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

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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.

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April 25–28, 2022
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Maokun Li, Tsinghua University
Yan Li, China Jiliang University
En-Xiao Liu, A*STAR Institute of High Performance Computing
Qing Huo Liu, Duke University
Shinichiro Ohnuki, Nihon University
Qiang Ren, Beihang University
Jiming Song, Iowa State University
Eng Leong Tan, Nanyang Technological University
Shurun Tan, Zhejiang University/University of Illinois at Urbana-Champaign Institute
Mei Song Tong, Tongji University
Chao-Fu Wang, National University of Singapore
Yu Mao Wu, Fudan University
Mingyao Xia, Peking University
Da Yi, Chongqing University
Hong-Xing Zheng, Hebei University of Technology

PIERS 2022 Hangzhou Subcommittee 2
(Metamaterials, Plasmonics and Complex Media)

Hongsheng Chen, Zhejiang University (Co-chair)
Huanyang Chen, Xiamen University (Co-chair)
Qiaoliang Bao, Monash University
Fei Gao, Zhejiang University
Jian-Hua Jiang, Soochow University
Wei Xiang Jiang, Southeast University
Guixin Li, Southern University of Science and Technology
Jensen Li, Hong Kong University of Science and Technology
Ying Li, Zhejiang University
Xiao Lin, Zhejiang University
Hui Liu, Nanjing University
Yongmin Liu, Northeastern University
Yu Luo, Nanyang Technological University
Qinghai Song, Harbin Institute of Technology
Yihao Yang, Zhejiang University
Baile Zhang, Nanyang Technological University
Yu Zhang, Xiamen University
PIERS 2022 Hangzhou Subcommittee 3
(Optics and Photonics)

Zhanghai Chen, Xiamen University (Co-chair)
Sailing He, Royal Institute of Technology; Zhejiang University (Co-chair)
Wei Dong Chen, Universite du Littoral Cote d’Opale
Alexey V. Kavokin, Westlake University
Feng Li, Xi’an Jiaotong University
Chao-Yang Lu, University of Science and Technology of China
Haoliang Qian, Zhejiang University
Cees Ronda, Philips Group Innovation — Research
Hai-Zhi Song, Southwest Institute of Technical Physics
Lars Thylen, KTH Royal Institute of Technology
Jian Wang, Huazhong University of Science and Technology
Shiwei Wu, Fudan University
Qihua Xiong, Tsinghua University
Xiulai Xu, Institute of Physics, Chinese Academy of Science
Remo Proietti Zaccaria, IIT & Ningbo Institute of Materials and Technology Engineering, CAS
Delong Zhang, Zhejiang University
Long Zhang, Xiamen University

PIERS 2022 Hangzhou Subcommittee 4
(Antennas and Microwave Technologies)

Hai-Wen Liu, Xi’an Jiaotong University (Co-chair)
Wen-Yan Yin, Zhejiang University (Co-chair)
Liang Zhou, Shanghai Jiao Tong University (Co-chair)
Xiaoming Chen, Xi’an Jiaotong University
Jing-Ya Deng, Xidian University
Wenjie Feng, Nanjing University of Science and Technology
Zhang-Cheng Hao, Southeast University
Sanming Hu, Southeast University
Zhihao Jiang, Southeast University
Long Li, Xidian University
Xiuping Li, Beijing University of Posts and Telecommunications
Yingsong Li, Harbin Engineering University
Yue Li, Tsinghua University
Kaixue Ma, Tianjin University
Zhongxiang Shen, Nanyang Technological University
Sheng Sun, University of Electronic Science and Technology of China
Ming-Chun Tang, Chongqing University
Zuojia Wang, Zhejiang University
Zhun Wei, Zhejiang University
Lin-Sheng Wu, Shanghai Jiaotong University
Qi Wu, Beihang University
Qingsheng Zeng, Nanjing University of Aeronautics and Astronautics
Qwei Zhan, Zhejiang University
Yue-Ping Zhang, Nanyang Technological University

PIERS 2022 Hangzhou Subcommittee 5
REMOTE SENSING, INVERSE PROBLEMS, IMAGING, RADAR AND SENSING

Kun-Shan Chen, Guilin University of Technology (Co-chair)
Yang Du, Zhejiang University (Co-chair)
Mohammad Al-Khaldi, University Corporation for Atmospheric Research
Lei Bi, University of Electronic Science and Engineering of China
Rajat Bindlish, NASA’s Goddard Space Flight Center
Alexandra M. Bringer, The Ohio State University
Steven K. Chan, NASA Jet Propulsion Laboratory, California Institute of Technology
Xudong Chen, National University of Singapore
Xiaolong Dong, National Space Science Center, Chinese Academy of Sciences
Yanlei Du, Aerospace Information Research Institute, Chinese Academy of Sciences
Hong Tat Ewe, Universiti Tunku Abdul Rahman
Xiaofeng Li, National Oceanic and Atmospheric Administration (NOAA)
Tien-Hao Liao, California Institute of Technology
Hui Lu, Tsinghua University
Jiancheng Shi, National Space Science Center, Chinese Academy of Sciences
Shurun Tan, Zhejiang University/University of Illinois at Urbana-Champaign Institute
Saibun Tjuatja, University of Texas at Arlington
Leung Tsang, University of Michigan
Fuzhong Weng, Chinese Academy of Meteorological Sciences, China Meteorological Administration
Lixin Wu, Central South University
Jian Yang, Tsinghua University
Ping Yang, Texas A&M University
Xiaofeng Yang, Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences
Simon H. Yueh, California Institute of Technology
PIERS 2022 Hangzhou Awards Committee

Kazuya Kobayashi, Chuo University (Chair)
Steven K. Chan, NASA Jet Propulsion Laboratory, California Institute of Technology (Co-chair)
Wenchao Chen, Zhejiang University (SC1)
Maokun Li, Tsinghua University (SC1)
Wei E. I. Sha, Zhejiang University (SC1)
Hongsheng Chen, Zhejiang University (SC2)
Huanyang Chen, Xiamen University (SC2)
Jian-Hua Jiang, Soochow University (SC2)
Sailing He, Royal Institute of Technology; Zhejiang University (SC3)
Feng Li, Xi’an Jiaotong University (SC3)
Haoliang Qian, Zhejiang University (SC3)
Hai-Zhi Song, Southwest Institute of Technical Physics (SC3)
Hai-Wen Liu, Xi’an Jiaotong University (SC4)
Sheng Sun, University of Electronic Science and Technology of China (SC4)
Liang Zhou, Shanghai Jiao Tong University (SC4)
Steven K. Chan, NASA Jet Propulsion Laboratory, California Institute of Technology (SC5)
Kun-Shan Chen, Guilin University of Technology (SC5)
Yang Du, Zhejiang University (SC5)

PIERS 2022 Hangzhou Local Organizing Committee

Chair: Hongsheng Chen
Members:

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<td>Qiwei Zhan</td>
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PIERS 2022 Hangzhou Session Organizers

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<th>Jacqueline Boutin</th>
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<td>You-Feng Cheng</td>
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<td>Yuyi Feng</td>
<td>Naixing Feng</td>
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IMPORTANT NOTICE

Due to the recent domestic outbreaks of COVID-19 that have spread to many provinces in China, the organizing committee of PIERS 2021 has decided to split this event into 2 parts.

Part 1: Totally Virtual

This virtual part will be on November 22, the original start date of PIERS 2021.

1) All poster sessions will be switched to online. Poster Presenters are requested to upload the presentation files in PDF format by November 15. A ZOOM conference on November 22 will be arranged for all poster presenting authors to discuss the details interactively. The poster presenting author is encouraged to upload a 3–5 mins pre-recorded video to introduce the poster. All onsite registered presenting authors in this online poster session can still attend the future hybrid part of PIERS.

2) In total there will be 5 virtual oral sessions (1 oral session for each subcommittee) to accept a few oral talks online, in case some presenting authors strongly hope to join the virtual conference without delay.

3) This virtual PIERS will use ZOOM as supporting software. There will be an online help center via ZOOM during the conference week. The ZOOM access information and linkages will be available on the Online Program.

4) The final program for this virtual PIERS 2021 will be available online by November 18.

