systems, National Research Council, CNR-ISASI*);

00:00 Innovative Ferromagnetic Microfiber Composites for Advanced Electromagnetic Shielding: Applications in Microwave Electronics and Next-generation Antenna Design
*Azim Uddin* (*Shaoxing JAR Innovation Center Co., Ltd.*); *Remo Proietti Zaccaria* (*Italian Institute of Technology*); *Jianping Zhang* (*Shaoxing JAR Innovation Center Co., Ltd.*);

00:00 Point of Care Analysis: A Reachable Goal with Surface
Invited Plasmon Resonance in Polymer Optical Fibers
*Luigi Zeni* (*University of Campania L. Vanvitelli*);

00:00 Metasurface-enhanced Lab-on-Fiber Optrodes as Valu-
Invited able Platforms for Point-of-Care Optical Biosensing
*Marco Consales* (*University of Sannio*); *Patrizio Vaiano* (*University of Sannio*); *A. M. Cusano* (*Centro Regionale Information Communication Technology*); *Maria Principe* (*University of Sannio*); *S. Ucci* (*Centro Regionale Information Communication Technology*); *G. Quero* (*University of Molise*); *S. Spaziani* (*Centro Regionale Information Communication Technology*); *G. M. Berruti* (*University of Sannio*); *A. Micco* (*Centro Regionale Information Communication Technology*); *Andrea Cusano* (*University of Sannio*);

00:00 Non-Hermitian Hamiltonians for High-sensitivity Fiber Optic Gyroscopes
*Martino De Carlo* (*Politecnico di Bari*); *Francesco De Leonardis* (*Politecnico di Bari*); *Vittorio M. N. Passaro* (*Politecnico di Bari*);

00:00 Multifunctional Integrated Fiber-optic Ultrasonic Transducers and Imaging Applications
*Qizhen Sun* (*Huazhong University of Science and Technology*);

## Session 2A6a
## Oral Presentations for Best Student Paper Awards — SC3: Optics and Photonics

**Tuesday AM, May 6, 2025**

**Room 6 - Capital Suite 3**

00:00 Advanced Optical Properties of InGaN/GaN LED Structures Affected by Large V-pits
*Fatimah Alreshidi* (*King Abdullah University of Science and Technology (KAUST)*); *Hadeel A. Alamoudi* (*King Abdullah University of Science and Technology (KAUST)*); *Lih-Ren Chen* (*National Yang Ming Chiao Tung University*); *Tien-Chang Lu* (*National Yang Ming Chiao Tung University*); *Iman S. Roqan* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Optical Skyrmions of Vortex Darkness
*Nilo Mata-Cervera* (*Nanyang Technological University*); *Deepak K. Sharma* (*Agency for Science, Technology and Research (A*STAR)*); *Yijie Shen* (*Nanyang Technological University*); *Ramon Paniagua-Dominguez* (*Agency for Science, Technology and Research*); *Miguel Angel Porras* (*Universidad Politecnica de Madrid*);

00:00 Programmable Nanophotonic Matrix Based on Phase Change Materials for Spectral Detection and Imaging
*Zhi Zhang* (*Zhejiang University*); *Zijian Lin* (*Zhejiang University*); *Tingbiao Guo* (*Zhejiang University*); *Sailing He* (*Royal Institute of Technology & Zhejiang University*);

00:00 Ultrathin Hybrid Phononic-dielectric Metasurface for Broadband Long-wave-IR Photodetector
*Tao Cheng* (*Shandong University*); *Huanhuan Zhao* (*Shandong University*); *Linhua Liu* (*Shandong University*); *Jia-Yue Yang* (*Shandong University*);

00:00 Versatile Thermosensitive Polymer-stabilized Liquid Crystal Smart Windows without Alignment Layers
*Min Han Lu* (*National Yang Ming Chiao Tung University*); *Wei Lee* (*National Yang Ming Chiao Tung University*);

00:00 Effects of Extreme Downscaling on Micro Fabry-Perot Spectral Responses and Resonant Mode Profiles
*Ahmed Mahrous* (*Université Gustave Eiffel*); *Mohamed Nabil* (*Ain-Shams University*); *Mazen Erfan* (*Si-Ware Systems*); *Yasser M. Sabry* (*Si-Ware Systems*); *Diaa Khalil* (*Si-Ware Systems*); *Tarik Bourouina* (*Université Gustave Eiffel*);

## Session 2A6b
## Oral Presentations for Best Student Paper Awards — SC2: Metamaterials, Plasmonics and Complex Media

**Tuesday AM, May 6, 2025**

**Room 6 - Capital Suite 3**

00:00 Three-dimensional Topological Valley Photonic Crystals
*Wenhao Li* (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*); *Haoran Xue* (*The Chinese University of Hong Kong*); *Yihao Yang* (*Zhejiang University*);

00:00 Omnidirectionally Matched Cloak for Unpolarized Waves
*Yuqi Wang* (*Zhejiang University*); *Xiaojun Hu* (*Zhejiang University*); *Yuan Gao* (*Shandong University of Technology*); *Dexin Ye* (*Zhejiang University*);

00:00 Topological Edge States in a Square Lattice of Dielectric Bianisotropic Resonators
*Alina D. Rozenblit* (*ITMO University*); *Nikita A. Olekhno* (*ITMO University*);

00:00 Highly-efficient Near-field Thermophotovoltaics Based on Nanowire Metamaterials for Low-grade Heat Recovery
*Xinran Li* (*Zhejiang University*); *Sen Zhang* (*Zhejiang University*); *Yongdi Dang* (*Zhejiang University*); *Yuxuan Li* (*Zhejiang University*); *Yi Jin* (*Zhejiang University*); *Yungui Ma* (*Zhejiang University*);

00:00 High-resolution Recommender System for Metamaterial Synthesis
*Ismail Abiola Shittu* (*Khalifa University*); *Mohamed A. Abou-Khousa* (*Khalifa University*); *Ibrahim (Abe) M. Elfadel* (*Khalifa University*);

00:00 Tailorable Resonant Emissivity in the Mid-infrared Range between 10 µm and 25 µm on Highly Doped Pristine Silicon Gratings
*Kirollos Ernest Matta* (*Université Gustave Eiffel, CNRS, ESYCOM*); *Sreyash Sarkar* (*Université Gustave Eiffel*); *Ahmed Elsayed* (*Si-Ware Systems*); *Frederic Marty* (*Université Gustave Eiffel*); *Armande Herve* (*Université Gustave Eiffel, CNRS, ESYCOM*); *Martine Gnambodoe-Capochichi* (*Université Gustave Eiffel*); *Abdelkrim Khelif* (*Hamad Bin Khalifa University*); *Mazen Erfan* (*Si-Ware Systems*); *Yasser M. Sabry* (*Si-Ware Systems*); *Elyes Nefzaoui* (*Université Gustave Eiffel*); *Tarik Bourouina* (*Université Paris-Est*);

## Session 2A7
## Semiconductor Optoelectronics 1

**Tuesday AM, May 6, 2025**

**Room 7 - Capital Suite 4**

Organized by Iman S. Roqan, Vijay Kumar Gudelli

Chaired by Iman S. Roqan, Vijay Kumar Gudelli

00:00 Growth-related Challenges of Nitride Semiconductors in
Invited Manufacturing Optoelectronic and Electronic Devices
*Mike Leszczynski* (*Institute of High Pressure Physics PAS*); *Ewa Grzanka* (*Institute of High Pressure Physics PAS*); *Robert Czernecki* (*Institute of High Pressure Physics PAS*);

00:00 Low Dark Count Rate Backside-illuminated Ge-on-Si Single Photon Avalanche Diode
*Liyu Liu* (*Xi'an Institute of Optics and Precision Mechanics (XIOPM), Chinese Academy of Sciences (CAS)*); *Yu Chang* (*Xi'an Institute of Optics and Precision Mechanics (XIOPM), Chinese Academy of Sciences (CAS)*); *Yin Fei* (*Xi'an Institute of Optics and Precision Mechanics (XIOPM), Chinese Academy of Sciences (CAS)*); *Qiao Kai* (*Xi'an Institute of Optics and Precision Mechanics (XIOPM), Chinese Academy of Sciences (CAS)*); *Xing Wang* (*Xi'an Institute of Optics and Precision Mechanics (XIOPM), Chinese Academy of Sciences (CAS)*);

00:00 Mechanical Energy-driven Piezocatalysis: Novel Strategies for Hydrogen Evolution Using 2D TMDCs Nanostructures
*Masimukku Srinivaas* (*Cheng Shiu University*); *I-Cheng Li* (*Cheng Shiu University*); *Guo-Ping Chang-Chien* (*Cheng Shiu University*); *Jih-Jen Wu* (*National Cheng Kung University*);

00:00 Enhanced Photoelectrochemical Water Splitting Using 2D Material-semiconductor Hybrid Systems for Solar-to-Hydrogen Energy Conversion
*Sridharan Balu* (*National Taipei University of Technology*); *Thomas Chung-Kuang Yang* (*National Taipei University of Technology*);

00:00 Development of a Monolithic Blue Photonic Crystal
Invited Surface-emitting Laser with a Circularly Polarized Emission
*Chia-Yen Huang* (*National Yang Ming Chiao Tung University*); *Wen-Hsuan Hsieh* (*National Yang Ming Chiao Tung University*); *Yong-Wei Lai* (*National Yang Ming Chiao Tung University*); *Po-Young Chang* (*National Yang Ming Chiao Tung University*); *Tien-Chang Lu* (*National Yang Ming Chiao Tung University*);

00:00 Carrier Dynamics of Orange/Red In-rich InGaN Double-quantum Wells LED Hybridized by Blue InGaN Single Quantum Well
*Hadeel A. Alamoudi* (*King Abdullah University of Science and Technology (KAUST)*); *Nuaman M. Kutty* (*King Abdullah University of Science and Technology (KAUST)*); *Fatimah Alreshidi* (*King Abdullah University of Science and Technology (KAUST)*); *Daisuke Iida* (*King Abdullah University of Science and Technology*); *Kishor Upadhyaya* (*King Abdullah University of Science and Technology (KAUST)*); *Kazuhiro Ohkawa* (*King Abdullah University of Science and Technology (KAUST)*); *Iman S. Roqan* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Opportunities and Challenges for Characterizing Opto-
Invited electronic and Plasmonic Materials with Advanced Electron Microscopy
*Dalaver H. Anjum* (*Khalifa University*); *Emad Nafez Mustafa* (*Khalifa University*); *Humaira Zafar* (*Khalifa University*); *Ammar Nayfeh* (*Khalifa University*); *Mauro Fernandes Pereira* (*Khalifa University*);

00:00 Performance Enhancement of $CH_3NH_3PbBr_3$ Based Perovskite Solar Cells with ZnO Buffer Layer
*Deepak Kumar Jarwal* (*Pandit Deendayal Energy University*); *Ashwini Kumar Mishra* (*Pandit Deendayal Energy University*); *Rahul Kumar* (*Institute of Infrastructure Technology Research and Management*); *Gopal Rawat* (*National Institute of Technology*);

00:00 Streamlined Fabrication of a Cost-effective and Durable Hygroscopic Composite for Evaporative Cooling of Solar Panels
*Huangyu Fang* (*King Abdullah University of Science and Technology*); *Saichao Dang* (*King Abdullah University of Science and Technology*); *Prasanth Kumar* (*King Abdullah University of Science and Technology*); *Qiaoqiang Gan* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Invited Raman Scattering Imaging and Analyses of Phonon Transport in Heterostructures
*Yoshihiro Ishitani* (*Chiba University*); *Thee Ei Khaing Shwe* (*Chiba University*); *Masaya Chizaki* (*Chiba University*); *Daisuke Iida* (*King Abdullah University of Science and Technology (KAUST)*); *Yuki Kikuchi* (*Chiba University*); *Yusuke Ishii* (*Chiba University*); *Bei Ma* (*Chiba University*); *Mohammed Najmi* (*King Abdullah University of Science and Technology (KAUST)*); *Kazuhiro Ohkawa* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Use of Si Nanoparticles to Improve Performance of Solar Cells by Photon Downshifting
*Ammar Nayfeh* (*Khalifa University*);

## Session 2A8
## Quantum Light Source and Quantum Interference

**Tuesday AM, May 6, 2025**

**Room 8 - Capital Suite 5**

Organized by Baihong Li, Ruifang Dong
Chaired by He Lu, Omar S. Magana-Loaiza

00:00 Invited Quantum Coherence of Classical Plasmonic Waves
*Omar S. Magana-Loaiza* (*Louisiana State University*);

00:00 Invited Generation of Wavelength-stable Entangled Biphotons for Quantum Interference Applications
*Xiao Xiang* (*National Time Service Center, Chinese Academy of Sciences*); *Yuting Liu* (*National Time Service Center, Chinese Academy of Sciences*); *Huibo Hong* (*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*); *Ruifang Dong* (*National Time Service Center, Chinese Academy of Sciences*); *Shou-Gang Zhang* (*National Time Service Center, Chinese Academy of Sciences*);

00:00 Invited Securing Quantum Time Transfer with Energy-time Entanglement
*Runai Quan* (*National Time Service Center, Chinese Academy of Sciences*); *Huibo Hong* (*National Time Service Center, Chinese Academy of Sciences*); *Xiao Xiang* (*National Time Service Center, Chinese Academy of Sciences*); *Mingtao Cao* (*National Time Service Center, Chinese Academy of Sciences*); *Xinghua Li* (*National Time Service Center, Chinese Academy of Sciences*); *Baihong Li* (*Shaanxi University of Science and Technology*); *Ruifang Dong* (*National Time Service Center, Chinese Academy of Sciences*); *Tao Liu* (*National Time Service Center, Chinese Academy of Sciences*); *Shou-Gang Zhang* (*National Time Service Center, Chinese Academy of Sciences*);

00:00 Invited Multiparameter Cascaded Quantum Interferometer
*Baihong Li* (*Shaanxi University of Science and Technology*);

00:00 Invited Quantum Photon Source in Lithium Niobate Nanowaveguide
*He Lu* (*Shandong University*);

00:00 Invited Experimental Construction of High-capacity Quantum Information Protocols
*Shengshuai Liu* (*East China Normal University*);

00:00 Discrete Time Crystal Based on Optical Cavity-atom System without External Driving
*Timofey T. Sergeev* (*Dukhov Research Institute of Automatics (VNIIA)*); *A. A. Zyablovsky* (*Dukhov Research Institute of Automatics (VNIIA)*); *E. S. Andrianov* (*Dukhov Research Institute of Automatics (VNIIA)*);

00:00 Subthreshold Generation in a Phonon Laser with an Exceptional Point
*Artem Ramazanovich Mukhamedyanov* (*Dukhov Research Institute of Automatics (VNIIA)*); *Alexander A. Zyablovsky* (*Dukhov Research Institute of Automatics (VNIIA)*); *Evgeny S. Andrianov* (*Dukhov Research Institute of Automatics (VNIIA)*);

## Session 2A9
## Surface Integral and Boundary Element Methods: Fundamentals and Applications

**Tuesday AM, May 6, 2025**

**Room 9 - Capital Suite 6**

Organized by Olivier J. F. Martin, Ulrich Hohenester
Chaired by Olivier J. F. Martin, Ulrich Hohenester

00:00 Invited Coupling Boundary Element Methods with Electronic Structure Calculations to Model Molecular Nanoplasmonics: From Hot-carrier Catalysis to Plexcitons
*Stefano Corni* (*University of Padua*);

00:00 Invited Modelling the Spill-out Effect from a Metallic Nanosphere: A Boundary-based Approach
*Xuezhi Zheng* (*KU Leuven*); *Guy A. E. Vandenbosch* (*KU Leuven*);

00:00 Modeling Complex Atomic Structures with the Surface Integral Equation Method
*Parmenion Mavrikakis* (*Ecole Polytechnique Federale de Lausanne*); *N. Brosseau-Habert* (*FEMTO-ST Institute*); *M. Devel* (*FEMTO-ST Institute*); *Olivier J. F. Martin* (*Swiss Federal Institute of Technology Lausanne (EPFL)*);

00:00 Invited A Computational Maxwell Solver for Nonlocal Feibelman Parameters in Plasmonics
*Ulrich Hohenester* (*University of Graz*); *L. Huber* (*University of Graz*);

00:00 Decoupled-source Surface Integral Equations for Low-frequency Electromagnetic Modeling of Homogeneous Penetrable Objects
*Wen Tao Yuan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Invited Non-local Effects in the Interaction of a Quantum Emitter and a Plasmonic Nanoantenna
*Javier Aizpurua* (*University of the Basque Country UPV/EHU*); *Antton Babaze* (*Materials Physics Center CSIC-UPV/EHU*); *Ruben Esteban* (*Donostia International Physics Center DIPC*); *A. G. Borisov* (*Institut des Sciences Moleculaires d'Orsay*);

00:00 A Time-domain Thin-sheet Integral Equation Solver for Simulation of Two-dimensional Dispersive Media
*Sebastian Celis Sierra* (*King Abdullah University of Science and Technology (KAUST)*); *Meruyert Khamitova* (*King Abdullah University of Science and Technology (KAUST)*); *Ran Zhao* (*University of Electronic Science and Technology of China*); *Hakan Bagci* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Invited Simulation of the Interaction between Free Electrons and Nanosscale Optical Fields
*F. Javier García de Abajo* (*ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology*);

00:00 Invited Collecting Big Data by 3D EM Simulation: Needs, Challenges, Solutions, and Limits
*Branko M. Kolundzija* (*University of Belgrade*);

00:00 Invited Surface Integral Equation Method for the Modes Analysis of Plasmonic Nanostructures
*Olivier J. F. Martin* (*Swiss Federal Institute of Technology Lausanne (EPFL)*);

## Session 2A10
## Advancements and Applications of Drone-Borne Synthetic Aperture Radar (SAR) Systems

**Tuesday AM, May 6, 2025**

**Room 10 - Capital Suite 7**

Organized by João Roberto Moreira Neto, Hugo Enrique Hernandez-Figueroa

Chaired by João Roberto Moreira Neto, Hugo Enrique Hernandez-Figueroa

00:00 A UAV Radar System for Reconstructing Vertical Structure of Forests by Single Pass
*Zhen Li* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Ping Zhang* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Zhipeng Wu* (*Aerospace Information Research Institute, Chinese Academy of Sciences*);

00:00 Suppression of Angular Side-lobes in Drone-Borne SAR Tomography
*Kostyantyn A. Lukin* (*Usikov Institute for Radiophysics and Electronics*); *Juliana A. Goes* (*University of Campinas*); *João Roberto Moreira Neto* (*University of Campinas*); *Hugo E. Hernandez-Figueroa* (*University of Campinas*);

00:00 Non-invasive Exploration of Archaeological Falaj System: L-band SAR Tomography Insights
*Luciano Prado de Olivera* (*Technology Innovation Institute*); *T. Prabowo* (*Technology Innovation Institute*); *L. S. Bins* (*Technology Innovation Institute*); *João Roberto Moreira Neto* (*University of Campinas*); *M. Almansoori* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Mapping Underground Moisture: Insights from Drone-borne SAR System in UAE
*Luciano Prado de Olivera* (*Technology Innovation Institute*); *T. Prabowo* (*Technology Innovation Institute*); *L. S. Bins* (*Technology Innovation Institute*); *Gian C. Oré* (*University of Campinas*); *João Roberto Moreira Neto* (*University of Campinas*); *M. Almansoori* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Invited Circularly Polarized Antennas for Drone, Airborne, HAPS, and Spaceborne Synthetic Aperture Radar: Remote Sensing Missions and Applications
*Josaphat Tetuko Sri Sumantyo* (*Chiba University*);

00:00 Boreal Forest Belowground Biomass Measurement by Using Drone-borne Synthetic Aperture Radar Tomography
*Henrik J. Persson* (*Swedish University of Agricultural Sciences*); *João Roberto Moreira* (*Radaz S.A., São José dos Campos*); *Gian C. Oré* (*University of Campinas*); *Ansgar Jörgenfelt* (*Swedish University of Agricultural Sciences*); *Shivam Rawat* (*Swedish University of Agricultural Sciences*); *Rubén Valbuena* (*Swedish University of Agricultural Sciences*); *Eduardo Freitas* (*Radaz S.A., São José dos Campos*); *Christian Wimmer* (*Radaz S.A., São José dos Campos*); *Hugo Enrique Hernandez-Figueroa* (*University of Campinas*);

00:00 Invited Compact Multiband Interferometric SAR System for Surface and Sub-surface Target Detection and Tomographic Mapping
*Renato Machado* (*São José dos Campos*);

00:00 Soil Moisture Monitoring for Precision Agriculture via Drone-borne Multi-band Synthetic Aperture Radar
*Gian Carlos Oré Huacles* (*University of Campinas*); *Armando Marino* (*University of Stirling, Stirling*); *William Kirk* (*Surveyar Ltd*); *Luciano Prado de Olivera* (*Technology Innovation Institute*); *João Roberto Moreira Neto* (*Radaz S.A., São José dos Campos*); *Juliana A. Goes* (*University of Campinas*); *Hugo Enrique Hernandez-Figueroa* (*University of Campinas (UNICAMP)*);

00:00 Localization of Buried Objects by P/L/C-band SAR Tomography
*Gian Carlos Oré Huacles* (*University of Campinas*); *Karin K. De Vicente* (*Superintendence of Technical-Scientific Police*); *Joao Machado* (*Superintendence of Technical-Scientific Police*); *Christian Wimmer* (*Radaz S.A., São José dos Campos*); *Eduardo Freitas* (*Radaz S.A., São José dos Campos*); *Hugo Enrique Hernandez-Figueroa* (*University of Campinas (UNICAMP)*);

00:00 Iron Mine Survey Based on Drone-borne Tomographic SAR System
*Gian Carlos Oré Huacles* (*University of Campinas*); *Daiane Munch* (*Vale Institute of Technology*); *Luiz Antonio Pereira Silva* (*Vale Institute of Technology*); *Bruna Cordeiro* (*Federal University of Ouro Preto*); *João Roberto Moreira Neto* (*University of Campinas*); *Hugo Enrique Hernandez-Figueroa* (*University of Campinas*); *Rosa Elvira Correa Pabón* (*Federal University of Ouro Preto*);

00:00 Efficient Control and Data Processing of Drone-borne SAR on Xilinx Kria K26 SoM
*Elisson Eric da Silva Andrade* (*University of Campinas*); *A. A. Santos* (*University of Campinas*); *Hugo Enrique Hernandez-Figueroa* (*University of Campinas (UNICAMP)*);

00:00 Time and Spectral Characteristics of X-band Radar Echoes Reflected from Wind Turbine with Rotating Rotor
*Tomasz Karas* (*Wroclaw University of Science and Technology*); *Wladyslaw Magiera* (*Wroclaw University of Science and Technology*); *Paweł Kabacik* (*Wrocław University of Science and Technology*); *Grzegorz Jaromi* (*EuroTech*);

## Session 2A0
## Poster Session 3

**Tuesday AM, May 6, 2025**
**8:30 AM - 12:30 AM**
**Room Poster Area**

00:00 Gaussian Quasi-monochromatic Light Beam Scattering on a Photonic Crystal Slab
*Daria Yu. Sergeeva* (*National Research Nuclear University "MEPhI"*); *I. V. Bekrenev* (*National Research Nuclear University "MEPhI"*);

00:00 SiC Multi-level Trench P-type Well JBS Diode
*Jiteng Yang* (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Yan Wen* (*Southwest Jiaotong University*);

00:00 Study on Shielding Effect of Brushless Motor Chassis
*Renjun Pan* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Quanfeng Jiang* (*Southwest University of Science and Technology*); *Jun Bo Li* (*Southwest University of Science and Technology*); *Junhao Shi* (*Southwest University of Science and Technology*); *Liping Wang* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*);

00:00 A Hybrid Fast Algorithm for Electromagnetic Interference Modeling in Complex Electromagnetic Environment
*Weiyu Xia* (*Southwest University of Science and Technology*); *Zi-Qiang Wu* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 Meteorological Station for Measuring the Evaporation Wave Duct
*Alexey Mikhailovich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *R. S. Yemelyanov* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Digital Processing of Electron Beam Images for Glass Plate Irradiation: Analysis of Electron Beam Profiles and Absorbed Dose Distribution
*Vitali Grisha Khachatryan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *Suren Arutunian* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *Vardan Avagyan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *Hakob Davtyan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *Bagrat Grigoryan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *Michael Ivanyan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *Misak Sukiasyan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *Stepan Tatikyan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *Ashot Vardanyan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *Arsham Yeremyan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*);

00:00 Unveiling Spin-orbital Angular Momentum Locking in Photonic Dirac Vortex Cavities
*Haitao Li* (*The Hong Kong University of Science and Technology (Guangzhou)*); *Xiaoxiao Wu* (*The Hong Kong University of Science and Technology (Guangzhou)*);

00:00 Modeling an Antenna for Orthosis
*Shu Ya Zan* (*Henan University of Science and Technology*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Dual-layer Planar Spiral-shaped Metamaterial Structure for Circular Polarization
*Huma* (*Shah Abdul Latif University Khairpur*); *Farman Ali Mangi* (*Shah Abdul Latif University Khairpur*); *Fatima Ghulam Kakepoto* (*Zhejiang Normal University*); *Umair Rafique* (*University of Oulu*); *Syed Muzahir Abbas* (*Macquarie University*);

00:00 Suppression of Laser Spark Propagation by Noble Gas Jet for EUV Lithography Application
*A. P. Veselov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *A. V. Sidorov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *A. V. Vodopyanov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *E. I. Preobrazhensky* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Sub-terahertz Gyrotrons Based on Cavities with Mode Selective Elements
*Ilya V. Bandurkin* (*Institute of Applied Physics RAS*); *Mikhail Yu. Glyavin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Andrey Pavlovich Fokin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Yuriy K. Kalynov* (*Institute of Applied Physics, RAS*); *Ivan V. Osharin* (*Institute of Applied Physics, RAS*); *Andrei V. Savilov* (*A. V. Gaponov-Grekhov Institute of Applied Physics, RAS*);

00:00 Fabrication of On-chip Based WGM Toroidal Microresonators Using Si Lithography and $CO_2$ Laser Techniques
*Deniss Zurikovs* (*Riga Technical University*); *Ints Murans* (*Riga Technical University*); *Dilan Enrique Ortiz Blanco* (*Riga Technical University*); *Dmitrijs Prigunovs* (*Riga Technical University*); *Janis Alnis* (*University of Latvia*); *Toms Salgals* (*Riga Technical University*); *Sergejs Marinins* (*Riga Technical University*); *Mareks Parfjonovs* (*Riga Technical University*); *Ilze Andersone* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Preparation and Performance Study on $SiO_2$ Micro-nano Composite Film Structure for Daytime Radiative Cooling
*Changhai Li* (*Fudan University*); *Xiaojie Sun* (*Fudan University*); *Yuting Yang* (*Fudan University*); *Baojian Liu* (*Fudan University*); *Haotian Zhang* (*Fudan University*); *Rong He* (*Fudan University*); *Rongjun Zhang* (*Fudan University*); *Yu-Xiang Zheng* (*Fudan University*); *Liangyao Chen* (*Fudan University*);

00:00 Microwave Photonics-based Reflectometry for PCB Defect Detection
*Yiling Guo* (*Hong Kong Polytechnic University*); *Menglin L. N. Chen* (*The Hong Kong Polytechnic University*); *Mingtuan Lin* (*National University of Defense Technology*);

00:00 Photonic Convolutional Accelerator-based 3D Point Cloud Underwater Terrain Matching and Localization Algorithm
*Zhen Xu* (*Beijing University of Posts and Telecommunications*); *Xin Peng* (*Beijing University of Posts and Telecommunications*);

00:00 Wide-angle Metalens for Enhanced Imaging Capabilities
*Isma Javed* (*Information Technology University of the Punjab*); *Azhar Javed Satti* (*Information Technology University of the Punjab*); *Afzaal Ahmad* (*University of Glasgow*); *Muhammad Zubair* (*University of Glasgow*); *Qammer H. Abbassi* (*University of Glasgow*); *Muhammad Qasim Mehmood* (*Information Technology University (ITU)*);

00:00 Poincare Beam Spirality at a Sharp Focus
*Vladislav D. Zaitsev* (*Samara National Research University*); *Sergey S. Stafeev* (*NRC Kurchatov Institute*); *Victor V. Kotlyar* (*Image Processing Systems Institute — Branch of the Federal Scientific Research Centre "Crystallography and Photonics" of RAS*);

00:00 Mechanical Strain Monitoring Using Filter-based Fiber Bragg Grating Interrogator
*Deniss Zurikovs* (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*); *Janis Braunfelds* (*Riga Technical University*); *Andis Supe* (*Riga Technical University*);

00:00 Experimental Study of a Thermally Tuned Micro-ring Based Silicon Nitride Demultiplexer
*Abdalla O. Hableel* (*Technology Innovation Institute*); *Nikita M. Kondratyev* (*Technology Innovation Institute*); *Mahmoud A. Gaafar* (*Technology Innovation Institute*); *Evgeny Lonshakov* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Gyrotrons as Stable Sources of Radiation for Frequency Locking
*Andrey A. Ananichev* (*Institute of Applied Physics of the RAS*); *A. V. Chirkov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Grigory G. Denisov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Andrey Pavlovich Fokin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Mikhail Yu. Glyavin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *German Yu. Golubiatnikov* (*Institute of Applied Physics of the RAS*); *S. Yu. Kornishin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Andrey N. Kuftin* (*Institute of Applied Physics of the RAS*); *A. G. Litvak* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Vladimir N. Manuilov* (*Institute of Applied Physics RAS*); *Boris Z. Movshevich* (*Institute of Applied Physics of the RAS*); *Yu. V. Novozhilova* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *L. G. Popov* (*GYCOM Ltd.*); *E. A. Soluyanova* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Evgeniy M. Tai* (*Institute of Applied Physics of the RAS*);

00:00 Development of a Gyrotron Circuit Based on a Photonic Structure with a Triangular Trajectory of an Operating Wave Beam
*Ekaterina M. Novak* (*Institute of Applied Physics, RAS*); *Andrei V. Savilov* (*Institute of Applied Physics, RAS*);

00:00 Behavioral Model Based on Meta-learning for Multi-state Wireless Power Amplifier
*Meng Zhou* (*Beijing University of Posts and Telecommunications*); *X. Hu* (*Beijing University of Posts and Telecommunications*); *B. Y. Li* (*Beijing University of Posts and Telecommunications*); *X. R. Wang* (*Beijing University of Posts and Telecommunications*); *X. W. Meng* (*Beijing University of Posts and Telecommunications*); *W. D. Wang* (*Beijing University of Posts and Telecommunications*);

00:00 A 6-element Multi-resonator Sensor for Touching Detection Based on Chipless RFID Technology
*Yu Chun He* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 A Novel RFID Temperature Sensor Integrated with Reconfigurable Encoding Structure
*Yaming Xie* (*Tongji University*); *Guo Chun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Improving 5G/B5G Network Performance with RFID-enabled Resource Management Systems
*Stella Ndidi Arinze* (*Enugu State University of Science and Technology*); *Halima Ibrahim Kure* (*University of East London*); *Augustine O. Nwajana* (*University of Greenwich*);

00:00 Ultra-wideband Planar Tightly Coupled Dipole Antenna Array with 3 : 1 Bandwidth
*Chao Zou* (*Southwest University of Science and Technology*); *Yuan Zhang* (*University of Electronic Science and Technology of China*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Tong Su* (*Southwest University of Science and Technology*); *Haonan Huang* (*Southwest University of Science and Technology*); *Liping Wang* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Zhen-Yong Du* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yixiang Li* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 A Miniaturized Low-profile Ultra-wideband Omnidirectional Vertical Polarization Antenna
*Liping Wang* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Haonan Huang* (*Southwest University of Science and Technology*); *Renjun Pan* (*Southwest University of Science and Technology*); *Jun Bo Li* (*Southwest University of Science and Technology*); *Chao Zhou* (*Southwest University of Science and Technology*); *Yu-Rui Jia* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 A Multilayer Low-pass Frequency Selective Surface with Wide Stopband
*Haonan Huang* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Liping Wang* (*Southwest University of Science and Technology*); *Meiying Li* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 Finding Areas of Greatest Influence on Side Lobes Level in Radiation Pattern in Antenna Array
*Alexey Mikhailovich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Alexei A. Komarov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Director Patch Antenna Design for Emitting UWB Signals for Local Navigation System
*Vitaliy Vladislavovich Trubetskoy* (*Moscow Technical University of Communications and Informatics (MTUCI)*); *A. M. Ignatov* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *R. G. Riazantsev* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Design of One-to-two and One-to-four Filtering Power Dividers Based on Substrate Integrated Waveguide
*Zhilin He* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*);

00:00 A Novel Design and Optimization of a Multi-section Coupler for Microwave Radar Systems
*Mohamed Guermal* (*Abdelmalek Essaadi University*); *Jamal Zbitou* (*Abdelmalek Essaadi University*); *Mohammed El Gibari* (*Nantes University/IETR*); *Fouad Aytouna* (*Abdelmalek Essaadi University*); *Aziz Oukaira* (*Moncton University of Canada*); *Ahmed Lakhssassi* (*University of Quebec*);

00:00 Design of Terahertz Slot Antenna Based on Photonic Crystal Substrate
*Rostom Khalef* (*Université de Constantine 1*);

00:00 Efficiency Improvement of Rectenna Working on Frequency Band of Electromagnetic Waves of 5G Mobile Network
*Abdelouahab Bouraiou* (*University Yahia Fares of Medea*); *Chaabane Soumali* (*University of Batna*);

00:00 Metal-artifacts Reduction in Synchrotron Monochromatic x-ray Computed Tomography
*Koki Kato* (*Yamagata University*); *Keishi Araki* (*Yamagata University*); *Tsuyoshi Ouchi* (*Yamagata University*); *Tetsuya Yuasa* (*Yamagata University*);

00:00 FENGYUN-4A Advanced Geosynchronous Radiation Imager Layered Precipitable Water Vapor Products' Comprehensive Evaluation Based on Quality Control System
*Yong Zhang* (*National Satellite Meteorological Center, China Meteorological Administration*);

00:00 A Pixel-wise Binary Regression Algorithm for GNSS-R Soil Moisture Retrieval to Improve Performance over Vegetation-covered Surfaces
*Zhounan Dong* (*Suzhou University of Science and Technology*); *Shuanggen Jin* (*Henan Polytechnic University*); *Dai Chen* (*Suzhou University of Science and Technology*); *Peng Wang* (*Suzhou University of Science and Technology*);

00:00 Certified Randomness from Uncharacterized Source and Measurement
*Xing Lin* (*University of Hong Kong*);

00:00 Classification of Muscle Fatigue Using Surface Electromyography Signals Based on ICEEMDAN-GRU
*Qicao Chen* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Li Wu* (*Southwest University of Science and Technology*); *Qi Qi* (*Southwest University of Science and Technology*); *Changzheng Ling* (*Southwest University of Science and Technology*); *Yue Pan* (*Southwest University of Science and Technology*); *Yuchen Zhang* (*Southwest University of Science and Technology*);

00:00 A Novel Design of Multi-level Storage Architecture and Scratch-pad Memory Management Module for Dedicated Scientific Computing Architecture
*Xiao Jie Lu* (*Tongji University*); *Yuan Yang Du* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 In Situ Infrared Spectroscopic Evidence of Enhanced Electrochemical $CO_2$ Reduction on $AuFe_1$
*Xinyi Shen* (*University of Science and Technology of China*); *Xiaokang Liu* (*University of Science and Technology of China*); *Sicong Wang* (*University of Science and Technology of China*); *Tao Chen* (*University of Science and Technology of China*); *Wei Zhang* (*University of Science and Technology of China*); *Linlin Cao* (*University of Science and Technology of China*); *Tao Ding* (*University of Science and Technology of China*); *Yue Lin* (*University of Science and Technology of China*); *Dong Liu* (*University of Science and Technology of China*); *Lan Wang* (*University of Science and Technology of China*); *Tao Yao* (*University of Science and Technology of China*);

00:00 Design and Implementation of a Low Harmonic Distortion Piezoelectric Ceramic Power Amplifier Based on Wide-bandgap GaN Devices
*Chunxi Jiang* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Yangli Liu* (*Southwest University of Science and Technology*); *Yuting Xu* (*Southwest University of Science and Technology*); *Tong Zheng* (*Southwest University of Science and Technology*); *Qifeng Wu* (*Southwest University of Science and Technology*); *Gang Long* (*Southwest University of Science and Technology*);

00:00 Invisible Connections: Enhancing Homelessness Support through Technological Advances Amidst Pandemic Constraints – A Design and Statistical Study
*Eddy Semayobe* (*University of Hertfordshire*); *Catherine C. Ukala* (*University of Hertfordshire*); *Eugene A. Ogbodo* (*University of Hertfordshire*); *Azunka N. Ukala* (*University of Hertfordshire*);

00:00 On the Efficiency of High-order Harmonic Generation in Attosecond Physics
*Ang-Yang Yu* (*Heilongjiang Agricultural Engineering Vocational College*);

00:00 Design of Dynamic Performance Test Bench for Basic Braking Devices of Heavy and Fast Freight Train
*Yu Xi Ren* (*CRRC Qiqihar Rolling Stock Co., Ltd.*); *Shi Long An* (*CRRC Qiqihar Rolling Stock Co., Ltd.*); *Yaming Xie* (*Tongji University*); *Guo Chun Wan* (*Tongji University*);

## Session 2P1
## Deep Learning in Electromagnetics Research 2

**Tuesday PM, May 6, 2025**

**Room 1 - CH B (A)**

Organized by Willie John Padilla, Kebin Fan

00:00 Invited Towards Chiral Light-matter Interactions with Machine-learning-optimized Nano-photonic Metasurface
*Arash Rahimi-Iman* (*Justus-Liebig-Universität Gießen*);

00:00 Genetically Designed Metamaterials for Scattering Control
*Pavel Ginzburg* (*Tel Aviv University*); *Dmytro Vovchuk* (*Riga Technical University*); *Anna Mikhailovskaya* (*Tel Aviv University*); *Konstantin Grotov* (*Tel Aviv University*); *Mikhail Tsukerman* (*Tel Aviv University*); *Denis Kolchanov* (*Tel Aviv University*); *Dmitry Dobrykh* (*Tel Aviv University*); *Sergey Geyman* (*ITMO University*); *Mykola Khobzei* (*Information Security Yuriy Fedkovych Chernivtsi National University*); *Vladyslav Tkach* (*Yuriy Fedkovych Chernivtsi National University*); *Toms Salgals* (*Riga Technical University*); *Nataļja Muračova* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Efficient Deep Learning Methodology for Large-scale Metalens
*Arthur Clini De Souza* (*Université Côte d'Azur, Inria, CNRS, LJAD*); *Stephane Lanteri* (*Inria Research Center at Cote d'Azur University*); *Hugo Enrique Hernandez-Figueroa* (*University of Campinas*); *Marco Abbarchi* (*Aix Marseille University, University de Toulon*); *Badre Kerzabi* (*Solnil, 95 Rue de la République*); *Mahmoud Elsawy* (*Inria Research Center at Cote d'Azur University*);

00:00 Radio Frequency Spectrogram-based Anomaly Detection
*Ammar Battah* (*Technology Innovation Institute*); *Santosh Sanjeev* (*Technology Innovation Institute*); *Sultan Abughazal* (*Technology Innovation Institute*); *Jaeden Amero* (*Technology Innovation Institute*); *Qingjie Yang* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Improving OCR by Integrating Image Denoising and LLM-based Text Refinement
*Santosh Sanjeev* (*Technology Innovation Institute*); *David Martinez* (*Technology Innovation Institute*); *Sultan Abughazal* (*Technology Innovation Institute*); *Ammar Battah* (*Technology Innovation Institute*); *Ali Yaqoob* (*Technology Innovation Institute*); *Islem Yahi* (*Technology Innovation Institute*); *Qingjie Yang* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Invited Hybrid Framework for Inverse Design of Large-scale Metaphotonic Devices
*Reza Marzban* (*Georgia Institute of Technology*); *Hamed Abiri* (*Georgia Institute of Technology*); *Ali Adibi* (*Georgia Institute of Technology*);

00:00 Invited Wafer-scale, Aperiodic Inverse Design with Millions Scale Structures Datasets: Fundamentals and Applications
*Sergei Rodionov* (*King Abdullah University of Science and Technology (KAUST)*); *Qizhou Wang* (*King Abdullah University of Science and Technology (KAUST)*); *Arturo Burguete Lopez* (*King Abdullah University of Science and Technology (KAUST)*); *Andrea Fratalocchi* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Two-stage Deep Learning Based Landmine Detection in Ground Penetrating Radar Scans
*Sultan Abughazal* (*Technology Innovation Institute*); *Santiago Morales* (*Technology Innovation Institute*); *Oginne Lapuz* (*Technology Innovation Institute*); *Qingjie Yang* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Invited Three Intelligent Metasurface Designs: Forward Prediction, Inverse Design, and Spectral Correlation
*Chao Qian* (*Zhejiang University*);

00:00 AI-enabled Based Inverse Design of Active and Passive Devices Co-designed for End-to-end RF/THz ICs
*Kaushik Sengupta* (*Princeton University*);

00:00 A Differentiable Solver for Scattering on Axially Symmetric Particles
*Vladimir Igoshin* (*ITMO University*); *Alexey Yu. Kokhanovskiy* (*ITMO University*); *Mihail I. Petrov* (*ITMO University*);

## Session 2P2a
## Recent Advances in Optical Metasurfaces 3

**Tuesday PM, May 6, 2025**

**Room 2 - CH B (C&B)**

Organized by Cheng Zhang, Fei Ding

Chaired by Fei Ding

00:00 Invited Single Quantum Emitters with Arbitrarily Polarized Dipole Moments under Ambient Conditions
*Juan Xia* (*Huazhong University of Science and Technology*); *Jianwei Tang* (*Huazhong University of Science and Technology*); *Qiaoyin Lu* (*Huazhong University of Science and Technology*); *Weihua Guo* (*Huazhong University of Science and Technology*);