Part 2: Hybrid PIERS

This hybrid part will be postponed to April 25–28, 2022. The conference site remains unchanged.

1) All oral sessions will be postponed to April 25-28, 2022 by default.

2) If a presenting author strongly hopes to join the virtual oral session, please kindly contact PIERS OFFICE to apply for the virtual oral slot before November 15.

3) This hybrid PIERS can accept a few submissions of new abstracts. The deadline for new abstract submission is January 10. The registration deadline is January 30. The Advance Program will be available by March 5. The final program will be available by March 20.
SYMPOSIUM VENUE

The 2022 PhotonIcs & Electromagnetics Research Symposium, will be held in Hangzhou from 25 to 28 April 2022, at the Grand New Century Hotel Hangzhou (Address: No. 818, Middle Shixin Road, Xiaoshan, Hangzhou 311202, China).

REGISTRATION

The PIERS technical sessions will begin at 8:00 on Monday, April 25, 2022. You may come to register during 9:30–18:30 on Sunday, April 24, 2022, at the registration desks at the Grand New Century Hotel Hangzhou, China. Registration is also available from 7:30 to 18:00 on Monday, April 25, 2022 and from 8:00 to 18:00 on April 26–27, 2022.

The on-site registration fee is USD 690 or RMB 4700, and the reduced registration fee for a student is USD 450 or RMB 3100 (a valid student ID is required). If you have pre-registered and paid, your name badge and symposium program will be ready for you to pick up at the registration counter during the symposium. Please wear your name badge throughout the meeting. Access to the coffee break, interactive areas, and technical sessions will be prohibited if a name badge is not visible.

SPECIAL EVENTS

Symposium Reception

On Monday evening, April 25, 2022, all conference participants are invited to a welcome reception at the conference hotel. The tickets are free and handed out on a first-come-first-served basis. Please make reservation in advance for the reception by April 1, 2022.

Symposium Banquet

On Wednesday evening, April 27, 2022, symposium banquet is planned for PIERS participants and their guests at the conference hotel. A limited number of banquet tickets will be available. For all participants, the price is USD 60/RMB 400 per person. Please make reservation and pay in advance for the banquet by April 1, 2022.

PIERS ONLINE

Information on PIERS 2022 Hangzhou and future PIERS is posted at www.piers.org.
GUIDELINE FOR PRESENTERS

Onsite Oral Presentations

- **Load and TEST Presentation Files in Advance:**
  Onsite Oral Presenters must upload and test presentation files in the onsite PIERS OFFICE no later than April 20. Presenters are not allowed to detach the session computer and attach their own notebook/laptop to the LCD projector in session room. You can either upload your presentation file in PIERS author center, or please upload you files onto onsite PIERS OFFICE.

- **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.

Web Oral Presentations

- **Upload Pre-recorded Video by April 15:**
  Web Oral Presenters must upload a pre-recorded video by April 15. Please upload your presentation file in PIERS author center. Each uploaded video will be checked by PIERS OFFICE. Once it is checked, you can view a “confirmed” status in PIERS Author Center. Please wait 1–2 working days to check this video confirmed status especially during the uploading peak.

- **Video File Format:**
  Your final video file should be in the MP4 format. There are several tools you can use to make a MP4 video file.
  1) Create a Voice Over PowerPoint presentation and convert it to MP4.
  2) Use some meeting softwares to directly have a final MP4 video file. Please visit these instructions on how to record a video on web page of PIERS Guidelines for Presenters.

- **Web Talk Limit and Video Duration:**
  Please find the following suggested time to record your video.
  Web Keynote Talk: Total 25 mins — including (20 mins video + 5 mins Q&A)
  Web Invited Talk: Total 15 mins — including (13 mins video + 2 mins Q&A)
  Web Contributed Talk: Total 10 mins — including (9 mins video + 1 mins Q&A)
Web Poster Presentations

- The web poster presentation file should be in the PDF format.
- This PDF poster presentation file will be available on online PIERS Program during the whole conference week.
- All presenters are suggested to update your PIERS profile with a personal image in order for the attendees to establish a connection or know you better.
PIERS 2022 HANGZHOU SPONSORS

Sponsored by:
- Zhejiang University
- The Electromagnetics Academy at Zhejiang University
- College of Information Science & Electronic Engineering
- Zhejiang Key Laboratory for Advanced Microelectronic Intelligent Systems and Applications
- The Zhejiang University/University of Illinois at Urbana-Champaign Institute (the ZJU-UIUC Institute)
- National Engineering Research Center for Optical Instruments
- Shanghai Ideaoptics Corp., Ltd.

Technically co-sponsored by:
- IEEE Geoscience and Remote Sensing Society (IEEE GRSS)
- IEEE Antennas and Propagation Society (IEEE AP-S)
- IEEE Photonics Society
- The Electromagnetics Academy
Session 1A0
Hot Topics in Photonics and Electromagnetics

Monday AM, April 25, 2022
Room 0 - Jingchao Hall
Organized by Sailing He
Chaired by Sailing He

11:00 Laser Particles for Single-cell Analysis
Hot
Seok Hyun Andy Yun (Harvard Medical School and Massachusetts General Hospital);

11:10 Electromagnetic Power Transfer and Photonic Voltage Transformation
Hot
Shanhui Fan (Stanford University);

11:20 The Frontiers of Plasmonic Nanocavities
Hot
Hongxing Xu (Wuhan University);

11:30 Information Metamaterials and Intelligent Metamaterials
Hot
Tie Jun Cui (Southeast University);

11:40 Liquid Light Based Platform for Quantum Computation
Hot
Alexey V. Kavokin (Westlake University);

11:50 Quantum Advantage and Beyond
Hot
Chao-Yang Lu (University of Science and Technology of China);

12:00 Perovskite Materials for Large-area Photovoltaic Modules and Flat-panel X-ray Imagers
Hot
Yang Yang (Zhejiang University);

12:10 Optical Interfaces from Metasurface Optics to Topological Polaritons: Le Voyage Rétro
Hot
Cheng-Wei Qiu (National University of Singapore);

12:20 Picophotonics
Hot
Nikolay I. Zheludev (University of Southampton & Nanyang Technological University);

Session 1A1
SC2: Topological Phenomena in Classical Optics and Quantum Optics 1

Monday AM, April 25, 2022
Room 0 - Jingchao Hall
Organized by Luqi Yuan, Da-Wei Wang, Zhaoju Yang
Chaired by Luqi Yuan, Zhaoju Yang

08:00 Explore Topological Physics in Synthetic Dimensions
Keynote
Shanhui Fan (Stanford University);

08:25 Non-Bloch Parity-time Symmetry and Exceptional Points
Invited
Peng Xue (Beijing Computational Science Research Center);

08:45 Silicon Photonics Quantum Devices and Circuits
Invited
Jianwei Wang (Peking University);

09:05 Topological Behaviors of Ultracold Atoms in the Momentum Space
Invited
Bo Yan (Zhejiang University);

09:25 Spin Angular Momentum and Applications in Topological Waves
Invited
Jie Ren (Tongji University);

09:45 Acoustic Topological Dislocation Modes
Invited
Liping Ye (Wuhan University); Chunyin Qiu (Wuhan University); Meng Xiao (Wuhan University); Tianzi Li (Wuhan University); Juan Du (Wuhan University); Manzhu Ke (Wuhan University); Zhengyou Liu (Wuhan University);

10:05 Dynamic Band Structure Measurement in the Synthetic Space
Invited
Guangzhen Li (Shanghai Jiao Tong University); Luqi Yuan (Shanghai Jiao Tong University); Xianfeng Chen (Shanghai Jiao Tong University);

10:20 Iterative Green’s Function for Photonic and Acoustic Topological Surface States Analysis
Invited
Yi-Xin Sha (Peking University); Mingyao Xia (Peking University); Ling Lu (Institute of Physics, Chinese Academy of Sciences);

10:40 Coffee Break
Session 1A2a
SC3: Reconfigurable Photonic Circuits for Computing and Switching 1
Monday AM, April 25, 2022
Room 2 - Shixin Hall 1
Organized by Huan Li, Nathan Youngblood, Ming Zhang
Chaired by Huan Li, Nathan Youngblood