00:00 Dynamic Control of Second-harmonic Chirality through Lithium Niobate Nonlocal Metasurface
*Yiwen Liu* (*University of Southern Denmark*); *Chao Meng* (*University of Southern Denmark*); *Fei Ding* (*University of Southern Denmark*); *Sergey I. Bozhevolnyi* (*University of Southern Denmark*);

00:00 Invited Algorithm-driven Design of Multifunctional Metasurfaces
*Wei Ma* (*Zhejiang University*);

00:00 Silicon-polystyrene Binary Colloidal Photonic Crystals for Light Reflection Engineering and Confinement Applications
*Sreya Sanjeev* (*National Institute of Technology Calicut*); *Abijith Kaithatharayil Reju* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*); *Subramanyan Namboodiri Varanakkottu* (*National Institute of Technology Calicut*);

00:00 Invited Inverse Design for Wavelength and Polarization Multiplexing in Optical Metasurfaces
*Bo Xiong* (*Zhejiang University*); *Wei Ma* (*Zhejiang University*);

00:00 Invited BIC Metasurfaces and Their THz Applications
*Longqing Cong* (*Southern University of Science and Technology*);

## Session 2P2b
## Advancing Metamaterials: From Research to Applications

**Tuesday PM, May 6, 2025**

**Room 2 - CH B (C&B)**

Organized by Chun-Yu Lu, Tadzio Levato

00:00 Invited Advanced Planar Lenses for Super-focusing Spot Generation from UV to Visible Light via Topology Optimization
*Tsung Sheng Kao* (*National Yang Ming Chiao Tung University*);

00:00 Multi-functional Lasing from Structures of Lepidoptera
*Shih-Wen Chen* (*National Taipei University of Technology*); *Ja-Hon Lin* (*National Taipei University of Technology*); *Tzu-Chau Lin* (*National Central University*);

00:00 Circular Polarizer Based on Metamaterial Spiral Planar Structure
*Fatima Ghulam Kakepoto* (*Zhejiang Normal University*); *Shihua Huang* (*Zhejiang Normal University*); *Farman Ali Mangi* (*Shah Abdul Latif University Khairpur*); *Syed Muzahir Abbas* (*Macquarie University*);

00:00 Extraordinarily Transparent Compact Metallic Metamaterials
*Xiaofei Xiao* (*Technology Innovation Institute*);

00:00 Study of Magnetoelectric Elements Characteristics for Magnetoelectric Synchronous Generator
*Vasilii A. Misilin* (*Yaroslav-the-Wise Novgorod State University*); *Viktor A. Kiselev* (*Yaroslav-the-Wise Novgorod State University*); *Alena R. Petrova* (*Novgorod State University*); *Aleksandr A. Rak* (*Novgorod State University*); *Evgeny V. Kuzmin* (*Novgorod State University*); *Roman V. Petrov* (*Novgorod State University*);

00:00 Exceptional Point of a Non-Hermitian Terahertz Metasurface for Controllable Polarization Transmission
*Febina Sherin M* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*);

00:00 Boosting Performance of 1.5 T MRI Using Switchable Metasurface Wraps Composed of Interconnected Rectangular Windings
*Jegyasu Gupta* (*Indian Institute of Technology*); *Amit Baran Dey* (*Indian Institute of Technology Roorkee*); *Tanmay Bhowmik* (*Indian Institute of Technology*); *Ratnajit Bhattacharjee* (*Indian Institute of Technology Guwahati*); *Subramani Kanagaraj* (*Indian Institute of Technology*); *Debabrata Sikdar* (*Indian Institute of Technology*);

00:00 Numerical Investigation of Hollow Fiber Optic for Pressure Sensing
*Mahra Almheiri* (*Technology Innovation Institute*); *Montasir Qasymeh* (*Abu Dhabi University*); *Tadzio Levato* (*Technology Innovation Institute*);

00:00 High-speed Photodetectors and Electrically Tunable Phase Shifters Using Integrated 2D Materials
*Srinivasa Reddy Tamalampudi* (*New York University — Abu Dhabi*); *Ghada Dushaq* (*New York University — Abu Dhabi*); *Mahmoud Rasras* (*New York University — Abu Dhabi*);

00:00 Non-destructive Monitoring of Food Processes Using Millimeter-wave Sensors
*Gokarna Pandey* (*Technology Innovation Institute (TII)*); *Johan Stiens* (*Vrije Universiteit Brussel (VUB)*);

00:00 Innovations in Microwave Ablation: Advancing Antenna Design and Thermal Analysis for Medical Applications
*Pawel Cala* (*Technology Innovation Institute*); *Gokarna Pandey* (*Technology Innovation Institute (TII)*); *Xiaofei Xiao* (*Technology Innovation Institute*);

00:00 Neural Network-enhanced Spectral Density Analysis for Advanced Metamaterial Applications
*Chun-Yu Lu* (*Technology Innovation Institute*); *Md. Mahfuzur Rahman* (*Jashore University of Science and Technology*); *Shih-Wen Chen* (*National Taipei University of Technology*);

## Session 2P3
## Thermal Radiation: Principles, Progress, and Potentials

**Tuesday PM, May 6, 2025**

**Room 3 - CH B (D)**

Organized by Bai Song, Kezhang Shi

Chaired by Kezhang Shi

00:00 Invited Thermal Management of Semiconductor Optoelectronics Using Radiative Cooling
*Qiaoqiang Gan* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Invited Electrochromic Materials for Visible and Near Infrared Light Modulation
*Rui-Tao Wen* (*Southern University of Science and Technology*);

00:00 Invited Design of Materials for Thermal Radiation Regulation and Their Applications in Energy Savings
*Yucan Peng* (*Peking University*);

00:00 Invited Manipulated Near-field Radiative Heat Transfer between Nanoparticles Based on Acoustic Phonon Polaritons
*Ceji Fu* (*Peking University*); *Shuo Chen* (*Peking University*); *Xiaohu Wu* (*Shandong Institute of Advanced Technology*);

00:00 Invited Dynamic Control of Light and Thermal Radiation Based on Nanophotonic Cavities and Reversible Metal Electrodeposition
*Boxiang Wang* (*Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences*); *S. H. Jin* (*Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences*); *J. H. Hou* (*Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences*); *T. Xie* (*Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences*);

00:00 Invited Materials Design Principle for Mid-IR Electrochromic Polymer Metasurfaces
*Po-Chun Hsu* (*University of Chicago*);

00:00 Invited Radiant Heat Transfer: From Local Mode to Non-local Mode
*Cheng-Long Zhou* (*Harbin Institute of Technology*); *Chu-Jun Yu* (*Harbin Institute of Technology*); *Hongliang Yi* (*Harbin Institute of Technology*);

00:00 Invited Smart Radiative Thermal Management Metadevices
*Yang Li* (*Zhejiang University*); *Zhuoyuan Zhang* (*The Hong Kong University of Science and Technology*); *Keqiao Li* (*The Hong Kong University of Science and Technology*); *Baoling Huang* (*The Hongkong University of Science and Technology*);

00:00 Invited Materials Informatics Design of Thermal Metamaterials
*Run Hu* (*Huazhong University of Science and Technology*); *Zihe Chen* (*Huazhong University of Science and Technology*);

00:00 Invited Nanoscale Radiative Heat Transfer in Non-reciprocal Systems
*Svend-Age Biehs* (*Carl von Ossietzky Universitat*);

00:00 Experimental Study of Thermal Emission by Subwavelength Apertures
*Kyriaki Kontou* (*Centre for Energy and Thermal Sciences of Lyon (CETHIL), CNRS, INSA Lyon*); *Olivier Merchiers* (*Université de Lyon, CNRS, INSA-Lyon, Universite Claude Bernard Lyon 1*); *Pierre-Olivier Chapuis* (*CNRS, National Institute of Applied Physics (INSA) Lyon*);

00:00 Vertical Radiative Cooling System with Lubricated Surface for Passive Atmospheric Water Harvesting
*Shakeel Ahmad* (*King Abdullah University of Science and Technology*); *Murali Gedda* (*King Abdullah University of Science and Technology*); *Qiaoqiang Gan* (*King Abdullah University of Science and Technology (KAUST)*);

## Session 2P4
## Bound States in the Continuum and Non-local Flat Optics

**Tuesday PM, May 6, 2025**

**Room 4 - Capital Suite 1**

Organized by Dezhuan Han, Wenzhe Liu

Chaired by Wenzhe Liu

00:00 BIC-based Approach to Polarisation Independent Metasurfaces
*Aleksandra A. Kutuzova* (*ITMO University*); *Sergei V. Li* (*Zhejiang University*); *Binze Ma* (*Zhejiang University*); *Qiang Li* (*Zhejiang University*); *Mikhail V. Rybin* (*ITMO University*);

00:00 Invited Nonlocality-induced Photonic Multiverse
*Tongtong Song* (*Nanjing University*); *Yongxin Jing* (*Nanjing University*); *Changhui Shen* (*Nanjing University*); *Hongchen Chu* (*Nanjing Normal University*); *Jie Luo* (*Soochow University*); *Zhao-Qing Zhang* (*The Hong Kong University of Science and Technology*); *Ru-Wen Peng* (*Nanjing University*); *Mu Wang* (*Nanjing University*); *C. T. Chan* (*Hong Kong University of Science and Technology*); *Yun Lai* (*Nanjing University*);

00:00 Invited Inherent Spin-orbit Locking in Topological Bound State in the Continuum Lasing
*Jiajun Wang* (*Fudan University*); *Lei Shi* (*Fudan University*); *Yuri S. Kivshar* (*Australian National University*); *Jian Zi* (*Fudan University*);

00:00 Invited Recent Advances in Resonant Metaphotonics
*Yuri S. Kivshar* (*Australian National University*);

00:00 Bound States in the Continuum and Lattice Resonances in Dipole Lattices
*Ilia Igorevich Karavaev* (*ITMO University*); *Andrey A. Bogdanov* (*Harbin Engineering University*);

00:00 Invited Advanced Nanostructured Metasurfaces
*Haoran Ren* (*Monash University*);

00:00 Invited Electrically Tunable Optical Metasurfaces Based on MEMS Mirrors
*Fei Ding* (*University of Southern Denmark*);

00:00 Invited Super-bound States in the Continuum: Parametric Dependence and Efficient Computation
*Nan Zhang* (*City University of Hong Kong*); *Ya Yan Lu* (*City University of Hong Kong*);

00:00 Invited Janus Bound States in the Continuum with Asymmetric Topological Charges
*Meng Kang* (*Hong Kong University of Science and Technology*); *Meng Xiao* (*Wuhan University*); *Che Ting Chan* (*The Hong Kong University of Science and Technology*);

00:00 Invited Nanoscale Dynamic Light Control Based on Bound States in the Continuums
*Yifei Mao* (*Shanghai Jiao Tong University*);

00:00 Invited Observation of Bloch Flatbands and Localized States in Moiré Bilayer Grating
*Qinyu Jing* (*Fudan University*); *Zhiyuan Che* (*Fudan University*); *Shaohu Chen* (*Fudan University*); *Tongtong Xue* (*Beijing Institute of Technology*); *Jiajun Wang* (*Fudan University*); *Wenzhe Liu* (*Fudan University*); *Yunyun Dai* (*Beijing Institute of Technology*); *Lei Shi* (*Fudan University*); *Jian Zi* (*Fudan University*);

00:00 Manipulating Quasi-bound States in Continuum Using Symmetry-breaking Metasurface
*Faizan Faraz* (*Zhejiang University*); *Jiwei Zhao* (*Zhejiang University*); *Huan Lu* (*Zhejiang University*); *Rongrong Zhu* (*Zhejiang University*); *Bin Zheng* (*Zhejiang University*);

## Session 2P5a
## Optical Fiber Sensors for Medical and Industrial Applications 2

**Tuesday PM, May 6, 2025**

**Room 5 - Capital Suite 2**

Organized by Antonello Cutolo

00:00 Invited Fiber Coupled Tuneable Photonic Devices Based on Plasmonic Photo-thermal Effects for Biomedical Applications
*Antonio D'Alessandro* (*Sapienza University of Rome*); *Carlo Santini* (*Sapienza University of Rome*); *Maria Laura Sforza* (*Sapienza University of Rome*); *Federica Zaccagnini* (*Sapienza University of Rome*); *Francesca Petronella* (*Institute of Crystallography CNR-IC*); *Luciano De Sio* (*Sapienza University of Rome*);

00:00 Novel Strategies to Integrate Evanescent Field Sensors in a Silicon-on-insulator Technology
*Tabea Fünning* (*IHP — Leibniz-Institut fur Innovative Mikroelektronik*); *Christian Mai* (*IHP — Leibniz-Institut fur Innovative Mikroelektronik*); *Martin Paul* (); *Christoph Schumann* (); *Michael G. Weller* (); *Andreas Mai* (*IHP — Leibniz-Institut fur Innovative Mikroelektronik*); *Patrick Steglich* (*IHP — Leibniz-Institut fur Innovative Mikroelektronik*);

00:00 Single Photon Detection for Fast Virus Detection
*Abolfazl Bahrampour* (*Sharif University of Technology*);

00:00 How Distributed Optical Fiber Sensors Can Change Earthquake Studies: A Case Study
*Abolfazl Bahrampour* (*Sharif University of Technology*);

00:00 Invited Applications Optical Micro Resonators in Bio Sensors
*Ali Reza Bahrampour* (*Sharif University*);

00:00 Micro- to Sub-50 nm Patterning: Innovative Structuring Technologies for Nonplanar Optical Fibers and Nanofibers
*Antonio Balena* (*Center for Biomolecular Nanotechnologies, Istituto Italiano di Tecnologia*); *Marianna D'Amato* (*Sorbonne University, CNRS, ENS-PSL University, Collège de France*); *Muhammad Fayyaz Kashif* (*Università degli Studi di Napoli Federico II*); *Chengjie Ding* (*Sorbonne University, CNRS, ENS-PSL University, Collège de France*); *Lucien Belzane* (*Sorbonne University, CNRS, ENS-PSL University, Collège de France*); *Althea Housset* (*Sorbonne University, CNRS, ENS-PSL University, Collège de France*); *Hanna Le Jeannic* (*Sorbonne University, CNRS, ENS-PSL University, Collège de France*); *Massimo De Vittorio* (*Center for Biomolecular Nanotechnologies, Istituto Italiano di Tecnologia*); *Ferruccio Pisanello* (*Center for Biomolecular Nanotechnologies, Istituto Italiano di Tecnologia*); *Alberto Bramati* (*Sorbonne University, CNRS, ENS-PSL University, Collège de France*);

00:00 Shutdown-free System for Integral Field Analysis and Calibration of Measurement Chains via Optical TIs for Renewable Energy Systems
*Josemir Coelho Santos* (*University of São Paulo*);

## Session 2P5b
## Intelligent Photonics

**Tuesday PM, May 6, 2025**

**Room 5 - Capital Suite 2**

Organized by Mikhail Y. Shalaginov, Lian Shen

Chaired by Mikhail Y. Shalaginov

00:00 Invited Manipulation of the NV Center Nuclear Spin Using Invisible Transition
*Svyatoslav M. Drofa* (*Russian Quantum Center*); *Vladimir V. Soshenko* (*P.N. Lebedev Institute, RAS*); *Ivan S. Cojocaru* (*Russian Quantum Center*); *Stepan V. Bolshedvorskii* (*P.N. Lebedev Physical Institute RAS*); *Polina G. Vilyuzhanina* (*Russian Quantum Center*); *Eugene A. Primak* (*Russian Quantum Center*); *Aleksandr M. Kozodaev* (*National Research Nuclear University "MEPhI"*); *A. Chernyavskiy* (*Russian Quantum Center*); *Victor G. Vins* (*LLC Velman*); *Vadim N. Sorokin* (*P.N. Lebedev Physical Institute RAS*); *A. N. Smolyaninov* (*LLC Sensor Spin Technologies*); *Sergey Ya. Kilin* (*B.I. Stepanov Institute of Physics NASB*); *Aleksey V. Akimov* (*Russian Quantum Center*);

00:00 Invited Coherent Computing, Quantum Light Generation and Other Applications of Integrated Microring Resonators
*Alexander K. Vorobyev* (*Russian Quantum Center*); *Andrey Danilin* (*Russian Quantum Center*); *Timur R. Yunusov* (*Russian Quantum Center*); *Aleksei P. Dushanin* (*Russian Quantum Center*); *Nadezhda S. Tatarinova* (*Russian Quantum Center*); *Daria M. Sokol* (*Russian Quantum Center*); *Aleksei D. Ivanov* (*Russian Quantum Center*); *Nikita Yu. Dmitriev* (*Russian Quantum Center*); *Valery E. Lobanov* (*Russian Quantum Center*); *Artem E. Shitikov* (*Russian Quantum Center*); *Anatoly V. Masalov* (*Russian Quantum Center*); *Igor A. Bilenko* (*Russian Quantum Center*); *Dmitry A. Chermoshentsev* (*Russian Quantum Center*);

00:00 Invited Nanophotonics with Hexagonal Boron Nitride: Ultraviolet Transparency, High Refractive Index, and Giant Optical Anisotropy
*Valentyn S. Volkov* (*Emerging Technologies Research Center, XPANCEO*);

00:00 Keynote Diffractive Information Processing and Computational Imaging
*Aydogan Ozcan* (*University of California of Los Angeles*);

00:00 Invited AI for Meta-optics Design
*Mikhail Y. Shalaginov* (*Massachusetts Institute of Technology*);

00:00 Invited Manifold Learning Approaches for Knowledge Discovery and Design of Electromagnetic Nanostructures
*Mohammadreza Zandehshahvar* (*Georgia Institute of Technology*); *Mohammad Hadighehjavani* (*Georgia Institute of Technology*); *Mahmoodreza Marzban* (*Georgia Institute of Technology*); *Ali Adibi* (*Georgia Institute of Technology*);

00:00 Invited Integrating Deep Learning and Topology Optimization for Next-generation Nanophotonic Devices
*Sajid Muhaimin Choudhury* (*Bangladesh University of Engineering and Technology (BUET)*); *Md. Ehsanul Karim* (*Bangladesh University of Engineering and Technology (BUET)*); *Md. Redwanul Karim* (*Bangladesh University of Engineering and Technology (BUET)*); *Navid Sadat Yamin* (*Bangladesh University of Engineering and Technology (BUET)*);

## Session 2P6a
## Manipulation, Detection and Application in Optical Spatial and Temporal Modulation Systems

**Tuesday PM, May 6, 2025**

**Room 6 - Capital Suite 3**

Organized by Atsushi Kanno

Chaired by Atsushi Kanno

00:00 Terahertz Structured Light Based on Nonlinear Effect
*Katsuhiko Miyamoto* (*Chiba University*);

00:00 Frequency Stabilized sub-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*); *Kouji Nawata* (*Tohoku Institute of Technology Sendai*); *Yoshiharu Urata* (*PHLUXi, Inc.*); *Norihiko Sekine* (*National Institute of Information and Communications Technology*);

00:00 Topological Nature Projected from Focusing Optical System to Terahertz Beam
*Seigo Ohno* (*Tohoku University*); *Hiroaki Iwase* (*Tohoku University*); *Hiroaki Shirasaka* (*Tohoku University*);

00:00 Spatial Modal Dispersion Modulation Technique in Multi-mode Optical Fiber Systems
*Atsushi Kanno* (*Nagoya Institute of Technology*); *Ryotaro Yamashita* (*Nagoya Institute of Technology*);

00:00 Electrically Controlled Reflectance Modulation Utilizing ENZ Materials near 1550 nm Wavelength
*Shakti Pada Mahato* (*Indian Institute of Technology Roorkee*); *Vipul Rastogi* (*Indian Institute of Technology Roorkee*);

00:00 5G Frequency Band Wireless Signal Detection Using Optical Phase Modulator and Optical Fiber Dispersion Effect
*Yamato Fujikata* (*Mie University*); *Naoki Ueda* (*Mie University*); *Yui Otagaki* (*Mie University*); *Hiroshi Murata* (*Mie University*);

## Session 2P6b
## Advanced Optical and Digital Signal Processing in Optical Communication Networks

**Tuesday PM, May 6, 2025**

**Room 6 - Capital Suite 3**

Organized by Tianhua Xu, Mingming Tan

Chaired by Feng Wen

00:00 Diffractive Optical Neural Networks Solving Different Classification Problems at Different Wavelengths
*Leonid L. Doskolovich* (*Image Processing Systems Institute, NRC "Kurchatov Institute"*); *G. A. Motz* (*Image Processing Systems Institute, NRC "Kurchatov Institute"*); *D. V. Soshnikov* (*Image Processing Systems Institute, NRC "Kurchatov Institute"*); *E. V. Byzov* (*Image Processing Systems Institute, NRC "Kurchatov Institute"*); *Evgeni A. Bezus* (*Image Processing Systems Institute, NRC "Kurchatov Institute"*); *Dmitry A. Bykov* (*Image Processing Systems Institute, NRC "Kurchatov Institute"*);

00:00 Digital Chaotic Encryption for Secure Optical Networks
Invited
*Zhouyi Hu* (*Beijing Jiaotong University*);

00:00 Analog Radio-over-Fiber Technologies for Cell-free
Invited MIMO Networks in 6G
*Xiaodan Pang* (*Riga Technical University*); *Rafael Puerta* (*Ericsson Research*); *Tianyu Jiang* (*KTH Royal Institute of Technology*); *Kristaps Rubuls* (*Riga Technical University*); *Dan Li* (*KTH Royal Institute of Technology*); *Armands Ostrovskis* (*Riga Technical University*); *Richard Schatz* (*Royal Institute of Technology (KTH)*); *Lu Zhang* (*Zhejiang University*); *Toms Salgals* (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*); *Xianbin Yu* (*Zhejiang University*); *Oskars Ozoliņš* (*Riga Technical University, Latvian Academy of Sciences*);

00:00 Practical Implementation of Probabilistic Constellation
Invited Shaping for High Speed Optical Data Links
*Jinlong Wei* (*Peng Cheng Laboratory*);

00:00 Investigation on Radio-over-fiber Signals Propagating through Mode-division Multiplexing Channel
*Yihan Wang* (*University of Electronic Science and Technology of China*); *Tianfeng Zhao* (*University of Electronic Science and Technology of China*); *Feng Wen* (*University of Electronic Science and Technology of China*);

00:00 Can SiP Modulators Enable 400 Gbps on Single Wave-
Invited length in IM/DD Systems?
*Armands Ostrovskis* (*Riga Technical University*); *Darja Cirjulina* (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*); *Minkyu Kim* (*IMEC*); *Michael Koenigsmann* (*Keysight Technologies Deutschland GmbH*); *Benjamin Krüger* (*Keysight Technologies Deutschland GmbH*); *Fabio Pittalà* (*Keysight Technologies Deutschland GmbH*); *Lu Zhang* (*Zhejiang University*); *Xianbin Yu* (*Zhejiang University*); *Richard Schatz* (*Royal Institute of Technology (KTH)*); *Markus Gruen* (*Keysight Technologies Deutschland GmbH*); *Hadrien Louchet* (*Keysight Technologies Deutschland GmbH*); *Robert Jahn* (*Keysight Technologies Deutschland GmbH*); *Kazuo Yamaguchi* (*Keysight Technologies*); *Vjaceslavs Bobrovs* (*Riga Technical University*); *Peter De Heyn* (*IMEC*); *Xiaodan Pang* (*Zhejiang University*); *Oskars Ozoliņš* (*Riga Technical University, Latvian Academy of Sciences*);

00:00 Photonic Terahertz Chaos for Broadband Communica-
Invited tion and Sensing
*Lu Zhang* (*Zhejiang University*); *Qiuzhuo Deng* (*Zhejiang University*); *Zhidong Lyu* (*Zhejiang University*); *Xiaodan Pang* (*Zhejiang University*); *Oskars Ozoliņš* (*Riga Technical University, Latvian Academy of Sciences*); *Xianbin Yu* (*Zhejiang University*);

00:00 Analytical Formulation of Linear and Nonlinear Noise in
Invited Coherent Optical Communication Systems with Polarization Dependent Loss
*Junhe Zhou* (*Tongji University*); *Tengyuan Liu* (*Tongji University*);

## Session 2P7a
## Semiconductor Optoelectronics 2

**Tuesday PM, May 6, 2025**

**Room 7 - Capital Suite 4**

Organized by Iman S. Roqan, Vijay Kumar Gudelli

Chaired by Iman S. Roqan, Vijay Kumar Gudelli

00:00 Plasmon Coupling in Metal Nanoparticle Assemblies
Invited and Enhanced Optoelectronic Responses for Graphene Oxide-metal Nanoparticles
*Bala Murali Krishna Mariserla* (*IIT Jodhpur*);

00:00 Enhancing Vertical Solar Panel Performance with Radiative Cooling
*Shakeel Ahmad* (*King Abdullah University of Science and Technology*); *Murali Gedda* (*King Abdullah University of Science and Technology*); *Saichao Dang* (*King Abdullah University of Science and Technology*); *Qiaoqiang Gan* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Passive Cooling Strategies for Solar Panels in Hot Cli-
Invited mates
*Qiaoqiang Gan* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Optoelectronic Devices Based on GaP (NAs) on Silicon
*Liliia N. Dvoretckaia* (*Alferov University*); *A. M. Mozharov* (*Alferov University*); *V. S. Volosatova* (*Alferov University*); *E. I. Moiseev* (*National Research University*); *A. K. Kaveev* (*Alferov University*); *V. V. Fedorov* (*Alferov University*); *I. S. Mukhin* (*Alferov University*);

00:00 Orientation Dependent Optical Behavior of Unintentionally Doped and Sn Doped $\beta$-$Ga_2O_3$ Substrates
*Kishor Upadhyaya* (*King Abdullah University of Science and Technology (KAUST)*); *Hadeel A. Alamoudi* (*King Abdullah University of Science and Technology (KAUST)*); *Vijay Kumar Gudelli* (*King Abdullah University of Science and Technology (KAUST)*); *Iman S. Roqan* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Progress and Outlook of AlGaN-based (290–310 nm)-
Invited Band UVB LEDs and (225–230 nm)-Band Far-UVC LEDs Grown on c-Sapphire
*Muhammad Ajmal Khan* (*Riken Cluster for Pioneering Research (CPR)*); *Mitsuhiro Muta* (); *Yukio Kashima* (*Riken Cluster for Pioneering Research (CPR)*); *Hiroyuki Yaguchi* (*Saitama University*); *Yasushi Iwaisako* (*Nippon Tungsten Co., Ltd.*); *Hideki Hirayama* (*Riken Cluster for Pioneering Research (CPR)*);

00:00 Nanostructured Hybrid Thin Films for Photons and Pollutants Concentration and Photocatalysis
*Andrea Lanfranchi* (*University of Genova*); *Vincenzo Spinoso* (*University of Florence*); *Alejandro Martinez-Bueno* (*University of Florence*); *Valeria d'Agostino* (*University of Naples Federico II*); *Simone Bertucci* (*Adolphe Merkel Institute*); *Paola Lova* (*University of Genova*);

## Session 2P7b
## Oral Presentations for Best Student Paper Awards — SC5: Remote Sensing, Inverse Problems, Imaging, Radar and Sensing

**Tuesday PM, May 6, 2025**

**Room 7 - Capital Suite 4**

00:00 Ship Detection in the Harbor for SAR Images Based on Superpixel and Contextual Features
*Yongchao Cheng* (*Northwestern Polytechnical University*); *Chun Liu* (*Northwestern Polytechnical University*); *S. Liu* (*Northwestern Polytechnical University*);

00:00 AI-based Sea Surface Wind Direction Retrieval from SAR Imagery
*Hongyu Yang* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Xiaofeng Yang* (*Nanjing University*);

00:00 ASPE-net: An Adaptive Structural Parameters Estimation Net for SAR under Motion Errors
*Yue Song* (*University of Electronic Science and Technology of China*); *Wei Pu* (*University of Electronic Science and Technology of China*); *Junjie Wu* (*University of Electronic Science and Technology of China*); *Jianyu Yang* (*University of Electronic Science and Technology of China*);

00:00 Bistatic SAR Image Fusion Based on NSCT
*Zijian Zhang* (*University of Electronic Science and Tech of China*); *Yue Song* (*University of Electronic Science and Technology of China*); *Junjie Wu* (*University of Electronic Science and Technology of China*); *Wei Pu* (*University of Electronic Science and Technology of China*);

00:00 Localization of Beaver Burrows by P-band SAR Tomography
*Gian Carlos Oré Huacles* (*University of Campinas*); *William Kirk* (*Surveyar Ltd*); *Hugo Enrique Hernandez-Figueroa* (*University of Campinas*);

00:00 Advancing TDR Technique for Oil Leakage Detection
*Hao-Ruei Jhan* (*National Yang Ming Chiao Tung University*); *Farizal Hakiki* (*National Yang Ming Chiao Tung University*); *Chih-Ping Lin* (*National Yang Ming Chiao Tung University*);

## Session 2P8
## High Power Sub-THz and THz Waves: Sources and Applications

**Tuesday PM, May 6, 2025**

**Room 8 - Capital Suite 5**

Organized by Mikhail Yu. Glyavin, Nikolai Yu. Peskov

Chaired by Mikhail Yu. Glyavin, Nikolai Yu. Peskov

00:00 Gyrotrons on the Way to High Power Sub-THz/THz Radiation Sources
*Grigory G. Denisov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Evgeniy M. Tai* (*Institute of Applied Physics of the RAS*); *Mikhail Yu. Glyavin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 First Experiments on a Demountable Prototype of a MW Level 230 GHz Gyrotron
*Andrey A. Ananichev* (*Institute of Applied Physics of the RAS*); *A. V. Chirkov* (*Institute of Applied Physics of the Russian Academy of Sciences*); *Grigory G. Denisov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Andrey Pavlovich Fokin* (*Federal Research Center A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Mikhail Yu. Glyavin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *S. Yu. Kornishin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Andrey N. Kuftin* (*Institute of Applied Physics of the RAS*); *A. G. Litvak* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Vladimir N. Manuilov* (*Institute of Applied Physics RAS*); *L. G. Popov* (*GYCOM Ltd.*); *E. A. Soluyanova* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Evgeniy M. Tai* (*Institute of Applied Physics of the RAS*);

00:00 Frequency-tunable Gyrotron with External Reflections: Design of an Experiment and Problem of Mode Competition
*Daniil V. Lazarev* (*A.V. Gaponov-Grekhov Institute of Applied Physics, RAS*); *Yuriy K. Kalynov* (*Institute of Applied Physics, RAS*); *Ivan V. Osharin* (*Institute of Applied Physics, RAS*); *Andrei V. Savilov* (*A. V. Gaponov-Grekhov Institute of Applied Physics, RAS*); *Evgeniy S. Semenov* (*Institute of Applied Physics*);

00:00 Cyclotron-resonant Modulator of High-power Ka-band Radiation
*Sergey V. Samsonov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Irina V. Zotova* (*Institute of Applied Physics, RAS*); *Alexander S. Sergeev* (*Institute of Applied Physics, Russian Academy of Sciences*); *Vladislav Yur'evich Zaslavsky* (*Institute of Applied Physics, Russian Academy of Sciences*); *Naum S. Ginzburg* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Design of a Helix SWS with Coupler for Compact Ka-band Space TWT
*Vaishali* (*Banasthali Vidyapith*); *A. Mercy Latha* (*Central Electronics Engineering Research Institute (CEERI)*); *Meenu Kaushik* (*CSIR-Central Electronics Engineering Research Institute (CEERI)*); *Vishant Gahlaut* (*Banasthali University*);

00:00 Catching of the Space Charge in Gyrotron Electron Guns with Cusp Magnetic Field
*Vladimir N. Manuilov* (*Institute of Applied Physics RAS*); *Yu. K. Kalynov* (*Institute of Applied Physics RAS*);

00:00 Experimental Investigations of Multi-frequency Operation Regimes of a High-current Relativistic Gyrotron with Elongated Interaction Space
*Alexander Nikolaevich Leontyev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Edward Bulatovich Abubakirov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Andrey Nikolaevich Denisenko* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Naum Samuilovich Ginzburg* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Roman Markovich Rozental* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Alexander Sergeevich Sergeev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Irina Valerievna Zotova* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 A New Approach for Multicharged Ion Beams Production for the Heavy Ion Accelerator Facility
*Vadim A. Skalyga* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *I. V. Izotov* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *S. V. Golubev* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *A. V. Polyakov* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *S. V. Razin* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *D. M. Smagin* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *A. V. Vodopyanov* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *S. S. Vybin* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *L. T. Sun* (*Institute of Modern Physics of the Chinese Academy of Sciences*); *H. Y. Zhao* (*Institute of Modern Physics of the Chinese Academy of Sciences*); *Y. T. Lu* (*Institute of Modern Physics of the Chinese Academy of Sciences*); *J. J. Zhang* (*Institute of Modern Physics of the Chinese Academy of Sciences*); *B. Zhang* (*Institute of Modern Physics of the Chinese Academy of Sciences*); *J. B. Li* (*Institute of Modern Physics of the Chinese Academy of Sciences*); *J. D. Ma* (*Institute of Modern Physics of the Chinese Academy of Sciences*);

00:00 Multi-periodic 1D and 2D Slow-wave Structures for Surface-wave Oscillators with Transverse Radiation Output
*Ekaterina D. Egorova* (*Institute of Applied Physics, RAS*); *Naum S. Ginzburg* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Nikolai Yu. Peskov* (*Institute of Applied Physics, RAS*); *Andrey Mihailovich Malkin* (*Institute of Applied Physics, Russian Academy of Sciences*); *Alexander S. Sergeev* (*Institute of Applied Physics, Russian Academy of Sciences*); *Vladislav Yur'evich Zaslavsky* (*Institute of Applied Physics, Russian Academy of Sciences*);

00:00 Project of Mutligigawatt Power W-band Free Electron Maser with 3D Distributed Feedback Driven by Large-size Sheet Electron Beam
*Nikolai Yu. Peskov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Ekaterina D. Egorova* (*Institute of Applied Physics, RAS*); *Vladislav Yu. Zaslavsky* (*Institute of Applied Physics, RAS*); *Ksenia A. Leshcheva* (*Institute of Applied Physics, RAS*); *Alexander A. Vikharev* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Alexander Sergeevich Sergeev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Naum Samuilovich Ginzburg* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Andrey V. Arzhannikov* (*Budker Institute of Nuclear Physics RAS*); *Evgeny S. Sandalov* (*Budker Institute of Nuclear Physics RAS*); *Denis A. Samtsov* (*Budker Institute of Nuclear Physics RAS*); *Stanislav L. Sinitsky* (*Budker Institute of Nuclear Physics Russian Academy of Sciences*);

00:00 Production of High Power Sub-THz Radiation in Oversized Surface-wave Oscillators Using 2D Feedback
*Naum S. Ginzburg* (*Institute of Applied Physics, Russian Academy of Sciences*); *Nikolai Yu. Peskov* (*Institute of Applied Physics, RAS*); *Vladislav Yu. Zaslavsky* (*Institute of Applied Physics, RAS*); *Andrey Mihailovich Malkin* (*Institute of Applied Physics, Russian Academy of Sciences*); *Edward B. Abubakirov* (*Institute of Applied Physics of the Russian Academy of Sciences*); *Andrey N. Denisenko* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Mikhail D. Proyavin* (*Institute of Applied Physics, Russian Academy of Sciences*); *Alexander S. Sergeev* (*Institute of Applied Physics, Russian Academy of Sciences*);

00:00 High-power Terahertz Band Relativistic Surface-wave Oscillator with Two-dimensional Periodic Planar Grating Energized by Explosive Emission Sheet Electron Beams
*Vladislav Yur'evich Zaslavsky* (*Institute of Applied Physics, Russian Academy of Sciences*); *Yu. V. Rodin* (*Institute of Applied Physics, Russian Academy of Sciences*); *M. B. Goykhman* (*Institute of Applied Physics, Russian Academy of Sciences*); *A. V. Gromov* (*Institute of Applied Physics, Russian Academy of Sciences*); *A. N. Panin* (*Institute of Applied Physics, Russian Academy of Sciences*); *Vladimir V. V. Parshin* (*Institute of Applied Physics, Russian Academy of Sciences*); *D. R. Gulyovsky* (*Institute of Applied Physics, Russian Academy of Sciences*); *Mikhail D. Proyavin* (*Institute of Applied Physics, Russian Academy of Sciences*); *Alexey V. Palitsin* (*Institute of Applied Physics, Russian Academy of Sciences*);

00:00 High-gradient Sub-THz Accelerating Structures Powered by Cherenkov Superradiance Pulses
*Alexander A. Vikharev* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Irina V. Zotova* (*Institute of Applied Physics, RAS*); *A. E. Fedotov* (*Institute of Applied Physics, RAS*); *M. I. Yalandin* (*Institute of Electrophysics, UB RAS*);

00:00 Evaluating the Impact of Plant Species on Outdoor Wireless Communication by Analyzing Plant Material Characteristics
*L. Meenu* (*Amrita Vishwa Vidyapeetham*); *Sajeer Aiswarya* (*Amrita Vishwa Vidyapeetham*); *K. A. Unnikrishna Menon* (*Amrita Vishwa Vidyapeetham*); *Sreedevi K. Menon* (*Amrita Vishwa Vidyapeetham*);

00:00 Theory of Gas Breakdown by Short Pulses of THz Radiation
*A. P. Veselov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *A. V. Sidorov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Vitaliy V. Kubarev* (*Budker Institute of Nuclear Physics, Russian Academy of Science, Siberian Branch*); *A. V. Vodopyanov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *O. A. Shevchenko* (*Budker Institute of Nuclear Physics, Russian Academy of Science, Siberian Branch*); *Ya. I. Gorbachev* (*Budker Institute of Nuclear Physics, Russian Academy of Science, Siberian Branch*);

00:00 Quasi-analytical Theory of Two-wave Implementation of Gyro-BWO with Zigzag Quasi-optical Microwave System
*Ekaterina M. Novak* (*A. V. Gaponov-Grekhov Institute of Applied Physics, RAS*); *Sergey V. Samsonov* (*A. V. Gaponov-Grekhov Institute of Applied Physics, Russian Academy of Sciences*); *Andrei V. Savilov* (*A. V. Gaponov-Grekhov Institute of Applied Physics, RAS*);

## Session 2P9a
## Millimeter and Sub Mm-Waves On-chip/Off-chip Antennas

**Tuesday PM, May 6, 2025**

**Room 9 - Capital Suite 6**

Organized by Mihai Sanduleanu, Nazar T. Ali

00:00 A Wideband PIFA-pair-based MIMO Antenna for 5G Smartphones and Beyond
*Abdi Ahmed Madey* (*Murang'a University of Technology*); *Nicholas O. Oyie* (*Murang'a University of Technology*); *M. N. Ahuna* (*Technical University of Kenya*);

00:00 Modelling and Analysis of Electron Tunnelling in Carbon Nanotube-based Rectifying Antennas
*Ahmed Hassan* (*Khalifa University of Science and Technology*); *Mihai Sanduleanu* (*Khalifa University of Science and Technology*);

00:00 On-chip Antenna for a Sub mm-Waves, 160 GHz, Vital Signs Monitoring IC, in 22 nm CMOS FDSOI
*Lama Kadoura* (*Wayne State University*); *Mohammed Ismail* (*Wayne State University*); *Mihai Sanduleanu* (*Khalifa University of Science and Technology*);

00:00 Characterization of Carbon Nanotube Rectennas for Solar Energy Harvesting
*Ahmed Mahdy Yassin Hassan* (*Khalifa University of Science and Technology*); *Mihai Sanduleanu* (*Khalifa University of Science and Technology*);

00:00 Multi-slots Loaded Planar Antenna for Wideband Millimeter-wave Applications
*Saad Hassan Kiani* (*Universiti Teknikal Malaysia Melaka*); *Umair Rafique* (*University of Oulu*); *Hisham Khalil* (*The University of Lahore*); *Shobit Agarwal* (*University of Naples Federico II*); *Syed Muzahir Abbas* (*Macquarie University*);

00:00 Metasurface-based Aperture-coupled Antenna for Millimeter-wave Applications
*Umair Rafique* (*University of Oulu*); *Syed Muzahir Abbas* (*Macquarie University*); *Hisham Khalil* (*The University of Lahore*); *Hijab Zahra* (*Macquarie University*); *Shobit Agarwal* (*University of Naples Federico II*);

00:00 The Design of Two and Four-port MIMO Antennas at 28 GHz with Isolation Enrichment for 5G Communication
*Ravi Kumar Goyal* (*Engineering College Ajmer*); *Uma Shankar Modani* (*Engineering College Ajmer*);

00:00 Via-free Substrate-integrated Waveguide Resonator Antennas Based on Coplanar Meta-surfaces for Generating OAM Vortex Waves with High Bandwidth
*X. H. Cui* (*Shandong University*); *Dongxing Gao* (*Shandong University*); *Likai Liang* (*Shandong University*); *Yanling Wang* (*Shandong University*); *Y. Y. Bai* (*Shandong University*); *F. N. Kong* (*Shandong University*); *S. Xiao* (*Shandong University*); *Y. S. Yang* (*Shandong University*);

00:00 Low Profile Circular SIW Cavity-backed Slot Antenna for V2V and 5G Applications
*Anil Kumar Nayak* (*Indian Institute of Technology Indore*);

## Session 2P9b
## Advanced Antennas and Arrays for Wireless Communications

**Tuesday PM, May 6, 2025**

**Room 9 - Capital Suite 6**

Organized by Sen Yan, Yan Wang

Chaired by Sen Yan

00:00 Low Cost Reconfigurable One-bit Phased Array Antenna for Mobile Communication
*Yan Wang* (*Fudan University*);

00:00 Sub-terahertz 2-D Beam Scanning SSPP Leaky-wave Antenna Based on Copper Additive Manufacturing
*Yuanxi Cao* (*Xi'an Jiaotong University*); *Sen Yan* (*Xi'an Jiaotong University*);

00:00 A Novel Concept of Heat-dissipating Mobile Antenna with Extremely Small Clearance and Improved Terminal Cooling Effect
*Le Chang* (*Xi'an Jiaotong University*); *Meiyan Chen* (*Xi'an Jiaotong University*); *Anxue Zhang* (*Xi'an Jiaotong University*);