08:00 Designing Fast and Efficient Electrically Driven Phase Change Photonics through Multiphysics Simulation Framework
John R. Erickson (University of Pittsburgh); Viresh Shah (University of Pittsburgh); Qingzhou Wan (University of Pittsburgh); Nathan Youngblood (University of Pittsburgh); Feng Xiong (University of Pittsburgh);

08:10 Low-loss Phase-change Materials for Nonvolatile Reconfigurable Photonic Circuits
Carlos Ríos (University of Maryland);

08:25 Silicon Photonics for Neuromorphic Computing and Artificial Intelligence: Applications and Roadmap
Bhavin J. Shastri (Queen’s University); C. Huang (Princeton University); A. N. Tait (Princeton University); T. Ferreira De Lima (Princeton University); P. R. Prucnal (Princeton University);

08:40 Phase Change Material Integrated Silicon Photonics: Invited GST and Beyond
Arka Majumdar (University of Washington);

08:55 Photonic Generative Adversarial Network (GAN) with Noise-aware Training
Changming Wu (University of Washington); Xiaoxuan Yang (Duke University); Heshan Yu (University of Maryland); Ruoming Peng (University of Washington); Ichiro Takeuchi (University of Maryland); Yiran Chen (Duke University); Mo Li (University of Washington);

09:25 Online Traffic Classification Scheme Based on Bidirectional Long-short Term Memory and Attention in Edge Computing Oriented Optical Networks
Zhengjie Sun (Beijing University of Posts and Telecommunication); Hui Yang (Beijing University of Posts and Telecommunications); Chao Li (Beijing University of Posts and Telecommunication); Quyuan Yao (Beijing University of Posts and Telecommunication); Bowen Bao (Beijing University of Posts and Telecommunication); Jie Zhang (Beijing University of Posts and Telecommunications);

09:40 Survivable Service Chain with Adaptive Reconfiguration for Elastic Optical Network
Jiashun Ma (Beijing University of Posts and Telecommunications); Hui Yang (Beijing University of Posts and Telecommunications); Bowen Bao (Beijing University of Posts and Telecommunication); Quyuan Yao (Beijing University of Posts and Telecommunication); Zhengjie Sun (Beijing University of Posts and Telecommunication); Jie Zhang (Beijing University of Posts and Telecommunications);

09:55 Miniaturized Online pH Detection System Based on a Microfluidic Chip
Li Zhu (Southeast University); Anqi Yang (Southeast University); Yu Lu (Southeast University); Qianru Feng (Southeast University); Yiping Cui (Southeast University);

10:10 Peptide-conjugated Luminescent Iridium(III) Complexes as Biocompatible Theranostic Probes for Cancer and Immune Systems
Wanhe Wang (Northwestern Polytechnical University); Jing Wang (Northwestern Polytechnical University); Chang-Hang Leung (University of Macau); Dik-Lung Ma (Hong Kong Baptist University);

Session 1A2b
Optics Sensor, Optical Network and Others 1
Monday AM, April 25, 2022
Room 2 - Shixin Hall 1
Chaired by Ergun Simsek

09:15 A Robust Drift-diffusion Equations Solver Enabling Accurate Simulation of Photodetectors
Ergun Simsek (University of Maryland Baltimore County); Segeid Ehsan Jamali Mahabadi (University of Maryland Baltimore County); Ishraq Md Anjum (University of Maryland Baltimore County); Curtis R. Menyuk (University of Maryland Baltimore County);

09:25 Online Traffic Classification Scheme Based on Bidirectional Long-short Term Memory and Attention in Edge Computing Oriented Optical Networks
Zhengjie Sun (Beijing University of Posts and Telecommunication); Hui Yang (Beijing University of Posts and Telecommunications); Chao Li (Beijing University of Posts and Telecommunication); Quyuan Yao (Beijing University of Posts and Telecommunication); Bowen Bao (Beijing University of Posts and Telecommunication); Jie Zhang (Beijing University of Posts and Telecommunications);

09:40 Survivable Service Chain with Adaptive Reconfiguration for Elastic Optical Network
Jiashun Ma (Beijing University of Posts and Telecommunications); Hui Yang (Beijing University of Posts and Telecommunications); Bowen Bao (Beijing University of Posts and Telecommunication); Quyuan Yao (Beijing University of Posts and Telecommunication); Zhengjie Sun (Beijing University of Posts and Telecommunication); Jie Zhang (Beijing University of Posts and Telecommunications);

09:55 Miniaturized Online pH Detection System Based on a Microfluidic Chip
Li Zhu (Southeast University); Anqi Yang (Southeast University); Yu Lu (Southeast University); Qianru Feng (Southeast University); Yiping Cui (Southeast University);

10:10 Peptide-conjugated Luminescent Iridium(III) Complexes as Biocompatible Theranostic Probes for Cancer and Immune Systems
Wanhe Wang (Northwestern Polytechnical University); Jing Wang (Northwestern Polytechnical University); Chang-Hang Leung (University of Macau); Dik-Lung Ma (Hong Kong Baptist University);

Session 1A3a
SC2&SC3: Photonics Empowered by Artificial Intelligence 1
Monday AM, April 25, 2022
Room 3 - Shixin Hall 2
Organized by Yongmin Liu, Junsuk Rho, Wei Ma
Chaired by Junsuk Rho, Wei Ma

08:00 Dynamically-tuned Active Metasurfaces and Plasmonic Devices Based on Phase Change Materials
Ru-Wen Peng (Nanjing University); Jia-Nan Wang (Nanjing University); Fang-Zhou Shu (Nanjing University); Bo Xiong (Nanjing University); Ben-Qi Hou (Nanjing University); Ren-Hao Fan (Nanjing University); Dong-Xiang Qi (Nanjing University); Yongmin Liu (Northeastern University); Mu Wang (Nanjing University);
08:00 Smart Design of Plasmonic Stack Metamaterials by Artificial Intelligence
Invited
Jinfeng Zhu (Xiamen University); Jiankai Xiong (Xiamen University);

08:40 Realizing Colorful Holographic Mimicry by Metasurfaces
Invited
Bo Xiong (Nanjing University); Yihao Xu (Northeastern University); Jianan Wang (Nanjing University); Ru-Wen Peng (Nanjing University); Mu Wang (Nanjing University); Yongmin Liu (Northeastern University);

08:55 Deep Learning Accelerated Dielectric Metasurface Design
Invited
Yijie Gu (Zhejiang University); Ran Hao (China Jiliang University); Er Ping Li (Zhejiang University — UIUC Institute);

09:10 On-chip Cascaded Devices with an Intelligent Algorithm
Invited
Hongyi Yuan (Beijing Institute of Technology); Cuicui Lu (Beijing Institute of Technology);

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9:00 Focused-ion-beam-based Nano-kirigami for Cascaded Multifunctional Information Devices Based on Ambipolar Two-dimensional Semiconductors
Invited
Dong Li (Hunan University);

10:00 Electrochemical Delamination of Ultra-large Few-layer Black Phosphorus with a Hydrogen-free Intercalation Mechanism
Invited
Ning Wang (Northwestern Polytechnical University); Xue Yang (Northwestern Polytechnical University); Qingliang Feng (Northwestern Polytechnical University);

10:20 Epitaxial Growth of Nanosheet Arrays and Its Application in Infrared Detection
Invited
Xiaoming Yuan (Central South University);

10:40 Coffee Break

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10:40 The Carrier Spin Polarization in 2D van der Waals Heterostructures
Invited
Danliang Zhang (Hunan University); Xiao Wang (Hunan University); Anli Pan (Hunan University);

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Session 1A3b
SC3: Low-dimensional Semiconductor Optoelectronics and Integration 1

Monday AM, April 25, 2022
Room 3 - Shixin Hall 2
Organized by Anlian Pan, Xiao Wang
Chaired by Xiao Wang

09:20 Exciton Management for High Performance Perovskite Emitting Devices
Invited
Chuanjiang Qin (Changchun Institute of Applied Chemistry, Chinese Academy of Science);

09:40 Multifunctional Information Devices Based on Ambipolar Two-dimensional Semiconductors
Invited
Dong Li (Hunan University);

10:00 Electrochemical Delamination of Ultra-large Few-layer Black Phosphorus with a Hydrogen-free Intercalation Mechanism
Invited
Ning Wang (Northwestern Polytechnical University); Xue Yang (Northwestern Polytechnical University); Qingliang Feng (Northwestern Polytechnical University);

10:20 Epitaxial Growth of Nanosheet Arrays and Its Application in Infrared Detection
Invited
Xiaoming Yuan (Central South University);

10:40 Coffee Break

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08:00 Nonlinear Response of All-dielectric Metasurfaces
Invited
Shumin Xiao (Harbin Institute of Technology);

08:20 Adaptable Invisibility Management Using Kiragami-inspired Transformable Metamaterials
Invited
He-Xiu Xu (Air Force Engineering University); Mingzhang Wang (Air Force Engineering University); Guangwei Hu (National University of Singapore); Shaohui Wang (Air Force Engineering University); Yanzhao Wang (Air Force Engineering University); Chaohui Wang (Air Force Engineering University); Yixuan Zeng (National University of Singapore); Jiafang Li (Beijing Institute of Technology); Shuang Zang (University of Hong Kong); Wei Huang (Northwestern Polytechnical University);

08:40 Hyperbolic Metamaterials for Optical Functional Devices
Keynote
Tie Jun Cui (Southeast University); Che Liu (Southeast University);

09:00 Focused-ion-beam-based Nano-kirigami for Cascaded Multilayer 3D Nanoarchitecture and Wavefront Modulation
Invited
Yu Han (Beijing Institute of Technology); Juan Liu (Beijing Institute of Technology); Jiafang Li (Beijing Institute of Technology);

09:15 Intelligent Metamaterials and Metasurfaces
Keynote
Fei Gao (Huazhong University of Science and Technology);

09:45 Broadband Janus Scattering from Tilted Dipolar Metagratings
Invited
Xuan Chen (Zhejiang University); Min Li (Zhejiang University); Zuojia Wang (Zhejiang University);

10:00 Spoof Surface Plasmon Polariton Enhances Radiation Efficiency of Terahertz Photoconductive Antenna
Invited
Chi Wang (Zhejiang University); Hongsheng Chen (Zhejiang University); Fei Gao (Zhejiang University);
Session 1A5
SC2: Recent Advances of Metasurfaces and Metagratings

Monday AM, April 25, 2022
Room 5 - Gui Hall
Organized by Hongyu Shi, Kuang Zhang
Chaired by Jianjia Yi, Hongyu Shi

08:00 Interleaved Metasurface for Multi-beam Generation with Arbitrary Polarization Control
Invited
Linda Shao (Shanghai Jiao Tong University); Weiren Zhu (Shanghai Jiao Tong University);
08:20 Chirality-assisted Metasurface for Spin-symmetry Breaking
Invited
Yuziang Wang (Harbin Institute of Technology); Kuang Zhang (Harbin Institute of Technology); Qun Wu (Harbin Institute of Technology);
08:40 An Efficient Reconfigurable Metagrating
Invited
Jing Wang (Xidian University); Lina Zhu (Xidian University); Jianjia Yi (Xi’an Jiaotong University);
09:00 Polarization Converter with Asymmetric Jones Matrix Using Metasurface
Yidan Wang (Xi’an Jiaotong University); Hongyu Shi (Xi’an Jiaotong University); Juan Chen (Xi’an Jiaotong University); Anzue Zhang (Xi’an Jiaotong University); Zhuo Xu (Xi’an Jiaotong University);
09:20 Structured Light Illumination over 120° Field of View Based on Metasurfaces
Yibo Ni (Tsinghua University); Sai Chen (Tsinghua University); Yujie Wang (Harbin Institute of Technology); Qiaofeng Tan (Tsinghua University); Shunlin Xiao (Harbin Institute of Technology); Yuanmu Yang (Tsinghua University);
09:40 A Reconfigurable Metagrating for Regulating Wavefront with PIN Diode
Invited
Ruoyu Dai (Xidian University); Lina Zhu (Xidian University); Jianjia Yi (Xi’an Jiaotong University);
09:50 Metamaterial Aperture for Frequency-diverse Dual-mode OAM Beams
Ningning Zhou (Xi’an Jiaotong University); Mengran Zhao (Xi’an Jiaotong University); Shitao Zhu (Xi’an Jiaotong University);
10:05 Waveguide Coupler in Designer Surface Plasmon Using Topological Edge States
Li Bolin (Xi’an Jiaotong University); Hongyu Shi (Xi’an Jiaotong University); Juan Chen (Xi’an Jiaotong University); Anzue Zhang (Xi’an Jiaotong University); Zhuo Xu (Xi’an Jiaotong University);
10:20 Probing the Emerging Physics in van der Waals Materials with Combined Optical and Electrical Probes
Invited
Sihan Zhao (Zhejiang University);
10:40 Coffee Break

Session 1A6
SC2: Emerging Physical Properties in 1D and 2D van der Waals Materials and Their Heterostructures

Monday AM, April 25, 2022
Room 6 - Mingrui Hall
Organized by Sihan Zhao, M. Iqbal Bakti Utama
Chaired by Sihan Zhao, M. Iqbal Bakti Utama

08:00 Tunable Correlated and Topological Phenomena in ABC Heterostructures
Invited
Guorui Chen (Shanghai Jiao Tong University);
08:15 Probing Moiré Superlattices with Optical Spectroscopy
Invited
Chenhao Jin (University of California, Santa Barbara);
08:30 Theory of Excitons in 2D Magnet Materials — Interlayer Interactions and Entanglement
Invited
Ting Cao (University of Washington);
08:45 Real-space Visualization of Correlated States in Tunable Moiré Superlattices
Invited
Shaowei Li (University of California, San Diego);
09:00 Nonreciprocal Magneto-optical Scattering Effect in Two-dimensional Ferromagnetism
Invited
Bo Peng (University of Electronic Science and Technology of China);
09:15 Synthesis and Optical Characterizations of 1D van der Waals Hetero-structures Based on Single-walled Carbon Nanotubes
Invited
Ming Liu (The University of Tokyo); Ya Feng (The University of Tokyo); Yongjia Zheng (The University of Tokyo); Shohei Chiashi (The University of Tokyo); Keigo Otsuka (The University of Tokyo); Rong Xiang (The University of Tokyo); Shigeo Maruyama (The University of Tokyo);
09:30 Quasicrystals in Twisted 2D Systems
Invited
Mikito Koshino (Osaka University);
09:45 Optical Interfaces with a Magnetic Surface Conductivity
Invited
Yuhan Zhong (Zhejiang University); Tong Cai (Zhejiang University); Tony Low (University of Minnesota); Hongsheng Chen (Zhejiang University); Xiao Lin (Zhejiang University);
10:00 Probing the Emerging Physics in van der Waals Materials Using Metasurfaces
Invited
Sihan Zhao (Zhejiang University);
10:20 Electronic Correlation and Excitons in 2D Moiré Superlattices
Yanhai Tang (Zhejiang University);
10:40 Coffee Break
Session 1A7
SC2: Light-matter Interaction and Optical Field Manipulation in Metasurfaces and Metamaterials 1
Monday AM, April 25, 2022
Room 7 - Mingsi Hall
Organized by Lin Chen, Zhang-Kai Zhou
Chaired by Lin Chen, Zhang-Kai Zhou