00:00 A Two-dimensional Scanning Antenna Based on Metamaterial Luneburg Lens in Terahertz Band
*Zhaoqi Bian* (*Xi'an Jiaotong University*); *Yuanxi Cao* (*Xi'an Jiaotong University*); *Sen Yan* (*Xi'an Jiaotong University*);

00:00 A Low-profile UWB High-gain Antenna Design for Airborne Detection Applications
*Xu Yan* (*Xi'an Jiaotong University*); *Fei Yang* (*Xi'an Jiaotong University*); *Anxue Zhang* (*Xi'an Jiaotong University*);

00:00 Dual-band $\pi$-shaped Printed Monopole Antenna with Isolating Stub for 3G and 5G Applications
*Mohamed S. Soliman* (*Taif University*);

00:00 On the Possibility of Realizing an Efficient Small Monopole
*Elizabeth Dagan* (*Merchavim Institute of R&D in Negev*); *Dor Ohana* (*Department of EE, Sami Shamoon Collage of Engineering*); *Motti Haridim* (*HIT — Holon Institute Technology*);

00:00 A Right-hand Circularly Polarized Four-port MIMO Rectangular Microstrip Patch Antenna with Shifted Transmission Line for WLAN Applications
*Devansh Ramdurgekar* (*Shri G.S. Institute of Technology and Science*); *Shree Veer Patel* (*Shri G.S. Institute of Technology and Science*); *Satish Kumar Jain* (*Shri G.S. Institute of Technology and Science*);

00:00 Genetically Designed Wire-bundle Antenna with Broadband Supergain
*Dmytro Vovchuk* (*Riga Technical University*); *Gilad Uziel* (*Tel Aviv University*); *Andrey Machnev* (*Tel Aviv University*); *Jurgis Porins* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*); *Pavel Ginzburg* (*Tel Aviv University*);

## Session 2P10
## Ocean and Coastal Remote Sensing: The AI Approach

**Tuesday PM, May 6, 2025**

**Room 10 - Capital Suite 7**

Organized by Xiaofeng Li, Xiaofeng Yang

Chaired by Xiaofeng Yang

00:00 Retrieving Wind Vectors from Wave Spectra Using Deep Learning
*Haoyu Jiang* (*Shenzhen University*); *Xiaoqi Jiang* (*Shenzhen University*);

00:00 An Algorithm for Wind and Wave Association Retrieval from Gaofen-3 by Deep Learning
*Mengyu Hao* (*Shanghai Ocean University*); *Yuyi Hu* (*Shanghai Ocean University*); *Weizeng Shao* (*Shanghai Ocean University*); *Xingwei Jiang* (*National Satellite Ocean Application Service, Ministry of Natural Resources*);

00:00 Real-time Radio Refractivity Estimation Using the Differentiable Split-step Fourier Parabolic Equation
*Mikhail S. Lytaev* (*St. Petersburg Federal Research Center of the Russian Academy of Sciences*);

00:00 Analysis of the Spatiotemporal Variation Characteristics of Ocean Fronts in the Arctic Ocean
*Le Gao* (*Institute of Oceanography, Chinese Academy of Sciences*); *Yi Yang* (*Institute of Oceanography, Chinese Academy of Sciences*); *Xiaofeng Li* (*Institute of Oceanology, Chinese Academy of Sciences*);

00:00 A CNN for Ocean Parameter Retrieval Based on Space-frequency Fusion
*Xuan Jin* (*National Key Laboratory of Microwave Imaging*); *Yawei Zhao* (*National Key Laboratory of Microwave Imaging*); *Jinsong Chong* (*Aerospace Information Research Institute, Chinese Academy of Sciences*);

00:00 A Multi-Features-based Model for Tropical Cyclone Intensity Estimation with Infrared Remote Sensing Observations
*Sheng Wang* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Guihong Liu* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Yang Yu* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Wentao Ma* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Xiaofeng Yang* (*Nanjing University*);

00:00 Sea Surface Salinity Retrieval in the Yellow Sea Using a Deep Neural Network
*Yidi Wei* (*Ocean University of China*); *Qing Xu* (*Ocean University of China*); *Xiaobin Yin* (*Ocean University of China*); *Yan Li* (*Ocean University of China*);

00:00 Dynamical-constrained Training Improves ENSO Prediction Skills
*Tao Lian* (*Second Institute of Oceanography, Ministry of Natural Resources*);

00:00 A Multi-scale Spatiotemporal Feature Network for Sea Surface Salinity Forecast in the Eastern Tropical Pacific Ocean
*Xiaobin Yin* (*Ocean University of China*); *Shiji Dong* (*Ocean University of China*); *Yan Li* (*Ocean University of China*);

00:00 CMFS-UNet: A Mamba-UNet Model for Flood Mapping in Bitemporal and Dual-polariziation SAR Imagery
*Yuxin Wei* (*Shanghai Ocean University*); *Bin Liu* (*Shanghai Ocean University*);

00:00 AI-based Oceanic Internal Waves Detection and Propagation Estimation from Satellite SAR Imagery
*Shuai Song* (*Key Laboratory of Internet of Smart Earth*); *Yaming Zhao* (*Key Laboratory of Internet of Smart Earth*); *Yang Yu* (*Aerospace Information Research Institute, CAS*); *Xiaofeng Yang* (*Nanjing University*);

00:00 A ConvLSTM Nearshore Water Level Prediction Model with Integrated Attention Mechanism
*Yi Guan* (*Guangdong Ocean University*); *Tianyu Zhang* (*Guangdong Ocean University*); *Jian Yang* (*Guangdong Ocean University*); *Juzheng Shen* (*Guangdong Ocean University*); *Qin Zhao* (*Guangdong Ocean University*); *Yingbang Huang* (*Guangdong Ocean University*);

00:00 Scattering Simulation and Parameter Inversion of Emulsion Oil on Sea Surface
*Tingyu Meng* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Xiaofeng Yang* (*Nanjing University*); *Kun-Shan Chen* (*Nanjing University*); *Ferdinando Nunziata* (*Università degli Studi di Napoli Parthenope*); *Andrea Buono* (*Università degli Studi di Napoli Parthenope*);

## Session 2P0
## Poster Session 4

**Tuesday PM, May 6, 2025**
**13:30 PM - 18:30 PM**
**Room Poster Area**

00:00 Electronically Tunable Neural Network Based on Magnetoelectric Structure
*Vasilii A. Misilin* (*Yaroslav-the-Wise Novgorod State University*); *Viktor A. Kiselev* (*Yaroslav-the-Wise Novgorod State University*); *Alena R. Petrova* (*Novgorod State University*); *Marina A. Khavanova* (*Novgorod State University*); *Roman V. Petrov* (*Novgorod State University*); *Aleksandr O. Nikitin* (*Yaroslav-the-Wise Novgorod State University*);

00:00 Analysis of Electromagnetic Interference Coupling Paths with Electromagnetic Topology
*Junhao Shi* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Jun Bo Li* (*Southwest University of Science and Technology*); *Renjun Pan* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*);

00:00 A Study of Singularity and Near-singularity Problems in Volume Integral Equation Discretized by Curvilinear Tetrahedrons
*Tao Leng* (*Southwest University of Science and Technology*); *Yuan Zhang* (*University of Electronic Science and Technology of China*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Peng Chen* (*Southwest University of Science and Technology*); *Yuan-Hui Huang* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Zhen-Yong Du* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yixiang Li* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 Mechanisms of Electrostatic Interactions between Two Charged Dielectric Spheres inside a Polarizable Medium: An Effective-dipole Analysis
*Yanyu Duan* (*The Hong Kong University of Science and Technology (Guangzhou)*); *Zecheng Gan* (*The Hong Kong University of Science and Technology (Guangzhou)*); *Ho-Kei Chan* (*Harbin Institute of Technology (Shenzhen)*);

00:00 Research on the Analysis and Correction Techniques of the Influence of Packaging on Mail Terahertz Spectroscopy Detection
*Tao Li* (*Handan University*); *Chao Wang* (*Handan University*); *Yiyang Yao* (*Handan University*); *Ying Zhang* (*Handan University*); *Dayong Gu* (*The First Affiliated Hospital of Shenzhen University, Shenzhen Second People's Hospital*);

00:00 Lithium Niobate-based Metasurface for Telecom Applications
*Annabella La Grasta* (*Polytechnic University of Bari*); *Teresa Natale* (*Polytechnic University of Bari*); *Walter Fuscaldo* (*Consiglio Nazionale delle Ricerche Istituto per la Microelettronica e Microsistemi*); *Dimitrios C. Zografopoulos* (*Consiglio Nazionale delle Ricerche Istituto per la Microelettronica e Microsistemi*); *Francesco Dell'Olio* (*Polytechnic University of Bari*);

00:00 Comparison of the Waveguide Mechanism of Radio Wave Propagation over Tropical and Arctic Seas
*Shu Ya Zan* (*Henan University of Science and Technology*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Compact Metamaterial Antenna for Advanced Robotic Communication
*Saif Jamal Qureshi* (*University of Hertfordshire*); *Azunka N. Ukala* (*University of Hertfordshire*); *Martin A. Thomas* (*University of Hertfordshire, College Lane*); *Eugene A. Ogbodo* (*University of Hertfordshire*);

00:00 Topological Properties of Optical Polarization Singularities in Metallic Cavities
*Shiqi Jia* (*City University of Hong Kong*); *Tong Fu* (*City University of Hong Kong*); *Shubo Wang* (*City University of Hong Kong Shenzhen Research Institute*);

00:00 Radiation Effects of High-energy Heavy Ions on Carbon Nanotube Field-effect Transistors
*Suhan Tang* (*University of Electronic Science and Technology of China*); *Yu Zhang* (*University of Electronic Science and Technology of China*); *Chuan Wang* (*University of Electronic Science and Technology of China*); *Feiliang Chen* (*University of Electronic Science and Technology of China*); *Mo Li* (*University of Electronic Science and Technology of China*); *Jian Zhang* (*University of Electronic Science and Technology of China*);

00:00 Generation of Microwave Kerr-like Dissipative Solitons Based on Cyclotron-resonant Interaction
*L. A. Yurovskiy* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Irina V. Zotova* (*Institute of Applied Physics, RAS*); *Naum S. Ginzburg* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Prediction of Subway Track Vibration Reduction Performance Based on Spatio-temporal Correlation Characteristics of Ultraweak FBG Arrays
*Jingwei Sun* (*Wuhan University of Technology*); *Fang Liu* (*Wuhan University of Technology*); *Linxiao Guo* (*Wuhan University of Technology*); *Yan Yang* (*Wuhan University of Technology*); *Fangpeng Qiu* (*Fiberhome Telecommunication Technologies Co., Ltd.*);

00:00 Tri-band Imaging Thermal Photonic Metasurface for Information Encryption
*Qixiang Chen* (*Southeast University*); *Dongliang Zhao* (*Southeast University*);

00:00 Compact Er/Yb Generator of Ultrashort Pulses with a Variable Duration
*Andrei D. Zverev* (*Prokhorov General Physics Institute of the Russian Academy of Sciences*); *V. A. Kamynin* (*Prokhorov General Physics Institute of the Russian Academy of Sciences*); *V. B. Tsvetkov* (*Prokhorov General Physics Institute of the Russian Academy of Sciences*); *B. I. Denker* (*Prokhorov General Physics Institute of the Russian Academy of Sciences*); *S. E. Sverchkov* (*Prokhorov General Physics Institute of the Russian Academy of Sciences*); *Vladimir V. Velmiskin* (*Prokhorov General Physics Institute of the Russian Academy of Sciences*); *Yuriy G. Gladush* (*Skolkovo Institute of Science and Technology*); *Dmitry V. Krasnikov* (*Skolkovo Institute of Science and Technology*); *Albert G. Nasibulin* (*Skolkovo Institute of Science and Technology*); *Mikhail E. Belkin* (*MIREA — Russian Technological University*);

00:00 RIN Effect on Phase Noise Spectra of Lasers in Heterodyne Measurements
*Alexander Valerievich Kozlov* (*Russian Metrological Institute of Technical Physics and Radio Engineering*); *K. A. Zagorulko* (*Russian Metrological Institute of Technical Physics and Radio Engineering*); *N. P. Khatyrev* (*Russian Metrological Institute of Technical Physics and Radio Engineering*);

00:00 Method Development and Optimization for Cyanide Detection in Aquatic Environments Using the Mintek Lab Cynoprobe
*Deogratius T. Maiga* (*Council for Mineral Technology (MINTEK)*); *Terence T. Phadi* (*Council for Mineral Technology (MINTEK)*); *Mandla B. Chabalala* (*Council for Mineral Technology (MINTEK)*); *Titus Alfred Makudali Msagati* (*University of South Africa*); *Linda L. Sibali* (*University of South Africa*);

00:00 Polarization Orbital Angular Momentum of Vector Beams
*Vladislav Dmitrievich Zaitsev* (*Samara National Research University*); *Sergey S. Stafeev* (*NRC Kurchatov Institute*); *Aleksey A. Kovalev* (*NRC Kurchatov Institute*); *Victor V. Kotlyar* (*NRC Kurchatov Institute*);

00:00 An Experimental Study on $MoO_3$ Nanomaterial Coated U-shaped Fiber Optic Evanescent Wave Sensor for Toluene Detection
*P. Manivannan* (*Vellore Institute of Technology*); *S. Narasimman* (*Missouri University of Science and Technology*); *A. Prasanth* (*Missouri University of Science and Technology*); *Zachariah Callottu Alex* (*Vellore Institute of Technology*);

00:00 Erbium-doped Fiber Amplifier (EDFA)-assisted Laser Heterodyne Radiometer (LHR) Working in the Shot-noise Dominated Regime
*Jun Lee* (*Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences*);

00:00 Microwave Irradiation of Cellulose-containing Materials
*Tatiana Olegovna Krapivnitckaia* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Svetlana Andreevna Ananicheva* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Alisa B. Alyeva* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Nikita V. Chekmarev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Alexander A. Vikharev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Nikolai Yu. Peskov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Mikhail Yu. Glyavin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 W-band Planar Cherenkov Maser with 2D-periodic Slow-wave Structure Based on the ELMI Accelerator: Modeling and Results of the First Experiments
*Andrey V. Arzhannikov* (*Budker Institute of Nuclear Physics RAS*); *Ekaterina D. Egorova* (*Institute of Applied Physics, RAS*); *Naum Samuilovich Ginzburg* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Petr V. Kalinin* (*Budker Institute of Nuclear Physics RAS*); *Nikolai Yu. Peskov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Evgeny S. Sandalov* (*Budker Institute of Nuclear Physics RAS*); *Denis A. Samtsov* (*Budker Institute of Nuclear Physics RAS*); *Alexander Sergeevich Sergeev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Stanislav L. Sinitsky* (*Budker Institute of Nuclear Physics Russian Academy of Sciences*); *Vasily D. Stepanov* (*Budker Institute of Nuclear Physics RAS*); *Vladislav Yu. Zaslavsky* (*Institute of Applied Physics, RAS*);

00:00 Analysis of Leader Election Algorithms in the Context of Cooperative UAV Mission Simulation
*Dmitrijs Rjazanovs* (*Riga Technical University*); *Tianhua Chen* (*Riga Technical University*); *Dmitrijs Čulkovs* (*Riga Technical University*); *Armands Lahs* (*Riga Technical University*); *Jurijs Titovičs* (*Riga Technical University*); *Aleksejs Kopats* (*Riga Technical University*); *Toms Kārkliņš* (*Riga Technical University*); *Elans Grabs* (*Riga Technical University*); *Ernests Pētersons* (*Riga Technical University*); *Aleksandrs Ipatovs* (*Riga Technical University*);

00:00 A Chipless RFID Sensor Based on U-shaped Resonator with Resistive Switch for Strain Detection
*Xiao Shuai Li* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Compact Wideband Circularly Polarized Magneto-electric Dipole Antenna Array
*Yurong Sun* (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Yan Wen* (*Southwest Jiaotong University*); *Xiao Gao* (*Southwest Jiaotong University*);

00:00 Energy Consumption of Robotic Arm with the Local Reduction Method
*Halima Ibrahim Kure* (*University of East London*); *Jishna Retnakumari* (*University of East London*); *Lucian Nita* (*University of East London*); *Saeed Sharif* (*University of East London*); *Hamed Balogun* (*Edge Hill University*); *Augustine O. Nwajana* (*University of Greenwich*);

00:00 The Design of Ku-band Anti-UAV Radar Array Antenna
*Tong Su* (*Southwest University of Science and Technology*); *Yan Chen* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Chao Zou* (*Southwest University of Science and Technology*); *Tong Li Yuan* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Zhen-Yong Du* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yixiang Li* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 Broadband Dual-band Omnidirectional Vertically Polarized Microstrip Antenna
*Liping Wang* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Jia Wan* (*Southwest University of Science and Technology*); *Haonan Huang* (*Southwest University of Science and Technology*); *Yu-Rui Jia* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 A Low Profile Ultra-wideband Discone Antenna
*Meiying Li* (*Southwest University of Science and Technology*); *Yuan Zhang* (*University of Electronic Science and Technology of China*); *Haonan Huang* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Liping Wang* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Ke Tian* (*Sichuan Shanghang Intelligent Technology Co., Ltd.*); *Zhong-Bin Cai* (*Sichuan Zhongjiu Defense Technology Co., Ltd.*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 Analysis and Comparison of Promising Sites for the Placement of Sub-THz Telescopes
*Vyacheslav F. Vdovin* (*Institute of Applied Physics of the RAS*); *D. B. Danilevsky* (*Radiooservatory RT-70*); *Maria V. Efimova* (*Institute of Applied Physics of the RAS*); *Ilya V. Lesnov* (*Institute of Applied Physics of the RAS*); *A. S. Marukhno* (*Institute of Applied Physics of the RAS*); *N. A. Marukhno* (*Institute of Applied Physics of the RAS*); *Kirill V. Mineev* (*Institute of Applied Physics of the RAS*); *Gennady Shanin* (*Radiooservatory RT-70*); *H. Sultanov* (*Radiooservatory RT-70*);

00:00 Construction of an Antenna Element with a Microstrip Power Supply for the Emission of UWB Signals
*Vitaliy Vladislavovich Trubetskoy* (*Moscow Technical University of Communications and Informatics (MTUCI)*); *A. M. Ignatov* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *R. G. Riazantsev* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Research on Wideband Filter Base Station Antenna
*Zhilin He* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*);

00:00 Design and Optimization of High Q Dielectric Resonators for Radio Frequency Filtering Applications
*Ildar Yusupov* (*ITMO University*); *Alyona Maksimenko* (*ITMO University*); *Srijeeta Barua* (*ITMO University*); *Dmitry Dobrykh* (*Tel Aviv University*); *Mikhail Udrov* (*ITMO University*);

00:00 Impact of PIN Diode Integration on Frequency Reconfigurability of Patch Antennas
*Bathula Santhikiran* (*Andhraloyola Institute of Engineering & Technology*); *Thandapani Kavitha* (*Veltech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology*);

00:00 Difference Beam of RLSA
*Feng Zhao* (*China Aerospace Science and Technology Corporation*);

00:00 Marine Mucus Detection Using Convolutional Neural Network and Multispectral Remote Sensing Imagery
*Ben Zhang* (*Ocean University of China*); *Qing Xu* (*Ocean University of China*);

00:00 Research on Infrared Small Target Detection Method Based on the Extraction and Combination of Deep and Shallow Features
*Qiuyue Xu* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Yue Pan* (*Southwest University of Science and Technology*); *Qicao Chen* (*Southwest University of Science and Technology*);

00:00 Combined Use of ML and Scattering Model for SM Retrieval Based on Sentinel-1 and Sentinel-2 Images over Agricultural Area
*Raja Inoubli* (*National School of Computer Science*); *Lilila Bennaceur Farah* (*Manar University*); *Daniel Enrique Constantino-Recillas* (*ESIME Zacatenco and ESIME Ticoman, Instituto Politécnico Nacional*); *Imed Riadh Farah* (*Manouba School of Engineering*); *Alejandro Monsivais-Huertero* (*Instituto Politécnico Nacional*);

00:00 Detection of Multipartite Entanglement and Its Applications
*Yu Xiang* (*Xi'an Jiaotong University*);

00:00 Physics Inspired Neural Network for Cortical Electromagnetic Activity of Neonates
*Aleksandar Jeremic* (*McMaster University*); *Abdullah Biran* (*King Faisal University*); *Aljazi A. Al-Maghlouth* (*King Saud bin Abdulaziz University for Health Sciences KSAU-HS*);

00:00 Design of a High-power Medium-frequency Power Amplifier Based on Envelope Elimination and Restoration (EER) Technology
*Yonghao Lu* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Xing Long Liu* (*Southwest University of Science and Technology*); *Qilong Yu* (*Southwest University of Science and Technology*); *Yining Qing* (*Southwest University of Science and Technology*); *Junfeng Luo* (*Southwest University of Science and Technology*); *Li Wu* (*Southwest University of Science and Technology*);

00:00 Millimeter-wave Channel Crosstalk Reduction Technique Enabled by Field Confined Metawaveguide Toward Inter-chip Data Communication
*Wenliang Lin* (*Guangzhou University*); *Lin Peng* (*Guangzhou University*); *Rui Ma* (*Guangzhou University*); *Yicong Li* (*Guangzhou University*); *Guangqiang Liu* (*Guangzhou University*); *Liang Yuan* (*Guangzhou University*); *Yukai Feng* (*Guangzhou University*); *Yanan Bao* (*Jincheng Research Institute of Opto-mechatronics Industry*); *Gang Wu* (*Guangzhou University*);

00:00 Fault Diagnosis Method of Half-bridge Switching Power Supply Based on Support Vector Machine (SVM)
*Peng Chen* (*Southwest University of Science and Technology*); *Li-Juan Deng* (*Southwest University of Science and Technology*); *Pengfei Yu* (*Laboratory of Science and Technology on Reliability Physics and Application of Electronic Component*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Tao Leng* (*Southwest University of Science and Technology*); *Yuan-Hui Huang* (*Southwest University of Science and Technology*); *Jun-Liang Wan* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*);

00:00 Self-supervised Masked Attention Augmented Autoencoder for Video Anomaly Detection
*Yi Tao* (*Xi'an Aerospace Automation Co., Ltd., The 6th Academy of China Aerospace Science and Industry Corporation*); *Lirong Tang* (*Xi'an Aerospace Automation Co., Ltd., The 6th Academy of China Aerospace Science and Industry Corporation*); *Changsheng Bian* (*Xi'an Aerospace Automation Co., Ltd., The 6th Academy of China Aerospace Science and Industry Corporation*); *Jie Liu* (*Xi'an Aerospace Automation Co., Ltd., The 6th Academy of China Aerospace Science and Industry Corporation*); *Zhaoyi Li* (*Xi'an Aerospace Automation Co., Ltd., The 6th Academy of China Aerospace Science and Industry Corporation*);

00:00 Influence of $NiZnFe_2O_4$ Nanoparticles on Structural, Optical, and Dielectric Properties in PVA/Cs Films
*Islam Shoukri Ahmed Elashmawi* (*National Research Centre*);

## Session 3A0a
## Poster Session for Best Student Poster Award Competition

**Wednesday AM, May 7, 2025**
**8:30 AM - 12:30 AM**
**Room Poster Area**

00:00 Defects Engineering in Chalcogen Doped $\alpha$-$Al_2O_3$: A Comprehensive Study of Formation Energies, Charge Density, and Electronic Structure
*Yimin Liao* (*Hong Kong University of Science and Technology (Guangzhou)*); *Chee-Keong Tan* (*Hong Kong University of Science and Technology (Guangzhou)*);

00:00 An Aberration-free Line Scan Confocal Raman Imager and Type Classification and Distribution Detection of Microplastics
*Changwei Jiao* (*Zhejiang University*); *Jiaqi Liao* (*Zhejiang University*); *Sailing He* (*Royal Institute of Technology & Zhejiang University*);

00:00 A Novel Computational Microarchitecture for Large-scale LU Decomposition
*Xiao Jie Lu* (*Tongji University*); *Yuan Yang Du* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 The Underwater Terrain Matching Localization Algorithm Based on 3D Point Cloud
*Xin Peng* (*Beijing University of Posts and Telecommunications*); *Zhen Xu* (*Beijing University of Posts and Telecommunications*);

00:00 Efficient Metamaterial Synthesis Using Iterative Refinement and Content-based Filtering
*Ismail Abiola Shittu* (*Khalifa University*); *Mohamed A. Abou-Khousa* (*Khalifa University*); *Ibrahim (Abe) M. Elfadel* (*Khalifa University*);

00:00 Tunable Acoustic Superscattering
*Long Sun* (*King Abdullah University of Science and Technology (KAUST)*); *Ying Wu* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 High Q-factor Fano Resonant Microwave Metasurface for Enhanced Dielectric Sensing Applications
*Aleena Antony* (*National Institute of Technology Calicut*); *M. P. Pranaw* (*National Institute of Technology Calicut*); *Debabrata Kalita* (*National Institute of Technology Calicut*); *Isac Antony Babu Vazhappilly* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*);

00:00 Bio-inspired Fractal Antireflective Microwave Metasurface Structures
*Aneena Jaison* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*);

00:00 Hydrogen in SWNT for Comparison Motors with Less Emission
*Diyar Bajalan* (*Technische Universität Wien*);

00:00 Photonic Crystal-based Biosensor for Bacteria Detection in Water
*Abdellah Djamaa* (*University Frères Mentouri*); *Ahlem Benmerkhi* (*University Frères Mentouri*); *Mohamed Bouchemat* (*Constantine Mentouri University*);

00:00 Nano-pressure Sensor Using High Quality Based on Photonic Crystal Ring Resonator
*Fatima Zohra Siabah* (*University Mentouri*); *Faiza Bounaas* (*University of Mentouri Brothers Constantine 1*);

00:00 Wavelength Resolved Optical Properties Retrieval of Aerosols Using Cavity Enhanced Albedometer
*Aiswarya Saseendran* (*National Institute of Technology Calicut*); *B. Nithyaja* (*National Institute of Technology Calicut*);

00:00 A Novel Method of Sensing Area Differentiation for Mechanoluminescent Optical Fibers
*Zhi Chong Wan* (*Tongji University*); *Guochun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Design of Optical Fiber Ratiometric Fluorescence Sensor for the Detection of Quinolone Antibiotics
*Wenchao Liang* (*Northeastern University*); *Yanan Zhang* (*Northeastern University*); *Yong Zhao* (*Northeastern University*); *Xuegang Li* (*Northeastern University*); *Lu Cai* (*Northeastern University*);

00:00 Research on Metal Copper Ion Detection Based on Fiber-optic MZI Sensor
*Xuanyu Liu* (*Northeastern University*); *Yanan Zhang* (*Northeastern University*); *Yong Zhao* (*Northeastern University*); *Xuegang Li* (*Northeastern University*); *Lu Cai* (*Northeastern University*);

00:00 An Efficient Acquisition Method of Multiple LED Colors Based on Fiber-optic Spectrometer
*Zhi Chong Wan* (*Tongji University*); *Guochun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Studying the Carrier Dynamics and Optical Properties of Pyramid-shaped InGaN/GaN Micro-light-emitting Diodes ($\mu$-LEDs)
*Fatimah Alreshidi* (*King Abdullah University of Science and Technology (KAUST)*); *Hadeel A. Alamoudi* (*King Abdullah University of Science and Technology (KAUST)*); *Noémie Bonnet* (*Delmic B.V.*); *Toon Coenen* (*Delmic B.V.*); *Wei Guo* (*Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences*); *Iman S. Roqan* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Electrical and Optical Characteristic of ZnO-based Nanoparticles in UV Region
*Zeynab Rahmani* (*Urmia University*); *Khosro Mabhouti* (*Urmia University*); *P. Norouzzadeh* (*Urmia University*);

00:00 Effect of Cu and Cr Dopig on Optical Parameters of NiO
*Farzaneh Asaldoust* (*Urmia University*); *Khosro Mabhouti* (*Urmia University*); *Akbar Jafari* (*Urmia University*); *Maryam Taleb-Abbasi* (*University of Tabriz*);

00:00 Opto-electronical Enhancement in $LaSrMno_3$ Perovskite Nanoparticle by Fe, Co, Ni Substitution
*Masoumeh Khosrozadeh* (*Urmia University*); *Khosro Mabhouti* (*Urmia University*); *P. Norouzzadeh* (*Urmia University*); *R. Naderali* (*Urmia University*);

00:00 A Miniaturized Monopole Ultra-wideband Antenna with Band-Notched Filter for Positioning Applications
*Jing Jing Cao* (*Tongji University*); *Ajay K. Poddar* (*Synergy Microwave Corporation*); *Ulrich L. Rohde* (*Synergy Microwave Corporation*); *Mei Song Tong* (*Tongji University*);

00:00 Left-hand Circularly Polarized Five-element Patch Antenna Array for Satellite Communication Systems
*Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Feras Habib Rammah* (*National Research University "Moscow Power Engineering Institute"*); *A. A. Komarov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Novel Compact Filter-antenna Design for Modern Wireless Communication Systems
*Feras Habib Rammah* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Alexei A. Komarov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Design of Chebyshev's Bandpass Interdigital Filter for Modern Wireless Communication Systems
*Feras Habib Rammah* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Alexei A. Komarov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Electrodynamic Study of High-selective Three-dimensional Bragg Resonators for Spatially-extended Free-electron Masers
*Ekaterina D. Egorova* (*Institute of Applied Physics, RAS*); *Nikolai Yu. Peskov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Alexander Sergeevich Sergeev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *D. I. Sobolev* (*Institute of Applied Physics RAS*); *Alexander A. Vikharev* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Passive Intermodulation Reflectometry for the Diagnostics of Electrical Connectors
*Armand Wils* (*EDF Lab Les Renardières*); *Kévin Guilloy* (*EDF Lab Les Renardières*);

00:00 Constrained Stochastic Non-convex Optimization Algorithm for Machine Learning Problems in Electromagnetic Signal Processing
*Basil M. Idrees* (*Indian Institute of Technology Kanpur*); *Ketan Rajawat* (*Indian Institute of Technology Kanpur*);

00:00 Wideband PIM Measurement: System Design and Performance Evaluation
*Wei Jiang* (*Zhejiang University*); *Xiaoli Zhi* (*Zhejiang University*); *Ke Huang* (*Zhejiang University*); *Yu Cheng* (*Zhejiang University*); *Bin Zhang* (*Zhejiang University*); *Li-Xin Ran* (*Zhejiang University*);

## Session 3A0b
## Oral Presentation for Best Student Poster Award Competition

## Wednesday AM, May 7, 2025
## Room 11 - Capital Suite 8

00:00 Defects Engineering in Chalcogen Doped $\alpha$-$Al_2O_3$: A Comprehensive Study of Formation Energies, Charge Density, and Electronic Structure
*Yimin Liao* (*Hong Kong University of Science and Technology (Guangzhou)*); *Chee-Keong Tan* (*Hong Kong University of Science and Technology (Guangzhou)*);

00:00 An Aberration-free Line Scan Confocal Raman Imager and Type Classification and Distribution Detection of Microplastics
*Changwei Jiao* (*Zhejiang University*); *Jiaqi Liao* (*Zhejiang University*); *Sailing He* (*Royal Institute of Technology & Zhejiang University*);

00:00 A Novel Computational Microarchitecture for Large-scale LU Decomposition
*Xiao Jie Lu* (*Tongji University*); *Yuan Yang Du* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 The Underwater Terrain Matching Localization Algorithm Based on 3D Point Cloud
*Xin Peng* (*Beijing University of Posts and Telecommunications*); *Zhen Xu* (*Beijing University of Posts and Telecommunications*);

00:00 Efficient Metamaterial Synthesis Using Iterative Refinement and Content-based Filtering
*Ismail Abiola Shittu* (*Khalifa University*); *Mohamed A. Abou-Khousa* (*Khalifa University*); *Ibrahim (Abe) M. Elfadel* (*Khalifa University*);

00:00 Tunable Acoustic Superscattering
*Long Sun* (*King Abdullah University of Science and Technology (KAUST)*); *Ying Wu* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 High Q-factor Fano Resonant Microwave Metasurface for Enhanced Dielectric Sensing Applications
*Aleena Antony* (*National Institute of Technology Calicut*); *M. P. Pranaw* (*National Institute of Technology Calicut*); *Debabrata Kalita* (*National Institute of Technology Calicut*); *Isac Antony Babu Vazhappilly* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*);

00:00 Bio-inspired Fractal Antireflective Microwave Metasurface Structures
*Aneena Jaison* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*);

00:00 Hydrogen in SWNT for Comparison Motors with Less Emission
*Diyar Bajalan* (*Technische Universität Wien*);

00:00 Photonic Crystal-based Biosensor for Bacteria Detection in Water
*Abdellah Djamaa* (*University Frères Mentouri*); *Ahlem Benmerkhi* (*University Frères Mentouri*); *Mohamed Bouchemat* (*Constantine Mentouri University*);

00:00 Nano-pressure Sensor Using High Quality Based on Photonic Crystal Ring Resonator
*Fatima Zohra Siabah* (*University Mentouri*); *Faiza Bounaas* (*University of Mentouri Brothers Constantine 1*);

00:00 Wavelength Resolved Optical Properties Retrieval of Aerosols Using Cavity Enhanced Albedometer
*Aiswarya Saseendran* (*National Institute of Technology Calicut*); *B. Nithyaja* (*National Institute of Technology Calicut*);

00:00 A Novel Method of Sensing Area Differentiation for Mechanoluminescent Optical Fibers
*Zhi Chong Wan* (*Tongji University*); *Guochun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Design of Optical Fiber Ratiometric Fluorescence Sensor for the Detection of Quinolone Antibiotics
*Wenchao Liang* (*Northeastern University*); *Yanan Zhang* (*Northeastern University*); *Yong Zhao* (*Northeastern University*); *Xuegang Li* (*Northeastern University*); *Lu Cai* (*Northeastern University*);

00:00 Research on Metal Copper Ion Detection Based on Fiber-optic MZI Sensor
*Xuanyu Liu* (*Northeastern University*); *Yanan Zhang* (*Northeastern University*); *Yong Zhao* (*Northeastern University*); *Xuegang Li* (*Northeastern University*); *Lu Cai* (*Northeastern University*);

00:00 An Efficient Acquisition Method of Multiple LED Colors Based on Fiber-optic Spectrometer
*Zhi Chong Wan* (*Tongji University*); *Guochun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Studying the Carrier Dynamics and Optical Properties of Pyramid-shaped InGaN/GaN Micro-light-emitting Diodes (μ-LEDs)
*Fatimah Alreshidi* (*King Abdullah University of Science and Technology (KAUST)*); *Hadeel A. Alamoudi* (*King Abdullah University of Science and Technology (KAUST)*); *Noémie Bonnet* (*Delmic B.V.*); *Toon Coenen* (*Delmic B.V.*); *Wei Guo* (*Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences*); *Iman S. Roqan* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Electrical and Optical Characteristic of ZnO-based Nanoparticles in UV Region
*Zeynab Rahmani* (*Urmia University*); *Khosro Mabhouti* (*Urmia University*); *P. Norouzzadeh* (*Urmia University*);

00:00 Effect of Cu and Cr Dopig on Optical Parameters of NiO
*Farzaneh Asaldoust* (*Urmia University*); *Khosro Mabhouti* (*Urmia University*); *Akbar Jafari* (*Urmia University*); *Maryam Taleb-Abbasi* (*University of Tabriz*);

00:00 Opto-electronical Enhancement in $LaSrMno_3$ Perovskite Nanoparticle by Fe, Co, Ni Substitution
*Masoumeh Khosrozadeh* (*Urmia University*); *Khosro Mabhouti* (*Urmia University*); *P. Norouzzadeh* (*Urmia University*); *R. Naderali* (*Urmia University*);

00:00 A Miniaturized Monopole Ultra-wideband Antenna with Band-Notched Filter for Positioning Applications
*Jing Jing Cao* (*Tongji University*); *Ajay K. Poddar* (*Synergy Microwave Corporation*); *Ulrich L. Rohde* (*Synergy Microwave Corporation*); *Mei Song Tong* (*Tongji University*);

00:00 Left-hand Circularly Polarized Five-element Patch Antenna Array for Satellite Communication Systems
*Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Feras Habib Rammah* (*National Research University "Moscow Power Engineering Institute"*); *A. A. Komarov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Novel Compact Filter-antenna Design for Modern Wireless Communication Systems
*Feras Habib Rammah* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Alexei A. Komarov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Design of Chebyshev's Bandpass Interdigital Filter for Modern Wireless Communication Systems
*Feras Habib Rammah* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Alexei A. Komarov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Electrodynamic Study of High-selective Three-dimensional Bragg Resonators for Spatially-extended Free-electron Masers
*Ekaterina D. Egorova* (*Institute of Applied Physics, RAS*); *Nikolai Yu. Peskov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Alexander Sergeevich Sergeev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *D. I. Sobolev* (*Institute of Applied Physics RAS*); *Alexander A. Vikharev* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Passive Intermodulation Reflectometry for the Diagnostics of Electrical Connectors
*Armand Wils* (*EDF Lab Les Renardières*); *Kévin Guilloy* (*EDF Lab Les Renardières*);

00:00 Constrained Stochastic Non-convex Optimization Algorithm for Machine Learning Problems in Electromagnetic Signal Processing
*Basil M. Idrees* (*Indian Institute of Technology Kanpur*); *Ketan Rajawat* (*Indian Institute of Technology Kanpur*);

00:00 Wideband PIM Measurement: System Design and Performance Evaluation
*Wei Jiang* (*Zhejiang University*); *Xiaoli Zhi* (*Zhejiang University*); *Ke Huang* (*Zhejiang University*); *Yu Cheng* (*Zhejiang University*); *Bin Zhang* (*Zhejiang University*); *Li-Xin Ran* (*Zhejiang University*);

## Session 3A1
## Chiral Metaphotonics 2

**Wednesday AM, May 7, 2025**

**Room 1 - CH B (A)**

Organized by Maxim V. Gorkunov, Yuri S. Kivshar

Chaired by Maxim V. Gorkunov, Yuri S. Kivshar

00:00 Invited Design and Applications of Chiral Quasi-bound States in the Continuum
*Maxim V. Gorkunov* (*Shubnikov Institute of Crystallography, NRC "Kurchatov Institute"*);

00:00 Out-of-plane Symmetry Breaking by Substrate for Maximum Optical Chirality
*Alexander Antonov* (*Ludwig-Maximilians-University of Munich*); *Maxim V. Gorkunov* (*Shubnikov Institute of Crystallography, NRC "Kurchatov Institute"*); *Alena V. Mamonova* (*Shubnikov Institute of Crystallography, NRC "Kurchatov Institute"*); *Egor A. Muljarov* (*Cardiff University*); *Andreas Tittl* (*Ludwig-Maximilians-Universität München*); *Yuri S. Kivshar* (*Australian National University*);

00:00 Transition Radiation from a Spiral Phase Plate
*Fedor Kiselev* (*National Research Nuclear University "MEPhI"*); *Daria Yu. Sergeeva* (*National Research Nuclear University "MEPhI"*);

00:00 Chiral Luminescence and Harmonic Generation by Planar Dielectric Structures with Mirror Symmetry Broken by Substrate
*Alena V. Mamonova* (*Shubnikov Institute of Crystallography, NRC "Kurchatov Institute"*); *Maxim V. Gorkunov* (*Shubnikov Institute of Crystallography, NRC "Kurchatov Institute"*);

00:00 Invited Structured Freestanding Membranes for Circular Polarization Control
*Kuniaki Konishi* (*The University of Tokyo*);

00:00 Invited Local Phase Modulation Based on Planar Chiral Metaatoms and Its Applications
*Chen Chen* (*Nanjing University*); *Tao Li* (*Nanjing University*); *Shi-Ning Zhu* (*Nanjing University*);

00:00 Invited Mirrors, Cavities, and Analytical Results for Chiral Polaritonics
*Denis G. Baranov* (*Chalmers University of Technology*);

00:00 Pure Polarization States with Zero-point Ellipticity in Supramolecular Chiral Metamaterial with Dielectric Losses
*P. Rishin Chandran* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*);

00:00 Invited High-Q Dielectric Metasurfaces for Biosensing and Optical Chirality in the Deep-UV
*Bo-Ray Lee* (*National Yang Ming Chiao Tung University*); *Shang Jie Shen* (*National Yang Ming Chiao Tung University*); *Yao-Wei Huang* (*National Yang Ming Chiao Tung University*); *Yuri S. Kivshar* (*Australian National University*); *Ming Lun Tseng* (*National Yang Ming Chiao Tung University*);

00:00 Invited Chiral Light in Twisted Resonators
*Sergey A. Dyakov* (*Skolkovo Institute of Science and Technology*); *I. A. Smagin* (*Skolkovo Institute of Science and Technology*); *N. S. Salakhova* (*Skolkovo Institute of Science and Technology*); *I. M. Fradin* (*Skolkovo Institute of Science and Technology*); *Nikolay A. Gippius* (*Skolkovo Institute of Science and Technology*);

## Session 3A2
## Advances in Time-Varying Metamaterials and Metasurfaces

**Wednesday AM, May 7, 2025**

**Room 2 - CH B (C&B)**

Organized by Xuchen Wang, Fu Liu

Chaired by Huanan Li, Mohammad Sajjad Mirmoosa

00:00 Towards Feedback-based Time-varying Circuits, Metasurfaces, and Metamaterials
Keynote
*Sergei A. Tretyakov* (*Aalto University*);

00:00 Recent Advances in Electromagnetic Time Interfaces
Invited
*Mohammad Sajjad Mirmoosa* (*University of Eastern Finland*);

00:00 Towards Practical Realization of Positive/Negative Time-varying Element
Invited
*Silvio Hrabar* (*University of Zagreb*);

00:00 Towards Non-Foster Photonic Time Crystals
*Zeyuan Li* (*Harbin Engineering University*); *Mohammad Sajjad Mirmoosa* (*University of Eastern Finland*); *Viktar S. Asadchy* (*Aalto University*); *Xuchen Wang* (*Harbin Engineering University*);

00:00 Topological Wave Phenomena in Photonic Time QuasiCrystals
Invited
*Xiang Ni* (*City University of New York*); *Shixiong Yin* (*City University of New York*); *Huanan Li* (*City University of New York*); *Andrea Alù* (*The City University of New York*);

00:00 Unsupervised Classification of Non-Hermitian Topological Phases under Symmetries
Invited
*Yang Long* (*Nanyang Technological University*); *Baile Zhang* (*Nanyang Technological University*);

00:00 Dispersive Anisotropic Photonic Time Crystals for Stationary Charge Radiation
*Sihao Zhang* (*Nankai University*); *Huan He* (*Nankai University*); *Junhua Dong* (*Nankai University*); *Huanan Li* (*Nankai University*); *Jingjun Xu* (*Nankai University*); *Boris Shapiro* (*Technion-Israel Institute of Technology*);

00:00 Time-modulated Wire Media with High Precision Resolution
*Dmytro Vovchuk* (*Riga Technical University*); *Mykola Khobzei* (*Information Security Yuriy Fedkovych Chernivtsi National University*); *Vladyslav Tkach* (*Yuriy Fedkovych Chernivtsi National University*); *Anna Mikhailovskaya* (*Tel Aviv University*); *Serhii Haliuk* (*Yuriy Fedkovych Chernivtsi National University*); *Andrii Samila* (*Yuriy Fedkovych Chernivtsi National University*); *Jurgis Porins* (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*); *Pavel Ginzburg* (*Tel Aviv University*);

00:00 Rotation Induced Unusual Optical Force and Torque on Small Particles
*Hengzhi Li* (*City University of Hong Kong*); *Wanyue Xiao* (*City University of Hong Kong*); *Tong Fu* (*City University of Hong Kong*); *Zheng Yang* (*City University of Hong Kong*); *Shubo Wang* (*City University of Hong Kong*);

00:00 Space-time Modulated Aperiodic Gratings
*Runcheng Huang* (*Harbin Engineering University*); *Xuchen Wang* (*Harbin Engineering University*);

## Session 3A3a
## Additive Manufacturing of Photonic Devices

**Wednesday AM, May 7, 2025**

**Room 3 - CH B (D)**

Organized by Haider Butt, Rashid K. Abu Al-rub

Chaired by Haider Butt

00:00 Multimaterial 3D Printing of Multifunctional Contact Lenses
*Muhammed Hisham* (*Khalifa University*); *Sungmun Lee* (*Khalifa University*); *Haider Butt* (*Khalifa University of Science and Technology*);

00:00 Additive Manufacturing of Rare-earth Doped Glass for Optical Application
*Min Ouyang* (*South China University of Technology*); *Guoping Dong* (*South China University of Technology*);

00:00 Additive Manufacturing of Nanocomposite Contact Lenses
*Said El Turk* (*Khalifa University of Science and Technology*); *Haider Butt* (*Khalifa University of Science and Technology*);

00:00 3D Printed Multi-material Optical Sensor for Simultaneous Detection of Temperature and UV Radiation
*Dileep Chekkaramkodi* (*Khalifa University of Science and Technology*); *Andreas Schiffer* (*Khalifa University of Science and Technology*); *Haider Butt* (*Khalifa University of Science and Technology*);

00:00 Natural Pigments in Contact Lenses as Multifunctional Additives
*C. Muhammed Shebeeb* (*Khalifa University*); *Sanjana Chandran* (*Khalifa University*); *Abdulrahim Sajini* (*Khalifa University*); *Yarjan Abdul Samad* (*Khalifa University of Science and Technology*); *Haider Butt* (*Khalifa University of Science and Technology*);

00:00 One-step Fabrication of Holographic Fresnel Lenses for Optical Sensing via Vat Photopolymerization
*Murad Ali* (*Khalifa University of Science and Technology*); *Haider Butt* (*Khalifa University of Science and Technology*);

## Session 3A3b
## Advanced Photonic Technologies for Spectroscopic Applications 2

**Wednesday AM, May 7, 2025**

**Room 3 - CH B (D)**

Organized by Simone Borri, Weixiong Zhao, Wei Dong Chen

Chaired by Weixiong Zhao, Wei Dong Chen

00:00 Invited — High-precision Measurement of $CO_2$ Concentration and Its Isotopic Ratios Based on QCLAS Technology
*Xiaojuan Cui* (*Anhui University*); *Qizhi Zhu* (*Anhui Univerisitry*); *Xiaohan Cui* (*Anhui Univerisitry*); *Shuaikang Yin* (*Anhui Univerisitry*); *Xin Shi* (*Anhui Univerisitry*); *Yang Hong* (*Jianghuai Advance Technology Center*); *Benli Yu* (*Anhui University*);

00:00 Suborbital Laser Heterodyne Spectrometer for Martian Methane Measurement
*Tu Tan* (*Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences*); *Weixiong Zhao* (*Anhui Institute of Optics and Fine Mechanics, HFIPS, Chinese Academy of Sciences*); *Xiaoming Gao* (*Anhui Institutes of Physical Science, Chinese Academy of Sciences*); *Jun Li* (*Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences*); *Wei Dong Chen* (*Université du Littoral Côte d'Opale*);

00:00 Invited — Calibration-free Mid-infrared Exhaled Breath Sensor Based on BF-QEPAS for Non-invasive Diagnosis
*Lei Dong* (*Shanxi University*); *Hongpeng Wu* (*Shanxi University*); *Ruyue Cui* (*Shanxi University*); *Vincenzo Spagnolo* (*Politecnico di Bari*);

00:00 High-sensitivity Cantilever-enhanced Photoacoustic Sensors: Novel Configurations towards Low-power and High-resolution Regimes
*Jacopo Pelini* (*CNR-INO — Istituto Nazionale di Ottica*); *Stefano Dello Russo* (*ASI Agenzia Spaziale Italiana — Centro di Geodesia Spaziale*); *Zhen Wang* (*The Chinese University of Hong Kong*); *Iacopo Galli* (*CNR-INO, Istituto Nazionale di Ottica*); *Maria Concetta Canino* (*INFN, Istituto Nazionale di Fisica Nucleare*); *Alberto Roncaglia* (*INFN, Istituto Nazionale di Fisica Nucleare*); *Pablo Cancio Pastor* (*CNR-INO — Istituto Nazionale di Ottica*); *Naota Akikusa* (*Hamamatsu Photonics K.K.*); *Wei Ren* (*The Chinese University of Hong Kong*); *Paolo De Natale* (*CNR-INO, Istituto Nazionale di Ottica*); *Mario Siciliani De Cumis* (*ASI Agenzia Spaziale Italiana — Centro di Geodesia Spaziale*); *Simone Borri* (*CNR-INO, Istituto Nazionale di Ottica*);

00:00 Comparative Analysis of Data-driven Models for Spatially Resolved Thermometry Using Emission Spectroscopy
*Ruiyuan Kang* (*Technology Innovation Institute*); *Meixia Geng* (*Technology Innovation Institute*); *Qingjie Yang* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Analysis of Laser Beam Propagation in the LIBS Optical System Using Ray Optics in COMSOL Multiphysics Software
*Kiran Kumar Kabotu* (*Technology Innovation Institute*); *Hamdan AlHashmi* (*Technology Innovation Institute*); *Maryam AlRaeesi* (*Technology Innovation Institute*); *Shaikha AlMarzooqi* (*Technology Innovation Institute*); *Sarah AlHosani* (*Technology Innovation Institute*); *Antaryami Mohanta* (*Technology Innovation Institute*); *Guillaume Matras* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Invited — Field Deployed Mid-infrared Intrapulse DFG Frequency Combs for Atmospheric and Chemical Kinetic Applications
*Greg B. Rieker* (*University of Colorado*);

## Session 3A4
## Singular Optics in Nanophotonics and Metasurfaces

**Wednesday AM, May 7, 2025**

**Room 4 - Capital Suite 1**

Organized by Cheng-Wei Qiu, Jincheng Ni

Chaired by Jincheng Ni

00:00 Invited — Geometric Phase-driven Scattering Evolutions
*Wei Liu* (*National University of Defense Technology*);

00:00 Invited — Local Symmetry Breaking and Chiral Photon Emission from Achiral Nanostructures
*Yang Chen* (*University of Science and Technology of China*);

00:00 Invited — Self-assembly Active Nanophotonics
*Jiangang Feng* (*University of Science and Technology of China*);

00:00 Uncovering the Chiral Source in Resonant Nanostructures
*Weijin Chen* (*Tongji University*);

00:00 Invited — Nano-kirigami with Controlled Plastic, Elastic and Hysteretic Deformations
*Zhiguang Liu* (*University of Science and Technology of China*);

00:00 Manipulation of Exciton Polaritons in a Liquid-crystal Perovskite Microcavity
*Wen Wen* (*University of Science and Technology of China*);

00:00 Momentum-space Topological Phase Singularities in
Invited Photonic Bands
*Jincheng Ni* (*University of Science and Technology of China*);

00:00 Exploiting Phase Singularities in Metasurfaces Design
*Mirko Barbuto* (*ROMA TRE University*); *Alessio Monti* (*ROMA TRE University*); *Stefano Vellucci* (*Niccolò Cusano University*); *Andrea Alù* (*The City University of New York*); *Filiberto Bilotti* (*ROMA TRE University*); *Alessandro Toscano* (*ROMA TRE University*);

00:00 Enhanced Sensing by Coherent Perfect Absorber Laser Points of Non-Hermitian Systems
*Minye Yang* (*Xi'an Jiaotong University*); *Zhilu Ye* (*Xi'an Jiaotong University*); *Ming Liu* (*Xi'an Jiaotong University*);

## Session 3A5
## Optical Spectroscopy of Two-dimensional Materials and Heterostructures

**Wednesday AM, May 7, 2025**

**Room 5 - Capital Suite 2**

Organized by Hui Zhao, Yongsheng Wang

Chaired by Hui Zhao, Yongsheng Wang

00:00 Chiroptical Spectroscopy of Two-dimensional Het-
Invited erostructures and Its Interaction with Plasmonic Nanocavity
*Xiulai Xu* (*Peking University*);

00:00 Engineering Exciton Photoluminescence in Microdisk Resonators Based on All-TMDC Double Heterostructures
*P. A. Alekseev* (*Ioffe Institute*); *I. A. Milekhin* (*Ioffe Institute*); *K. A. Gasnikova* (*Ioffe Institute*); *I. A. Eliseyev* (*Ioffe Institute*); *V. Yu. Davydov* (*Ioffe Institute*); *Andrey A. Bogdanov* (*Harbin Engineering University*); *Vasily Kravtsov* (*ITMO University*); *A. O. Mikhin* (*ITMO University*); *Bogdan R. Borodin* (*Ioffe Institute*); *Alexander G. Milekhin* (*Rzhanov Institute of Semiconductor Physics, Russian Academy of Science*);

00:00 Plasmon Polariton Enhanced Optoelectrical Response of
Invited Graphene Heterostructures
*Weiwei Luo* (*Nankai University*); *Wei Cai* (*Nankai University*); *Jingjun Xu* (*Nankai University*);

00:00 Effect of Ground-state Charge Transfer in van der Waals
Invited Heterostructures
*Yongsheng Wang* (*Beijing Jiaotong University*); *Dawei He* (*Beijing Jiaotong University*); *Hui Zhao* (*Beijing Jiaotong University*);

00:00 Microdisc Lasers HgCdTe-based Structures for Operating at 20–25 μm Range under Watt-level Optical Pumping
*Sergey V. Morozov* (*Institute for Physics of Microstructures of RAS*); *K. A. Mazhukina* (*Institute for Physics of Microstructures of RAS*); *A. A. Yantser* (*Institute for Physics of Microstructures of RAS*); *A. A. Razova* (*Institute for Physics of Microstructures of RAS*); *V. V. Utochkin* (*Institute for Physics of Microstructures of RAS*); *M. A. Fadeev* (*Institute for Physics of Microstructures of RAS*); *Vladimir V. Rumyantsev* (*Institute for Physics of Microstructures of RAS*); *Alexander A. Dubinov* (*Institute for Physics of Microstructures of RAS*); *V. Ya. Aleshkin* (*Institute for Physics of Microstructures of RAS*); *D. V. Shengurov* (*Institute for Physics of Microstructures of RAS*); *N. S. Gusev* (*Institute for Physics of Microstructures of RAS*); *E. E. Morozova* (*Institute for Physics of Microstructures of RAS*); *V. I. Gavrilenko* (*Institute for Physics of Microstructures of RAS*);

00:00 Ultrafast Spectra for Low-dimensional Interface Detec-
Invited tion
*Chunxiang Xu* (*Southeast University*); *Qiannan Cui* (*Southeast University*); *He Zhang* (*Southeast University*); *Feiyang Hou* (*Southeast University*);

00:00 Transient Absorption Microscopy of Two-dimensional
Invited Semiconductors
*Hui Zhao* (*University of Kansas*); *Yongsheng Wang* (*Beijing Jiaotong University*); *Dawei He* (*Beijing Jiaotong University*);

00:00 Stacking Dependent Optical Properties of $MoS_2$-$WS_2$ Heterostructures: The First Principles Study
*Vijay Kumar Gudelli* (*King Abdullah University of Science and Technology (KAUST)*); *B. Ravina* (*King Abdullah University of Science and Technology (KAUST)*); *Bala Murali Krishna Mariserla* (*IIT Jodhpur*); *S. Appalakondiah* (*Pondicherry University*); *Iman S. Roqan* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Interlayer Charge Transfer in Two-dimensional Alloy
Invited Heterostructures
*Dawei He* (*Beijing Jiaotong University*); *Yongsheng Wang* (*Beijing Jiaotong University*); *Hui Zhao* (*Beijing Jiaotong University*);

00:00 Superconducting Infrared and Terahertz Detectors Based on Two-dimensional Materials
*K. V. Shein* (*National Research University "Higher School of Economics"*); *E. Zharkova* (*Brain and Consciousness Research Center*); *A. N. Titchenko* (*National Research University "Higher School of Economics"*); *G. N. Goltsman* (*National Research University "Higher School of Economics"*); *I. Charaev* (*University of Zurich*); *D. A. Bandurin* (*National University of Singapore*); *Igor A. Gayduchenko* (*Moscow State University of Education (MSPU)*);

## Session 3A6
## Complicated Systems in Photonics and Other Waves

**Wednesday AM, May 7, 2025**

**Room 6 - Capital Suite 3**

Organized by Feng Li, Huanyang Chen

Chaired by Feng Li, Chao Qian

00:00 Few Photon Optical Phase Rotation Induced by Giant
Invited Polariton-polariton Interactions
*Dmitry N. Krizhanovskii* (*University of Sheffield*);

00:00 Broadband Nonlinear Optical Structures on Chips
Invited
*Chunyu Huang* (*Nanjing University of Aeronautics and Astronautics*); *Yu Luo* (*Nanjing University of Aeronautics and Astronautics*); *Hui Liu* (*Nanjing University*); *Haoyun Yu* (*Nanjing University*);

00:00 Water-wave Superscattering
Invited
*Chao Qian* (*Zhejiang University*);

00:00 Topological Manipulations on Photonic Chips
Invited
*Wange Song* (*Nanjing University*); *Shi-Ning Zhu* (*Nanjing University*); *Shuang Zhang* (*The University of Hong Kong*); *Tao Li* (*Nanjing University*);

00:00 Simple Diffractive Grating for Generating Water-wave
Invited Spatiotemporal Vortex Pulses
*Zhiyuan Che* (*Fudan University*); *Wenzhe Liu* (*Fudan University*); *Junyi Ye* (*Fudan University*); *Lei Shi* (*Fudan University*); *Che Ting Chan* (*The Hong Kong University of Science and Technology*); *Jian Zi* (*Fudan University*);

00:00 Wave Chaotic Dynamics in Optical Microcavities in
Invited Curved Space
*Yechun Ding* (*Xi'an Jiaotong Unviersity*); *Yongsheng Wang* (*Xi'an Jiaotong Unviersity*); *Wei Lin* (*Xi'an Jiaotong University*); *Feng Li* (*Xi'an Jiaotong University*);

00:00 Transformation Non-Hermitian Skin Effect
Invited
*Wen Xiao* (*Xiamen University*); *Shan Zhu* (*Xiamen University*); *Huanyang Chen* (*Xiamen University*);

00:00 Optical Frequency Comb-based Photonic Millimeter-wave Chaos Generation for High-capacity Wireless Networks
*M. Baskaran* (*Sri Sairam Engineering College*); *K. Jeyapiriya* (*Sri Sairam Engineering College*);

00:00 Valley Vortex States in Water Wave Crystal
*Zijian Qin* (*Zhejiang University*);

00:00 Vortex Interaction with Metamaterials
*Qilin Duan* (*Xiamen University*); *Linkang Han* (*Xiamen University*); *Huanyang Chen* (*Xiamen University*);

## Session 3A7
## Lasers in Life Sciences: From 3D Bio Printing to Sensing

**Wednesday AM, May 7, 2025**

**Room 7 - Capital Suite 4**

Organized by Maria De Fatima Fonseca Domingues, Anna Maria Pappa

00:00 Multiphoton Printing for Adaptive Smart Materials
*Maria Farsari* (*IESL-FORTH*);

00:00 Single-molecule Detection via Plastic Optical Fiber Biosensors
*Nunzio Cennamo* (*University of Campania Luigi Vanvitelli*);

00:00 Optical Fiber Biosensors Based on Semi-randomized Interferometry: Towards Multifunctional Detection Probes
*Daniele Tosi* (*Nazarbayev University*);

00:00 Investigation of Extracellular Vesicle Deposition on Tapered Optical Fibers and Light Transmission Analysis
*Natsnet Bereket Tecle* (*Khalifa University of Science and Technology*); *Sagar Arya* (*Khalifa University of Science and Technology*); *Anna Maria Pappa* (*Khalifa Universe of Science and Technology*); *Maria De Fatima Fonseca Domingues* (*Khalifa Universe of Science and Technology*);

00:00 3D Printed Smart Contact Lenses
*Haider Butt* (*Khalifa University of Science and Technology*);

00:00 Hydrogel-based Optical Fiber Sensors with Integrated Gold Nanoparticles for Diabetes Management
*Israr Ahmed* (*Khalifa University of Science and Technology*); *Yarjan Abdul Samad* (*Khalifa University of Science and Technology*); *Haider Butt* (*Khalifa University of Science and Technology*);

00:00 Polymer Nanoparticles as Photoactive Transducers to Control Cellular Metabolism
*Maria Rosa Antognazza* (*Italian Institute of Technology*);

00:00 Pulsed Laser Fabrication and Diagnostics for Tissue Enginnering Apllications
*Emmanuel Stratakis* (*Foundation for Research and Technology (FORTH)*);

00:00 Photon Circus: From Protein Dynamics and 3D Imaging to 3D Bioprinting
*Shabir Hassan* (*Khalifa University*);

## Session 3A8
## Multimode Nonlinear Photonics

**Wednesday AM, May 7, 2025**

**Room 8 - Capital Suite 5**

Organized by Stefan Wabnitz, Mauro Fernandes Pereira

Chaired by Stefan Wabnitz, Mauro Fernandes Pereira

00:00 Optical Thermodynamics of Photonic Nonlinear Multi-
Keynote mode Systems
*Demetrios Christodoulides* (*University of Southern California*);

00:00 Temporal Self-organization, Coherence Memory and Amnesia in a Seeded Mamyshev Oscillator
*Bo Cao* (*Tsinghua University*); *Chengying Bao* (*Tsinghua University*); *Changxi Yang* (*Tsinghua University*);

00:00 Multimode Fiber Raman Lasers with Transverse Mode
Invited Selection by Regular and Random RI Structures
*Sergey A. Babin* (*Institute of Automation and Electrometry SB RAS*); *A. G. Kuznetsov* (*Institute of Automation and Electrometry SB RAS*); *Zhibzema E. Munkueva* (*Institute of Automation and Electrometry of the SB RAS*); *Alexandr V. Dostovalov* (*Institute of Automation and Electrometry SB RAS*);

00:00 Spatial Instability of Fundamental Mode in Step-index Multimode Fiber
*S. Boni* (*Sapienza University of Rome*); *A. Ciorra* (*Sapienza University of Rome*); *W. A. Gemechu* (*Sapienza University of Rome*); *A. Sparapani* (*Sapienza University of Rome*); *Fabio Mangini* (*"La Sapienza" University of Rome*); *M. Ferraro* (*University of Calabria*); *Y. Sun* (*Universite Libre de Bruxelles*); *M. Gervaziev* (*Novosibirsk State University*); *D. Kharenko* (*Novosibirsk State University*); *S. Babin* (*Novosibirsk State University*); *Stefan Wabnitz* (*Sapienza University of Rome*);

00:00 Characterization of Nonlinear Dynamics in Multimode
Invited Fibers
*Goëry Genty* (*Tampere University*); *Jiaqi Li* (*Tampere University*); *Piotr Ryczkowski* (*Tampere University of Technology*);

00:00 Light-by-light Reconfiguration in Optical Fibres
Invited
*Kunhao Ji* (*University of Southampton*); *David J. Richardson* (*University of Southampton*); *Stefan Wabnitz* (*Sapienza University of Rome*); *Massimiliano Guasoni* (*University of Southampton*);

00:00 Hybrid Distributed/Modal Approach to Description of Rear-earth Fiber Lasers
*Dmitry K. Vysokikh* (*Dukhov Research Institute of Automatics*); *Alexander V. Dorofeenko* (*Institute for Theoretical and Applied Electromagnetics, RAS*); *A. P. Bazakutsa* (*Kotelnikov Institute of Radioengineering and Electronics of RAS*); *O. V. Butov* (*Kotelnikov Institute of Radioengineering and Electronics of RAS*);

00:00 Nonlinear Dependence of Radiation Line Width on Pumping in Phonon Lasers
*Artem Ramazanovich Mukhamedyanov* (*Dukhov Research Institute of Automatics (VNIIA)*); *Alexander A. Zyablovsky* (*Dukhov Research Institute of Automatics (VNIIA)*); *E. S. Andrianov* (*Dukhov Research Institute of Automatics (VNIIA)*);

00:00 Molecule-induced Microcavity Surface Nonlinear Optics
*Xiaoqin Shen* (*ShanghaiTech University*);

## Session 3A9
## Nanophotonics with Solid-state Quantum Emitters

**Wednesday AM, May 7, 2025**

**Room 9 - Capital Suite 6**

Organized by Jianwei Tang, Xuewen Chen

Chaired by Jianwei Tang

00:00 Non-trivial Light-matter Interactions in High-Q 2D Ma-
Invited terial Nanocavities
*Chenjiang Qian* (*Institute of Physics, Chinese Academy of Sciences*); *V. Villafañe* (*Technische Universität München*); *P. Soubelet* (*Technische Universität München*); *A. V. Stier* (*Technische Universität München*); *J. J. Finley* (*Technische Universität München*);

00:00 Light-matter Interactions in the One-dimensional Op-
Invited tomechanical Cavity
*Guangwei Deng* (*University of Electronic Science and Technology of China*);

00:00 Shaping Single-photon Emission with Emitter-coupled
Invited Metasurfaces
*Fei Ding* (*University of Southern Denmark*);

00:00 Quantum Emitters and Their Application in Quantum
Invited Detection
*Hai-Zhi Song* (*Southwest Institute of Technical Physics & UESTC*); *Jing Qiu* (*Southwest Institute of Technical Physics*); *Mochou Yang* (*Southwest Institute of Technical Physics*); *Beitong Cheng* (*Southwest Institute of Technical Physics*); *Si Shen* (*University of Electronic Science and Technology*); *Shihai Wei* (*University of Electronic Science and Technology of China*); *Bo Jing* (*Southwest Jiaotong University*);

00:00 Nanoplasmonic Architectures for Quantum Nanopho-
Keynote tonics at Ambient Temperatures
*Ortwin Hess* (*Trinity College Dublin*);

00:00 Control of Quantum Dot Emission with Brillouin Zone
Invited Folding Metasurfaces
*Young Chul Jun* (*Ulsan National Institute of Science and Technology*);

00:00 Cavity-enhanced Superfluorescence in Perovskite Micro-
Invited cavities
*Changchang Huang* (*Huazhong University of Science and Technology*); *Wei Xie* (*East China Normal University*); *Weihang Zhou* (*Huazhong University of Science and Technology*);

00:00 Identical Photons and Solid-state Qubits in GaAs Quan-
Invited tum Dots
*Liang Zhai* (*University of Electronic Science and Technology of China*);

00:00 Directional Excitation in Chiral Waveguide Quantum Optics
Invited
*Hamidreza Siampour* (*Queen's University Belfast*);

## Session 3A10
## Rough Surface Scattering: Theory and Application

**Wednesday AM, May 7, 2025**

**Room 10 - Capital Suite 7**

Organized by Joel T. Johnson, Antonio Iodice

Chaired by Joel T. Johnson, Antonio Iodice

00:00 On the Prediction of Scattering from Objects in the Presence of a Rough Surface
*Joel T. Johnson* (*The Ohio State University*); *Joseph Gedney* (*The Ohio State University*); *Robert J. Burkholder* (*The Ohio State University*);

00:00 Closed-form Approximation of the Kirchhoff Integral for a General Class of Rough Surface Autocorrelation Functions
*Antonio Iodice* (*University of Naples "Federico II"*);

00:00 Multiscale Roughness Effect on Scattering from Snow-covered Sea Ice
*Ying Yang* (*Nanjing University*); *Kun-Shan Chen* (*Nanjing University*);

00:00 Remote Sensing Scattering of Offshore Oil Spills with Modified Freeman Polarization Decomposition
*Ya-Rong Zou* (*National Satellite Marine Application Center*); *Wen-Tao An* (*National Satellite Marine Application Center*);

00:00 Method of Moments-based Scattering from Rough Surfaces Using High-performance Parallel Implementations for Heterogeneous Computing Architectures
*Pasquale Imperatore* (*Institute for Electromagnetic Sensing of the Environment (IREA), National Research Council (CNR)*); *F. Gregoretti* (*Institute for High Performance Computing and Networking (ICAR), National Research Council (CNR)*); *Nicolas Pinel* (*University of Nantes*); *M. Nisar* (*Institute for Electromagnetic Sensing of the Environment (IREA), National Research Council (CNR)*); *Christophe Bourlier* (*Nantes Université, CNRS, IETR (Institut d'Électronique et des Technologies numéRiques)*); *D. Romano* (*Institute for High Performance Computing and Networking (ICAR), National Research Council (CNR)*); *Antonio Iodice* (*University of Naples "Federico II"*);

00:00 Analytical Method of Scattered Electromagnetic Field by a Buried Sphere in a Stratified Formation
*Kai Zhao* (*Jilin University*); *Decheng Hong* (*Jilin University*);

00:00 Interferometry Using Spaceborne GNSS-R and SoOp Systems: A Feasibility Study
*Joel T. Johnson* (*The Ohio State University*); *Mohammad Al-Khaldi* (*The Ohio State University*); *Steven K. Chan* (*NASA Jet Propulsion Laboratory, California Institute of Technology*); *George Hajj* (*NASA Jet Propulsion Laboratory, California Institute of Technology*);

00:00 Performance Analysis of Inverse Equivalent Source Method with Different Types of Incident Fields
*Ahmet Sefer* (*King Abdullah University of Science and Technology (KAUST)*); *Hakan Bagci* (*King Abdullah University of Science and Technology (KAUST)*);

## Session 3P1
## Novel Meta-devices and Their Applications 1

**Wednesday PM, May 7, 2025**

**Room 1 - CH B (A)**

Organized by Din Ping Tsai, Pin Chieh Wu

Chaired by Din Ping Tsai, Pin Chieh Wu

00:00 Metasurfaces: From Optical Elements to Integrated Devices
Invited
*Tao Li* (*Nanjing University*);

00:00 Dynamic Beam Steering and Switching with Active Metasurfaces at Mid-IR Frequencies
Invited
*Min Seok Jang* (*Korea Advanced Institute of Science and Technology*);

00:00 Monocular Metasurface Camera for Single-shot Multi-dimensional Imaging
Invited
*Yuanmu Yang* (*Tsinghua University*);

00:00 Laser Scanning Microscopy (x-scan) to Study Nonlinear Nanophotonics
Invited
*Shi-Wei Chu* (*National Taiwan University*);

00:00 Vector Vortex Lasing from Perovskite Metasurface Based on Quasi-bound States in the Continuum
Invited
*Chi-Ching Liu* (*Academia Sinica*); *Yun-Chorng Chang* (*Academia Sinica*);

00:00 Custom Software-driven Design of a Large-diameter, Achromatic Metalens for Thermal Imaging and AI Applications
Invited
*Chih-Ming Wang* (*National Central University*); *W.-L. Hsu* (*National Central University*); *Y.-C. Chen* (*National Central University*); *Q.-C. Zeng* (*National Central University*); *C.-Y. Yu* (*National Central University*); *P.-D. Chen* (*National Central University*); *B.-J. Chen* (*National Central University*); *N. Y.-C. Liu* (*University Brunei Darussalam*);

00:00 Plasmonic Raman Tags for Selective Photothermal
Invited Eradication of GBM Cells
*Yung-Ching Chang* (*National Cheng Kung University*); *Chan-Chuan Liu* (*National Cheng Kung University*); *Wan-Ping Chan* (*National Cheng Kung University*); *Yu-Long Lin* (*National Cheng Kung University*); *Chun-I Sze* (*National Cheng Kung University*); *Shiuan-Yeh Chen* (*National Cheng Kung University*);

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

00:00 Deep-ultraviolet Polaritonic Metadevices for Molecular
Invited Sensing
*Bo-Ray Lee* (*National Yang Ming Chiao Tung University*); *Mao Feng Chiang* (*National Yang Ming Chiao Tung University*); *Kuan-Heng Chen* (*National Yang Ming Chiao Tung University*); *Jia Hua Lee* (*National Yang Ming Chiao Tung University*); *Po Hsiang Hsu* (*National Yang Ming Chiao Tung University*); *Der-Hsien Lien* (*National Yang Ming Chiao Tung University*); *Yu-Chuan Lin* (*National Yang Ming Chiao Tung University*); *Ray-Hua Horng* (*National Yang Ming Chiao Tung University*); *Yuri S. Kivshar* (*Australian National University*); *MingLun Tseng* (*National Yang Ming Chiao Tung University*);

00:00 Tailoring Optical Field Confinement in Surface Plasmon
Invited Polariton Lasers through Dielectric and Metal Layer Optimization
*Timothy Chou* (*National Cheng Kung University*); *Wing-Sing Cheung* (*National Cheng Kung University*);

00:00 High-Q Resonances in Nonlocal Plasmonic Metasurfaces
Invited
*Yao Liang* (*City University of Hong Kong*); *Yuri S. Kivshar* (*Australian National University*); *Din Ping Tsai* (*City University of Hong Kong*);

00:00 Versatile Wavefront Control with Multi-resonant High-Q Metasurfaces
*Hsiu-Ping Su* (*National Cheng kung University*); *Shih-Hsiu Huang* (*National Cheng Kung University*); *Chao-Yun Chen* (*National Cheng Kung University*); *Yu-Chun Lin* (*National Cheng Kung University*); *Zijin Yang* (*Tsinghua University*); *Yuzhi Shi* (*Tongji University (TJU)*); *Qinghua Song* (*Tsinghua Shenzhen International Graduate School*); *Pin Chieh Wu* (*National Cheng Kung University*);

00:00 Static and Reconfigurable Transmissive Huygens' Metasurfaces for Beam-steering Applications
*Stefano Vellucci* (*Niccolò Cusano University*); *Alessio Monti* (*ROMA TRE University*); *Mirko Barbuto* (*ROMA TRE University*); *Alessandro Toscano* (*"Roma Tre" University*); *Filiberto Bilotti* (*"Roma Tre" University*);

00:00 Photoluminescence Polarization Control of 2D Material via Exceptional Points in Plasmonic Metasurfaces
*Po-Sheng Huang* (*National Cheng Kung Unviersity*); *Ya-Hsin Hsiao* (*National Cheng Kung Unviersity*); *Pin Chieh Wu* (*National Cheng Kung University*);

00:00 Electronic Metadevices with Electrical Metastructures:
Invited A New Frontier in Telecommunications
*Abdallah Y. I. Abushawish* (*Nanyang Technological University*); *Ziwen Huang* (*Nanyang Technological University*); *Mohammad Samizadeh Nikoo* (*Nanyang Technological University*);

## Session 3P2a
## Resonant Metasurfaces at THz, Visible, and Near-infrared

**Wednesday PM, May 7, 2025**

**Room 2 - CH B (C&B)**

Organized by Francesco Dell'Olio

Chaired by Francesco Dell'Olio

00:00 Bound States in the Continuum in Resonant Nanostruc-
Invited tures for Advanced Biomedical Applications
*Silvia Romano* (*Institute of Applied Sciences & Intelligent Systems, National Research Council, CNR-ISASI*); *Bruno Miranda* (*Institute of Applied Sciences & Intelligent Systems, National Research Council, CNR-ISASI*); *Aida Seifalinezhad* (*Institute of Applied Sciences & Intelligent Systems, National Research Council, CNR-ISASI*); *Annalisa Lamberti* (*University of Naples Federico II*); *Elisabetta Primiceri* (*Institute of Nanotechnology, National Research Council*); *Adam M. Schwartzberg* (*Lawrence Berkeley National Laboratory*); *Vito Mocella* (*Institute of Applied Sciences & Intelligent Systems, National Research Council, CNR-ISASI*); *Ivo Rendina* (*Institute of Applied Sciences & Intelligent Systems, National Research Council, CNR-ISASI*); *Gianluigi Zito* (*Institute of Applied Sciences & Intelligent Systems, National Research Council, CNR-ISASI*);

00:00 Laser-induced Selective Crystallization in GST Nanos-
Invited tructures Empowered by Quasi-bound States in the Continuum
*Marco Gandolfi* (*Università degli Studi di Brescia*); *Maria Eugenia Serrano Flores* (*Università degli Studi di Brescia*); *Jesse Frantz* (*US Naval Research Laboratory*); *Jason Myers* (*US Naval Research Laboratory*); *Robel Bekele* (*US Naval Research Laboratory*); *Jas Sanghera* (*US Naval Research Laboratory*); *Anthony Clabeau* (*University Research Foundation*); *Natalia M. Litchinitser* (*Duke University*); *Maria Antonietta Vincenti* (*University of Brescia*);

00:00 Biosensors Based on Plasmonic Metasurfaces for
Invited Biomedical Applications
*Francesco Arcadio* (*University of Campania L. Vanvitelli*); *Luigi Zeni* (*University of Campania L. Vanvitelli*); *Nunzio Cennamo* (*University of Campania Luigi Vanvitelli*);

00:00 Noxious Micro-Nano Plastic Detection and Quantification in Water-Bodies via Light-Matter Interactions in Quantum Metasurfaces
*Mohammad Mansoor Khan* (*Indian Institute of Information Technology Guwahati*); *Ramesh Kumar Sonkar* (*Indian Institute of Technology Guwahati*);

00:00 Spatially-modulated Metasurface Tiles for Electromagnetic Shielding at Targeted Frequency
*Abijith Kaithatharayil Reju* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*);

00:00 Metamaterial Enhanced Metal Halide Perovskite's Absorption in Terahertz Regime
*Gopika Hari K* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*);

00:00 Development of High-quality Factor Terahertz Metasurface Biosensors
*Jerin K. John* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*);

## Session 3P2b
## Multifunctional and Reconfigurable Terahertz and Infrared Metasurfaces

**Wednesday PM, May 7, 2025**

**Room 2 - CH B (C&B)**

Organized by Jinhui Shi, Chunmei Ouyang

Chaired by Jinhui Shi

00:00 Polarization Control in Chiral Metasurfaces with Symmetry and Resonances
Invited
*Kirill Koshelev* (*Australian National University*);

00:00 Towards 6G: Reconfigurable Intelligent Surfaces with Graphene-enabled Phase Modulation for Terahertz Applications
*Fatemeh Barahimi* (*Tarbiat Modares University*); *Maryam Hesari-Shermeh* (*Tarbiat Modares University*); *Bijan Abbasi-Arand* (*Tarbiat Modarres University*);

00:00 Graphene Assisted Tunable Electromagnetically Induced Transparency Metasurface for Spatial Modulation Applications in THz Regime
*L. P. Abhishek* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*);

00:00 Tri-layer Broadband Reflective Metasurface for Simultaneous Linear and Circular Cross-polarization Conversion in Terahertz Regime
*Adithya Danaj* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*);

00:00 Research on High Dynamic and Broadband Electromagnetic Modulation Characteristics Based on Plasma and Flexible Hydrogel Materials
*Wenchong Ouyang* (*Xidian University*); *Zhengwei Wu* (*University of Science and Technology of China*);

00:00 Design, Fabrication, and Optical Characterization of
Invited GST-based Metasurfaces for Telecommunication Bands
*Mikhail V. Rybin* (*ITMO University*);

00:00 Metafilms for Visible and Infrared Stealth
Invited
*Cong Quan* (*National University of Defense Technology*); *Song Gu* (*National University of Defense Technology*); *Tao Xu* (*National University of Defense Technology*); *Shuo Li* (*National University of Defense Technology*); *Ping Liu* (*National University of Defense Technology*); *Zhihong Zhu* (*National University of Defense Technology*); *Jianfa Zhang* (*National University of Defense Technology*);

00:00 Chiral-selective Coherent Absorption Based on Bound
Invited States in the Continuum
*Jinhui Shi* (*Harbin Engineering University*); *Juntian Peng* (*Harbin Engineering University*); *Wenjia Li* (*Harbin Engineering University*); *Bo Lv* (*Harbin Engineering University*); *Chunying Guan* (*Harbin Engineering University*);

## Session 3P3
## Thermal Photonics: Fundamental Physics and Application 1

**Wednesday PM, May 7, 2025**

**Room 3 - CH B (D)**

Organized by Wei Li, Qiaoqiang Gan, Longnan Li

Chaired by Qiaoqiang Gan

00:00 Sustainable Hybrid PV-TEG System for Temperature Regulation and Nighttime Power Generation in Solar Technologies
*Abdulrahman M. Alajlan* (*King Abdulaziz City for Science and Technology*);

00:00 Free-form Metamaterial Design for Thermal Camouflage Guided by Conditional Diffusion Model
*Jiang Guo* (*The University of Tokyo*);

00:00 Microprism Optics for Energy Saving and Production
Invited
*Sun-Kyung Kim* (*Kyung Hee University*);

00:00 Functional Nonreciprocal Thermal Radiation Based on
Invited Magneto-optical, Phase-change Materials, and Beyond
*Kezhang Shi* (*Zhejiang University*); *Sailing He* (*Royal Institute of Technology & Zhejiang University*);

00:00 Ultrabroadband Directional Thermal Emission
Invited
*Ziwei Fan* (*Texas A&M University*); *Taeseung Hwang* (*Texas A&M University*); *Sam Lin* (*Texas A&M University*); *Y. Chen* (*Texas A&M University*); *Zijing Wong* (*Eastern Institute of Technology*);

00:00 Optofluidic Metasurfaces with Dual Functionalities for
Invited Energy-passive Cooling and Water Harvesting
*Tarik Bourouina* (*Université Gustave Eiffel*);

00:00 Effect of Directional Emissivity on Radiative Heat
Invited Transfer with Obstacles
*Yufei Yan* (*Université Gustave Eiffel, CNRS, ESYCOM*); *Kirollos Matta* (*Université Gustave Eiffel, CNRS, ESYCOM*); *Armande Herve* (*Université Gustave Eiffel, CNRS, ESYCOM*); *Tarik Bourouina* (*Université Paris-Est*); *Elyes Nefzaoui* (*University Gustave Eiffel*);

00:00 Broadband Active Metasurfaces by Reversible Metal
Invited Electrodeposition
*Po-Chun Hsu* (*University of Chicago*);

00:00 Dynamic Radiative Thermal Management in Smart
Invited Windows
*Xun Cao* (*Shanghai institute of Ceramics, Chinese Academy of Sciences*); *Aibin Huang* (*Shanghai institute of Ceramics, Chinese Academy of Sciences*); *Cuicui Cao* (*Shanghai institute of Ceramics, Chinese Academy of Sciences*); *Zewei Shao* (*Shanghai institute of Ceramics, Chinese Academy of Sciences*);

00:00 Solid-state Ionic Thermoelectrics for Photothermal
Invited Sensing
*Gongze Liu* (*The Hong Kong University of Science and Technology*); *Baoling Huang* (*The Hongkong University of Science and Technology*);

00:00 Unlocking the Potentials of Tunable Infrared Emissivity
Invited with Semiconductor Quantum Dots
*Yu Gu* (*Nanjing University of Science and Technology*); *Haixiao Xu* (*Southeast University*); *Zhi Li* (*Southeast University*);

## Session 3P4
## Advances in Topological Photonics

**Wednesday PM, May 7, 2025**
**Room 4 - Capital Suite 1**
Organized by Yihao Yang, Haoran Xue
Chaired by Haoran Xue

00:00 Three-dimensional Photonic Chern Insulator with Arbi-
Invited trary Chern Vectors
*Xiang Xi* (*Southern University of Science and Technology*); *Zhen Gao* (*Southern University of Science and Technology*);

00:00 Arbitrarily Configurable Nonlinear Topological Modes
Invited
*Meng Xiao* (*Wuhan University*);

00:00 Change in the Topological Charge of a Superposition of Optical Vortices in the Form of a Geometric Progression under the Influence of Turbulence
*Elena Sergeevna Kozlova* (*Samara National Research University*); *Dmitry O. Shilov* (*Samara National Research University*); *Victor V. Kotlyar* (*Image Processing Systems Institute — Branch of the Federal Scientific Research Centre "Crystallography and Photonics" of RAS*);

00:00 Point-gap Topology in Non-Hermitian Hyperbolic Lat-
Invited tices
*Mengying Hu* (*Fudan University*); *Jing Lin* (*Fudan University*); *Kun Ding* (*Fudan University*);

00:00 Singular Dispersion Equation: Breaking Diffraction
Invited Limit in Dielectrics
*Renmin Ma* (*Peking University*);

00:00 Photonic Axion Insulator
Invited
*Baile Zhang* (*Nanyang Technological University*);

00:00 Photonic Parity-time Symmetric Bimorphic Topological Insulator
*Tuo Wan* (*Zhejiang University*); *Zhaoju Yang* (*Zhejiang University*);