08:00 Coupling Theory of Quasinormal Modes for Coupled Invited Lossy and Dispersive Plasmonic Nanoresonators
Haitao Liu (Nankai University); Can Tao (Nankai University); Junda Zhu (Nankai University); Ying Zhong (Tianjin University);
08:20 Quantum Photonic Sources Based on Nanophotonic Structures
Xi-Feng Ren (University of Science and Technology of China);
08:35 All-dielectric Nanoresonators of Ultrahigh Near-field Enhancements and Their Couplings with Quantum Emitters
Zhong-Jian Yang (Central South University);
08:40 Light Manipulation by Jones Matrix Metasurface with Different Degrees of Freedom
Yanjuan Bao (Jinan University);
08:55 Metasurface-based Quantum Source
Lin Li (East China Normal University);
09:10 Scattering Enhancement of Light in Refractive-index Near-zero Environments
Chan Wang (Zhejiang University); Chao Qian (Zhejiang University); Tong Cai (Zhejiang University); Hao Hu (Nanyang Technological University); Lian Shen (Zhejiang University); Zuojia Wang (Zhejiang University); Huaping Wang (Zhejiang University); Zhuii Xu (Zhejiang University); Baile Zhang (Nanyang Technological University); Hongsheng Chen (Zhejiang University); Xiaoli Lin (Zhejiang University);
09:25 Alkali Metals for Plasmonics
Lin Zhu (Nanjing University);
09:40 Circular Metagratings for Optical Field Manipulation
Fengjun Li (Jinan University); Xiangping Li (Jinan University); Zi-Lan Deng (Jinan University);
09:55 Anapole Modes Generated with Plasmonic Nanoparticle Clusters
Ying Yu (Taiyuan University of Technology); Peng Yue (Taiyuan University of Technology); Shao-Ding Liu (Taiyuan University of Technology);
10:10 Subwavelength Generation and Manipulation of Structured Light Fields
Shenhe Fu (Jinan University);

Session 1A8a
SC3: Optical Sensing and Detection 1
Monday AM, April 25, 2022
Room 8 - Minghou Hall
Organized by Jiang Wu
Chaired by Jun Wang

08:00 Optical Sensors Based on Quantum Dots Nanocomposite Film
Xiaobo Xing (South China Normal University); Pengfei Xia (South China Normal University); Zongbao Li (Tongren University); Haigan Wang (Guangdong Industry Technical College); Jianlin Huang (Guangzhou Institute of Measurement and Testing Technology);
08:15 Bionic Intelligent Photodetectors Based on TMDs
Wen Du (University of Electronic Science and Technology of China); Caihong Li (University of Electronic Science and Technology of China); Jiang Wu (University of Electronic Science & Technology of China);
08:30 Innovative Path of Antimonide-based Gap-engineered KeynoteType-II Superlattices Image
Manijeh Razeghi (Northeastern University);

Session 1A8b
SC3: Optoelectronic Sensors for Chemical and Biological Applications 1
Monday AM, April 25, 2022
Room 8 - Minghou Hall
Organized by Xiaoyu Cheng, Fan Wang
Chaired by Fan Wang, Xiaoyu Cheng

09:00 Rotational Dynamics of Cargo during Clathrin-mediated Invited Endocytosis Revealed by Multi-dimensional Single Particle Tracking
Ning Fang (Xiamen University);
09:15 Aptamer-based Optical Manipulation of Protein Subcellular Localization in Cells
Sitao Xie (Hunan University); Yulin Du (Hunan University); Ya Zhang (Hunan University); Zhimin Wang (Hunan University); Dailiaang Zhang (Hunan University); Lei He (Hunan University); Liping Qiu (Hunan University); Jianhui Jiang (Hunan University); Weihong Tan (Hunan University);
09:30 Paper-based Microfluidic Sensor Chip for the Detection Invited of Food Contaminants
Rui Wang (Tianjin University of Science and Technology); Qian Wang (Tianjin University of Science and Technology); Yang Lu (Tianjin University of Science and Technology);
09:45 The Nonlinearity of Lanthnoid Ions Doped Nanocrystals Invited for Nanoscale Biomedical Sensing
Fan Wang (University of Technology Sydney);
Session 1A9
SC3: Long-wavelength Integrated Photonic Devices and Applications

Monday AM, April 25, 2022
Room 9 - Tianren Hall
Organized by Zhenzhou Cheng, Yi Zou
Chaired by Zhenzhou Cheng, Yi Zou

08:00 Mid-infrared Chemical Sensing with the Topological Protection
Binbin Weng (University of Oklahoma); Kiernan E. Arledge (University of Oklahoma); Bruno Uchoa (University of Oklahoma); Yi Zou (ShanghaiTech University);

08:15 Mid-infrared Germanium Photonic Devices and Beyond
Tinghui Xiao (The University of Tokyo); Zhenzhou Cheng (Tianjin University); Keisuke Goda (University of California);

08:30 Mid-infrared Microstructured Optical Fibers and Their Applications
Tonglei Cheng (Northeastern University); Fang Wang (Northeastern University); Xue Zhou (Northeastern University); Xucnan Zhang (Northeastern University); Xin Yan (Northeastern University);

08:50 Mid-wavelength/Long-wavelength Infrared Photodetectors Grown on Si or Ge Substrate
Baidu Chen (Shanghai Tech University);

09:10 Infrared Integrated Chalcogenide Nonlinear Photonics
Bin Zhang (Sun Yat-sen University);

09:30 Group IV Integrated Photonics beyond Telecom Region
Li Shen (Huazhong University of Science and Technology); Anna C. Peacock (University of Southampton);

09:50 Mid-infrared Single-mode Novel Chalcogenide Glass Fiber for High Power Laser Delivery
Xuan Wang (Ningbo University); Xiang Wang (Ningbo University); Xiaolin Liang (Ningbo University); Zhengming Zhao (Ningbo University); Rongping Wang (Ningbo University); Qihua Nie (Ningbo University);

Session 1A10a
SC2: Metalens and Random-structured Metamaterials

Monday AM, April 25, 2022
Room 10 - Tianhong Hall
Organized by Yaoguang Ma
Chaired by Yaoguang Ma

08:00 Imaging Based on Metasurfaces
Shu-Ming Wang (Nanjing University);

08:15 Hierarchical-morphology Structure for Daytime Radiative Cooling Metamaterial
Sjie Pian (Zhejiang University); Shaoning Zeng (Huazhong University of Science and Technology); Guangming Tao (Huazhong University of Science and Technology); Yaoguang Ma (Zhejiang University);

08:30 Multi-optical Effects in Two-dimensional Photonic Crystals of Metallic Pairs
Qilin Duan (Xiamen University); Ying Chen (Huaqiao University); Huanyang Chen (Xiamen University);

08:45 Constructing Achromatic Polarization-dependent Bilateral Metalenses with Stereo-metastructures
Xiang Xiong (Nanjing University); Zhenghan Wang (Nanjing University); Yajun Gao (Nanjing University); Ru-Wen Peng (Nanjing University); Mu Wang (Nanjing University);

09:00 Steering the Optical Loss of Random Plasmonic Nanostructures
Lin Zhou (Nanjing University);

09:15 Metamaterial Hourglass Lens Design for Enhanced Magnetic Shielding
Dyuti Sengupta (Oregon State University); Andreas Weisshaar (Oregon State University);

09:25 Achromatic Metalens in the Visible Wavelength
Qikai Chen (Zhejiang University); Yitian Liu (Zhejiang University); Yaoguang Ma (Zhejiang University);

09:40 Chromatic Aberration Correction for Large-diameter Metalenses in the Long-wave Infrared Region
Yitian Liu (Zhejiang University); Qikai Chen (Zhejiang University); Yaoguang Ma (Zhejiang University);

Session 1A10b
SC3: Integrated Quantum Photonics 1

Monday AM, April 25, 2022
Room 10 - Tianhong Hall
Organized by Chaoyuan Jin, Feng Liu
Chaired by Chaoyuan Jin, Feng Liu

09:00 Quantum Weak Measurement
Ru-Wen Peng (Nanjing University); Xiange Wang (Zhejiang University); Keisuke Goda (University of Tokyo);

09:15 Mid-infrared Chalcogenide Nonlinear Photonics and Beyond
Yaoguang Ma (Zhejiang University); Rui Gao (University of Utah); Kan Li (Zhejiang University of Technology);

09:30 Quantum Metrology
Yitian Liu (Zhejiang University); Shu-Ming Wang (Nanjing University); Mu Wang (Nanjing University);