00:00 Approaching the Adiabatic Infimum of Topological Pumps on Thin-film Lithium Niobate Waveguides
*Shengjie Wu* (*Nanjing University*); *Wange Song* (*Nanjing University*); *Jiacheng Sun* (*Nanjing University*); *Jian Li* (*Nanjing University*); *Zhiyuan Lin* (*Nanjing University*); *Xuanyu Liu* (*Nanjing University*); *Shi-Ning Zhu* (*Nanjing University*); *Tao Li* (*Nanjing University*);

00:00 Topological Photonic Crystal Fibre
Invited
*Bofeng Zhu* (*Nanyang Technological University*); *Qi Jie Wang* (*Nanyang Technological University*); *Yidong Chong* (*Nanyang Technological University*);

00:00 Non-Hermitian Dirac Cones with Valley-dependent Life-
Invited times
*Xinrong Xie* (*Zhejiang University*); *Fei Gao* (*Zhejiang University*); *Haoran Xue* (*The Chinese University of Hong Kong*);

00:00 Energy-efficient Feeding and Radiation Schemes for Topological Electromagnetic Devices
*Yuan-Zhen Li* (*Zhejiang University*); *Zijian Zhang* (*Zhejiang University*); *Fei Gao* (*Zhejiang University*);

00:00 Photonic Floquet Skin-topological Effect
*Yeyang Sun* (*Zhejiang University*); *Xiangrui Hou* (*Zhejiang University*); *Tuo Wan* (*Zhejiang University*); *Fangyu Wang* (*Zhejiang University*); *Shiyao Zhu* (*Zhejiang University*); *Zhichao Ruan* (*Zhejiang University*); *Zhaoju Yang* (*Zhejiang University*);

00:00 Valley Photonic Topological Insulator for Fluorescence Endoscopy
*Navid Sadat Yamin* (*Bangladesh University of Engineering and Technology (BUET)*); *Sajid Muhaimin Choudhury* (*Bangladesh University of Engineering and Technology (BUET)*);

## Session 3P5a
## Optical Sensors: From Theory to Applications

**Wednesday PM, May 7, 2025**

**Room 5 - Capital Suite 2**

Organized by Cees Ronda

00:00 Design and Benchmarking of a Novel Prototype for Vibration Displacement Measurement from Sub-micron to Micron Based on Laser Self-mixing Interference
*Yuanfu Tan* (*The Chinese University of Hong Kong*); *Wei-Hsin Liao* (*The Chinese University of Hong Kong*); *Hay Wong* (*University of Liverpool*);

00:00 An Analog Front-end Circuit with Walk Error Compensation for 4D LiDAR Imaging Sensors
*Jianping Guo* (*Fudan University*); *Xiaoyang Zeng* (*Fudan University*); *Wenhong Li* (*Fudan University*); *Mingyu Wang* (*Fudan University*);

00:00 Two-dimensional Curved Diffraction Lens-grating CDLG to Compensate for a Set of Wavefront Aberrations
*Pavel A. Khorin* (*Samara National Research University*); *A. P. Dzyuba* (*Samara National Research University*); *Svetlana Nikolaevna Khonina* (*Samara National Research University*);

00:00 Propagation/Leakage Transition of Fiber Cladding Modes as an Exceptional Point
*Eugeny D. Chubchev* (*Lomonosov Moscow State University*); *Egor I. Dolzhenko* (*Kotelnikov Institute of Radioengineering and Electronics of Russian Academy of Sciences*); *Kirill A. Tomyshev* (*Kotel'nikov Institute of Radio Engineering and Electronics of RAS*); *Igor A. Nechepurenko* (*Ferdinand-Braun-Institut (FBH)*); *Alexander V. Dorofeenko* (*Lomonosov Moscow State University*); *Oleg V. Butov* (*Kotelnikov Institute of Radioengineering and Electronics of RAS*);

00:00 Optical Gas Sensors: Optimization, Fabrication and Data Processing
*Alexander V. Dorofeenko* (*Lomonosov Moscow State University*); *Eugeny D. Chubchev* (*Dukhov Research Institute of Automatics*); *Alexander V. Baryshev* (*Dukhov Research Institute of Automatics*); *Daria P. Kulikova* (*Lomonosov Moscow State University*); *Ilya A. Rodionov* (*Bauman Moscow State Technical University*); *Aleksandr S. Baburin* (*BMSTU*); *Evgeniy S. Lotkov* (*Lomonosov Moscow State University*);

00:00 Luminescence Nanothermometry and High-contrast Multi-surface Imaging of Latent Fingerprints Using Nanophosphors
*Hendrik C. Swart* (*University of the Free State*); *Sumedha Tamboli* (*University of the Free State*); *Govind B. Nair* (*University of the Free State*);

00:00 Silicon-based Racetrack Resonators: Harnessing EIT for Enhanced Near Infrared Sensing
*Sarah Shafaay* (*American university in Cairo*); *Mohamed A. Swillam* (*University of Toronto*);

## Session 3P5b
## Quantum Sensing Methods and Applications

**Wednesday PM, May 7, 2025**

**Room 5 - Capital Suite 2**

Organized by Yong-Chun Liu, Bei Liu

00:00 Invited Electromagnetic Induction Imaging with Atomic Magnetometers: Coming of Age
*Ferruccio Renzoni* (*University College London*);

00:00 Invited Composite Pulses Beyond Static Noises
*Xin Wang* (*City University of Hong Kong*);

00:00 Invited Quantum Radar over Long Distances
*Diego Alejandro Roberto Dalvit* (*Los Alamos National Laboratory*);

00:00 Invited Superresolving and Supersensitive Multiphoton Quantum Imaging
*Omar S. Magana-Loaiza* (*Louisiana State University*);

00:00 Quantum-enhanced Gravimetry
*Victor Montenegro* (*University of Electronic Science and Technology of China (UESTC)*);

00:00 Turbulence-resistant Quantum Imaging Based on Quantum Entanglement
*Si Shen* (*University of Electronic Science and Technology*); *Q. Xu* (*University of Electronic Science and Technology*); *Jing Qiu* (*Southwest Institute of Technical Physics*); *M. K. Cai* (*University of Electronic Science and Technology*); *Qiang Zhou* (*University of Electronic Science and Technology of China*); *Hai-Zhi Song* (*Southwest Institute of Technical Physics & UESTC*);

00:00 Noise-robust Ultrasensitive Sensing Empowered by Non-Hermitian Amplification
*Tian Zhang* (*Nanjing University*); *Xiujuan Zhang* (*Nanjing University*);

00:00 Quantum Sensing with Free Electrons
*Cruz I. Velasco* (*ICFO — Institut de Ciencies Fotoniques, 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 Quantum Imaging with Constraints: Developing a Practical Algorithm
*Saif Almazrouei* (*Technology Innovation Institute*); *Alexander Mikhalychev* (*B.I. Stepanov Institute of Physics, NAS of Belarus*); *Abdellatif Bouchalkha* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Ultra-sensitive Magnetometry Based on Hot Atomic Vapors
*An-Ning Xu* (*Shandong University*); *Bei Liu* (*Shandong University*);

## Session 3P6a
## Structured Light Fields and Light Scattering

**Wednesday PM, May 7, 2025**

**Room 6 - Capital Suite 3**

Organized by Leonardo Andre Ambrosio

Chaired by Leonardo Andre Ambrosio

00:00 Keynote — Analytical and Semi-analytical Structured Light Scattering by Arbitrary Shaped Particles, Theories and Applications
*Gerard Gouesbet* (*University of Rouen*);

00:00 Engineering the Longitudinal Intensity Profile of Optical Beams after an Arbitrary Number of 4$\boldsymbol{f}$-systems for Light Scattering Applications
*Jhonas Olivati de Sarro* (*University of Sao Paulo*); *Michel Zamboni-Rached* (*University of Campinas*); *Gerard Gouesbet* (*University of Rouen*); *Leonardo Andre Ambrosio* (*University of Sao Paulo*);

00:00 Invited — Angular Spectrum Decomposition, Localized Approximation and Finite Series Methods in Evaluating the Beam Shape Coefficients of Structured Beams: A Comparison
*Jianqi Shen* (*University of Shanghai for Science and Technology*); *Siqi Tang* (*University of Shanghai for Science and Technology*);

00:00 Local Wavevector in Optical Vortices
*Sergey S. Stafeev* (*NRC Kurchatov Institute*); *Victor V. Kotlyar* (*NRC Kurchatov Institute*);

00:00 Full-quantum Description of Erbium-doped Laser with Consideration of Ion Pairs Effects
*Ivan V. Vovchenko* (*Moscow Institute of Physics and Technology*); *E. S. Andrianov* (*Dukhov Research Institute of Automatics (VNIIA)*); *Alexander V. Dorofeenko* (*Institute for Theoretical and Applied Electromagnetics, RAS*); *A. M. Smirnov* (*Moscow Institute of Physics and Technology*); *Oleg V. Butov* (*Kotelnikov Institute of Radioengineering and Electronics of RAS*);

00:00 Nonlinear Geometric Liquid Crystal Lens
*Samlan Chandran Thodika* (*University of Bordeaux, CNRS*); *Etienne Brasselet* (*Université de Bordeaux, CNRS*);

## Session 3P6b
## Space-time Optics

**Wednesday PM, May 7, 2025**

**Room 6 - Capital Suite 3**

Organized by Qiwen Zhan

Chaired by Qiwen Zhan

00:00 Invited — Spatiotemporal and Multidimensional Solitons
*Boris A. Malomed* (*Tel Aviv University*);

00:00 Spatiotemporal Airy Rings (STAR) Wavepacket
*Qian Cao* (*University of Shanghai for Science and Technology*); *Xiaolin Su* (*University of Shanghai for Science and Technology*); *Andy Chong* (*Pusan National University*); *Qiwen Zhan* (*University of Shanghai for Science and Technology*);

00:00 Invited — Pulse Velocity Control for Intense Lasers
*Zhaoyang Li* (*Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences*); *Hongxiang Lin* (*Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences*); *Yuxin Leng* (*Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences*);

00:00 Generation of Spatiotemporal Vortex Pulses by Resonant Period Structures
*Lei Shi* (*Fudan University*);

00:00 Spatiotemporal Topology in High-order Harmonic Generation
*Zijian Lyu* (*Peking University*); *Yiqi Fang* (*Peking University*); *Yunquan Liu* (*Peking University*);

00:00 Invited — Controlling the Spatiotemporal Optical Vortices Orientation with a Grating Pair in a Pulse Shaper
*Jordan Adams* (*University of Dayton*); *Andy Chong* (*Pusan National University*);

00:00 Spin-orbit Quantum Frequency Conversion
*Rafael Barros* (*Tampere University*); *A. Junior* (*Universidade Federal Fluminense*); *A. Z. Khoury* (*Universidade Federal Fluminense*); *Robert Fickler* (*Tampere University*);

00:00 Invited — Toroidal, Skyrmionic, and Helical Light Pulses
*Yijie Shen* (*Nanyang Technological University*);

## Session 3P7
## Advances in Multi-Band IF, RF, and Microwave Active, Passive and Antenna Components for Aerospace, Defense and Space System Applications across L/S/C/X/Ku/K/Ka Bands 1

**Wednesday PM, May 7, 2025**

**Room 7 - Capital Suite 4**

Organized by Venkata Kishore Kothapudi, Lakshman Pappula

Chaired by Venkata Kishore Kothapudi

00:00 Arbitrary Power Division Ratio Multi-functional Filtering Power Divider With Reciprocal and Non-reciprocal Frequency Response
*Girdhari Chaudhary* (*Jeonbuk National University*); *Palaystint Thorng* (*Jeonbuk National University*); *Suyeon Kim* (*Jeonbuk National University*); *Phanam Pech* (*Jeonbuk National University*); *Yongchae Jeong* (*Jeonbuk National University*);

00:00 Unequal Termination Impedance 3 dB Branch Line Hybrid Coupler
*Palaystint Thorng* (*Jeonbuk National University*); *Suyeon Kim* (*Jeonbuk National University*); *Phanam Pech* (*Jeonbuk National University*); *Girdhari Chaudhary* (*Jeonbuk National University*); *Yongchae Jeong* (*Jeonbuk National University*);

00:00 An X/Ku-band Open Stub Loaded Shared Aperture Chebyshev Amplitude Distribution Antenna Array for Airborne Synthetic Aperture Radar Applications
*Praveena Kati* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*); *Venkata Kishore Kothapudi* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*);

00:00 Different Tapering Techniques for SLL Performance Using Inter-element Spacing 0.7$\boldsymbol{\lambda}$ X/Ku-band Series Feed Centre Fed Open-ended Shared Aperture Antenna Array Airborne SAR Applications
*Praveena Kati* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*); *Venkata Kishore Kothapudi* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*);

00:00 Design of Compact G. Peano Square Fractal Patch Antenna and Its Radar Cross Section Investigation
*Yogesh Babaraoji Thakare* (*PVG's COET, Pune University*);

00:00 Wideband High Gain Compressed Dipole Antenna for Drone Jammer Application
*Arka Bhattacharyya* (*Vignan's Foundation for Science, Technology, and Research (VFSTR)*); *Venkata Kishore Kothapudi* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*);

00:00 A Dual-band Electromagnetic Protection Antenna
*Junyi Yang* (*Southwest University of Science and Technology*); *Quanjie Xiong* (*Southwest University of Science and Technology*); *Jinqi Dong* (*Southwest University of Science and Technology*); *Shuyun Lin* (*Southwest University of Science and Technology*); *Qi Chen* (*Southwest University of Science and Technology*);

00:00 Memristor Based Reconfigurable Band-stop Filter for Aerospace Applications
*Rida Gadhafi* (*University of Dubai*); *Sabina Abdul Hadi* (*University of Dubai*); *Ahmad Ali* (*University of Dubai*); *Abdulla Almarzooqi* (*University of Dubai*); *Ammar Nayfeh* (*Khalifa University*); *Wathiq Mansoor* (*University of Dubai*);

00:00 An Ultra-wideband Electromagnetic Protection Antenna
*Quanjie Xiong* (*Southwest University of Science and Technology*); *Junyi Yang* (*Southwest University of Science and Technology*); *Qi Chen* (*Southwest University of Science and Technology*); *Jinqi Dong* (*Southwest University of Science and Technology*); *Shuyun Lin* (*Southwest University of Science and Technology*);

00:00 A Conceptual Design of Microwave Power Dividing Amplifiers
*Jongsik Lim* (*Soonchunhyang University*); *Jeongho Park* (*Soonchunhyang University*); *Sang-Min Han* (*Soonchunhyang University*); *Dal Ahn* (*Soonchunhyang University*); *Yongchae Jeong* (*Jeonbuk National University*);

00:00 Modified Coplanar Waveguide RF MEMS Based Switch
*M. P. Lauksiga* (*Amrita Vishwa Vidyapeetham*); *Pranav Vinod* (*Amrita Vishwa Vidyapeetham*); *A. P. Praveen* (*Amrita Vishwa Vidyapeetham*); *Sreedevi K. Menon* (*Amrita Vishwa Vidyapeetham*);

00:00 Isolation Enhancement in 2 Element Array for MIMO Application
*Nandana Radhakrishnan* (*Amrita Vishwa Vidyapeetham*); *Diya U. Pradeep* (*Amrita Vishwa Vidyapeetham*); *Massimo Donelli* (*ELEDIA Research Center*); *Sreedevi K. Menon* (*Amrita Vishwa Vidyapeetham*);

00:00 Planar Crossover for Beamforming Applications from Modified Patch Antenna
*J. S. Harichandana* (*Amrita Vishwa Vidyapeetham*); *Diya U. Pradeep* (*Amrita Vishwa Vidyapeetham*); *Massimo Donelli* (*ELEDIA Research Center*); *Sreedevi K. Menon* (*Amrita Vishwa Vidyapeetham*);

00:00 An Open Stub Loaded Microstrip Line for Adulteration of Liquid Food Materials
*Nair S. Bhuvana* (*Amrita Vishwa Vidyapeetham*); *C. E. Arya Eswar* (*Amrita Vishwa Vidyapeetham*); *Ignacio Gil* (*Universitat Politècnica de Catalunya*); *Sreedevi K. Menon* (*Amrita Vishwa Vidyapeetham*);

00:00 Design and Development of a High Performance Two-element MIMO Antenna for 5.9 GHz Vehicular Communication
*Bhavya Babu* (*Amrita Vishwa Vidyapeetham*); *Sajeer Aiswarya* (*Amrita Vishwa Vidyapeetham*); *Nair S. Bhuvana* (*Amrita Vishwa Vidyapeetham*);

00:00 Techniques for Loss Coatings on Support Rods of Helix TWTs
*Vishant Gahlaut* (*Banasthali Vidyapith*); *A. Mercy Latha* (*CSIR-Central Electronics Engineering Research Institute (CEERI)*); *Meenu Kaushik* (*Banasthali Vidyapith*); *Sanjay Kumar Ghosh* (*CSIR-Central Electronics Engineering Research Institute (CEERI)*);

00:00 A Compact Flexible High-bandwidth Meander Line Patch Antenna for IoT Applications
*Mehmet Selim Mamati* (*Marmara University*); *"cS. Keser* (*Marmara University*); *Mohammad A. Alsunaidi* (*Marmara University*);

00:00 Metamaterial Based Frequency Tunable mmWave Antenna for Communication Applications
*R. Budhi Sagar* (*Center for Wireless Networks & Applications (WNA)*); *L. Meenu* (*Center for Wireless Networks & Applications (WNA)*); *Sajeer Aiswarya* (*Center for Wireless Networks & Applications (WNA)*);

00:00 Design and Functional Overview of an SAA-SAR System with Integrated Polarization Switching and TR Modules
*Venkata Kishore Kothapudi* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*); *Likith Parepalli* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*); *Sarikonda Gopi Krishna Raju* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*); *Atchukola Pavan Sai Kumar* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*); *Dugga Lakshmikanth Reddy* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*); *Gavini Janaki Ramaiah* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*); *Shaik Amman* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*); *Cherukumalli Sairam* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*); *Shaik Mohammad Ali* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*); *Karru Bala Krishna* (*Vignan's Foundation for Science, Technology, and Research (VFSTR)*); *Gudipudi Teja Kumar* (*Vignan's Foundation for Science, Technology and Research (VFSTR)*);

00:00 Ultra-wideband Dual Polarized Vivaldi Antenna Array for High Resolution Synthetic Aperture Radar (SAR)
*S. Nivedita* (*Sri Sairam Engineering College*); *M. Abinaya* (*Sri Sairam Engineering College*); *R. A. Priyadharshini* (*Sri Sairam Engineering College*); *M. Baskaran* (*Sri Sairam Engineering College*);

00:00 Ultra-compact Substrate Integrated Waveguide Bandpass Filter with Unequal Termination Impedance and Wide-stopband Characteristics
*Phanam Pech* (*Jeonbuk National University*); *Palaystint Thorng* (*Jeonbuk National University*); *Girdhari Chaudhary* (*Jeonbuk National University*); *Jongsik Lim* (*Soonchunhyang University*); *Yongchae Jeong* (*Jeonbuk National University*);

## Session 3P8a
## Advances in the Physical Verification of Integrated Circuits

**Wednesday PM, May 7, 2025**

**Room 8 - Capital Suite 5**

Organized by Wenjian Yu, Ibrahim (Abe) M. Elfadel

Chaired by Ibrahim (Abe) M. Elfadel

00:00 A 2-D Floating Random Walk Solver for Capacitance Extraction of Interconnects in Advanced Process Nodes
*Jiechen Huang* (*Tsinghua University*); *Wenjian Yu* (*Tsinghua University*);

00:00 Accelerating the Computation of Multilayered Media Green's Functions for RFIC Electromagnetic Simulation Using Deep Complex Networks
*Hao Zhou* (*Hangzhou Dianzi University*); *Peng Zhao* (*Hangzhou Dianzi University*); *Gaofeng Wang* (*Hangzhou Dianzi University*); *Yuanao Zhong* (*Faraday Dynamics, Ltd*);

00:00 Fast Verification of RF Devices Based on the Physical-informed Deep Image Prior
*Bi-Yi Wu* (*Beijing Institute of Technology*); *Xin-Qing Sheng* (*Beijing Institute of Technology*);

00:00 SFormer: A Transformer-based $\boldsymbol{S}$-parameter Extractor for Fast Signal Integrity Analysis
*Qin Li* (*Southern University of Science and Technology*); *Yanliang Sha* (*Southern University of Science and Technology*); *Hao Zhou* (*Southern University of Science and Technology*); *Quan Chen* (*Southern University of Science and Technology*);

00:00 Decentralized Balanced Truncation Based on Relative Gain Array for Model Order Reduction of Second-order Systems
*Xunsheng Tan* (*Shanghai Jiao Tong University*); *Xinjie Zhang* (*Shanghai Jiao Tong University*); *Xiaoman Yang* (*Shanghai Jiao Tong University*); *Wenjie Zhu* (*Shanghai Jiao Tong University*); *Tianshu Hou* (*Shanghai Jiao Tong University*); *Hai-Bao Chen* (*Shanghai Jiao Tong University*);

00:00 Fast Extraction of Chip Thermal Resistances for Advanced Packaging Design
*Boyuan Yu* (*Tsinghua University*); *Zhixiao Jiang* (*Tsinghua University*); *Zuochang Ye* (*Tsinghua University*); *Shunfeng Han* (*Beijing SmartChip Microelectronics Technology Co. Ltd*); *Bofu Li* (*Beijing SmartChip Microelectronics Technology Co. Ltd*); *Dejian Li* (*Beijing SmartChip Microelectronics Technology Co. Ltd*); *Wenjian Yu* (*Tsinghua University*);

00:00 Integrated Magnetofluiddynamic Systems for Thermal Management of Hot Chips
*Uttam Ghoshal* (*Power Chips 3D Inc.*);

## Session 3P8b
## Advanced Techniques in Computational Electromagnetics

**Wednesday PM, May 7, 2025**

**Room 8 - Capital Suite 5**

Organized by Vladimir Okhmatovski, Hakan Bagci

00:00 Characteristic Mode Analysis of Composite Nanostructures Using Coupled Volume Integral and Hydrodynamic Equations
*Meruyert Khamitova* (*King Abdullah University of Science and Technology (KAUST)*); *Ran Zhao* (*University of Electronic Science and Technology of China*); *Doolos Aibek Uulu* (*Light Academy College of Engineering*); *Hakan Bagci* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Heteregenous Tolerances in H-LU Decomposition of Integral Equations
*Omid Babazadeh* (*University of Manitoba*); *Jin Hu* (*University of Southern California*); *Emrah Sever* (*Aselsan*); *Ian Jeffrey* (*University of Manitoba*); *Constantine Sideris* (*University of Southern California*); *Vladimir Okhmatovski* (*University of Manitoba*);

00:00 Adaptive Refinement and Efficient Accuracy Evaluation for Surface Integral Equations in Electromagnetic Analysis
*Haojie Cao* (*University of Electronic Science and Technology of China*); *Ran Zhao* (*University of Electronic Science and Technology of China*); *Jun Hu* (*University of Electronic Science and Technology of China*);

00:00 Self-consistent Modeling of Coupled Maxwell-rate Equations with the Finite-Difference Time-Domain Method
*Parmenion Mavrikakis* (*Ecole Polytechnique Federale de Lausanne*); *S. Athanasiou* (*Ecole Polytechnique Federale de Lausanne*); *Olivier J. F. Martin* (*Swiss Federal Institute of Technology Lausanne (EPFL)*);

00:00 A Hybrid Multiple Scattering Approach Utilizing Vector Cylindrical Wave Expansions for Closely Spaced Elongated Scatterers Distributed in a Layer
*Shurun Tan* (*Zhejiang University*); *Haifeng Zheng* (*Zhejiang University*);

00:00 Fast Calculations of Band Diagram for Complex Topological Structure Using Multiple Scattering Theory
*Tien-Hao Liao* (*National Taipei University of Technology*); *Rouxing Gao* (*University of Michigan*); *Zhenming Huang* (*University of Michigan*); *Leung Tsang* (*University of Michigan*); *Shurun Tan* (*Zhejiang University*);

## Session 3P9a
## Quantum Information Processing and Devices

**Wednesday PM, May 7, 2025**

**Room 9 - Capital Suite 6**

Organized by Hai-Zhi Song, Guangwei Deng

Chaired by Hai-Zhi Song, Guangwei Deng

00:00 Hybrid Magnetic Systems for Quantum Frequency Conversion
*Maksut Maksutoğlu* (*Gebze Technical University*); *Erdem Demirci* (*Gebze Technical University*); *Eren Doğan* (*Gebze Technical University*); *Sinan Kazan* (*Gebze Technical University*); *Ibrahim S. Ünver* (*Gebze Technical University*); *Farkhad Zaynullin* (*Gebze Technical University*); *Talha Bozkurt* (*Gebze Technical University*); *Hacer Ipek* (*Gebze Technical University*); *N. Güneş Saribaş* (*Gebze Technical University*); *Hasan Pişkin* (*Alanya University*); *Fikret Yildiz* (*Gebze Technical University*); *Georgy Mozzhukhin* (*Gebze Technical University*); *Bulat Rameev* (*Gebze Technical University*);

00:00 Invited Inverted Split-ring Resonator with Varactor Tuning for Controlling the Photon-magnon Coupling in Quantum Magnonic Systems
*Aleksey A. Girich* (*O.Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine*); *Sergey V. Nedukh* (*O.Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine*); *Sergey Yu. Polevoy* (*O.Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine*); *A. S. Vakula* (*O.Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine*); *K. Yu. Sova* (*O.Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine*); *Bulat Rameev* (*Gebze Technical University*); *Sergey I. Tarapov* (*O.Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine*);

00:00 Invited Magnon-Erbium-Ion Hybrids for Quantum Frequency Conversion
*Aliya Galimova* (*Kazan State Power Engineering University*); *Hasan Pişkin* (*Alanya University*); *Faik Mikailzade* (*Gebze Technical University*); *Rustem Khusnutdinov* (*Kazan State Power Engineering University*); *Sergey A. Moiseev* (*Kazan National Research Technical University*); *Bulat Rameev* (*Gebze Technical University*);

00:00 Protecting Transmon Qubits from Quasiparticle Decoherence with Gap-asymmetric Junctions
*Giampiero Marchegiani* (*Technology Innovation Institute*); *Luigi Amico* (*Technology Innovation Institute*); *Gianluigi Catelani* (*Technology Innovation Institute*);

00:00 Invited Suppressing Chaos with Mixed Superconducting Qubit Devices
*Ben Blain* (*Technology Innovation Institute*); *Giampiero Marchegiani* (*Technology Innovation Institute*); *Luigi Amico* (*Technology Innovation Institute*); *Gianluigi Catelani* (*Technology Innovation Institute*);

00:00 Invited Microwave Coherent Storage Based on the Long Lifetime Cavity Electromechanical System
*Tie-Fu Li* (*Tsinghua University*);

00:00 Advantage of High-dimensional LOCC in Entanglement Detection
*Wenbo Xing* (*University of Electronic Science and Technology of China*);

00:00 Invited Hybrid Integration of Solid-state Quantum Emitters for Enhanced Performance
*Jianwei Tang* (*Huazhong University of Science and Technology*);

00:00 Invited Single-molecule-scale Magnetic Resonance with Solid Spin Quantum Sensors
*Qi Zhang* (*Zhejiang University*);

## Session 3P9b
## Quantum Optics & Quantum Electromagnetics

**Wednesday PM, May 7, 2025**

**Room 9 - Capital Suite 6**

00:00 Efficient Quantum Memories of Multiplexed High Dimension States for Quantum Networks
*Mingtao Cao* (*National Time Service Center, Chinese Academy of Sciences*); *Hong Gao* (*Xi'an Jiaotong University*); *Shou-Gang Zhang* (*National Time Service Center, Chinese Academy of Sciences*);

00:00 Some Problems in Computational Classical and Quantum Electromagnetics
*Dong-Yeop Na* (*Pohang University of Science and Technology*); *Boyuan Zhang* (*Purdue University*); *Jie Zhu* (*Purdue University*); *Weng Cho Chew* (*Purdue University*);

00:00 Spin-based Sensors and Their Application in Fundamental Physics
*Wei Ji* (*Institut für Physik, Universität Mainz*);

00:00 Modified Michelson Interferometer Setup for Light Bending in Free Space
*Wael H. Khatib* (*Virtual Satellites, Startup and Research Group*); *Mihai Sanduleanu* (*Khalifa University of Science and Technology*);

00:00 Bandgap-tuned Nanoplasmonic Ultra-wide Bandpass Filters Based on MIM Waveguide Structures for Sub-wavelength Wireless Networks
*Kola Thirupathaiah* (*MLR Institute of Technology and Management*); *Montasir Qasymeh* (*Abu Dhabi University*);

00:00 A Novel Hybrid Algorithm Framework for Scaling Classical-quantum Computations
*Abrar Galib Zaman* (*Abu Dhabi University*); *Shehzor Bin Noufal* (*Abu Dhabi University*);

00:00 Quantum Image Processing Algorithm for Large Space Datasets
*Mohammed Abdellatif AbdelAal Zidan* (*Hurghada University*); *Montasir Qasymeh* (*Abu Dhabi University*);

## Session 3P10a
## Advancements and Challenges in Electromagnetic Technologies: From Metamaterials Design to Microwave Sensing

**Wednesday PM, May 7, 2025**

**Room 10 - Capital Suite 7**

Organized by Luciano Prado de Olivera, Zubair Akhter

Chaired by Luciano Prado de Olivera, Zubair Akhter

00:00 Electromagnetic Analysis of a Flexible Spilt Ring Microwave Sensor for Rotation and Displacement Measurement
*Apala Banerjee* (*Indian Institute of Technology Kanpur*); *Mohammad Jaleel Akhtar* (*Indian Institute of Technology Kanpur*);

00:00 Fluid Interface Detection Using Array of Planar Resonators
*Sagiru Gaya* (*Khalifa University*); *Mohamed Saeed Al Shehhi* (*Khalifa University*); *Khaled Al-Wahedi* (*Khalifa University*); *Mohamed A. Abou-Khousa* (*Khalifa University*);

00:00 Analysis of the Potential Accuracy of Estimating the Radial Spread of Small Elements of the Cloud of Space Debris in Radar Monitoring of Low Earth Orbit
*Alexei A. Komarov* (*National Research University "Moscow Power Engineering Institute"*); *A. I. Baskakov* (*National Research University "Moscow Power Engineering Institute"*); *M. S. Mikhailov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Conception and Realization of Microwave Sensor for Efficient Hydrogen Detection
*Mehdi Khaiaf Belghiti* (*Université Mohammed VI Polytechnique (UM6P)*); *Mohammed El-Gibari* (*Lunam Universite, Universite de Nantes*); *Btissam El khamlichi* (*Université Mohammed VI Polytechnique (UM6P)*); *Ahmed Rhallabi* (*Nantes University*); *Amal El Fallah Serghrouchni* (*Université Mohammed VI Polytechnique (UM6P)*);

00:00 Dielectric Property Characterization Using Thru-reflect Calibration in Focused Free-space Measurements Across Broadband Frequency Range
*Shaikha AlDhaheri* (*Technology Innovation Institute*); *Papa Ousmane Leye* (*Technology Innovation Institute*); *Stanislav Bobrovskiy* (); *Islem Yahi* (*Technology Innovation Institute*); *Mae AlMansoori* (); *Chaouki Kasmi* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

## Session 3P10b
## Single-pixel imaging and its applications

**Wednesday PM, May 7, 2025**

**Room 10 - Capital Suite 7**

Organized by Hongchao Liu

00:00 Invited Single-pixel Optical Imaging in Complex Environments
*Wen Chen* (*The Hong Kong Polytechnic University*);

00:00 Invited Encoding-decoding Joint Optimization for Single-pixel Imaging and Sensing
*Liheng Bian* (*Beijing Institute of Technology*);

00:00 Invited Single-pixel Imaging Using Fast Gradient-based Algorithms
*Yin Xiao* (*The Hong Kong Polytechnic University*); *Wen Chen* (*The Hong Kong Polytechnic University*);

00:00 Dual-color Perovskite Single-pixel Detector for Metasurface Imaging in Complex Environment
*Jiahao Xiong* (*University of Macau*);

00:00 Single-pixel Imaging with Nonlinearity
*Zhiyuan Ye* (*Beijing Normal University*); *Jun Xiong* (*Beijing Normal University*);

00:00 Metasurface-enabled Image-free Optoelectronic Hybrid Recognition Network
*Xuan Zhang* (*University of Macau*);

00:00 High Resolution Quantum Ghost Imaging with Spatial Modes
*Fazilah Nothlawala* (*University of the Witwatersrand*); *Chané Moodley* (*University of the Witwatersrand*); *Neelan Gounden* (*University of the Witwatersrand*); *Isaac Nape* (*University of the Witwatersrand*); *Andrew Forbes* (*University of the Witwatersrand*);

00:00 Optical Color Image Encryption Based on Tunable Perovskite Single-pixel Detector
*Ai Fu* (*University of Macau*);

**Session 3P0**
**Poster Session 5**

**Wednesday PM, May 7, 2025**
**13:30 PM - 18:30 PM**
**Room Poster Area**

00:00 Ultrawideband Absorber Design Using Resistive Double-cross Frequency-selective Surface
*Wei-Chun Kao* (*Yuan Ze University*); *Cheng-Nan Chiu* (*Yuan Ze University*);

00:00 Estimation of the Size of the Sanitary Protection Zone from Antennas in Urban Environments and on Rough Terrain
*Shu Ya Zan* (*Henan University of Science and Technology*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Research on Shielding Performance of Built-in Dielectric Plate in Chassis
*Jun Bo Li* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Quanfeng Jiang* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Feng Guo* (*Southwest University of Science and Technology*); *Liping Wang* (*Southwest University of Science and Technology*); *Renjun Pan* (*Southwest University of Science and Technology*); *Junhao Shi* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 Study on "Top-Down" System's EMC Design Flow with Multi-EDA Simulation Software
*Yuan-Hui Huang* (*Southwest University of Science and Technology*); *Xiao-Jun Zhao* (*Sichuan Jiuzhou Electric Appliance Group Co., Ltd.*); *Yuan Zhang* (*University of Electronic Science and Technology of China*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Jun Bo Li* (*Southwest University of Science and Technology*); *Tao Leng* (*Southwest University of Science and Technology*); *Peng Chen* (*Southwest University of Science and Technology*); *Hai-Yan Guo* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 Computational Modeling of the Variation of the Electric Dipole Moment of Cryptochrome Protein Subject to an External Magnetic Field
*Mahboobe Sehati* (*Sharif University of Technology*); *Shabnam Abutalebi B. A.* (*Sharif University of Technology*); *Sareh Rostami* (*Sharif University of Technology*); *Abolfazl Bahrampour* (*Sharif University of Technology*); *Ali Reza Bahrampour* (*Sharif University*);

00:00 Conversion from $\boldsymbol{S}$-parameter to Equivalent Circuit Model for Power Distribution Network Analysis
*Li Jiang* (*Zhejiang University*); *Ling Zhang* (*Zhejiang University*); *Junjie Ren* (*Zhejiang University*); *Erping Li* (*Zhejiang University*);

00:00 Thermally Tunable Metamaterial Absorber for Wideband Terahertz Applications Using Vanadium Dioxide
*Tara Afra* (*Polytechnic University of Bari*); *Walter Fuscaldo* (*Consiglio Nazionale delle Ricerche Istituto per la Microelettronica e Microsistemi*); *Dimitrios C. Zografopoulos* (*Consiglio Nazionale delle Ricerche Istituto per la Microelettronica e Microsistemi*); *Teresa Natale* (*Polytechnic University of Bari*); *Francesco Dell'Olio* (*Polytechnic University of Bari*);

00:00 Application of 3D Printing for the Development of Radiotransparent Constructions
*K. S. Kharlamp'ev* (*National Research University "Moscow Power Engineering Institute"*); *Kirill Sergeyevich Sychev* (*National Research University "Moscow Power Engineering Institute"*); *I. A. Gromov* (*National Research University "Moscow Power Engineering Institute"*); *Nikita S. Maximov* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Label-free Measurements of ***In Vivo***-like Cells by a Terahertz Metamaterial Biosensor Chip
*Lulu Han* (*Beihang University*); *Kanglong Chen* (*Beihang University*); *Cun-Jun Ruan* (*Beihang University*); *Qinggang Ge* (*Peking University Third Hospital*); *Jun Yang* (*Peking University Third Hospital*);

00:00 Sub-Terahertz Metasurface Design for 6G Communication Systems: A Retrieval-augmented Generation (RAG) Approach
*Hisham Khalil* (*The University of Lahore*); *Umair Rafique* (*University of Oulu*);

00:00 Increasing the Detail of the Point Spread Function Due to Apodization with a Phase Ring Grating to Improve the Efficiency of Detecting Wavefront Aberrations
*Pavel A. Khorin* (*Samara National Research University*); *D. P. Serafimovich* (*Samara National Research University*);

00:00 Development of High-power Submillimeter-range Gyrotron for CST Diagnostic in DEMO and TRT
*Grigory G. Denisov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Mikhail Yu. Glyavin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Irina V. Zotova* (*Institute of Applied Physics, RAS*); *Ilya V. Zheleznov* (*Institute of Applied Physics, RAS*); *Andrey Mihailovich Malkin* (*Institute of Applied Physics, Russian Academy of Sciences*); *Alexander S. Sergeev* (*Institute of Applied Physics, Russian Academy of Sciences*); *Alexander G. Shalashov* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Egor D. Gospodchikov* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*);

00:00 Highway Traffic Flow Monitoring Based on Spatio-temporal Vibration Distribution of Ultra-weak Fiber Bragg Grating Arrays
*Linxiao Guo* (*Wuhan University of Technology*); *Jingwei Sun* (*Wuhan University of Technology*); *Miao Ma* (*Wuhan University of Technology*); *Qiuming Nan* (*Wuhan University of Technology*); *Fang Liu* (*Wuhan University of Technology*);

00:00 Determination of Microresonator Thermal Parameters for the Case of Complex Time Dependence of Pump Power
*Vladislav I. Pavlov* (*Russian Metrological Institute of Technical Physics and Radio Engineering*); *I. S. Silvestrov* (*Russian Metrological Institute of Technical Physics and Radio Engineering*); *M. N. Khromov* (*Russian Metrological Institute of Technical Physics and Radio Engineering*);

00:00 Design of Optimized Solar Cavity for Maximizing Power Absorption in Solar-pumped Laser
*Tomomasa Ohkubo* (*Tokyo University of Technology*); *Ei-Ichi Matsunaga* (*Tokyo University of Technology*); *Thanh Hung Dinh* (*National Institutes for Quantum Science and Technology*); *Yuji Sato* (*Osaka University*);

00:00 Design and Optimization of Fast-and-Easy Deployable Optical Heads for Transceiver-based Gigabit-class FSO Communication System
*Faheem Ahmad* (*Technology Innovation Institute*); *Ramzil Galiev* (*Technology Innovation Institute*); *Mariam Al Khateri* (*Technology Innovation Institute*); *Predrag Sekulic* (*Technology innovation Institute*); *Rashed Al Blooshi* (*Technology Innovation Institute*); *Ravikiran Saripalli* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Metalenses for Fractional Optical Vortices
*Sergey S. Stafeev* (*NRC Kurchatov Institute*); *Anton G. Nalimov* (*Image Processing Systems Institute — Branch of the Federal Scientific Research Centre "Crystallography and Photonics" of RAS*); *Victor V. Kotlyar* (*NRC Kurchatov Institute*);

00:00 Dependence of the Terahertz Wave Frequency Upconversion Detection Characteristics on the Pumping Pulse Energy
*Na Ming* (*Shandong University*); *Shuzhen Fan* (*Shandong University*); *Xingyu Zhang* (*Shandong University*); *Dechun Li* (*Shandong University*); *Liyuan Guo* (*Shandong University*); *Binzhe Jiao* (*Shandong University*); *Jiasheng Yuan* (*Shandong University*); *Shiwu Wang* (*Shandong University*); *Kaiyu Wang* (*Shandong University*); *Naichang Liu* (*Shandong University*); *Xutao Dai* (*Shandong University*);

00:00 Ultrahigh Resolution Fiber Laser Strain Sensor Based on Optical Injection Phase-lock Loop
*Yu Zhang* (*Harbin Engineering University*); *Wei Jin* (*Harbin Engineering University*); *Jiaxing Gao* (*Harbin Engineering University*); *Yifan Qin* (*Harbin Engineering University*); *Zhihai Liu* (*Harbin Engineering University*); *Libo Yuan* (*Guilin University of Electronics Technology*);

00:00 Real-time Defogging Algorithm Implementation for Camera Monitor System Based on ZYNQ
*Ling Chen Xu* (*Tongji University*); *Jie Han* (*Tongji University*); *De Liang Cao* (*Tongji University*); *Guo Chun Wan* (*Tongji University*);

00:00 Dielectric Properties Measurement of Cellulose-containing Materials Using the Resonator Method
*Tatiana Olegovna Krapivnitckaia* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Vladimir V. Parshin* (*Institute of Applied Physics Russian, Academy of Sciences*); *Evgeny A. Serov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Alisa B. Alyeva* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Svetlana Andreevna Ananicheva* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Alexander A. Vikharev* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Nikolai Yu. Peskov* (*Institute of Applied Physics, RAS*); *Mikhail Yu. Glyavin* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Investigation of Photocathodes Based on Nanocrystalline Diamond Films for RF Injector Applications
*Alexey M. Gorbachev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Anatoly L. Vikharev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Anatoly K. Poteomkin* (*Institute of Applied Physics of the Russian Academy of Sciences*); *Alexander D. Krupin* (*Institute of Applied Physics of the Russian Academy of Sciences*); *Sergey A. Bogdanov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Mikhail A. Lobaev* (*Institute of Applied Physics of the Russian Academy of Sciences*); *Alexander Ya. Vul* (*Ioffe Institute RAS*); *Arthur T. Dideikin* (*Ioffe Institute RAS*); *Nikolai Yu. Peskov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Dmitry B. Radishev* (*Institute of Applied Physics of the Russian Academy of Sciences*); *Mikhail N. Drozdov* (*Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Video Traffic Classification in the 5G Open RAN Network
*Tianhua Chen* (*Riga Technical University*); *Roberts Benkis* (*Riga Technical University*); *Nikolajs Bogdanovs* (*Riga Technical University*); *Mihails Stetjuha* (*Riga Technical University*); *Jānis Klūga* (*Riga Technical University*); *Viktors Jeralovičs* (*Riga Technical University*); *Dmitrijs Rjazanovs* (*Riga Technical University*); *Elans Grabs* (*Riga Technical University*); *Aleksandrs Ipatovs* (*Riga Technical University*);

00:00 Analysis of Spatial Randomness in Access Point Deployment for Cell-free Massive MIMO Antenna
*Muhammad Arslan* (*Tongji University*); *Yu Zhao Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Metasurface In-band Full-duplex Antenna Loaded with Ceramic Superstrate-based Realizes Wideband Mutual Coupling Suppression
*Haoxuan Sheng* (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Yan Wen* (*Southwest Jiaotong University*); *Yurong Sun* (*Southwest Jiaotong University*); *Xiao Gao* (*Southwest Jiaotong University*);

00:00 RF Signal-based Classification of Unmanned Aerial Vehicles Leveraging Cyclostationarity
*Mohit Sharma* (*Technology Innovation Institute*); *Anuj Abraham* (*Technology Innovation Institute*); *Sultan Abughazal* (*Technology Innovation Institute*); *Qingjie Yang* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 A Low-cost Multi-beam Lens Antenna for UAV Detection
*Zongwei Zhan* (*Southwest University of Science and Technology*); *Jin Wang* (*AVIC Chengdu Aircraft Industrial (Group) Co., Ltd.*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Jia-Hao Wang* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*);

00:00 A One-port Calibrator Circuit for One-port Measurements
*Li-Hsien Wang* (*National Taiwan University*); *Tah-Hsiung Chu* (*National Taiwan University*);

00:00 Common-mode Noise Suppression in Differential Transmission Lines by Coating the Line with High Permittivity Material
*Jiasheng Chen* (*Southwest University of Science and Technology*); *Yan Chen* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Yujie Song* (*Southwest University of Science and Technology*); *Bin Xie* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Zhen-Yong Du* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yixiang Li* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 Some Technical Problems and Solutions of Developing Data Transfer Channels
*Ilya V. Lesnov* (*Institute of Applied Physics of the RAS*); *Vyacheslav F. Vdovin* (*Institute of Applied Physics of the RAS*);

00:00 Experimental Characterization of Conformal Embroidered Disc-shaped Textile Array Antenna
*Sisi Indriani* (*Institut Teknologi Bandung*); *Trasma Yunita* (*Institut Teknologi Bandung*); *Sabrina Megumi Ahmad* (*Institut Teknologi Bandung*); *Muhammad Naufal Arira* (*Institut Teknologi Bandung*); *Edwar* (*Telkom University*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Low-profile Dual-frequency Omnidirectional Vertically Polarized Antenna
*Miao Tang* (*Southwest University of Science and Technology*); *Jin Wang* (*AVIC Chengdu Aircraft Industrial (Group) Co., Ltd.*); *Liping Wang* (*Southwest University of Science and Technology*); *Zhi-Lin He* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Zhen-Yong Du* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yixiang Li* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 Deep Neural Network Based Microwave GaAs pHEMT Model
*Chie-In Lee* (*National Sun Yat-Sen University*); *Ian Chen* (*National Sun Yat-Sen University*);

00:00 A Novel Low-cost Chipless RFID Displacement Sensor with High Sensitivity
*Yaming Xie* (*Tongji University*); *Yu Kun Liu* (*Tongji University*); *Guo Chun Wan* (*Tongji University*);

00:00 Flexible Transmitarray Based on Ultrathin Polyimide Membrane
*Peng You* (*National University of Defense Technology*); *Yusheng Yang* (*National University of Defense Technology*); *Ziyang Gu* (*National University of Defense Technology*); *Yufei Fu* (*National University of Defense Technology*); *Hantao Xu* (*National University of Defense Technology*); *Zhangbiao Yang* (*National University of Defense Technology*); *Dong-Fang Guan* (*National University of Defense Technology*);

00:00 Electrical Reflectometry: From Conventional Diagnosis to Advanced Distributed System Monitoring
*Yasmina Tabouri* (*Djillali Liabes University of Sidi Bel Abbes*); *Mouad Addad* (*Djillali Liabes University of Sidi Bel Abbes*); *Ali Djebbari* (*Djillali Liabes University of Sidi Bel Abbes*);

00:00 Combining Physical Predictors and Convolutional Neural Network for Predicting Sea Level Anomaly
*Yongcun Cheng* (*PIESAT Information Technology Co., Ltd.*); *Yang Zhang* (*PIESAT Information Technology Co., Ltd.*); *Haoyu Liu* (*Ocean University of China*); *Xiaobin Yin* (*Ocean University of China*); *Qing Xu* (*Ocean University of China*);

00:00 A Fast Passive Geolocation Method for Scanning and Directive RF Emitters
*M. Cusatti* (*Elettronica S.p.A.*); *Davide Massaro* (*Elettronica S.p.A.*); *D. Massimi* (*Elettronica S.p.A.*); *Cosmo Mitrano* (*Elettronica S.p.A.*); *D. Palermo* (*Elettronica S.p.A.*); *A. C. Petrelli* (*Elettronica S.p.A.*); *Luca Scorrano* (*Elettronica S.p.A.*);

00:00 Application of the Kirchhoff Migration Technique for a Fast Identification of Small Dielectric Objects from 2D Fresnel Dataset
*Taeyoung Ha* (*National Institute for Mathematical Sciences*); *Youngho Woo* (*National Institute for Mathematical Sciences*); *Won-Kwang Park* (*Kookmin University*);

00:00 Research on Quantum Gyroscope Based on Hong-Ou-Mandel Interference and SSA-BP Network Model
*Yiwei Zhai* (*Shaanxi University of Science & Technology*); *W. Li* (*Shaanxi University of Science & Technology*);

00:00 A Design of a 650 V Shielded Gate Trench Field-stop IGBT
*Yu Xie* (*Southwest Jiaotong University*); *Xiaopei Chen* (*Chengdu Technological University*); *Quanyuan Feng* (*Southwest Jiaotong University*);

00:00 Research of Nonlinear Correction for High Power Piezoelectric Ceramic Power Amplifier
*Rongyan Liu* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Li Wu* (*Southwest University of Science and Technology*); *Xuebing Leng* (*Southwest University of Science and Technology*); *Tong Zheng* (*Southwest University of Science and Technology*); *Yonghao Lu* (*Southwest University of Science and Technology*);

00:00 Low Power Silicon-based Sub-Terahertz Chip-to-Chip Data Link Interconnect Enabled by Subwavelength Metawaveguide and Slow-wave Oscillator
*Gang Wu* (*Guangzhou University*); *Lin Peng* (*Guangzhou University*); *Rui Ma* (*Guangzhou University*); *Guangqiang Liu* (*Guangzhou University*); *Yukai Feng* (*Guangzhou University*); *Xuanbin Jiang* (*Guangzhou University*); *Liang Yuan* (*Guangzhou University*); *Wen Liang Lin* (*Guangzhou University*); *Yicong Li* (*Guangzhou University*);

00:00 Accurate Winding Loss Estimation Method Considering Phase Difference in Current for Wireless Power Transfer Applications
*Chenxi Liu* (*Southwest University of Science and Technology*); *Xiaoping Li* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 A Novel Encoder-Decoder Framework for Estimating the Backscattering Coefficient of Large and Complex Terrain
*Dong Zhu* (*Information Materials and Intelligent Sensing Laboratory of Anhui Province*); *Qiang Zhao* (*Information Materials and Intelligent Sensing Laboratory of Anhui Province*); *Lixia Yang* (*Anhui University*); *Peng Zhao* (*National Key Laboratory of Electromagnetic Environmen*); *Jinpeng Zhang* (*National Key Laboratory of Electromagnetic Environmen*); *Qingliang Li* (*National Key Laboratory of Electromagnetic Environmen*);

00:00 A Fisher Information-based Approach for Designing Quantum Channels with Optimal Ultimate Rate
*Fahimeh Salari Sehdaran* (*Sharif University of Tehran*);

00:00 De-embedding Method for X-parameters of GaAs pHEMT
*Chie-In Lee* (*National Sun Yat-Sen University*); *Ian Chen* (*National Sun Yat-Sen University*);

## Session 4A1
## Novel Meta-devices and Their Applications 2

**Thursday AM, May 8, 2025**

**Room 1 - CH B (A)**

Organized by Din Ping Tsai, Pin Chieh Wu

Chaired by Din Ping Tsai, Pin Chieh Wu

00:00 Invited Three-photon Downconversion in Resonant Nonlinear Metasurfaces for Photon-triplet Generation
*Miguel Bacaoco* (*University of Technology Sydney*); *Kirill Koshelev* (*Australian National University*); *Alexander S. Solntsev* (*University of Technology Sydney*);

00:00 Invited Low-cost and Scalable Manufacturing of Optical Metasurfaces in the Visible Using Engineered Optical Materials (Low-loss a-Si:H, PER, and Hybrid ALD Structural Resin)
*Junsuk Rho* (*Pohang University of Science and Technology (POSTECH)*);

00:00 Ultra-wideband Three-dimensional Frequency Selective Surface with Large Angle Stability
*Zhaoran Chen* (*North China Electric Power University*); *Junjie Hu* (*North China Electric Power University*); *Xiayuan Yao* (*North China Electric Power University*);

00:00 Evanescent Wave Nonreciprocity Based on Nonlinear Spectral Singularities
*Huan He* (*Nankai University*); *Zhicheng Xiao* (*Hunan University*); *Huanan Li* (*Nankai University*); *Jingjun Xu* (*Nankai University*);

00:00 Photoacoustic Microscopy with Meta-optics
*Dorian S. H. Brandmüller* (*University of Graz*); *D. Grafinger* (*Technical University of Graz*); *A. Hohenau* (*University of Graz*); *M. Ossiander* (*Technical University of Graz*); *R. Nuster* (*University of Graz*); *Peter Banzer* (*University of Graz*);

00:00 The Establishment of Shielding Effectiveness Simulation Model Based on the Analysis of Conductive Fiber Arrangement Characteristics
*Zhe Liu* (*Xi'an Polytechnic University*); *Yichen Yang* (*Xi'an Polytechnic University*); *Gege Hang* (*Xi'an Polytechnic Universit*);

00:00 Design and Fabrication of a Flexible Metamaterial Absorber Based on Fabric
*Yajing Wang* (*Xi'an Polytechnic University*); *Xiuchen Wang* (*Xi'an Polytechnic University*);

00:00 Metamaterial-inspired Orthogonally Aligned Shifted Ring Resonator Array (SRRA) for Enhancing Signal-to-noise Ratio of 1.5 T MRI Scans
*Amit Baran Dey* (*Indian Institute of Technology Roorkee*); *Jegyasu Gupta* (*Indian Institute of Technology*); *Gulshan Kumar* (*Indian Institute of Technology*); *Subramani Kanagaraj* (*Indian Institute of Technology*); *Ratnajit Bhattacharjee* (*Indian Institute of Technology Guwahati*); *Debabrata Sikdar* (*Indian Institute of Technology*);

00:00 Intelligent Gain Metasurfaces and Potential Applications
*Xiaoyue Zhu* (*Zhejiang University*);

## Session 4A2
## Multi-functional Metasurfaces and Photonic Structures

**Thursday AM, May 8, 2025**

**Room 2 - CH B (C&B)**

Organized by Changxu Liu, Haoran Ren

Chaired by Changxu Liu, Haoran Ren

00:00 Invited Spatially Encoded Light-matter Coupling with Spectrally Selective Metasurfaces
*Andreas Tittl* (*Ludwig-Maximilians-Universität München*);

00:00 Invited Meta Devices for Photonics and Quantum
*Din Ping Tsai* (*City University of Hong Kong*);

00:00 Invited Hardware-accelerated Optoelectronic Platform Opens High-resolution Hyperspectral Video Understanding at 1.2 Tb/s
*A. B. Lopez* (*King Abdullah University of Science and Technology (KAUST)*); *Q. Wang* (*King Abdullah University of Science and Technology (KAUST)*); *S. Rodionov* (*King Abdullah University of Science and Technology (KAUST)*); *Andrea Fratalocchi* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Invited Miniaturized Detectors and Light Sources Enabled by Optical Nanoantennas
*Zhaogang Dong* (*Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research)*);

00:00 Invited Metamaterial Platforms for Biophotonics, Augmented Reality, and Optical Neural Networks Applications
*Andrea Di Falco* (*University of St Andrews*);

00:00 Invited Quantum Metasurfaces for Advanced Photon Sources
*Fei Ding* (*University of Southern Denmark*);

00:00 Invited Multi-dimensional Light Field Manipulation Using Dielectric Metasurfaces
*Cheng Zhang* (*Huazhong University of Science and Technology*);

00:00 Optical Metasurfaces for Unusual Optical Vortex Beams
*Hammad Ahmed* (*Heriot-Watt University*); *Xianzhong Chen* (*Heriot-Watt University*);

00:00 Transmissive and On-chip Integrated Metalenses as Miniaturized Platforms for Single Molecule Sensing
*Aleksandr Barulin* (*Sungkyunkwan University*); *E. Barulina* (*Moscow Center for Advanced Studies*); *M. Podobrii* (*Moscow Center for Advanced Studies*); *Sergey M. Novikov* (*Moscow Center for Advanced Studies*); *A. I. Chernov* (*Moscow Center for Advanced Studies*); *Inki Kim* (*Sungkyunkwan University (SKKU)*);

00:00 Thermooptical Nonlinearity in Nanophotonic Metastructures and Metasurfaces Enhanced by Bound States in the Continuum
*Mihail I. Petrov* (*ITMO University*);

## Session 4A3
## Thermal Photonics: Fundamental Physics and Application 2

**Thursday AM, May 8, 2025**

**Room 3 - CH B (D)**

Organized by Wei Li, Qiaoqiang Gan, Longnan Li

Chaired by Qiaoqiang Gan

00:00 Invited Dual-mode Radiative Thermal Management Materials and Devices
*Rujun Ma* (*Nankai University*);

00:00 Invited The Use of Thermoregulation in Nature
*Young Min Song* (*Gwangju Institute of Science and Technology*);

00:00 Invited Confining Energy at the Nanoscale and Its Applications
*Wenxin Wang* (*Harbin Engineering University*); *Jiang Hu* (*Harbin Engineering University*); *Jiazhi Yuan* (*Harbin Engineering University*); *Yiqun Zhang* (*Harbin Engineering University*); *Yan Zheng* (*Harbin Engineering University*);

00:00 Invited Switchable Radiative Cooling and Solar Heating for Sustainable Thermal Management
*Seung Hwan Ko* (*Seoul National University*); *Youngju Jung* (*Seoul National University*);

00:00 Thermal Nonreciprocity Barely Improves Radiative Cooling
*Zihe Chen* (*Huazhong University of Science and Technology*); *Run Hu* (*Huazhong University of Science and Technology*);

00:00 Radiative Cooling for Sky-facing LED Streetlights
*Saichao Dang* (*King Abdullah University of Science and Technology*); *Hasan H. Almahfoudh* (*King Abdullah University of Science and Technology*); *Qiaoqiang Gan* (*King Abdullah University of Science and Technology (KAUST)*);

00:00 Invited Photonic Structures for Radiative Cooling in Energy and Sustainability Applications
*Aikifa Raza* (*Khalifa University of Science and Technology*); *Tiejun Zhang* (*Khalifa University of Science and Technology*);

00:00 Invited Insights into Phase Change Phenomena with Surface Plasmon Resonance Imaging
*Seong Hyuk Lee* (*Chung-Ang University*);

00:00 Invited Optical Information Encryption Based on Thermal Radiation Manipulation
*Dongliang Zhao* (*Southeast University*);

00:00 Invited Kirchhoff's Laws of Thermal Radiation for Complex, Nonreciprocal, and Time-varying Metamaterials
*Sander A. Mann* (*University of Amsterdam*);

## Session 4A4
## Bioinspired Optics/Photonics

**Thursday AM, May 8, 2025**

**Room 4 - Capital Suite 1**

Organized by Young Min Song, Hyeon-Ho Jeong

Chaired by Hyeon-Ho Jeong

00:00 Invited Functional Pd Material Insertion at the Dielectric Film of Fabry-Perot Cavity for Enhanced Colour Tunability
*Hyeonbin Woo* (*Korea University*); *Taehyun Kim* (*Korea University*); *Min-Joong Kim* (*Korea University*); *Myung-Ki Kim* (*Korea University*); *Yong-Sang Ryu* (*Korea University*);

00:00 Invited Metasurfaces and Metalenses for Miniaturization of Optical Devices
*Junsuk Rho* (*Pohang University of Science and Technology (POSTECH)*);

00:00 Is the Symmetry in Morphology Always Beneficial in Nature?
*Jae-Hyun Kim* (*Kyung Hee University*); *Sun-Kyung Kim* (*Kyung Hee University*);

00:00 Invited Bioinspired Dynamic Color Modulation for Soft Robotics Application
*Seung Hwan Ko* (*Seoul National University*);

00:00 Invited Bio-inspired Artificial Vision Systems for Challenging Environments
*Gil Ju Lee* (*Gwangju Institute of Science and Technology*);

00:00 Identification of Early Biomarkers for Exploring the Severity of Sepsis Disease
*Sajid Farooq* (*Zhejiang Normal University*); *Jialun Li* (*Zhejiang University*); *Xinhua Zhu* (*Taizhou Hospital, Zhejiang University*); *Zhehai Li* (*Zhejiang Normal University*); *Xiaoxiao Zhao* (*Taizhou Hospital, Zhejiang University*); *Xinyue Li* (*Zhejiang University*); *Yinghe Xu* (*Taizhou Hospital, Zhejiang University*); *Sailing He* (*Royal Institute of Technology & Zhejiang University*);

00:00 Iridescent Structural Color by Using Ultra-low Refractive Index Aerogel in Optical Cavity
Invited
*Jennie Paik* (*University of Michigan*); *Wei-Jie Feng* (*University of Michigan*); *Hyeonwoo Kim* (*University of Michigan*); *L. Jay Guo* (*The University of Michigan*);

00:00 Structural Colors Based on Mie Scattering of Spheres with Medium Refractive Index
*Suli Wu* (*Dalian University of Technology*);

00:00 Use of Natural Minerals for Low-cost Multilayer Structural Color Fabrication by PVD Process
*Benjamin A. Rorem* (*University of Michigan*); *Yian Cheng* (*University of Michigan*); *L. Jay Guo* (*The University of Michigan*);

## Session 4A5
## Specialty Optical Fibers and Sensing Technologies

**Thursday AM, May 8, 2025**

**Room 5 - Capital Suite 2**

Organized by Jianzhong Zhang

00:00 Annulus Core Erbium-doped Photonic Crystal Fiber for Amplification of OAM Modes in MDM-WDM Systems
*Ishani De* (*Indian Institute of Technology Roorkee*); *Ankita Gaur* (*Adani Enterprises Limited*); *Vipul Rastogi* (*Indian Institute of Technology Roorkee*);

00:00 Optical Fiber Tip Function Integration with Ultrafast Laser Manufacturing
*Changrui Liao* (*Shenzhen University*);

00:00 Transparent Nanocrystal-doped Glass and Fiber for Optical Applications
*Guoping Dong* (*South China University of Technology*);

00:00 Dual Parametric Sensors Based on Hole-assisted Multicore Fibers
*Chunying Guan* (*Harbin Engineering University*); *Jing Yang* (*Harbin Engineering University*); *Jinhui Shi* (*Harbin Engineering University*);

00:00 Spectral Modulation and Wavelength Conversion in Optical Microfiber Knot Resonator
*Biqiang Jiang* (*Northwestern Polytechnical University*); *Jiexing Wu* (*Northwestern Polytechnical University*); *Xiao Xuan* (*Northwestern Polytechnical University*); *Jianlin Zhao* (*Northwestern Polytechnical University*);

00:00 Surface Plasmon Resonance Excited by Twisted Fiber for Highly Sensitive Refractive Index Sensing
*Lingling Li* (*Wuhan University of Technology*); *Yuheng Zuo* (*Wuhan University of Technology*); *Peizhen Jiang* (*Wuhan University of Technology*); *Fang Liu* (*Wuhan University of Technology*); *Lina Yue* (*Wuhan University of Technology*); *Yan Yang* (*Wuhan University of Technology*); *Ai Zhou* (*Wuhan University of Technology*);

00:00 An Intelligent Optical Fiber Device Integrating Sensing, Storage, and Computing
*Yu Zhang* (*Harbin Engineering University*); *Wei Jin* (*Harbin Engineering University*); *Xiang Li* (*Harbin Engineering University*); *Siying Cheng* (*Harbin Engineering University*); *Yaru Li* (*Harbin Engineering University*); *Zhihai Liu* (*Harbin Engineering University*); *Libo Yuan* (*Guilin University of Electronics Technology*);

00:00 Ultra-broadband NIR Luminescence in Bi-doped Multicomponent Glass and Optical Fiber
*Weiwei Chen* (*South China University of Technology*); *Guoping Dong* (*South China University of Technology*);

00:00 A Quasi-distributed Temperature and Tensile Force Sensing Scheme Based on Bi/Er Co-doped Fibre
*Zhexu Huang* (*Shanghai University*); *Yanhua Luo* (*Shanghai University*); *Jianxiang Wen* (*Shanghai University*); *Yanhua Dong* (*Shanghai University*); *Wei Chen* (*Shanghai University*); *Tingyun Wang* (*Shanghai University*); *Jianzhong Zhang* (*Harbin Engineering University*); *Gang-Ding Peng* (*University of New South Wales*);

00:00 Femtosecond Laser-inscribed Large-scale Fiber Bragg Grating Arrays for Distributed Sensing in Harsh Environments
*Jun He* (*Shenzhen University*); *Baijie Xu* (*Shenzhen University*); *Guanfeng Chen* (*Shenzhen University*); *Bin Du* (*Shenzhen University*); *Xizhen Xu* (*Shenzhen University*); *Yiping Wang* (*Shenzhen University*);

00:00 Repetition Rate Continuously Reconfigurable Supercontinuum Generation Using an All-fiber Non-mode-locked Source
*Yifan Qin* (*Harbin Engineering University*); *Shuyi Chen* (*Harbin Institute of Technology*); *Zhihai Liu* (*Harbin Engineering University*);

00:00 Application of Distributed Optical Fiber Acoustic Sensing System with Artificial Intelligence Algorithm in Underground Pipeline Monitoring
*Ying-Ying Wang* (*Qilu University of Technology (Shandong Academy of Sciences)*); *Chang Wang* (*Shandong Fybsense Photoelectric Technology Co., LTD*); *Xiaohui Liu* (*Shandong Fybsense Photoelectric Technology Co., LTD*); *Changfeng Li* (*Shandong Fybsense Photoelectric Technology Co., LTD*); *Jinlu Wang* (*Qilu University of Technology (Shandong Academy of Sciences)*); *Xingcheng Wang* (*Shandong Ruifeng Photoelectric Technology Co., LTD*); *Xiangdong Li* (*Qilu University of Technology (Shandong Academy of Sciences)*);

00:00 A Novel Composite Fiber Optic Sensor for Synchronous
Invited Detection of Solution Concentration and Temperature with Temperature Self-compensation
*Yong Zhao* (*Northeastern University*); *Lu Cai* (*Northeastern University*); *Yanan Zhang* (*Northeastern University*); *Maoqing Chen* (*Northeastern University*); *Hongxin Zhang* (*Northeastern University*);

00:00 Harnessing Spatial Modes in Fibers for Communication and Sensing
Invited
*Jian Wang* (*Huazhong University of Science and Technology*);

## Session 4A6
## Innovations in Modern Microwave Imaging and Sensing Technologies

**Thursday AM, May 8, 2025**

**Room 6 - Capital Suite 3**

Organized by Wei Pu, Yu Hai

00:00 Manned Airborne Microwave Radiation Observations for Atmospheric Thermal Parameter Studies
*Jieying He* (*National Space Science Center, Chinese Academy of Sciences*); *Yuxuan Feng* (*National Space Science Center, Chinese Academy of Sciences*);

00:00 A New Convolutional Neural Network for Polarimetric SAR Imagery Classification
*Shuaiying Zhang* (*National University of Defense Technology (NUDT)*); *Zhen Dong* (*National University of Defense Technology (NUDT)*); *Wentao An* (*National Satellite Ocean Application Service*);

00:00 Wireless, Wearable Pressure-temperature Sensors for Highly Sensitive and Reliable Diabetic Foot Ulcer Management
*Zhilu Ye* (*Xi'an Jiaotong University*); *Xinran Li* (*Xi'an Jiaotong University*); *Minye Yang* (*Xi'an Jiaotong University*); *Ming Liu* (*Xi'an Jiaotong University*); *Xiaohui Zhang* (*Xi'an Jiaotong University*);

00:00 Microwave Photonic Ultra-wideband Instrument for Planetary Boundary Layer Sensing
*Mehmet Ogut* (*California Institute of Technology*); *Shannon T. Brown* (*California Institute of Technology*); *Sidharth Misra* (*California Institute of Technology*); *Eric A. Kittlaus* (*California Institute of Technology*); *Pekka Kangaslahti* (*California Institute of Technology*); *Janusz Murakowski* (*Phase Sensitive Innovations*); *Michael Gehl* (*Sandia National Laboratories*);

00:00 Enhanced 3D SAR Imaging: By Using Truncated Nuclear and L1 Norm
*Mou Wang* (*University of Electronic Science and Technology of China*); *Yifei Hu* (*University of Electronic Science and Technology of China*); *Shunjun Wei* (*University of Electronic Science and Technology of China*); *Jun Shi* (*University of Electronic Science and Technology of China*);

00:00 A Method of SAR Motion Error Compensation Based on Trajectory Reconstruction
*Boyang Li* (*University of Electronic Science and Technology of China*); *Wanmin Wu* (*University of Electronic Science and Technology of China*); *Yue Song* (*University of Electronic Science and Technology of China*); *Wei Pu* (*University of Electronic Science and Technology of China*);

00:00 A Ku/Ka Dual-band Microwave Photonic Radar Front-end for High-resolution Ranging
*Lingjie Zhang* (*University of Electronic Science and Technology of China*); *Xiaoyu Liu* (*University of Electronic Science and Technology of China*); *Zhiyao Zhang* (*University of Electronic Science and Technology of China*); *Yong Liu* (*University of Electronic Science and Technology of China (UESTC)*);

00:00 Constant Modulus Waveform Design for Local Ambiguity Function Shaping via a Mismatched Filter Scheme
*Xiangqing Xiao* (*University of Electronic Science and Technology of China*); *Jinfeng Hu* (*University of Electronic Science and Technology of China*); *Kai Zhong* (*University of Electronic Science and Technology of China*); *Dongxu An* (*University of Electronic Science and Technology of China*);

00:00 Three-dimensional Electrical Impedance Tomography for Pulmonary Ventilation and Perfusion Monitoring: Algorithm Development and Clinical Practice
*Ke Zhang* (*Tsinghua University*); *Maokun Li* (*Tsinghua University*); *Fan Yang* (*Tsinghua University*); *Shenheng Xu* (*Tsinghua University*);

00:00 Electromagnetic Reconstruction of 3-D Subsurface Objects Straddling Multiple Planar Layers by FEBI and LM Methods
*Feng Han* (*Great Bay University*); *Jiawen Li* (*Guangxi Normal University*);

00:00 Enhancing Basement Relief Inversion from Gravity Data: Conditional PSU-Net with Integrated Error Prediction
*Ruiyuan Kang* (*Technology Innovation Institute*); *Meixia Geng* (*Technology Innovation Institute*); *Santosh Sanjeev* (*Technology Innovation Institute*); *Qingjie Yang* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

## Session 4A7a
## Advances in Multi-Band IF, RF, and Microwave Active, Passive and Antenna Components for Aerospace, Defense and Space System Applications across L/S/C/X/Ku/K/Ka Bands 2

**Thursday AM, May 8, 2025**

**Room 7 - Capital Suite 4**

Organized by Venkata Kishore Kothapudi, Lakshman Pappula

Chaired by Venkata Kishore Kothapudi

00:00 Circularly Polarized Wideband CPW Fed Monopole MIMO Antenna for 5G Sub-6 GHz Applications
*Pachiyannan Muthusamy* (*Vignan's Foundation for Science, Technology and Research (Deemed to be University)*); *Arka Bhattacharyya* (*Vignan's Foundation for Science, Technology, and Research (VFSTR)*);

00:00 Microstrip Resonator Assisted Sensor for Blood Glucose Detection
*Karthik Nair* (*Amrita Vishwa Vidyapeetham*); *Abhishek Aher* (*Amrita Vishwa Vidyapeetham*); *Sruthi Balakrishnan P* (*Amrita Vishwa Vidyapeetham*); *Rithin Ranjith* (*Amrita Vishwa Vidyapeetham*); *Balakrishnan Shankar* (*Amrita Vishwa Vidyapeetham*); *Sreedevi K. Menon* (*Amrita Vishwa Vidyapeetham*);

00:00 A Coaxial Structure for Measuring Dielectric Properties
*D. Peykal* (*Merchavim Institute of R&D in Negev, Merchavim Regional Council*); *Sh. Levi* (*Holon Institute of Technology*); *Rami Toledano* (*Sami Shamoon Collage of Engineering*); *Eden Elbaz* (*Merchavim Institute of R&D in Negev, Merchavim Regional Council*); *Motti Haridim* (*HIT — Holon Institute Technology*);

00:00 Dual Band Monopole Antenna with Defected Ground Plane
*M. Aswathy* (*Amrita Vishwa Vidyapeetham*); *Diya U. Pradeep* (*Amrita Vishwa Vidyapeetham*); *Massimo Donelli* (*University of Trento*); *Sreedevi K. Menon* (*Amrita Vishwa Vidyapeetham*);

00:00 Design and Analysis of a CPW-fed Koch Fractal Patch Antenna for Microwave and mm-Wave Application
*Aastha* (*Central University Lucknow*); *S. Anuradha* (*Central University Lucknow*); *Anil Kumar Nayak* (*Indian Institute of Technology Indore*);

00:00 Design of a Compact Low Loss 2-way Millimetre Wave Power Divider for Future Communication
*Muhammad Asfar Saeed* (*University of Greenwich*); *Augustine O. Nwajana* (*University of Greenwich*);

00:00 Mixer Design with Enhanced Isolation for Improved 5G Performance in the Ka-band
*Yavuz Selim Saglam* (*Yeditepe University*); *I. Sisman* (*Yeditepe University*); *Tugba Haykir Ergin* (*Yeditepe University*);

00:00 Enhanced Wideband Wide-angle Scanning for Large-scale Irregular Arrays through Advanced Phase Control
*Yankai Ma* (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*);

00:00 Design and Analysis of a Compact Dual-band Slotted Rectangular Antenna for Scalp-implantable Biotelemetry Applications
*Asim Quddus* (*University of Chakwal*); *Syed Rizwan Hassan* (*NFC Institute of Engineering and Fertilizer Research*); *Mohsin Tarar* (*University of Chakwal*);

00:00 Performance Evaluation of UAV-OMA and UAV-NOMA Systems for 5G and Beyond: A Comparative Analysis
*Neelam Mounika* (*National Institute of Technology Warangal*); *Sundru Anuradha* (*National Institute of Technology Warangal*);

## Session 4A7b
## Multi-Antenna Systems for 6G and beyond

**Thursday AM, May 8, 2025**

**Room 7 - Capital Suite 4**

Organized by Mario Marques da Silva

Chaired by Mario Marques da Silva

00:00 On the Performance of Large Intelligence Surfaces with LDPC Codes
*Mario Marques da Silva* (*Universidade Autonoma de Lisboa*); *Gelson Pembele* (*Universidade Autónoma de Lisboa*); *Rui Dinis* (*Universidade Nova de Lisboa*); *Americo Correia* (*Instituto de Telecomunicacoes*);

00:00 A New Spectral and Energy Efficient SNR Estimator for Broadcasting OFDM Systems Using Index Modulation
*Bandi Narasimha Rao* (*National Institute of Technology Warangal*); *Sundru Anuradha* (*National Institute of Technology Warangal*);

00:00 Compact Wideband High-gain Quad-port Octagonal MIMO Antenna with Fractal Elements for mm-Wave 6G Applications
*Poonam Tiwari* (*Banasthali Vidyapith*); *Manoj Kumar Gaur* (*Banasthali Vidyapith*); *Jayant Kumar Rai* (*ABV-Indian Institute of Information Technology and Management*); *Meenu Kaushik* (*Banasthali Vidyapith*); *Anshuman Shastri* (*Banasthali Vidyapith*); *Vishant Gahlaut* (*Banasthali Vidyapith*);

## Session 4A8
## SC4&SC3&SC2: Meeting of Minds for Cross-continental Collaboration in Photonics and Electromagnetics 2

**Thursday AM, May 8, 2025**

**Room 8 - Capital Suite 5**

Organized by Hugo Enrique Hernandez-Figueroa, Pavel A. Belov, Boon S. Ooi, Sailing He, Andrew Forbes

Chaired by Sailing He, Andrew Forbes

00:00 Flexible Metasurface Wraps for Boosting Quality of Magnetic Resonance Imaging
*Debabrata Sikdar* (*Indian Institute of Technology*);

00:00 Spectral Imaging for Sensing: From Active Metasurface Spectral Filtering to Aberration-free Line-scan Confocal Raman Imager
*Sailing He* (*Royal Institute of Technology & Zhejiang University*);

00:00 Experimental Markers for Photonic Stopband Topological Character Identification: Polarization-discriminated Dispersion and Its Applications
*Nitish Kumar Gupta* (*Birla Institute of Technology and Science (BITS) Pilani, Hyderabad Campus*); *Anjani Kumar Tiwari* (*Indian Institute of Technology Roorkee*);

00:00 Orbital Angular Momentum Comb Generation
*Daniil Litvinov* (*ITMO University*); *S. Isaeva* (*ITMO University*); *O. Kushchenko* (*Harbin Engineering University*); *Petr Ivanovich Lazarenko* (*National Research University of Electronic Technology*); *Mikhail V. Rybin* (*ITMO University*); *A. Sinelnik* (*ITMO University*); *S. Baturin* (*ITMO University*);

00:00 Metasurface-based Pads for Enhancing Diagnostic Accuracy of Magnetic Resonance Imaging
*Vladislav Koloskov* (*ITMO University*); *Viktor M. Puchnin* (*ITMO University*); *Evgeniy Koreshin* (*ITMO University*); *Alexander Efimtcev* (*ITMO University*); *Irina Mashchenko* (*Federal Almazov North-West Medical Research Center*); *Alexey P. Slobozhanyuk* (*ITMO University*); *Stanislav B. Glybovski* (*ITMO University*); *Alena V. Shchelokova* (*ITMO University*);

00:00 Nanophotonics for Perovskite Optoelectronic Devices
*Sergey Makarov* (*ITMO University*);

00:00 Manipulating the Electromagnetic Field in Wire Media Resonators for Enhanced Axion Detection
*Jim A. Enriquez* (*ITMO University*); *Rustam Balafendiev* (*ITMO University*); *Pavel A. Belov* (*ITMO University & New Uzbekistan University*);

00:00 Development of a Room-sized Volumetric Resonator for Advanced Wireless Power Transfer
*Aigerim N. Jandaliyeva* (*ITMO University*); *Nikita V. Mikhailov* (*ITMO University*); *Andrey N. Vdovenko* (*ITMO University*); *Evgenii B. Maiorov* (*ITMO University*); *Alena V. Shchelokova* (*ITMO University*); *Pavel A. Belov* (*ITMO University & New Uzbekistan University*);

00:00 Generalized Lorenz-Mie Theories: From Problems Solved in the Past to Problems to be Solved in the Future
*Gérard Gouesbet* (*University of Rouen*);

00:00 Global Collaboration through Multilateral Research Societies
*Osvaldo N. Oliveira, Jr.* (*University of Sao Paulo*);

## Session 4A9
## Novel Mathematical Methods in Electromagnetics

**Thursday AM, May 8, 2025**

**Room 9 - Capital Suite 6**

Organized by Yury V. Shestopalov, Kazuya Kobayashi

00:00 Around the Existence about Pure Toroidal Sources: A New Angular Spectrum Approach
*Sinuhe Perea-Puente* (*King's College London*); *Francisco J. Rodríguez Fortuño* (*King's College London*);

00:00 Microwave Tomography Method for Determining Inhomogeneities in Objects
*Yury V. Shestopalov* (*University of Gavle*); *Yury G. Smirnov* (*Penza State University*); *A. O. Lapich* (*Penza State University*); *Mikhail Yu. Medvedik* (*Penza State University*);

00:00 3D Anderson Localization of Light in Disordered Dielectric Media
*Yevgen Grynko* (*BASF Coatings GmbH*); *Dustin Siebert* (*Paderborn University*); *Jan Sperling* (*Paderborn University*); *Jens Forstner* (*Paderborn University*);

00:00 EIT-based Transmission Model for Multi-layer RIS
*Shuyi Chen* (*Harbin Institute of Technology*); *Yingzhe Hui* (*Harbin Institute of Technology*); *Yifan Qin* (*Harbin Engineering University*); *Weixiao Meng* (*Harbin Institute of Technology*);

00:00 Quantum State Density Matrix Modeling: Exploring the Scattering of Polarization-entangled Photon Pairs
*Ivan V. Lopushenko* (*University of Oulu*); *Vira R. Besaga* (*Friedrich Schiller University Jena*); *Oleksii Sieryi* (*University of Oulu*); *Alexander Bykov* (*University of Oulu*); *Frank Setzpfandt* (*Friedrich-Schiller-Universitat Jena*); *Igor Meglinski* (*Aston University*);

00:00 Experimental Validation of the Spectral Projection Model for Electromagnetic Scattering and Radiation
*Vidyasagar Sivalingam* (*University of Massachusetts Dartmouth*); *Dayalan Prajith Kasilingam* (*University of Massachusetts Dartmouth*);

00:00 Modeling Reconfigurable Intelligent Surfaces with the Finite Element Method
*Parmenion Mavrikakis* (*Ecole Polytechnique Federale de Lausanne*); *K. Ntokos* (*Aristotle University of Thessaloniki*); *Olivier J. F. Martin* (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *Traianos V. Yioultsis* (*Aristotle University of Thessaloniki*);

00:00 Multi-band Polarization-independent Fractal Absorbers for Electromagnetic Stealth Applications
*Mohammad Nasrat Zaqumi* (*Macquarie University*); *Fatima Ghulam Kakepoto* (*Zhejiang Normal University*); *Umair Rafique* (*University of Oulu*); *Syed Muzahir Abbas* (*Macquarie University Sydney*); *Subhas Chandra Mukhopadhyay* (*Macquarie University*);

00:00 Excitation of Electromagnetic Oscillations in Quasioptical Open Resonators by Internal Sources
*Kostyantyn A. Lukin* (*Usikov Institute for Radiophysics and Electronics*);

## Session 4A10
## The Potential of Electrical Reflectometry: An Interesting Technology for System Health Monitoring

**Thursday AM, May 8, 2025**
**Room 10 - Capital Suite 7**
Organized by Wafa Ben Hassen
Chaired by Wafa Ben Hassen

00:00 Electrical Reflectometry: Challenges and Strategies for Technology Transfer to Industrial Applications
*Wafa Ben Hassen* (*Universite Paris-Saclay*);

00:00 Arc Fault Detection and Localization on Embedded Wire Harness by MCTDR Sensors
*Soumaya Sallem* (*CEA, LIST, GIF-SUR-YVETTE*); *Marc Olivas Carrion* (*CEA LIST*);

00:00 Electrical Reflectometry-based Fire Detection System Using Innovative Heat-sensitive Cable
*Mariem Slimani* (*Universite Paris-Saclay*); *Nicolas Ravot* (*Universite Paris Saclay*); *Yosra Gargouri* (*Universite Paris-Saclay*); *Mickael Cartron* (*Universite Paris-Saclay*); *Wafa Ben Hassen* (*Universite Paris-Saclay*);

00:00 Implementation of a Novel Hardware Reflectometry System Employing Compressed Sensing for Efficient Cable Diagnostics
*Yosra Gargouri* (*Universite Paris-Saclay*); *Nicolas Ravot* (*Universite Paris Saclay*); *Mariem Slimani* (*Universite Paris-Saclay*); *Mickael Cartron* (*Universite Paris-Saclay*);

00:00 Invited Advancing Electrical Reflectometry for Real-time Grid Sensing: Innovations in Partial Discharge Detection and Network Health Monitoring
*Moussa Kafal* (*CEA, LIST*); *Samuel Griot* (*Nexans*);

00:00 Beyond System Health Monitoring: Constructing an Ideal Broadband Sensor Using Time-domain Software Correction
*Ghida Al Achkar* (*Université Clermont Auvergne, Clermont Auvergne INP, CNRS, Institut Pascal*); *P. Bonnet* (*Université Clermont Auvergne, Clermont Auvergne INP, CNRS, Institut Pascal*);

00:00 Software Correction of Transient Crosstalk Interferences in Unshielded Wiring: Numerical and Experimental Validations
*Brahim El Mokhtari* (*Université Clermont Auvergne, Clermont Auvergne INP, CNRS, Institut Pascal*); *P. Bonne* (*Université Clermont Auvergne, Clermont Auvergne INP, CNRS, Institut Pascal*);

00:00 Study of Cable Sheathing Degradation with the Use of Time-domain NMR
*Galina S. Kupriyanova* (*Immanuel Kant Baltic Federal University*); *Georgy V. Mozzhukhin* (*Gebze Technical University*); *Ivan G. Mershiev* (*Baltic Federal University by Immanuel Kant*); *Vitaliy V. Molchanov* (*Baltic Federal University by Immanuel Kant*); *Evgeniy A. Severin* (*Baltic Federal University by Immanuel Kant*); *Bulat Rameev* (*Gebze Technical University*);

## Session 4A0
## Poster Session 6

**Thursday AM, May 8, 2025**
**8:30 AM - 12:30 AM**
**Room Poster Area**

00:00 Dual-band Linear-to-circular Polarization Converter for ISM Applications
*Cheng-Hsin Ku* (*Yuan Ze University*); *Cheng-Nan Chiu* (*Yuan Ze University*);