09:45 Quantum Metrology
Yitian Liu (Zhejiang University); Shu-Ming Wang (Nanjing University); Mu Wang (Nanjing University);
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Topic</th>
<th>Authors/Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00</td>
<td>Invited</td>
<td>Deterministic Single-photon Optical Nonlinearity Enabled by a Quantum Dot Spin</td>
<td>Shao Sun (University of Colorado Boulder);</td>
</tr>
<tr>
<td>09:15</td>
<td>Invited</td>
<td>Quantum Photonic Sources with Silicon Chip</td>
<td>Xi-Feng Ren (University of Science and Technology of China);</td>
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<tr>
<td>09:35</td>
<td>Invited</td>
<td>Generation and Manipulation of Photonic Quantum States on Silicon Quantum Photonic Circuits</td>
<td>Wei Zhang (Tsinghua University);</td>
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<tr>
<td>08:40</td>
<td>SC2: Curved Space and Transformation Optics</td>
<td>Monday AM, April 25, 2022</td>
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<tr>
<td>08:00</td>
<td></td>
<td>Vortex Bound States by Emulating Gauge Fields of Topological Cosmic Strings</td>
<td>Chong Sheng (Nanjing University); Yao Wang (Shanghai Jiao Tong University); S. N. Zhu (Nanjing University); Xian-Min Jin (Shanghai Jiao Tong University); H. Liu (Nanjing University);</td>
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<tr>
<td>08:15</td>
<td></td>
<td>Light Rays and Waves on Curved Surfaces</td>
<td>Lin Xu (Anhui University);</td>
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<tr>
<td>08:30</td>
<td></td>
<td>Simulating a 2-D Wormhole and Its Giant Tidal Force with a Curved Waveguide</td>
<td>Ranqiu He (Nanjing University);</td>
</tr>
<tr>
<td>08:45</td>
<td></td>
<td>Multiple Drains Imaging in Generalized Maxwell’s Fish-eye Lenses</td>
<td>Yuhang Yin (Xiamen University); Jing Li (Xiamen University); Huangyang Chen (Xiamen University);</td>
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<tr>
<td>08:55</td>
<td></td>
<td>Controlling Wave Phases in Curved Space for Light</td>
<td>Yangjie Liu (Hubei University); B. Vial (Queen Mary University of London); Zhu Mao (Hubei University); Kuang Peng (Hubei University); Bin Zhou (Hubei University);</td>
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<tr>
<td>09:10</td>
<td></td>
<td>Pseudo-Hermitian Systems Constructed by Transformation Optics with Robustly Balanced Loss and Gain</td>
<td>Jie Luo (Soochow University); Liyou Luo (Nanjing University); Hong Chen Chu (Nanjing University); Yun Lai (Nanjing University);</td>
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<tr>
<td>09:25</td>
<td></td>
<td>The Geometric Optical Characteristics of Morse Lens</td>
<td>Shuwen Xue (Xiamen University); Huanyang Chen (Xiamen University);</td>
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<tr>
<td>09:40</td>
<td></td>
<td>Manipulating Local Photonic Density of States via Hyperbolic Metasurfaces</td>
<td>Songsong Li (Soochow University); Lei Gao (Soochow University); Yadong Xu (Soochow University);</td>
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<tr>
<td>09:55</td>
<td></td>
<td>A Transformation Optics Approach to d-parameter in Plasmonic Nanostructure</td>
<td>Fan Yang (University of California); Kun Ding (Purdue University); John B. Pendry (Imperial College London);</td>
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<tr>
<td>10:10</td>
<td>Invited</td>
<td>Nano-optical Studies of Exciton Polaritons in Van Der Waals Semiconductors</td>
<td>Zhe Fei (Iowa State University);</td>
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<tr>
<td>10:25</td>
<td>Invited</td>
<td>Nano-polaritonics in Graphene/hBN Heterostructures</td>
<td>Guangxin Ni (Florida State University);</td>
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<tr>
<td>08:00</td>
<td>SC5: Machine Learning for Electromagnetic Inverse Problems</td>
<td>Monday AM, April 25, 2022</td>
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<td>08:00</td>
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<td>Advances in Artificial Neural Network Techniques for Inverse Modeling of Microwave Components</td>
<td>Jing Jin (Tianjin University); Qi-Jun Zhang (Carleton University);</td>
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<tr>
<td>08:30</td>
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<td>Machine-learning-accelerated Calibration of Electromagnetic Grain Monitoring Systems</td>
<td>Keeley Edwards (University of Manitoba); Eungjoo Kim (University of Manitoba); Joe LoVetri (University of Manitoba); Ian Jeffrey (University of Manitoba); Colin Gilmore (University of Manitoba);</td>
</tr>
<tr>
<td>08:40</td>
<td></td>
<td>Scalable Semiconductor Classical and Quantum Photonic Systems</td>
<td>Jelena Vuckovic (Stanford University);</td>
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<tr>
<td>09:10</td>
<td></td>
<td>Latest Advances in Learning-assisted Information Retrieval from Microwave Observations in Biomedical Inverse Scattering and Environmental Sensing</td>
<td>Mahita Moghaddam (University of Southern California);</td>
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<tr>
<td>09:40</td>
<td></td>
<td>A Tailored Semi-physics-driven Artificial Neural Network for Electromagnetic Full-wave Inversion</td>
<td>Feng Han (Xiamen University); Yanjin Chen (Xiamen University); Miao Zhong (Xiamen University); Zhen Guan (Xiamen University);</td>
</tr>
</tbody>
</table>
09:55 Focus Shaping Using Untrained Artificial Neural Network
Ze-Yang Chen (Sun Yat-sen University); Zhan Wei (Zhejiang University); Rui Chen (Sun Yat-Sen University);

Session 1A13
SC5: Electromagnetic/Acoustic and Machine Learning Techniques in Oil & Gas Exploration: Modeling, Inversion, and Interpretations I

Monday AM, April 25, 2022
Room 13 - Mingdu Hall 3
Organized by Decheng Hong, Jiefu Chen
Chaired by Guozhong Gao, Decheng Hong

08:00 A Novel Intelligent Inversion Method for DC Laterolog Measurements in Deviated Formation
Yizhi Wu (China University of Petroleum (East China)); Yiren Fan (China University of Petroleum (East China)); Pan Zhang (China University of Petroleum (East China)); Liangyan Cai (China University of Petroleum (East China));

08:10 Solving Bubbly Flow Inverse Problem of an Electromagnetic Measurement Device
Yu Ke Lim (National University of Singapore); Cheng-Gang Xie (Schlumberger Oilfield (S) Pte Ltd); Xudong Chen (National University of Singapore);

08:20 Investigation of Formation Structure Effects on Electromagnetic LWD Tools Using 2.5D Finite Difference Method
Zhenguan Wu (Southwest Petroleum University); Jun Zhao (Southwest Petroleum University); Yiren Fan (China University of Petroleum (East China)); Lei Wang (China University of Petroleum (East China)); Qiang Lai (PetroChina Southwest Oil and Gas Company);

08:35 2D Pixel Based Inversion of Ultra-deep Electromagnetic Logging Data for Look-ahead Applications
Li Yuan (University of Houston); Hamming Wang (Chevron Energy Technology Company); Jiefu Chen (University of Houston);

08:45 Present and Future of Borehole Electromagnetic Measurements and Their Interpretation
Carlos Torres-Verdin (The University of Texas at Austin);

09:10 Looking for New LWD Tools That Can Look Farther Ahead
Teruhiko Hagwara (Aramco Service Company);

09:35 Dielectric Dispersion Logging: The Why, the How and Keynote Open Challenges
Laurent Mosse (Schlumberger-Doll Research);

Session 1A14
SC2&SC4: 5G/B5G Enabling Antenna Systems and Associated Testing Methodology

Monday AM, April 25, 2022
Room 14 - Mingdu Hall 5
Organized by Xiaoming Chen, Hui Li
Chaired by Xiaoming Chen, Hui Li

08:00 Mutual Coupling Reduction for Base Station Arrays
Xiaoming Chen (Xi’an Jiaotong University); Yiran Da (Xi’an Jiaotong University);

08:15 Yet Another Defected Ground Structure for Decoupling of Microstrip Antennas
Bingyi Qian (Xi’an Jiaotong University); Xiaoming Chen (Xi’an Jiaotong University); Ahmed A. Kishk (Concordia University);