00:00 Research on Road Safety-based Wide-angle RCS Enhancement Flexible Surface
*Jia-Hao Wang* (*Southwest University of Science and Technology*); *Zongwei Zhan* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Zhen-Yong Du* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yixiang Li* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Yu-Teng Zheng* (*DeTooLIC Technology Co., Ltd.*); *Bo Pu* (*DeTooLIC Technology Co., Ltd.*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 An Electromagnetic Compatibility Evaluation Method with AHP-entropy Weight Fuzzy Comprehensive
*Bin Xie* (*Southwest University of Science and Technology*); *Jiasheng Chen* (*Southwest University of Science and Technology*); *Yujie Song* (*Southwest University of Science and Technology*); *Hao-Ran Jiang* (*Sichuan Jiuzhou Electric Appliance Group Co., Ltd.*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Zhen-Yong Du* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yixiang Li* (*Chengdu Juji Millimeter Wave Technology Co., Ltd.*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Feng Guo* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 A Novel Dual-probe Method for Noise Source Impedance Extraction
*Guozheng Zhang* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Tianqi Zhao* (*DeTooLIC Technology Co., Ltd.*); *Jun Fan* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*);

00:00 Model Identification of Coupled Electromagnetic-thermal Model of Heterogeneous Structures Using Artificial Neural Networks
*Aleksandar Jeremic* (*McMaster University*);

00:00 Diffraction of an Electromagnetic Wave on a Wedge-shaped Terrain Section
*Nikolay Ivanovich Voytovich* (*South Ural State University (National Research University)*); *Anatoly G. Vasnev* (*South Ural State University (National Research University)*); *Boris V. Zhdanov* (*South Ural State University (National Research University)*); *Alexey V. Ershov* (*South Ural State University (National Research University)*);

00:00 Study of Artificial Magnetic Conductor Unit Cell Designs to Enhance Bowtie Antenna Performance
*Safia Chenaoui* (*University of Blida 1*); *Lila Mouffok* (*University of Blida 1*); *Sami Hebib* (*University of Blida 1*);

00:00 Development of Linear-to-circular Transmissive Polarizer for UHF RFID Range
*Si Thu Htet* (*Institut Teknologi Bandung*); *Dwi Andi Nurmantris* (*Telkom University*); *Edwar* (*Telkom University*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Investigation of the Mutual Influence of Multi-element Structures with Substrates of Chiral Metamaterial with Negative Values of Effective Permeability to Ensure Electromagnetic Compatibility
*Dmitrij Sergeevich Klujev* (*Povolzhskiy State University of Telecommunications and Informatics*); *Anatoly M. Neshcheret* (*Povolzhskiy State University of Telecommunications and Informatics*); *Alexander Alekseevich Potapov* (*Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences*); *Yulia V. Sokolova* (*Povolzhskiy State University of Telecommunications and Informatics*);

00:00 Coupling Properties and Effective Control of Terahertz Metasurfaces with Fabry-Pérot Cavities
*Xiaoxiao Wu* (*The Hong Kong University of Science and Technology (GZ)*); *Aoning Luo* (*The Hong Kong University of Science and Technology (GZ)*);

00:00 Simulation of the Wavefront Aberrations Influence on the Beams Formation with a Nonlinear Vortex Phase Singularity
*Pavel A. Khorin* (*Samara National Research University*); *N. A. Ivliev* (*Samara National Research University*);

00:00 Separation-tunable Bound States Enabled by Carbon Nanotubes
*Congyu Zhang* (*Beihang University*); *Bo Fu* (*Beihang University*);

00:00 Gain Performance Analysis of Rare-Earth-Doped Fiber Amplifier for Optical Networks
*Dmitrijs Prigunovs* (*Riga Technical University*); *Patriks Morevs* (*Riga Technical University*); *Ints Murans* (*Riga Technical University*); *Inese Parfjonova* (*Riga Technical University (RTU)*); *Aleksandrs Olinš* (*Riga Technical University*); *Ricards Kudojars* (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Investigation of Aerosol Scattering and Absorption Properties Using a Novel Broad-spectrum Albedometer
*Salma Jose* (*National Institute of Technology Calicut*); *K. S. Sidharth* (*National Institute of Technology Calicut*); *Dhilbar Muhammed* (*National Institute of Technology Calicut*); *M. K. Ravi Varma* (*National Institute of Technology Calicut*);

00:00 Exploring FEC Code Performance in Super-PON Systems: A Comparative Analysis of RS and LDPC Codes with PAM-4 Modulation
*Ricards Kudojars* (*Riga Technical University*); *Dmitrijs Prigunovs* (*Riga Technical University*); *Patriks Morevs* (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*); *Oleksiy Borysenko* (*Sumy State University*); *Svitlana Matsenko* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Optimizing Achromatic Metalens Designs for High-resolution Pathological Microscopy
*Taha Afzal* (*Information Technology University of the Punjab (ITU)*); *Sadia Noureen* (*Information Technology University of the Punjab (ITU)*); *Tauseef Tauqeer* (*Information Technology University of the Punjab (ITU)*); *Muhammad Zubair* (*University of Glasgow*); *Qammer H. Abbassi* (*University of Glasgow*); *Muhammad Qasim Mehmood* (*Information Technology University (ITU)*);

00:00 Calculation of the Optical Skyrmion Number
*Sergey S. Stafeev* (*NRC "Kurchatov Institute"*); *Aleksey A. Kovalev* (*NRC "Kurchatov Institute"*); *A. M. Telegin* (*NRC "Kurchatov Institute"*); *Victor V. Kotlyar* (*NRC "Kurchatov Institute"*);

00:00 Towards the Realisation of Waveguide-integrated Graphene Terahertz Detector
*Anastasia N. Titchenko* (*National Research University "Higher School of Economics"*); *Kirill V. Shein* (*National Research University "Higher School of Economics"*); *Grigory N. Gol'tsman* (*Moscow Pedagogical State University*); *Igor A. Gayduchenko* (*Moscow State University of Education (MSPU)*);

00:00 Scintillating Perovskite Glass Fiber Arrays Enabling Remote Radiation Detection and Pixelated Imaging
*Xiongjian Huang* (*South China University of Technology*); *Guoping Dong* (*South China University of Technology*);

00:00 Interference Reduction in Encoded Monitoring of Passive Optical Networks
*Ahmed El Amine Cheikr El Mezouar* (*Djillali Liabes University of Sidi Bel Abbes*); *Mouad Addad* (*Djillali Liabes University of Sidi Bel Abbes*); *Ali Djebbari* (*Djillali Liabes University of Sidi Bel Abbes*);

00:00 Peat Pyrolysis in Microwave Heating Simulation
*Tatiana Olegovna Krapivnitckaia* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Alexander A. Vikharev* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Svetlana Andreevna Ananicheva* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Alisa B. Alyeva* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Nikolai Yu. Peskov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Sergey A. Smirnov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Mikhail Yu. Glyavin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Multi-megawatt Ka-band Relativistic Gyrotron with a Longitudinally Slotted Cavity and a TM-type Operating Mode
*Yuri Yurievich Danilov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Evgeny Viktorovich Ilyakov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Igor Stanislavovich Kulagin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Alexander Nikolaevich Leontyev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Roman Markovich Rozental* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Seamless Switching between Cellular, 5G and Wi-Fi Technologies with Open RAN Integration
*Roberts Benkis* (*Riga Technical University*); *Romans Jerjomin* (*Riga Technical University*); *Romualds Beļinskis* (*Riga Technical University*); *Daniils Aleksandrovs-Moisejs* (*Riga Technical University*); *Artjoms Ratkuns* (*Riga Technical Universit*); *Janeks Ahrems* (*Riga Technical University*); *Arnis Ancans* (*Riga Technical University*); *Deomits Andrejevs* (*Riga Technical University*); *Elans Grabs* (*Riga Technical University*); *Dmitrijs Rjazanovs* (*Riga Technical University*); *Aleksandrs Ipatovs* (*Riga Technical University*);

00:00 A Novel Design of Silent Speech Recognition System Based on Surface Electromyography Signals
*Chenggang Dai* (*Shanghai University of Engineering Science*); *Shujia Yan* (*Shanghai University of Engineering Science*); *Mei Song Tong* (*Tongji University*); *Junyou Chen* (*Shanghai Investigation, Design & Research Institute Co., Ltd, China Three Gorges Corporation*);

00:00 Low-profile Ultra-wideband Tightly Coupled Dipole Array Antenna Based on Artificial Magnetic Conductor
*Xiao Gao* (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Yan Wen* (*Southwest Jiaotong University*); *Yurong Sun* (*Southwest Jiaotong University*); *Haoxuan Sheng* (*Southwest Jiaotong University*);

00:00 A Study on a Wireless Power Transmission Method for Downhole Sensors in Oilfields
*Yang Qiu* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Huanfa Yi* (*Southwest University of Science and Technology*); *Qianjiang Zhang* (*Southwest University of Science and Technology*);

00:00 A Simple High Gain Slot Integrated Dipole Antenna for Sub-6 GHz Applications
*Yue Jiang* (*Macquarie University*); *Umair Rafique* (*University of Oulu*); *Hijab Zahra* (*Macquarie University*); *Fatima Ghulam Kakepoto* (*Zhejiang Normal University*); *Farman Ali Mangi* (*Shah Abdul Latif University Khairpur*); *Syed Muzahir Abbas* (*Macquarie University*);

00:00 Investigation of the Effect of a Spherical Dielectric Element Installed in the Rupture of the NRD Waveguide Rod
*V. V. Krutskikh* (*National Research University "Moscow Power Engineering Institute"*); *Andrei N. Ushkov* (*National Research University "Moscow Power Engineering Institute"*); *D. S. Chukashov* (*National Research University "Moscow Power Engineering Institute"*); *A. Yu. Trofimov* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Alexei A. Komarov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Simulation of Circuit with Yttrium Iron Garnet Film Implementing the Magnetic Permeability Tensor Approximation
*Nikita S. Maximov* (*National Research University "Moscow Power Engineering Institute"*); *K. S. Kharlamp'ev* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *P. M. Vetoshko* (*V.I. Vernadsky Crimean Federal University*); *A. N. Kuzmichev* (*Russian Quantum Center*);

00:00 Design of a Broadband Circular Polarization Patch Antenna
*Egor Dmitrievich Malev* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Valery A. Permyakov* (*Moscow Power Engineering Institute (Technical University)*); *A. A. Komarov* (*National Research University "Moscow Power Engineering Institute"*); *B. L. Kogan* (*National Research University "Moscow Power Engineering Institute"*);

00:00 A Compact Narrowband Circular Waveguide Bandpass Filter with High Selectivity Incorporating Magneto-Dielectric Material
*Achmad Munir* (*Institut Teknologi Bandung*); *Edwar* (*Telkom University*); *Junas Haidi* (*Institut Teknologi Bandung*); *Sulistyaningsih* (*Institut Teknologi Bandung*); *Rheyuniarto Sahlendar Asthan* (*Institut Teknologi Sumatera*); *Agustinus Agung Nugroho* (*Institut Teknologi Bandung*);

00:00 Design of a Novel Interdigital Microwave Planer Filter with Asymmetrical Serpentine DGSs
*Xin Cao* (*Southwest University of Science and Technology*); *Weiping Li* (*East China Jiaotong University*);

00:00 Miniaturization Techniques of Microstrip Patch Antennae: Review
*Froumsia Dokrom* (*The University of Maroua*); *Essiben Dikoundou Jean-François* (*The University of Douala*); *Houwe Alphonse* (*Limbe Nautical Arts and Fisheries Institute*); *Kolyang* (*The University of Maroua*); *Valandi Pascal* (*The University of Maroua*);

00:00 Deep Learning Based QoS Flow Classification Scheme for Wireless Industrial Environments
*Yongbin Xie* (*Southwest University of Science and Technology*); *Min Zeng* (*Southwest University of Science and Technology*); *Ying Luo* (*Southwest University of Science and Technology*);

00:00 Asymmetric 4.77 dB Three-way Unequal Filtering Power Divider/Combiner for Communication Systems Application
*Augustine O. Nwajana* (*University of Greenwich*); *Mosammat Rokaiya Akter* (*University of Greenwich*); *Muhammad Asfar Saeed* (*University of Greenwich*);

00:00 Non-contact Vehicle Height Estimation Using 94 GHz Millimeter-wave Radar: A Novel Bridge Collision Prevention System
*Nezah Balal* (*Ariel University*);

00:00 Emission Forward Modeling for Mountain Glacier with Basal Slope
*Dongjin Bai* (*National Space Science Center, Chinese Academy of Sciences*); *Xiaolong Dong* (*National Space Science Center, Chinese Academy of Sciences*); *Saibun Tjuatja* (*University of Texas at Arlington*); *Di Zhu* (*National Space Science Center, Chinese Academy of Sciences*); *Zijin Zhang* (*National Space Science Center, Chinese Academy of Sciences*);

00:00 Polarimetric HRRP Target Recognition Based on Deep Neural Network and Scattering Mechanism
*Xinchao Wang* (*National University of Defense Technology*); *Si-Wei Chen* (*National University of Defense Technology*);

00:00 Quantum Recoil Effects in Smith-Purcell Radiation
*Ady Arie* (*Tel-Aviv University*); *Feiyan Zhao* (*Tel Aviv University*);

00:00 The Effect of the Process of Polysilicon Gate on the Performance of VDMOS
*Xiaopei Chen* (*Chengdu Technological University*); *Chiyuan Wang* (*Chengdu Technological University*); *Yu Xie* (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Suping Huang* (*Southwest Jiaotong University*);

00:00 Design of Standing Wave Detection System for High Power Medium-long Wave Antenna
*Xing Long Liu* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yonghao Lu* (*Southwest University of Science and Technology*); *Qilong Yu* (*Southwest University of Science and Technology*); *Yining Qing* (*Southwest University of Science and Technology*); *Junfeng Luo* (*Southwest University of Science and Technology*);

00:00 A Millimeter-wave Wireless Interconnect Integrated with Broadband Frequency Synthesizer and Power Amplifier
*Yicong Li* (*Guangzhou University*); *Lin Peng* (*Guangzhou University*); *Rui Ma* (*Guangzhou University*); *Liang Yuan* (*Guangzhou University*); *Guangqiang Liu* (*Guangzhou University*); *Yukai Feng* (*Guangzhou University*); *Yanan Bao* (*Jincheng Research Institute of Opto-mechatronics Industry*); *Gang Wu* (*Guangzhou University*);

00:00 A Design of Three Kinds of Fruit Quality Inspection Method Based on YOLOv5
*Zhuang Xu* (*Shanghai Institute of Technology*); *Yaming Xie* (*Tongji University*); *Guo Chun Wan* (*Tongji University*);

00:00 Design and Implementation of a Semi-physical Simulation Experimental System for Train Braking Performance Based on STM32
*Shi Long An* (*CRRC Qiqihar Rolling Stock Co., Ltd.*); *Yu Xi Ren* (*CRRC Qiqihar Rolling Stock Co., Ltd.*); *Yaming Xie* (*Tongji University*); *Guo Chun Wan* (*Tongji University*);

00:00 Multi-profile Radio, Fractal Engineering and Smart Radio Environment
*Alexander Alekseevich Potapov* (*Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences*);

## Session 4P1a
## Interplay between Metasurfaces and Artificial Intelligence

**Thursday PM, May 8, 2025**

**Room 1 - CH B (A)**

Organized by Chao Qian, Aydogan Ozcan

Chaired by Chao Qian

00:00 Accelerating Cross-scenario Metasurface Adaptability with Plug-and-play Kernel
*Nanxuan Wu* (*Zhejiang University*); *Chao Qian* (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*);

00:00 Intelligent Adaptive Metasurfaces
*Chao Qian* (*Zhejiang University*);

00:00 Direct Electromagnetic Information Processing with Planar Diffractive Neural Network
*Ze Gu* (*Southeast University*); *Qian Ma* (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

00:00 Driving Deep Learning-based Metasurface Design with Kramers-Kronig Relations
*Guangfeng You* (*Zhejiang University*); *Chao Qian* (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*);

00:00 An Inverse Design Wavelength Demultiplexer for On-chip Photoluminescence Sorting in TMDC Heterostructures
*Anastasiia Zalogina* (*University of Technology Sydney*); *Chi Li* (*Monash University*); *Ivan Zhigulin* (*University of Technology Sydney*); *Hossein Alijani* (*University of Technology Sydney*); *Hugo Charlton* (*University of Technology Sydney*); *Nathan Coste* (*University of Technology Sydney*); *Haoran Ren* (*Monash University*); *Igor Aharonovich* (*University of Technology Sydney*);

00:00 Metasurface-enabled All-Optical Differentiators
*Cheng Zhang* (*Huazhong University of Science and Technology*);

## Session 4P1b
## 3D Metamaterials for Effective Radar Absorption

**Thursday PM, May 8, 2025**

**Room 1 - CH B (A)**

Organized by Daniel Choi

00:00 Dual-band Microwave Metamaterial Absorber Using Modified Circular Ring Resonator for Sensor Applications
*Ramesh Amugothu* (*NIT Warangal*); *Damera Vakula* (*National Institute of Technology*); *N. V. S. Narasimha Sarma* (*NIT Warangal*);

00:00 Deep Learning-driven Inverse Design of TPMS Metamaterials for Phononic, Acoustic, and Photonic Applications
*Dong-Wook Lee* (*Technology Innovation Institute*); *Rashid K. Abu Al-rub* (*Khalifa University*);

00:00 Fabrication and Characterization of the Tilted-angle Honeycomb Structure Coated with the Nanocomposite Films of $Fe_3O_4$ Nanoclusters for Radar Absorption
*Hammad Younes* (*Khalifa University of Science and Technology*); *Ru Li* (*Khalifa University of Science and Technology*); *Sang-Eui Lee* (*Inha University*); *Young Keun Kim* (*Korea University*); *Daniel Choi* (*Khalifa University of Science and Technology*);

00:00 Thick Carbon Nanotube-based Flexible Composites for Radar Absorbing Applications
*Syed Mohammed Sajl* (*Khalifa University of Science & Technology*); *Amarsingh Bhabu Kanagaraj* (*Khalifa University of Science & Technology*); *Daniel Choi* (*Khalifa University*);

00:00 Development of 3D Metamaterials Fabricated by 3D Printing Processes for Radar Absorption
*Mariam Al Mansoori* (*Khalifa University of Science and Technology*); *Kinal Kim* (*Inha University*); *Sang-Eui Lee* (*Inha University*); *Daniel Choi* (*Khalifa University of Science and Technology*);

## Session 4P2
## Metamaterials, Metasurface and Applications

**Thursday PM, May 8, 2025**

**Room 2 - CH B (C&B)**

00:00 Multi-functional Frequency Selective Structure with Tunable Reflective Notch for Intelligent Communication Systems
*Da Li* (*Zhejiang University*); *Yudi Fan* (*Zhejiang University*); *Erping Li* (*Zhejiang University*);

00:00 Reconfigurable Intelligent Surface Assisted Wireless Energy Transfer: Concept and Experimental Validation
*Baiqing Tang* (*University of Hertfordshire*); *Yansheng Zhao* (*University of Hertfordshire*); *Qi Luo* (*University of Hertfordshire*); *Yichuang Sun* (*University of Hertfordshire*); *Rafael Caldeirinha* (*Instituto de Telecomunicações and Polytechnic of Leiria*);

00:00 Exploration of Non-Moiré Metasurface Tiles for Robust Polarization Functionalities
*Akshay S. Nair* (*National Institute of Technology Calicut*); *Natesan Yogesh* (*National Institute of Technology Calicut*);

00:00 Transmissive Metasurface Quarter-wave Plates for Few-femtosecond Pulses at Deep Ultraviolet Wavelengths
*Shatha Kaassamani* (*National Institute of Standards and Technology*); *Kyle Chapkin* (*National Institute of Standards and Technology*); *Dhruv Fomra* (*University of Maryland*); *Junyeob Song* (*National Institute of Standards and Technology*); *Amit Agrawal* (*National Institute of Standards and Technology*); *Henri J. Lezec* (*National Institute of Standards and Technology*); *Wenqi Zhu* (*National Institute of Standards and Technology*);

00:00 Ultrafast Liquid Crystal Spatial Light Modulator Enabled by Metasurface Technology
*Christina Kyrou* (*Université Côte d'Azur*); *R. Juliano Martins* (*Flatlight SAS*); *Emil Marinov* (*CRHEA-CNRS*); *Jean-Yves Duboz* (*Université Côte d'Azur*); *Patrice Genevet* (*Colorado School of Mines*);

00:00 Microwave Absorption of Composite Materials Based on Different Types of Magnetic Flakes
*Dzmitry S. Bychanok* (*Belarusian State University*); *E. Gurnevich* (*Belarusian State University*); *A. Sukhotski* (*Belarusian State University*); *Gleb Gorokhov* (*Belarusian State University*); *Sergey A. Maksimenko* (*Belarusian State University*);

00:00 Ensuring mm-Wave Communications Using Advanced Electromagnetic Surfaces in Near Field
*Alvaro F. Vaquero* (*Universidad de Oviedo*); *Manuel Arrebola* (*Universidad de Oviedo*);

00:00 Anisotropic Second Harmonic Generation from a Monocrystalline Gold Metasurface
*Sergejs Boroviks* (*Swiss Federal Institute of Technology Lausanne (EPFL)*); *Olivier J. F. Martin* (*Swiss Federal Institute of Technology Lausanne (EPFL)*);

00:00 Nanoporous Gold Structures as a Platform for Exciting Polarization-independent Radiative Ferrell-Berreman Modes
*Jaspreet Singh* (*Indian Institute of Technology Ropar*); *Nitish Kumar Gupta* (*Birla Institute of Technology and Science (BITS) Pilani, Hyderabad Campus*); *Subhendu Sarkar* (*Indian Institute of Technology Ropar*);

00:00 Performance Analysis of Switchable Linear-to-circular Polarizer in Conformal Configuration
*Dwi Andi Nurmantris* (*Telkom University*); *Radial Anwar* (*Telkom University*); *Zulfi* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Design and Observation of Type-II Dirac Points at Arbitary Position in the Reciprocal Space
*Yangsong Ye* (*Hong Kong University of Science and Technology (GZ)*);

00:00 A Study of a Graphene Layer as Tuning Element in Resonant Cavities for Dark Matter Axion Detection
*Jose Ramón Navarro Madrid* (*Technical University of Cartagena*); *Viktar S. Asadchy* (*Aalto University*); *Xuchen Wang* (*Harbin Engineering University*); *Alejandro Diaz-Morcillo* (*Universitat Politècnica de València*);

00:00 Electrical Tuning in Resonant Cavities with Varactor Diodes
*Jose Ramón Navarro Madrid* (*Technical University of Cartagena*); *Alejandro Diaz-Morcillo* (*Universitat Politècnica de València*); *Alejandro Alvarez Melcon* (*Universidad Politecnica de Cartagena*);

00:00 Multi-layered Metamaterial Based Broadband Circuit Analog Microwave Absorber Using Graphene/Carbon Conductive Paste
*Sahil Thakur* (*CSIR-Central Scientific Instruments Organization*); *Sachin Tyagi* (*CSIR-Central Scientific Instruments Organization*); *Kamel Haddadi* (*University of Lille*);

## Session 4P3a
## Photonics in Plant Science

**Thursday PM, May 8, 2025**

**Room 3 - CH B (D)**

Organized by Yuqiang Jiang

Chaired by Yuqiang Jiang

00:00 Measurement of Temperature inside Plants
*Yuqiang Jiang* (*Institute of Genetics and Developmental Biology, Chinese Academy of Sciences*);

00:00 Revealing Hierarchical Structure of Leaf Venations in Plant Science via Label-efficient Segmentation: Dataset and Method
*Weizhen Liu* (*Wuhan University of Technology*); *Ao Li* (*Wuhan University of Technology*); *Ze Wu* (*Wuhan University of Technology*); *Yue Li* (*Wuhan University of Technology*); *Baobin Ge* (*Wuhan University of Technology*); *Guangyu Lan* (*Wuhan University of Technology*); *Shilin Chen* (*Wuhan University of Technology*); *Minghe Li* (*Shanghai Artificial Intelligence Laboratory*); *Yuefei Liu* (*Wuhan University of Technology*); *Xiaohui Yuan* (*Wuhan University of Technology*); *Nanqing Dong* (*Shanghai Artificial Intelligence Laboratory*);

00:00 Study on Integrated Multimodal Information Collection and Processing Technology in Plant Phenomics
*Liang Xu* (); *Xin Tan* (*Changchun Institute of Optics, Fine Mechanics and Physics (CIOMP), Chinese Academy of Sciences*); *Mingyu Yang* (); *Qingbin Jiao* ();

00:00 High-throughput Phenotyping to Reveal the Genetic Architecture of Crop Abiotic Stress
*Jiawei Shi* (*Huazhong Agricultural University*); *Weikun Li* (*Huazhong Agricultural University*); *Jianglin Wang* (*Huazhong Agricultural University*); *Shangyuan Xie* (*Huazhong Agricultural University*); *Tao Luo* (*Huazhong Agricultural University*); *Ruilin Fang* (*Huazhong Agricultural University*); *Junli Ye* (*Huazhong Agricultural University*); *Haifu Tu* (*Huazhong Agricultural University*); *Xi Wu* (*Huazhong Agricultural University*); *Mingqiu Dai* (*Huazhong Agricultural University*); *Lizhong Xiong* (*Huazhong Agricultural University*); *Wanneng Yang* (*Huazhong Agricultural University*);

00:00 Construction and Analysis of Crop Phenotypic Omics Data Based on Imaging Technology
*Weijuan Hu* (*The Institute of Genetics and Developmental Biology (IGDB) of the Chinese Academy of Sciences (CAS)*);

00:00 Crop Photonics
*Quanfa Zhang* (*Wuhan Botanical Garden, Chinese Academy of Sciences*);

00:00 Enhanced Identification of Transgenic Corn Using UV-Vis Spectroscopy
*Mohammed Nasir Ali Khan* (*International Institute of Information Technology Hyderabad*); *Syed Azeemuddin* (*Pennsylvania State University*); *Mohammed Zafar Ali Khan* (*Indian Institute of Technology*);

## Session 4P3b
## Photonic Integrated Waveguide and Fiber-based Photonic Circuits and Devices

**Thursday PM, May 8, 2025**

**Room 3 - CH B (D)**

00:00 Substrate-integrated Topological Valley Photonic Crystals Fed by Transmission Lines
*Xinyu Zhang* (*The Hong Kong Polytechnic University*); *Menglin L. N. Chen* (*The Hong Kong Polytechnic University*);

00:00 Tunable Silicon-based Fano Resonance with Large Slope Rate and High Extinction Ratio
*Bei Chen* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Renheng Zhang* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Kunpeng Zhai* (*Nankai University*); *Ya Jin* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Xiaowen Xiong* (*Tsinghua University*); *Ninghua Zhu* (*Nankai University*);

00:00 Chip-integrated Temporal Telescope Induced by Moving Index Perturbation
*Nikita M. Kondratyev* (*Technology Innovation Institute*); *Abdalla O. Hableel* (*Technology Innovation Institute*); *Abdellatif Bouchalkha* (*Technology Innovation Institute*); *Evgeny Lonshakov* (*Technology Innovation Institute*); *Chaouki Kasmi* (*Technology Innovation Institute*); *Mahmoud A. Gaafar* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 A Programmable Grating with Phase Change Materials
*Martino De Carlo* (*Politecnico di Bari*); *Francesco De Leonardis* (*Politecnico di Bari*); *Vittorio M. N. Passaro* (*Politecnico di Bari*);

00:00 Digital Integrated Nonvolatile Variable Optical Attenuator
*Martino De Carlo* (*Politecnico di Bari*); *Francesco De Leonardis* (*Politecnico di Bari*); *Vittorio M. N. Passaro* (*Politecnico di Bari*);

00:00 Towards On-chip High-power Light Amplification with Integrated Optical Waveguides
*Mahmoud A. Gaafar* (*Technology Innovation Institute*); *Nikita M. Kondratyev* (*Technology Innovation Institute*); *Evgeny Lonshakov* (*Technology Innovation Institute*); *Chaouki Kasmi* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Devising a Cost-efficient Optical Interconnect for the Remote Metering in Microwave Band
*Mikhail E. Belkin* (*MIREA — Russian Technological University*); *Anna Voronina* (*MIREA — Russian Technological University*); *Alexander S. Sigov* (*MIREA — Russian Technological University*);

00:00 Experimental Evaluation of SOI Micro-ring Resonators with Different Gap Widths and Radii
*M. Hamza Öncüer* (*Insigma Engineering*); *Fatih Üstüner* (*Istanbul Ticaret University*);

00:00 Quantum Dot-enhanced Nanophotonic Circuits for Next-generation Optical Computing
*Abrar Galib Zaman* (*Abu Dhabi University*); *Shehzor Bin Noufal* (*Abu Dhabi University*);

## Session 4P4
## Biophotonics, Optical Imaging and Bioelectromagnetics

**Thursday PM, May 8, 2025**

**Room 4 - Capital Suite 1**

00:00 Analysis of Major Cell Death Pathways under Photodynamic Treatment Using QPI and FLIM
*Irina V. Semenova* (*Ioffe Institute of the Russian Academy of Sciences*); *Andrey V. Belashov* (*Ioffe Institute of the Russian Academy of Sciences*); *Anna A. Zhikhoreva* (*Ioffe Institute of the Russian Academy of Sciences*); *Oleg S. Vasyutinskii* (*Ioffe Institute of the Russian Academy of Sciences*);

00:00 Variations of Photophysical Properties of PpIX upon Binding to Serum Albumin
*Irina V. Semenova* (*Ioffe Institute of the Russian Academy of Sciences*); *Maxim V. Belashov* (*Ioffe Institute of the Russian Academy of Sciences*); *Ioanna A. Gorbunova* (*Ioffe Institute of the Russian Academy of Sciences*); *Anna A. Zhikhoreva* (*Ioffe Institute of the Russian Academy of Sciences*); *Maxim E. Sasin* (*Ioffe Institute of the Russian Academy of Sciences*); *Dina M. Beltukova* (*Ioffe Institute of the Russian Academy of Sciences*); *Andrey V. Belashov* (*Ioffe Institute of the Russian Academy of Sciences*); *Oleg S. Vasyutinskii* (*Ioffe Institute of the Russian Academy of Sciences*);

00:00 Data Fusion for Improved Prediction Interval Performance of Ratiometric Binary Liposome Measurement
*Waseem Ahmed* (*University of Southampton*); *Aneesh Vincent Veluthandath* (*University of Southampton*); *Ganapathy Senthil Murugan* (*University of Southampton*);

00:00 In Vivo Evaluation of Axitinib's Impact on Tumor Xenograft Vascularization and Oxygen Levels
*Anna M. Glyavina* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Ksenia Akhmedzhanova* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Alexey Kurnikov* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Yulia Khochenkova* (*N.N. Blokhin National Medical Research Center of Oncology*); *Dmitry Khochenkov* (*N.N. Blokhin National Medical Research Center of Oncology*); *Ilya Turchin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Pavel Subochev* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Anna G. Orlova* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Modeling Light-tissue Interactions in Finger Phantom Using Near Infrared and Mid Infrared Spectroscopy Based on Non-invasive Glucose Monitoring
*Sai Kalyan Rebba Yagna* (*Amrita Vishwa Vidyapeetham*); *L. Meenu* (*Amrita Vishwa Vidyapeetham*); *Sajeer Aiswarya* (*Amrita Vishwa Vidyapeetham*); *Vinodini Ramesh Maneesha* (*Amrita Vishwa Vidyapeetham*);

00:00 Label-free Imaging of Cancer Cells — Laden 3D Hydrogel Scaffold Using Spectral Domain Optical Coherence Tomography
*Pauline John* (*New York University Abu Dhabi*); *Gopinathan Janarthanan* (*New York University Abu Dhabi*); *Soyini Alexander* (*New York University Abu Dhabi*); *Sanjairaj Vijayavenkataraman* (*New York University Abu Dhabi*); *Azhar Zam* (*New York University Abu Dhabi*);

00:00 Coupling Optical and Chemical Imaging for Environmental and Biological Applications
*Yvain Carpentier* (*Université de Lille*); *Kevin Lepot* (*Université de Lille*); *Claire Pirim* (*Université de Lille*); *Cristian Focsa* (*Université de Lille 1*);

00:00 Light-field Particle Imaging Velocimetry with Color-and-depth Encoded Illumination
*Feng Xing* (*Nanjing University of Aeronautics and Astronautics*); *Depeng Wang* (*Nanjing University of Aeronautics and Astronautics*); *Huijun Tan* (*Nanjing University of Aeronautics and Astronautics*); *Kekuan Wang* (*Nanjing University of Aeronautics and Astronautics*); *Bingzhi Lin* (*Nanjing University of Aeronautics and Astronautics*); *Diming Zhang* (*Zhejiang Laboratory*);

00:00 Spatial Modulation Microscopy of Subwavelength Nanoparticles for Silicon Metrology
*Anton N. Sofronov* (*Samsung Research*);

00:00 Effect of 3G and 4G Mobile Phone Radiation on Brain and Sperm Cells of Wistar Rat
*Paulraj Rajamani* (*Jawaharlal Nehru University*); *Kumari Vandana Singh* (*Jawaharlal Nehru University*); *Rohit Gautam* (*Jawaharlal Nehru University*); *Jaiprakash Nirala* (*Jawaharlal Nehru University*); *Sonali Pardiya* (*Jawaharlal Nehru University*);

00:00 Effect of Gamma Irradiation on the Bread Wheat
*Inessa A. Avagyan* (*Yerevan State University*); *G. S. Aidarkhanova* (*Kazakh Agro Technical University Under S. Seifullin*); *Liya A. Minasbekyan* (*Yerevan State University*);

00:00 Breast Microwave Imaging: Enhancing Diagnostic Accuracy Using Frequency-dependent Phase Centre Corrections
*Peng Wang* (*University of Manitoba*); *Fatimah Eashour* (*University of Manitoba*); *Stephen Pistorius* (*University of Manitoba*);

## Session 4P5a
## Advances in Optical Sensing for Sustainability

**Thursday PM, May 8, 2025**

**Room 5 - Capital Suite 2**

Chaired by Hartmut Hillmer

00:00 Dynamic Characterization of MEMS Smart Glass: Amplitude Modulation Responses and Switching Times
*Eslam Farrag* (*Kassel University*); *Steffen Liebermann* (*Kassel University*); *Mustaqim Siddi Que Iskhandar* (*Kassel University*); *Md Kamrul Hasan* (*Kassel University*); *Shilby Baby* (*Nanoscale Glasstec GmbH*); *Shujie Liu* (*Kassel University*); *Philipp Kästner* (*Kassel University*); *Jiahao Chen* (*Kassel University*); *Muhammad Hasnain Qasim* (*Kassel University*); *Dennis Löber* (*Kassel University*); *Roland Donatiello* (*Kassel University*); *Guilin Xu* (*Nanoscale Glasstec GmbH*); *Hartmut Hillmer* (*University of Kassel*);

00:00 Energy Consumption and Energy Saving of MEMS Smart Glass for Personalized Light Steering Based on User Actions and Real Weather Data
*Md Kamrul Hasan* (*Kassel University*); *Shilby Baby* (*Nanoscale Glasstec GmbH*); *Mustaqim Siddi Que Iskhandar* (*Kassel University*); *Steffen Liebermann* (*Kassel University*); *Lamiya Rouf* (*Kassel University*); *Jiahao Chen* (*Kassel University*); *Muhammad Hasnain Qasim* (*Kassel University*); *Dennis Löber* (*Kassel University*); *Guilin Xu* (*Nanoscale Glasstec GmbH*); *Hartmut Hillmer* (*University of Kassel*);

00:00 Invited Novel Photonic MEMS Smart Glass — Huge Energy Savings in Buildings and Personalized Lighting
*Hartmut Hillmer* (*University of Kassel*); *Md Kamrul Hasan* (*Kassel University*); *Mustaqim S. Q. Iskhandar* (*Kassel University*); *Shilby Baby* (*Nanoscale Glasstec GmbH*); *Jiahao Chen* (*Kassel University*); *Md. Hasnain Qasim* (*Kassel University*); *Dennis Löber* (*Kassel University*); *Philipp Kästner* (*Kassel University*); *Roland Donatiello* (*Kassel University*); *Guilin Xu* (*Nanoscale Glasstec GmbH*);

00:00 Invited Novel Nanoantennas for Gas Sensing Applications
*Mohamed A. Swillam* (*University of Toronto*); *AbdelRahman M. Ghanim* (*The American University in Cairo*);

00:00 Infrastructure Strain Sensing Interrogated by Dual-comb Fiber Laser Spectroscopy
*Hani J. Kbashi* (*Aston University*); *Alberto R. Cuevas* (*Aston University*); *Sergey V. Sergeyev* (*Aston University*);

00:00 Geometrical Optimization for Capacitive Proximity Sensor through Numerical Evaluation with Interdigitated Electrodes
*Zih-Yu Chen* (*National Tsing Hua University*); *Cheng-Yao Lo* (*National Tsing Hua University*);

## Session 4P5b
## Optics and Photonics: Fundamentals and Applications

### Thursday PM, May 8, 2025
### Room 5 - Capital Suite 2

00:00 Four-wave Mixing in a Laser Diode Gain Medium with Feedback from a High-Q Microresonator in the Linear and Nonlinear Regime
*Daria M. Sokol* (*Russian Quantum Center*); *Dmitry A. Chermoshentsev* (*Russian Quantum Center*); *Artem E. Shitikov* (*Russian Quantum Center*); *Nikita Yu. Dmitriev* (*Russian Quantum Center*); *Valery E. Lobanov* (*Russian Quantum Center*); *Anatoly V. Masalov* (*Russian Quantum Center*); *Igor A. Bilenko* (*Russian Quantum Center*);

00:00 Lasers in Space: Years of Promise are Becoming Reality
*Claude R. Phipps* (*Photonic Associates, LLC*);

00:00 Giant Optical Anisotropy and Its Applications in van der Waals Materials
*Georgy A. Ermolaev* (*Emerging Technologies Research Center, XPANCEO*); *Aleksey V. Arsenin* (*Emerging Technologies Research Center, XPANCEO*); *Valentyn S. Volkov* (*Emerging Technologies Research Center, XPANCEO*); *K. S. Novoselov* (*National University of Singapore*);

00:00 Close of Room Temperature Stimulated Emission and Whispering Gallery Mode 3–5 mkm Lasers Based on Relativistic Heterostructers HgCdTe
*Sergey V. Morozov* (*Institute for Physics of Microstructures of RAS*); *K. A. Mazhukina* (*Institute for Physics of Microstructures of RAS*); *A. A. Yantser* (*Institute for Physics of Microstructures of RAS*); *A. A. Razova* (*Institute for Physics of Microstructures of RAS*); *V. V. Utochkin* (*Institute for Physics of Microstructures of RAS*); *M. A. Fadeev* (*Institute for Physics of Microstructures of RAS*); *Vladimir V. Rumyantsev* (*Institute for Physics of Microstructures of RAS*); *A. A. Dubinov* (*Institute for Physics of Microstructures of RAS*); *D. V. Shengurov* (*Institute for Physics of Microstructures of RAS*);

00:00 Biaxial van der Waals Crystals: Optical Properties and Advanced Photonic Applications
*Aleksandr Slavich* (*Emerging Technologies Research Center, XPANCEO*); *Georgy A. Ermolaev* (*Emerging Technologies Research Center, XPANCEO*); *D. V. Grudinin* (*Emerging Technologies Research Center, XPANCEO*); *K. V. Kravtsov* (*Emerging Technologies Research Center, XPANCEO*); *A. N. Toksumakov* (*Emerging Technologies Research Center, XPANCEO*); *A. V. Syuy* (*Emerging Technologies Research Center, XPANCEO*); *A. A. Vyshnevyy* (*Emerging Technologies Research Center, XPANCEO*); *I. A. Kruglov* (*Emerging Technologies Research Center, XPANCEO*); *Aleksey V. Arsenin* (*Emerging Technologies Research Center, XPANCEO*); *Valentyn S. Volkov* (*Emerging Technologies Research Center, XPANCEO*);

00:00 Multi-image Liquid Crystal Computer Generated Holograms
*Peter Ropač* (*University of Ljubljana*); *Yu-Tung Hsiao* (*Ghent University*); *Jeroen Beeckman* (*Ghent University*); *Miha Ravnik* (*University of Ljubljana*);

00:00 Exceptional Coupling and Dense Integration of e-skid Waveguides Made of Van-der-Waals Materials
*Dmitrii V. Grudinin* (*Emerging Technologies Research Center, XPANCEO*); *A. A. Vyshnevyy* (*Emerging Technologies Research Center, XPANCEO*); *Georgy A. Ermolaev* (*Emerging Technologies Research Center, XPANCEO*); *R. V. Kirtaev* (*Emerging Technologies Research Center, XPANCEO*); *Aleksandr S. Slavich* (*Emerging Technologies Research Center, XPANCEO*); *D. I. Yakubovsky* (*Emerging Technologies Research Center, XPANCEO*); *Aleksey V. Arsenin* (*Emerging Technologies Research Center, XPANCEO*); *Valentyn S. Volkov* (*Emerging Technologies Research Center, XPANCEO*);

00:00 Narrow Linewidth Gain-switched Laser
*Artem E. Shitikov* (*Russian Quantum Center*); *Valery E. Lobanov* (*Russian Quantum Center*); *Dmitry M. Chermoshentsev* (*Russian Quantum Center*); *Igor A. Bilenko* (*Russian Quantum Center*);

00:00 Dual-band Plasmonic Band-pass Filters Based on Metal-insulator-metal Waveguide Square Ring Resonators for Sub-wavelength Wireless Networks
*Montasir Qasymeh* (*Abu Dhabi University*); *Kola Thirupathaiah* (*MLR Institute of Technology and Management*);