08:30 A SIW Leaky-wave Antenna Featuring Wide Beam-scan Range and Rapid Scanning Rate for 5G Applications
Qinwei Ji (Shenzhen University); Long Zhang (Shenzhen University); Jinfeng Zhang (Shenzhen University); Xi-anting Xie (Shenzhen University); Mingbing Wang (Shenzhen University); Yejuan He (Shenzhen University);

08:45 Shifted Base Mode Character of Array Antenna with Failed Elements
Zhuping Li (Beijing University of Aeronautics and Astronautics); Peng Huo (Beijing University of Aeronautics and Astronautics);

09:00 Wideband Direction-of-Arrival Estimation and Phase Noise Compensation
Rui Lu (Xi’an Jiaotong University); Jiali Kang (Xi’an Jiaotong University); Xiaoming Chen (Xi’an Jiaotong University);

09:15 A Multi-feed Arrangement Algorithm for Electrically Small Antennas of Best Performance
Jiang Xiong (University of Electronic Science and Technology of China); Weiquan Zhang (Tsinghua University);

09:30 Wide Beam Scanning Antenna Array and Near Field Testing System for 5G Millimeter-wave Communications
Yuqi He (Xidian University); Mengkai Xi (Xidian University); Sihan Lv (Xidian University); Ge Zhao (Xidian University); Luyu Zhao (Xidian University);

09:45 A Novel Circularly Polarized Filtering Patch Antenna
Zhi Jing Xiao (South China University of Technology); Jia Sheng Lin (South China University of Technology);

10:00 A Methodology for Designing Un-correlated MIMO Antennas
Hui Li (Dalian University of Technology); Yunze Diao (Dalian University of Technology);
**Session 1A15a**  
**SC1: AI/ML for Inversion, Imaging and Design/Optimization**

**Monday AM, April 25, 2022**  
**Room 15 - Mingdu Hall 6**

Organized by Qiang Ren, Jiefu Chen  
Chaired by Qiang Ren, Jiefu Chen

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08:00 Wideband Schiffman Phase Shifters Designed with Deep Neural Networks  
**Sensong An** (University of Massachusetts Lowell); **Bowen Zheng** (University of Massachusetts Lowell); **Hong Tang** (University of Massachusetts Lowell); **Hang Li** (University of Massachusetts Lowell); **Li Zhou** (University of Massachusetts Lowell); **Yunai Dong** (University of Massachusetts Lowell); **Mohammad Haerinia** (University of Massachusetts Lowell); **Hualiang Zhang** (University of Massachusetts Lowell); **Heming Yao** (Tsinghua University); **Zekui Jia** (Tsinghua University); **Fan Yang** (Beihang University); **Miaomiao Guo** (Beihang University); **Aria Abubakar** (Schlumberger Houston Formation Evaluation);

08:10 An Efficient Self-supervised Learning Approach for Enhancing the Undetermined Inversion of Multi-frequency Data  
**Yuchen Jin** (University of Houston); **Wengi Hu** (Advanced Geophysical Physical Technology); **Xuqing Wu** (University of Houston); **Jiefu Chen** (University of Houston);

08:20 Physics-embedded Deep Learning for Electromagnetic Invited Modeling and Inversion  
**Maokun Li** (Tsinghua University); **Rui Guo** (Tsinghua University); **Tao Shan** (Tsinghua University); **Ke Zhang** (Tsinghua University); **Xiaoqian Song** (Tsinghua University); **Liangshuai Guo** (Tsinghua University); **Zekui Jia** (Tsinghua University); **Zichao Lin** (Tsinghua University); **Hongyu Zhou** (Tsinghua University); **Heming Yao** (Hong Kong University); **Fan Yang** (Tsinghua University); **Shenheng Xu** (Tsinghua University); **Aria Abubakar** (Schlumberger Houston Formation Evaluation);

08:40 Inversion of Sophisticated Thermal Conductivity via Deep Learning  
**Yimeng Wang** (Beihang University); **Nianru Wang** (Beihang University); **Qiang Ren** (Beihang University);

08:55 Fast 3-D Microwave Imaging of Arbitrary Anisotropic Objects Based on Residual Network Enhanced by Variational Born Iterative Method  
**Junjie Fei** (Xiamen University); **Yanjun Chen** (Xiamen University); **Miao Zhong** (Xiamen University); **Feng Han** (Xiamen University); **Weng Cho Chew** (Purdue University);

09:10 Deep Learning for the Design of Hybrid Guided Mode Resonance Optical Filters Using Forward Neural Network Combined with Matching Method  
**Ruoyu Shen** (Fudan University); **Rong He** (Fudan University); **Junpeng Guo** (University of Alabama in Huntsville);

09:25 Effects of Attachment Structure of Feed Source on Radiated Field of Conical Antenna  
**Xiang-Qin Zhu** (Northwest Institute of Nuclear Technology); **Wei Chen** (Northwest Institute of Nuclear Technology); **Gang Wu** (Northwest Institute of Nuclear Technology);

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**Session 1A15b**  
**SC1: The Electrodynamics-quantum Mechanics and Numerical Modeling 1**

**Monday AM, April 25, 2022**  
**Room 15 - Mingdu Hall 6**

Organized by Jianwei You, Zheng-Yu Huang  
Chaired by Jianwei You

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09:50 Field-based Description of the Coupling between a Transmon Qubit and a Transmission Line Geometry  
**Thomas E. Roth** (Purdue University); **Weng Cho Chew** (Purdue University);

10:00 Modelling Studies of Magnetostatic Modes in Hybrid MW-YIG Structures  
**Maksut Maksutojia** (Gebze Technical University); **Alberto Ghirri** (Istituto Nanoscienze-CNR); **S. Çiğdem Yorulmaz** (Gebze Technical University); **Fikret Yildiz** (Gebze Technical University); **Marco Afronnte** (Università di Modena e Reggio Emilia); **Bulat Rameev** (Gebze Technical University);

10:10 Hybrid High-bandwidth Microwave-magnon Systems for Quantum Communications and Sensing  
**Morteza Vafadar Yengejeh** (Gebze Technical University); **Fikret Yildiz** (Gebze Technical University); **S. Çiğdem Yorulmaz** (Gebze Technical University); **Bulat Rameev** (Gebze Technical University);

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**Session 1A16**  
**SC1: Analyzing, Modelling and Suppression of Complex Electromagnetic Interference**

**Monday AM, April 25, 2022**  
**Room 16 - Mingdu Hall 7**

Organized by Yan Li, Da Yi  
Chaired by Yan Li, Da Yi

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08:00 A Simple Method for Calculating the Sensitivity of Near-field Scanning System Based on Transfer Function  
**Xin He** (Shanghai Jiao Tong University); **Xiao-Chun Li** (Shanghai Jiao Tong University); **Yu-Xu Liu** (Shanghai Jiao Tong University); **Jun-Fa Mao** (Shanghai Jiao Tong University);
08:15 A Circuit Model for Electromagnetic Suppressing Spurious Noise of Synchronous DC-DC Buck Converter
Xinke Li (Zhejiang University); Kaiming Wang (Zhejiang University—University of Illinois at Urbana-Champaign Institute); Er Ping Li (Zhejiang University — UIUC Institute);

08:30 Recent Advances in Novel Training Approaches for Microwave Parametric Modeling Using Padé via Lanczos and EM Sensitivities
Wei Liu (Tianjin University); Jianan Zhang (Carleton University); Peng Feng (Tianjin University); Qijun Zhang (Carleton University);

08:45 Near-field Interference Suppression Techniques for Miniaturized Microwave Circuits and Compact MIMO Antenna Arrays
Da Yi (Chongqing University); Ming-Chun Tang (Chongqing University);

09:00 Transmission Line Model of Field-to-wire Coupling with Shielded TWP/Twinax Cables with line Apertures
Oussama Gassab (Zhejiang University); Jingzuo Li (Zhejiang University); Dongdong Wang (Ship Development and Design Center); Fang He (Zhejiang University); Ruiyao Chen (Shanghai Aerospace Electronic Technology Institute); Wen-Yan Yin (Zhejiang University);