00:00 Asymmetric Drifting Platicons in High-Q Microresonators with Normal Dispersion
*Valery E. Lobanov* (*Russian Quantum Center*); *Olga V. Borovkova* (*Russian Quantum Center*); *Alexander K. Vorobyev* (*Russian Quantum Center*); *Artem E. Shitikov* (*Russian Quantum Center*); *D. M. Chermoshentsev* (*Russian Quantum Center*); *Igor A. Bilenko* (*Russian Quantum Center*);

00:00 Overview of Laser Transparent Material Processing Using Lasers
*You Wang* (*Southwest Institute of Technical Physics*);

## Session 4P6a
## Advances in Quantum Communications

**Thursday PM, May 8, 2025**

**Room 6 - Capital Suite 3**

Organized by Valéria Loureiro Da Silva

Chaired by Valéria Loureiro Da Silva

00:00 Optimizing Intruder Evasion and Key Recovery on BB84 Quantum Protocol via Varying Rotational Angles with a Universal Quantum Copying Machine
*Yousef Ahmed Y. Altaher* (*King's College London*);

00:00 QuIIN — An Initiative for Fostering a Brazilian Quantum Communication Industry
*Valéria Loureiro Da Silva* (*QuIIN — Quantum Industrial Innovation, SENAI CIMATEC*); *Micael Andrade Dias* (*QuIIN — Quantum Industrial Innovation, SENAI CIMATEC*); *Nelson Alves Ferreira Neto* (*QuIIN — Quantum Industrial Innovation, SENAI CIMATEC*); *Seyed Saman Mahjour* (*QuIIN — Quantum Industrial Innovation, SENAI CIMATEC*); *Braian Pinheiro Da Silva* (*QuIIN — Quantum Industrial Innovation, SENAI CIMATEC*); *Alexandre Baron Tacla* (*QuIIN — Quantum Industrial Innovation, SENAI CIMATEC*);

00:00 Invited Tackling Engineering Challenges in Metropolitan Quantum Networks
*Guilherme Penello Temporão* (*Pontifical Catholic University of Rio de Janeiro (CETUC/PUC-Rio)*);

00:00 Structured Light Communications in Aerial Links
*Braian Pinheiro Da Silva* (*QuIIN — Quantum Industrial Innovation, SENAI CIMATEC*); *A. L. S. Santos Junior* (*Universidade Federal Fluminense*); *M. Gil De Oliveira* (*Universidade Federal Fluminense*); *A. C. Barbosa* (*Universidade Federal Fluminense*); *Antonio Zelaquett Khoury* (*Universidade Federal Fluminense*);

00:00 Invited Secure Communications and Computations Based on Quantum Technologies
*Armando Nolasco Pinto* (*Aveiro University*);

00:00 Invited Information-theoretically Secure Equality Testing Protocol for Quantum Key Distribution Networks
*Go Kato* (*National Institute of Information and Communications Technology*); *M. Fujiwara* (*National Institute of Information and Communications Technology*); *Toyohiro Tsurumaru* (*Mitsubishi Electric Corporation, Information Technology R&D Center*);

## Session 4P6b
## Compound Semiconductors and Optoelectronic Devices

**Thursday PM, May 8, 2025**

**Room 6 - Capital Suite 3**

Organized by Jiang Wu, Cheng-Ao Yang

00:00 Invited High-performance and Intelligent Graphene-semiconductor Hybrid Photodetectors
*Xingzhan Wei* (*Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences*);

00:00 Low Noise InGaAs/InP Single-photon Avalanche Diode with Thin Multiplication Layer
*Xing Wang* (*Xi'an Institute of Optics and Precision Mechanics (XIOPM), Chinese Academy of Sciences (CAS)*); *Qiao Kai* (*Xi'an Institute of Optics and Precision Mechanics (XIOPM), Chinese Academy of Sciences (CAS)*); *Liyu Liu* (*Xi'an Institute of Optics and Precision Mechanics (XIOPM), Chinese Academy of Sciences (CAS)*);

00:00 Broadband Nyquist Pulse Generation on TFLN Platform for Integrated Quantum Source
*Christian Kress* (*Paderborn University*); *M. M. Mihaylov* (*Paderborn University*); *Tobias Schwabe* (*Paderborn University*); *Christine Silberhorn* (*Paderborn University*); *J. Christoph Scheytt* (*Paderborn University*);

00:00 Optical Spectroscopy of Strained A3B5 Nanowires
*P. A. Alekseev* (*Ioffe Institute*); *V. A. Sharov* (*Ioffe Institute*); *I. A. Eliseyev* (*Ioffe Institute*); *V. Yu. Davydov* (*Ioffe Institute*); *Andrey A. Bogdanov* (*Harbin Engineering University*); *Alexey M. Mozharov* (*Saint Petersburg Academic University*); *V. V. Fedorov* (*Saint Petersburg Academic University*); *Ivan S. Mukhin* (*National Research University for Information Technology, Mechanics and Optics*);

00:00 $CsPbBr_3$ Perovskite Enhance GaN Nanowires as a Self-power Device for Photovoltaic Applications
*Dhaifallah Rahim Almalawi* (*Taif University*); *Bin Xin* (*King Abdullah University of Science and Technology (KAUST)*); *Venkatesh Singaravelu* (*King Abdullah University of Science and Technology (KAUST)*); *Iman S. Roqan* (*King Abdullah University of Science and Technology (KAUST)*);

## Session 4P6c
## Optoelectronic Devices and Integration

**Thursday PM, May 8, 2025**
**Room 6 - Capital Suite 3**

00:00 Simulation of $MoS_2$-based LEDs: A COMSOL Approach to Optoelectronic Design
*Maryam AlQaydi* (*Technology Innovation Institute*); *Abdellatif Bouchalkha* (*Technology Innovation Institute*); *Mahmoud A. Gaafar* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Towards High-performance Quantum-based LEDs: Optoelectronic Modulation of 2D Silicon Carbide for Tunable and Efficient White Light Emission
*Md. Mahfuzul Haque* (*Bangladesh University of Engineering and Technology*); *Sajid Muhaimin Choudhury* (*Bangladesh University of Engineering and Technology (BUET)*);

00:00 On-chip Spectrometer with Superior Performance and Reconfigurability Enabled by Programmable Photonic Circuit
*Ang Li* (*Nanjing University of Aeronautics and Astronautics*); *Shilong Pan* (*Nanjing University of Aeronautics and Astronautics*);

00:00 Thermal and Optical Properties of Vanadium Oxide Thin Films Deposited by Atomic Layer Deposition
*Shuguang Wang* (*Fudan University*); *Qingyuan Cai* (*Shanghai Institute of Technical Physics, Chinese Academy of Sciences*); *Xiaojie Sun* (*Fudan University*); *Yuting Yang* (*Fudan University*); *Baojian Liu* (*Fudan University*); *Jing Li* (*Fudan University*); *Rongjun Zhang* (*Fudan University*); *Weibo Duan* (*Shanghai Institute of Technical Physics, Chinese Academy of Sciences*); *Yu-Xiang Zheng* (*Fudan University*); *Liangyao Chen* (*Fudan University*);

00:00 Chiral Semiconductors and Photon Recycling Mechanism for Optoelectronics
*Shaocong Hou* (*Wuhan University*); *Haofeng Zheng* (*Wuhan University*); *Jing Xiao* (*Wuhan University*);

00:00 Linear Stability Analysis of Soliton Generation in a Ring Cavity with High Backscattering
*Nikita M. Kondratyev* (*Technology Innovation Institute*); *Evgeny Lonshakov* (*Technology Innovation Institute*); *Mahmoud A. Gaafar* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

## Session 4P7
## Antenna and Array: Theory and Applications

**Thursday PM, May 8, 2025**
**Room 7 - Capital Suite 4**

00:00 Design and Optimization of Controlled Reception Pattern Array (CRPA) Antennas for GNSS Systems: Enhancing Anti-jamming Capabilities
*I. Sisman* (*Yeditepe University*); *Yavuz Selim Saglam* (*Yeditepe University*); *Tugba Haykir Ergin* (*Yeditepe University*);

00:00 Spiral Phased Array Antenna Distribution for Enhanced Sidelobe Suppression
*Nikita M. Kondratyev* (*Technology Innovation Institute*); *M. Engsig* (*Technology Innovation Institute*); *Evgeny Lonshakov* (*Technology Innovation Institute*); *Mahmoud A. Gaafar* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Gain and Dual-polarization Performance Enhancement in Medium-gain Antenna Arrays Featuring Thin Thickness
*Arkadiusz Byndas* (*Wroclaw University of Science and Technology*); *Mariusz Hofman* (*Tespol*); *Paweł Kabacik* (*Wrocław University of Science and Technology*);

00:00 Equalization Strategies for Beam Squint Compensation in Planar Antenna Arrays
*Mariam Qutaiba Abdalrazak* (*Al-Nahrain University*); *Asmaa H. Majeed* (*University of Nahrain*); *Raed A. Abd-Alhameed* (*University of Bradford*);

00:00 Effect Analysis of Thermal Deformation on the Phase Center of Phased Array Antenna
*Xiaowen Zhao* (*National Space Science Center, Chinese Academy of Sciences*); *Jixi Lu* (*National Space Science Center, Chinese Academy of Sciences*); *Yunhua Zhang* (*National Space Science Center, Chinese Academy of Sciences*);

00:00 Optimized Blazed Grating Antenna for Optical Phased Arrays
*Henna Farheen* (*Paderborn University*); *S. Joshi* (*Paderborn University*); *J. Christoph Scheytt* (*University of Paderborn*); *Viktor Myroshnychenko* (*University Paderborn*); *Jens Forstner* (*Paderborn University*);

00:00 Rectangular Maxwell Fish-Eye Lens Antenna Based on Transformation Optics
*Muhib Ullah* (*Zhejiang University*); *Xidong Wu* (*Zhejiang University*);

00:00 Ku/C Band Dual Frequency Altimeter Antenna
*Hongjian Wang* (*National Space Science Center, Chinese Academy of Sciences*);

00:00 Design and Development of Antipodal Vivaldi Antenna with Dielectric Loading & Corrugated Ripples for 5G Applications
*Munagoti Bhagya Lakshmi* (*V. R. Siddhartha Engineering College*); *Damera Vakula* (*National Institute of Technology*); *N. V. S. Narasimha Sarma* (*NIT Warangal*);

00:00 Circularly Polarized Antenna with EBG Cavity for High Gain WLAN Applications
*Asim Quddus* (*University of Chakwal*); *Syed Rizwan Hassan* (*NFC Institute of Engineering and Fertilizer Research*);

00:00 Investigation of Haussdorf Window in Antenna Power Weighting: Preliminary Findings and Practical Implications
*Hartuti Mistialustina* (*Universitas Sangga Buana*); *Muhammad Farhan Maulana* (*Universitas Sangga Buana*); *Muhammad Manzil Karama* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Validation of Beamwidth Broadening Technique at Patch Antennas Little Protruding Outside Walls of Small Satellites
*Paweł Kabacik* (*Wrocław University of Science and Technology*); *Arkadiusz Byndas* (*Wroclaw University of Science and Technology*); *Patryk Wawrzacz* (*Wroclaw University of Science and Technology*);

00:00 Scanning Rate Improvement of Composite Right/Left-handed Leaky-wave Antenna
*Debabrata K. Karmokar* (*University of South Australia*);

00:00 The Effect of Metamaterial on the Gain of the Microstrip Patch Antenna
*Yahya Salameh Hassan Khraisat* (*Al Balqa Applied University*);

00:00 Field and Phase Analysis in Printed Passive RFID Tag for Sensor Application
*Sajeer Aiswarya* (*Amrita Vishwa Vidyapeetham*); *L. Meenu* (*Amrita Vishwa Vidyapeetham*); *K. A. Unnikrishna Menon* (*Amrita Vishwa Vidyapeetham*); *Sreedevi K. Menon* (*Amrita Vishwa Vidyapeetham*);

00:00 Ultra-wideband Linear-to-circular Polarizer Based on Phase Difference Complementary Scheme
*Qingyi Guo* (*Shenzhen University*);

00:00 Comparing Modeling and Measuring Field Pattern of a Slotted Waveguide Antenna Using Modified Pocklington Equation
*Alejandro Trejo León* (*Sección de Estudios de Posgrado e Investigación*); *David Morales Rodríguez* (*Sección de Estudios de Posgrado e Investigación*); *Fabiola Martínez-Zúñiga* (*Instituto Politecnico Nacional*); *Jorge R. Sosa-Pedroza* (*Instituto Politecnico Nacional*);

00:00 Realizing Non Diffracting Beams and Photonic Antennas Using Dyadic Green's Functions and Inverse Design at Optical Wavelengths
*Solomon Micheal Serunjogi* (*New York University of Abu Dhabi*); *Mahmoud Rasras* (*New York University — Abu Dhabi*);

## Session 4P8a
## Optical Wireless Communications and Visible Light Communications

**Thursday PM, May 8, 2025**

**Room 8 - Capital Suite 5**

Organized by Cuiwei He, Chedlia Ben Naila

00:00 Performance Analysis of Cooperative-NOMA in VLC System
*Ramya Ch* (*NITW*); *Sundru Anuradha* (*National Institute of Technology Warangal*);

00:00 The Influence of Environmental Parameters on Optical Signal Attenuation in Underwater Wireless Communication Systems
*Himaja Madamanchi* (*Sri Sairam Engineering College*); *M. Baskaran* (*Sri Sairam Engineering College*);

00:00 Implementation and Experimental Validation of a Python-based Adaptive Optics Closed-loop Control
*Asma Al Ahmadi* (*Technology innovation Institute*); *Predrag Sekulic* (*Technology innovation Institute*); *Juan Coronel* (*Technology Innovation Institute*); *Guillaume Matras* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Spatial Modes Recognition in Optical Communication in Temporal Domain via Point Detector
*Purnesh Singh Badavath* (*National Institute of Technology*); *Vijay Kumar* (*National Institute of Technology*);

00:00 Fluorescent Antennas/Concentrators in Optical Wireless Communications: A Review
*Cuiwei He* (*Japan Advanced Institute of Science and Technology (JAIST)*); *Ke Wang* (*Royal Melbourne Institute of Technology (RMIT University)*);

00:00 Predictive Modeling of Attenuation in Free Space Optical Communication Using Visibility and Rainfall in Southwest Nigeria
*Folasade Abiola Semire* (*Universiti Sains Malaysia*); *T. G. Komolafe* (*Universiti Sains Malaysia*); *Z. K. Adeyemo* (*Universiti Sains Malaysia*);

## Session 4P8b
## Wireless Power Transfer and High Power Microwave Systems

**Thursday PM, May 8, 2025**
**Room 8 - Capital Suite 5**

00:00 Improving Efficiency of Miniature Wireless Power Transfer System Employing Metamaterial Slab
*Zhanel Kudaibergenova* (*Nazarbayev University*); *M. Hashmi* (*Nazarbayev University*);

00:00 Capacitance Prediction Using Parallel GRU Fusion Neural Network for Efficient Wireless Power Transfer
*Meng Wang* (*Henan Normal University*); *Yilong Sun* (*Henan Normal University*); *Mingshen Li* (*Henan Normal University*); *Qi Luo* (*University of Hertfordshire*); *Yanyan Shi* (*Henan Normal University*);

00:00 Defected Ground Structure-based WPT System for IMDs: Exploring Data Transmission Capability
*Anel Murat* (*Nazarbayev University*); *Zhanel Kudaibergenova* (*Nazarbayev University*); *M. Hashmi* (*Nazarbayev University*);

00:00 A Far-field Wireless Power Transfer Using Frequency Selective Surface and High-efficiency Power Amplifier at 3.5 GHz
*Farheen Fatima* (*Indian Institute of Technology Kanpur*); *Areeba Ahsan* (*Indian Institute of Technology Kanpur*); *Shubham Sharma* (*Indian Institute of Technology Kanpur*); *Aamir Alam* (*Indian Institute of Technology Kanpur*); *Mohammad Jaleel Akhtar* (*Indian Institute of Technology Kanpur*);

00:00 Design and Testing of a 300-kV PFN-Marx Generator for High-power Microwaves Applications
*Umar Hashmi* (*Technology Innovation Institute*); *A. Alali* (*Technology Innovation Institute*); *G. N. Appiah* (*Technology Innovation Institute*); *H. Deiban* (*Technology Innovation Institute*); *Fernando Albarracin-Vargas* (*Technology Innovation Institute-TII*); *Mae Al Mansoori* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*); *Chaouki Kasmi* (*Technology Innovation Institute*);

00:00 Compact 200 kV–50 Hz Marx Generator for Charging a Dipole Antenna
*Umar Hashmi* (*Technology Innovation Institute*); *A. Alali* (*Technology Innovation Institute*); *G. N. Appiah* (*Technology Innovation Institute*); *Fernando Albarracin-Vargas* (*Technology Innovation Institute-TII*); *Mae Al Mansoori* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*); *Chaouki Kasmi* (*Technology Innovation Institute*);

00:00 Design and Development of Compact HPEM Antenna with Tuning Capability
*Zubair Akhter* (*Technology Innovation Institute*); *Fernando Albarracin-Vargas* (*Technology Innovation Institute-TII*); *E. Gurnevich* (*Technology Innovation Institute*); *A. Al-Ali* (*Technology Innovation Institute*); *Ernesto Neira* (*Technology Innovation Institute, Directed Energy Research Centre*); *Mae Al Mansoori* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*); *Chaouki Kasmi* (*Technology Innovation Institute*);

00:00 Triple-band Pass Filter Using Substrate Integrated Waveguides with Open Loop Resonators for Ku/K Band Applications
*Pranav Krishnan* (*Amrita Vishwa Vidyapeetham*); *Sahithya Kattamuri* (*Amrita Vishwa Vidyapeetham*); *A. P. Praveen* (*Amrita Vishwa Vidyapeetham*); *Sreedevi K. Menon* (*Amrita Vishwa Vidyapeetham*);

00:00 High-performance CMOS OTA Design for Sub-6 GHz RF Applications: Optimizing Efficiency-linear Trade-offs in 65 nm Technology
*Tugba Haykir Ergin* (*Yeditepe University*); *Yavuz Selim Saglam* (*Yeditepe University*); *Ismail Sisman* (*Yeditepe University*);

00:00 Compact Dual Coupled Resonators WPT System for Biomedical Implants
*Mohamed Aboualalaa* (*Electronics Research Institute*);

## Session 4P9
## Electromagnetic Theory, EM Shielding and Computational Electromagnetics

**Thursday PM, May 8, 2025**
**Room 9 - Capital Suite 6**

00:00 Detecting and Preventing Data Poisoning Attacks on AI Models
*Halima Ibrahim Kure* (*University of East London*); *Pradipta Sarkar* (*University of East London*); *Ahmed B. Ndanusa* (*University of Abuja*); *Augustine O. Nwajana* (*University of Greenwich*);

00:00 Fundamental and Generalized Solutions of Maxwell's Equations at Moving Emitters of Electromagnetic Waves
*Ludmila A. Alexeyeva* (*Institute of Mathematics and Mathematical Modeling*); *Ilmira A. Kanymgaziyeva* (*L.N. Gumilyov Eurasian National University*);

00:00 Helical Motion of a Particle in a Multilayer Cylindrical Waveguide
*Mikayel 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)*); *A. 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)*); *V. Avagyan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *H. Babujyan* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *S. Arutunian* (*Center for the Advancement of Natural Discoveries Using Light Emission (CANDLE)*); *K. Floettmann* (*Deutsches Elektronen-Synchrotron DESY*); *F. Lemery* (*Deutsches Elektronen-Synchrotron DESY*);

00:00 A Thin Polarization Insensitive Frequency Selective Surface for X-band Shielding
*Ming Dong* (*Technology Innovation Institute*); *Papa Ousmane Leye* (*Technology Innovation Institute*); *Daria Kulikova* (*Technology Innovation Institute*); *Islem Yahi* (*Technology Innovation Institute*); *Chaouki Kasmi* (*Technology Innovation Institute*); *Felix Vega* (*Technology Innovation Institute*);

00:00 Research on Electromagnetic Shielding Performance of MXene-coated Pure Cotton Fabric
*Xiuchen Wang* (*Xi'an Polytechnic University*); *Zhihui Zhang* (*Xi'an Polytechnic University*); *Yajing Wang* (*Xi'an Polytechnic University*);

00:00 Use of Computer Aided Engineering for Dielectrophoresis Devices
*Lars Ole Fichte* (*Helmut Schmidt University*);

00:00 Stability of State-spaced Full-wave PEEC for Time-domain Full-wave Solution
*Chaofan Xie* (*Southeast University*); *Hong Cai Chen* (*Southeast University*);

00:00 A Parallel-based Efficient Nonuniform Meshing Method for FDTD Simulations
*Liang Peng* (*Southeast University*); *Kanjian Zhang* (*Southeast University*); *Hong Cai Chen* (*Southeast University*);

00:00 SIE for the Vector-scalar Potential Formulation: An Overview
*A. A. Abdrabou* (*Purdue University*); *Z. K. Jia* (*Purdue University*); *Boyuan Zhang* (*Purdue University*); *Luis J. Gomez* (*Purdue University*); *Thomas E. Roth* (*Purdue University*); *Weng Cho Chew* (*Purdue University*);

00:00 Neural Equalizer Based on Gated Recurrent Unit Variants for High-speed Links
*Hanzhi Ma* (*Zhejiang University*); *Yiqin Xiang* (*Zhejiang University*); *Erping Li* (*Zhejiang University*);

00:00 Finite Element Method for Photonics Modelling
Invited
*B. M. Azizur Rahman* (*City University*);

## Session 4P10a
## Pioneering Advances in Spaceborne Remote Sensing: Observations, Retrievals, Theoretical Frameworks, and AI Innovations

**Thursday PM, May 8, 2025**

**Room 10 - Capital Suite 7**

Organized by Xianglei Huang, Lei Bi

Chaired by Xianglei Huang, Lei Bi

00:00 High-throughput All-reflective Optical Design Enabling Achromatic Wide Field of View Space Imaging Systems
*Daewook Kim* (*University of Arizona*);

00:00 Development and Evaluation of a New Correlated K-distribution Scheme for BCC_RAD Radiative Transfer Model
*Liting Liu* (*Nanjing University of Information Science & Technology*); *Hua Zhang* (*China Meteorological Administration*);

00:00 Spectrally Consistent Ice Models for Simulating Polarized Radiance of Ice Clouds in the Visible and Near-infrared Bands: Global Simulations and Case Studies
*Lei Bi* (*Zhejiang University*); *Lanhui Sun* (*Zhejiang University*); *Yizhen Meng* (*Zhejiang University*);

00:00 Retrieval of Ice Cloud Extinction Coefficient from Lidar Observations with the Consideration of Coherent Backscatter Enhancement
*Chen Zhou* (*Nanjing University*);

00:00 Study on the Relevance to Detection Area and Image Feature Distance on Vehicle Tracking by Using Fractal Image Analysis
*Yifan Wu* (*Nihon University*); *Syota Yazawa* (*Nihon University*); *Akira Uchida* (*Nihon University*); *Takashi Kuroiwa* (*Nihon University*);

00:00 Study on Detecting Small UAVs Using Two LiDARs with Different FOV
*Takashi Kuroiwa* (*Nihon University*); *Yifan Wu* (*Nihon University*); *Syota Yazawa* (*Nihon University*); *Akira Uchida* (*Nihon University*);

00:00 Looking at Earth in the Far-IR: 54 Years of Waiting and the Initial Results from NASA's PREFIRE Mission
*Xianglei Huang* (*University of Michigan*); *Xiuhong Chen* (*The University of Michigan*); *Tristan L'Ecuyer* (*University of Wisconsin-Madison*); *Brian Drouin* (*Caltech/JPL*);

**Session 4P10b**
**Advances in Random Medium Scattering Theory and Remote Sensing Techniques**

**Thursday PM, May 8, 2025**
**Room 10 - Capital Suite 7**
Organized by Shurun Tan, Yanlei Du
Chaired by Shurun Tan, Yanlei Du

00:00 Marine Target Detection in Polarimetric SAR Images Based on Three-component Decomposition and Generalized Likelihood Ratio Test
*Chun Liu* (*Northwestern Polytechnical University*); *Cong Huang* (*Northwestern Polytechnical University*); *Ke Shi* (*Northwestern Polytechnical University*); *Xiaobo Deng* (*AVIC Leihua Electronic Technology Research Institute*);

00:00 Vegetation Scattering Modeling: An Intercomparison between a Hybrid Wave Approach and the Radiative Transfer Theory
*Shurun Tan* (*Zhejiang University*); *Haifeng Zheng* (*Zhejiang University*); *Kaiqi Chen* (*Zhejiang University*); *Tengfeng Zhang* (*Zhejiang University-University of Illinois Urbana-Champaign Institute, Zhejiang University*);

00:00 Roughness Scale Effects on Doppler Properties of Ocean Radar Scattering
*Jianing Shao* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Yanlei Du* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Yawei Zhao* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Xiaofeng Yang* (*Nanjing University*);

00:00 Ocean Internal Wave Detection in SAR Images by Combining Superpixel Segmentation and Saliency Features
*Yanlei Du* (*Aerospace Information Research Institute, Chinese Academy of Sciences*); *Xiaofeng Yang* (*Nanjing University*);

00:00 Advances in Remote Sensing Technology for the Study of Ocean Internal Waves
*Xiaolin Bai* (*Xiamen University*);

00:00 Fundamental Stochastic Processes to Predict Scattering in Turbulent Ionospheric Plasma under Low Solar Activity
*Rachid Talhi* (*University of Tours*);

00:00 Physical Modelling of Surface and Volume Scattering in Radar Remote Sensing of Snow
*Firoz Kanti Borah* (*University of Michigan*); *Leung Tsang* (*University of Michigan*); *Tien-Hao Liao* (*National Taipei University of Technology*); *Edward J. Kim* (*NASA Goddard Space Flight Center*); *Haokui Xu* (*University of Michigan*);

**Session 4P0**
**Poster Session 7**

**Thursday PM, May 8, 2025**
**13:30 PM - 18:30 PM**
**Room Poster Area**

00:00 Design and Failure Mechanism Analysis of High-power Microwave Limiter under High Power Microwave Pulse Injection
*Liang Zhou* (*Shanghai Jiao Tong University*);

00:00 Comparison of the Waveguide Mechanism of Radio Wave Propagation over Tropical and Arctic Seas
*Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *V. A. Telegin* (*Ionosphere and Radio Wave Propagation Russian Academy of Sciences*); *Valery A. Permyakov* (*Moscow Power Engineering Institute (Technical University)*);

00:00 Research on Microstrip Signal Line Interference Suppression in High Speed PCB Boards
*Yujie Song* (*Southwest University of Science and Technology*); *Jiasheng Chen* (*Southwest University of Science and Technology*); *Bin Xie* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Xin Cao* (*Southwest University of Science and Technology*); *Longjian Zhou* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Jun Fan* (*Southwest University of Science and Technology*);

00:00 Design and Optimization of a Low Frequency Ez Probe with High Sensitivity
*Jie Luo* (*Southwest University of Science and Technology*); *Qiwen Yan* (*Southwest University of Science and Technology*); *Xiaohe Chen* (*China University of Petroleum*); *Yin Sun* (*DeTooLIC Technology Co., Ltd.*); *Qiusen He* (*Zhejiang University*); *Xiaoping Li* (*Southwest University of Science and Technology*); *Qiangming Cai* (*Southwest University of Science and Technology*); *Guozheng Zhang* (*Southwest University of Science and Technology*); *Shufang Li* (*Beijing University of Posts and Telecommunications*); *Yu-Rui Jia* (*Southwest University of Science and Technology*);

00:00 Piezoelectric Potential Phonon Scattering Properties of ZnS of the Quantum-Qusi Two Dimensional System
*Su Ho Lee* (*Dong University*); *J. S. Yoo* (*Dong-A University*); *S. H. Rim* (*Dong-A University*); *He Rie Park* (*Dong-A University*);

00:00 Electron Cyclotron Resonance Thruster Technology: A Pathway to Efficient Spacecraft Propulsion
*Kezia Mariyam Thomas* (*Amity Institute of Space Science & Technology*);

00:00 Research on Calibration Techniques for Polarization Detection with Metagratings
*Zeyu Zheng* (*China Jiliang University*); *Chunlian Zhan* (*China Jiliang University*); *Han Gao* (*China Jiliang University*);

00:00 Structurally Enhanced Electromagnetic Interference Shielding Performance of 2D Material Composite Film
*Min-Yan Bai* (*National Taipei University of Technology*); *Zhao-Fu Yen* (*National Taipei University of Technology*); *Sridharan Balu* (*National Taipei University of Technology*); *Shih-Wen Chen* (*National Taipei University of Technology*);

00:00 Reconfigurable Kirigami-based Metasurface with Controllable Chirality for Dynamic Polarization Control
*Yiyi Yao* (*The Hong Kong University of Science and Technology (Guangzhou)*); *Haitao Li* (*The Hong Kong University of Science and Technology (Guangzhou)*); *Xiaoxiao Wu* (*The Hong Kong University of Science and Technology (Guangzhou)*);

00:00 Design of Terahertz Flat Lens for Focusing and Generation of Orbital Angular Momentums
*Xiaoxiao Wu* (*The Hong Kong University of Science and Technology (GZ)*); *Xiexuan Zhang* (*The Hong Kong University of Science and Technology (GZ)*);

00:00 Energy Comparison Fueled Motor with Hydrogen Fuels Packed in Different Single Wall Materials and Carbonnano Tube Storage
*Diyar Bajalan* (*Technische Universität Wien*);

00:00 High-speed Magnetic Field Detection Using Magneto-optical Faraday Effect in TGG Crystals
*Nezah Balal* (*Ariel University*);

00:00 Towards High-performance Hybrid Optical Amplifiers: Raman/EDFA Design for L- and C-band Applications
*Patriks Morevs* (*Riga Technical University*); *Dmitrijs Prigunovs* (*Riga Technical University*); *Ricards Kudojars* (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*); *Lilita Gegere* (*Riga Technical University*); *Mareks Parfjonovs* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Study on Wavelet Threshold Improved Noise Reduction Method for Miniature Optical Fiber Spectrometer
*Juntao Wang* (*Shanghai Institute of Technology*); *Xu Zhuang* (*Shanghai Institute of Technology*); *Ya Ming Xie* (*Tongji University*); *Guo Chun Wan* (*Tongji University*);

00:00 Investigation of Novel Approaches for the Design and Fabrication of Fiber-based Optical Tweezers
*Dilan Enrique Ortiz Blanco* (*Riga Technical University*); *Ints Murans* (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*); *Andrey Machnev* (*Tel Aviv University*); *Mihails Rjumšins* (*Riga Technical University*); *Stanislavs Satins* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Electro-optic Modulation with Lithium Niobate-based Metasurfaces for Advanced Optical Communication
*Ramna Khalid* (*Information Technology University (ITU) of the Punjab*); *Muhammad Qasim Mehmood* (*Information Technology University (ITU)*); *Qammer H. Abbassi* (*University of Glasgow*); *Muhammad Zubair* (*University of Glasgow*);

00:00 Comparative Modeling of Laguerre-Gaussian and Squared Laguerre-Gaussian Beams in a Turbulent Medium
*Elena Sergeevna Kozlova* (*Samara National Research University*); *Alexandra A. Savelyeva* (*Image Processing Systems Institute of the Russian Academy of Sciences*); *Victor V. Kotlyar* (*Image Processing Systems Institute — Branch of the Federal Scientific Research Centre "Crystallography and Photonics" of RAS*);

00:00 Quadratic Phase-based Dispersion-engineered Metasurfaces for Broadband Mid-wave Infrared
*Wen Li Cai* (*University of Chinese Academy of Sciences*); *Ling Fang Wang* (*University of Chinese Academy of Sciences*); *Yi Zhou* (*Shanghai Institute of Technical Physics, Chinese Academy of Sciences*);

00:00 Performance Improvement of Long Reach Optical Access Systems Using Hybrid Optical Amplifiers
*Shreyas Srinivas Rangan* (*Technical University of Riga*); *Jurgis Porins* (*Riga Technical University*); *Toms Salgals* (*Riga Technical University*);

00:00 SMIS 37 Upgrade — High-current Electron Cyclotron Resonance Ion Source with Gyrotron Plasma Heating
*Vadim A. Skalyga* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *S. V. Golubev* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *I. V. Izotov* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *A. V. Polyakov* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *S. V. Razin* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *D. M. Smagin* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *S. S. Vybin* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Broadband Data Analysis to Create a Model for Internet Connection Speeds Template
*Elmars Lipenbergs* (*Riga Technical University*); *Inga Vagale* (*Riga Technical University*); *Vjaceslavs Bobrovs* (*Riga Technical University*);

00:00 Project of a Relativistic 35 MW W-band Gyrotron for Accelerator Applications
*Alexander Nikolaevich Leontyev* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Oleg Petrovich Plankin* (*Institute of Applied Physics of the RAS*); *Roman Markovich Rozental* (*A. V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *Evgeny Sergeevich Semenov* (*Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 Design and Manufacturing of Ka-band Horn Antennas Using 3D Printing: An Expanded Study with Enhanced Comparative Analysis
*Nezah Balal* (*Ariel University*);

00:00 A Novel Metal Crack Sensor with Reconfigurable Encoding Tags Based on Chipless RFID Technology
*Jiu Yi Hao* (*Tongji University*); *Jing Jing Cao* (*Tongji University*); *Guochun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Aperture Coupled Feeding Technique for Improving Radiation Characteristics of Microstrip Antenna
*Mohammad Ridwan Effendi* (*Institut Teknologi Bandung*); *Mochamad Ananda Mario* (*UIN Sunan Gunung Djati*); *Agus Dwi Prasetyo* (*Institut Teknologi Bandung*); *Sisi Indriani* (*Institut Teknologi Bandung*); *Hartuti Mistialustina* (*Universitas Sangga Buana*); *Achmad Munir* (*Institut Teknologi Bandung*);

00:00 Design of BPF Using $\lambda/4$ Type CRLH-TL Resonators with Controllable Attenuation Poles by Applying Tap-coupling Method
*Hiroto Jujo* (*National Institute of Technology, Kisarazu College*); *Rin Satoh* (*National Institute of Technology, Kisarazu College*); *Gai Tokoro* (*National Institute of Technology, Kisarazu College*); *Ibuki Hosaka* (*National Institute of Technology, Kisarazu College*); *Takanobu Ohno* (*National Institute of Technology, Kisarazu College*); *Kosei Tanii* (*National Institute of Technology, Kisarazu College*); *Satoko Iida* (*National Institute of Technology, Kisarazu College*);

00:00 Another Way to Expand the Bandwidth of a Microstrip Antenna
*Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *B. L. Kogan* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Investigation of the Effect of a Complex-shaped Dielectric Element on the Characteristics of a Bandpass Filter Based on an NRD Waveguide
*V. V. Krutskikh* (*National Research University "Moscow Power Engineering Institute"*); *Andrei N. Ushkov* (*National Research University "Moscow Power Engineering Institute"*); *D. S. Chukashov* (*National Research University "Moscow Power Engineering Institute"*); *A. Yu. Trofimov* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Alexei A. Komarov* (*National Research University "Moscow Power Engineering Institute"*);

00:00 Measurement of Scattering Parameters of Ferrite-garnet Films on a Vector Network Analyzer
*Nikita S. Maximov* (*National Research University "Moscow Power Engineering Institute"*); *K. S. Kharlamp'ev* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *P. M. Vetoshko* (*V.I. Vernadsky Crimean Federal University*); *A. N. Kuzmichev* (*Russian Quantum Center*);

00:00 Design of a Multi-band Patch Antenna with Integrated Microwave Switch
*Egor Dmitrievich Malev* (*National Research University "Moscow Power Engineering Institute"*); *Mikhail Sergeyevich Mikhailov* (*National Research University "Moscow Power Engineering Institute"*); *Valery A. Permyakov* (*Moscow Power Engineering Institute (Technical University)*); *A. A. Komarov* (*National Research University "Moscow Power Engineering Institute"*); *B. L. Kogan* (*National Research University "Moscow Power Engineering Institute"*);

00:00 A Novel RFID Bidirectional Displacement Detection Sensor with 2-bit Reconfigurable Coding Units
*Zhuang Xu* (*Shanghai Institute of Technology*); *Yaming Xie* (*Tongji University*); *Guochun Wan* (*Tongji University*);

00:00 Design of Circularly Polarized Antenna for RF Energy Harvesting
*Hussain Muteb Alrasheedi* (*Prince Sattam bin Abdulaziz University*); *Faroq Razzaz* (*Prince Sattam Bin Abdulaziz University*);

00:00 5G Shark Fin Style Antenna for Vehicular Applications
*Hijab Zahra* (*Macquarie University*); *Umair Rafique* (*University of Oulu*); *Arslan Kiyani* (*Macquarie University*); *Fatima Ghulam Kakepoto* (*Zhejiang Normal University*); *Syed Muzahir Abbas* (*Macquarie University*); *Subhas Chandra Mukhopadhyay* (*Macquarie University*);

00:00 A Bandwidth Enhanced Antenna Based on Passive Component Loading
*Ming Fang* (*Anhui University*); *Yingsong Li* (*Anhui University*);

00:00 Innovative Machine Learning-driven Duplexing Patch Antenna System for Optimised Energy Harvesting and Seamless Communication in the Era of Smart Cities
*Azunka N. Ukala* (*University of Hertfordshire, College Lane*); *Martin Thomas* (*University of Hertfordshire, College Lane*); *Maham Rashid* (*University of Hertfordshire*); *Eugene A. Ogbodo* (*University of Hertfordshire, College Lane*);

00:00 Effective Object Detection Using Low-power Planar WPT System
*Daryn Shaldybaev* (*Nazarbayev University*); *Zhanel Kudaibergenova* (*Nazarbayev University*); *G. Nauryzbayev* (*Nazarbayev University*); *M. Hashmi* (*Nazarbayev University*);

00:00 An Efficient Water Quality Assessment Method Based on Multi-sensor Fusion System
*Qingmiao Tang* (*Shanghai University of Engineering Science*); *Shujia Yan* (*Shanghai University of Engineering Science*); *Chenggang Dai* (*Shanghai University of Engineering Science*); *Xinbo Liu* (*Shanghai Marine Equipment Research Institute*); *Mei Song Tong* (*Tongji University*); *Qiang Chen* (*Shanghai University of Engineering Science*);

00:00 Machine Learning Based Implementation of Antenna Beamforming Algorithm
*M. L. Liya* (*Amrita University*); *Hariharan Balaji* (*Amrita Vishwa Vidyapeetham*); *L. Meenu* (*Amrita Vishwa Vidyapeetham*); *Dhanesh G. Kurup* (*Institut d'Electronique ET de Télécommunications de Rennes IETR, UMR-6164 - Université de Rennes*);

00:00 A Study of the Semi-superjunction SGT MOSFET with Double-layer Epitaxy
*Qiqi Liu* (*Southwest Jiaotong University*); *Xiaopei Chen* (*Chengdu Technological University*); *Yu Xie* (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*);

00:00 Improved Accuracy of High-power Microwave Beam Measurements Based on Projective Transformations
*Svetlana Andreevna Ananicheva* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*); *M. V. Morozkin* (*Institute of Applied Physics, Russian Academy of Sciences*); *Dmitry I. Sobolev* (*Institute of Applied Physics, Russian Academy of Sciences*); *Andrey A. Ananichev* (*Institute of Applied Physics of the RAS*); *A. V. Chirkov* (*Institute of Applied Physics of the Russian Academy of Sciences*); *Grigory G. Denisov* (*Institute of Applied Physics, Russian Academy of Sciences*); *Andrey Pavlovich Fokin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Mikhail Yu. Glyavin* (*A.V. Gaponov-Grekhov Institute of Applied Physics of the Russian Academy of Sciences*);

00:00 A Fast Transient Response LDO with Dynamic Adjustment Circuit for Slew Rate
*Zhong Jie Tang* (*Tongji University*); *Zhi Chong Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 A High PSR Bandgap Reference with Curvature Compensation
*Xiaolong Chen* (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Wei Wang* (*Southwest Jiaotong University*);

00:00 Design of an Autonomous Wireless Charging Docking Station and Research on Its Trajectory Planning
*Qianjiang Zhang* (*Southwest University of Science and Technology*); *Haoran Li* (*Southwest University of Science and Technology*); *Yuyu Zhu* (*Southwest University of Science and Technology*); *Yue Pan* (*Southwest University of Science and Technology*);

00:00 Design of a Silicon-based Radio Frequency Low-noise Amplifier with Simultaneously Impedance and Noise Matching for Communication
*Rui Ma* (*Guangzhou University*); *Yicong Li* (*Guangzhou University*); *Lin Peng* (*Guangzhou University*); *Wen Liang Lin* (*Guangzhou University*); *Guangqiang Liu* (*Guangzhou University*); *Guangyu Zhong* (*Guangzhou University*); *Liang Yuan* (*Guangzhou University*); *Yukai Feng* (*Guangzhou University*); *Gang Wu* (*Guangzhou University*); *Zhihong Lin* (*Guangzhou University*);

00:00 Self-assembly of Lipids in $CaCl_2$ Solution with External Electric Fields: A Coarse-grained Molecular Dynamics Simulation
*Zheng Mao* (*Nanjing Institute of Technology*); *Yiqian Mao* (*Southeast University*);

00:00 Enhancing MATTER Protocol Integration over Thread in a Smart Home Scenario
*Ilja Kalinins* (*Riga Technical University*); *Ruslans Sudniks* (*Riga Technical University*); *Sandis Spolitis* (*Riga Technical University*); *Andis Supe* (*Riga Technical University*);

00:00 Accurate and Efficient Solutions of Electromagnetic Problems with Chiral Materials Based on Meshless Method
*Hao Cheng* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 An Enhanced Hybrid Channel Estimation Method for Extremely Large MIMO Systems
*Muhammad Arslan* (*Tongji University*); *Hao Cheng* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Enhanced Channel Estimation and Spectral Efficiency for Massive MIMO in TDD Mode
*Muhammad Arslan* (*Tongji University*); *Hao Cheng* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

00:00 Investigation of the Physical Properties of $Zn_{1-x}Cu_xO$ Thin Films Deposited via DC Magnetron Sputtering Technique
*Dhananjaya Kekuda* (*Manipal Institute of Technology, Manipal Academy of Higher Education*); *Reetha* (*Manipal Institute of Technology, Manipal Academy of Higher Education*);