09:15 Signal Integrity of Neuromorphic Spiking Signals on Memristor Crossbars
Can Wang (Zhejiang University/University of Illinois at Urbana-Champaign Institute); Zhaoyang Feng (Zhejiang University); Shurun Tan (Zhejiang University/University of Illinois at Urbana-Champaign Institute); Tuomin Tao (Zhejiang University); En-Xiao Liu (A*STAR Institute of High Performance Computing); Shao Ying Huang (Singapore University of Technology and Design); Er Ping Li (Zhejiang University — UIUC Institute);

09:30 A Novel Miniaturized Dual-band Frequency Selective Surface
Shaojie Xu (China Jiliang University); Yan Li (China Jiliang University); Liyan Fang (China Jiliang University); Ning Jin (China Jiliang University); Erping Li (Zhejiang University — UIUC Institute);

09:45 Electromagnetic Coupling between Power Distribution Network and On-chip Inductors in Package
Bing-Heng Li (Zhejiang University); Yan Li (China Jiliang University); Er Ping Li (Zhejiang University — UIUC Institute);

10:00 Study on Field Uniformity of Reverberation Chamber in Finite Space
Qinhao Sun (Zhejiang University — University of Illinois at Urbana-Champaign Institute, ZJUI); Er Ping Li (Zhejiang University — UIUC Institute);

Session 1P1
SC3: Crystalline Silicon Photovoltaics
Monday PM, April 25, 2022
Room 1 - Midtown Hall
Organized by Wensheng Yan, Liu Yang
Chaired by Wensheng Yan, Liu Yang

13:00 Conductive Passivating Contact Silicon Solar Cells
Invited Based on Organic Passivation Schemes
Jun Yan (Hebei University); Caili Zhang (Hebei University); Lu Wan (Hebei University); Shao Yue (Shanghai Aerospace Engineering College); Peng Feng (Shanghai Aerospace Engineering College);

13:20 Effect of Atomic Configuration on Band Gap Behavior in CH₃NH₂SnₓPb₁₋ₓI₃ Perovskite
Li Guan (Hebei University); Xiaofang Xu (Hebei University); Shichuang Han (Hebei University);

13:35 Defect Engineering in N-type Cz Silicon Wafers
Chuan Zhou (Institute of Electrical Engineering, Chinese Academy of Sciences); Lei Zhao (Institute of Electrical Engineering, Chinese Academy of Sciences); Wenjing Wang (Institute of Electrical Engineering, Chinese Academy of Sciences);

13:50 Energy Tracing and Device Simulation of Photovoltaic Cells
Yidan An (Soochow University); Tianshu Ma (Soochow University); Xiaofang Li (Soochow University);

14:10 Efficiency Addressing of the Thinned Crystalline Silicon Solar Cells towards Next PV Phase
Wensheng Yan (Hangzhou Dianzi University);

14:25 Device Engineering towards High-performance Large-area Organic Solar Cells
Yue Zeng (Hangzhou Dianzi University); Lingfeng Chen (Hangzhou Dianzi University); Jintao Zhou (Hangzhou Dianzi University); Wensheng Yan (Hangzhou Dianzi University);

14:40 Efficient Crystalline Silicon Solar Cells with Dopant-free Carrier-selective Heterocontacts
Jian He (Sun Yat-sen University); Pingqi Gao (Sun Yat-sen University);

15:00 Recent Progress in High-efficiency TOPCon Solar Cells
Invited Conducted by PECVD Technical Route
Jichun Ye (Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences); Yuheng Zeng (Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences); Haizhen Yang (Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences); Baogang Yan (Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences);

16:00 Flexible Crystalline Silicon Heterojunction Solar Cells with Dopant-free Carrier-selective Contacts
Liu Yang (Zhejiang University); Nan Lu (Zhejiang University); Qiyun Lei (Zhejiang University);
16:15 Stability and Carrier Selectivity Studies of Metal Oxide-based Passivated Contact Crystalline Silicon Solar Cells
Guandin Du (Shanghai Advanced Research Institute, Chinese Academy of Sciences); Le Li (Shanghai Advanced Research Institute, Chinese Academy of Sciences); Linfeng Lu (Shanghai Advanced Research Institute, Chinese Academy of Sciences); Shanting Zhang (Shanghai Advanced Research Institute, Chinese Academy of Sciences); Yinyin Lin (Shanghai Advanced Research Institute, Chinese Academy of Sciences); Dongdong Li (Shanghai Advanced Research Institute, Chinese Academy of Sciences);

16:35 Broadband SiNW Design for Application in Solar Cells
Invited
Zhongliang Gao (North China Electric Power University); Qi Geng (North China Electric Power University); Ting Gao (North China Electric Power University); Yingfeng Li (North China Electric Power University); Lei Chen (North China Electric Power University); Meicheng Li (North China Electric Power University);

16:55 Potential Applications of Self-cleaning and Radiative Cooling Technology for Solar Cell
Invited
Xinru Tan (China Three Gorges University); Yiteng Tu (China Three Gorges University); Lingyun Wu (China Three Gorges University); Yunkuan Wang (China Three Gorges University);

17:10 Interfaces in Perovskite Solar Cells
Liang Chu (University of Posts and Telecommunications);

17:25 Printable Materials for Printed Perovskite Solar Cells
Invited
Zhi-Cheng Zhong (Hubei University of Arts and Science); Jiabao Cheng (Hubei University of Arts and Science); Chuanjia Jiao (Hubei University of Arts and Science); Wangnan Li (Hubei University of Arts and Science);

17:40 A Facile Green Solvent Engineering for Up-scaling Perovskite Solar Cellmodules
Invited
Wangnan Li (Hubei University of Arts and Science); Gaoyuan Yang (Hubei University of Arts and Science); Guangben Yang (Hubei University of Arts and Science); Jingyang Wang (Hubei University of Arts and Science);

17:55 Ultrasonic Spray-coating of Large-scale TiO₂ Compact Layer for Efficient Perovskite Solar Cells
Invited
Peng Zhou (Wuhan University of Technology); Wangnan Li (Wuhan University of Technology); Tianhui Li (Wuhan University of Technology); Tongle Bu (Wuhan University of Technology); Fuzhi Huang (Wuhan University of Technology);

18:10 Hydrogenation Engineering in Crystalline Silicon Solar Invited Cells
Lihui Song (Hangzhou Dianzi University);

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Session 1P2a
SC3: Reconfigurable Photonic Circuits for Computing and Switching 2

Monday PM, April 25, 2022
Room 2 - Shixin Hall 1
Organized by Huan Li, Nathan Youngblood, Ming Zhang
Chaired by Ming Zhang, Huan Li

13:00 Chalcogenide Phase-change Materials for Photonic Memories and Computing
Invited
Zengguang Cheng (Fudan University); Harish Bhaskaran (University of Oxford);

13:20 Integrated Optical Switches Realized on Silicon-Silicon Nitride Multi-layer Waveguide Platform
Invited
Lianjie Zhou (Shanghai Jiao Tong University); Liangjun Lu (Shanghai Jiao Tong University); Wei Gao (Shanghai Jiao Tong University); Xin Li (Shanghai Jiao Tong University); Jianping Chen (Shanghai Jiao Tong University);

Invited
Hui Zhang (Nanyang Technological University); Ai Qun Liu (Nanyang Technological University);

13:55 Phase-change Photonic Neuromorphic Processing
Invited
Wolfram Pernice (University of Munster);

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Session 1P2b
SC3: Artificial Intelligence Optics

Monday PM, April 25, 2022
Room 2 - Shixin Hall 1
Organized by Jianji Dong, Junbo Feng
Chaired by Qiming Zhang

14:15 Artificial Intelligence Enabled Inverse Design for Invited Nanophotonics
Qiming Zhang (University of Shanghai for Science and Technology); Min Gu (University of Shanghai for Science and Technology);

14:35 Optical Logic Gate Operations with Single-pixel Imaging
Invited
Shuming Jiao (Peng Cheng Laboratory); Jun Peng (Shenzhen University);

14:45 Photonic Spiking Neural Network: Theory, Devices, and Algorithms
Invited
Shui Ying Xiang (Xidian University); Ziwei Song (Xidian University); Yunan Han (Xidian University); Yahu Zhang (Xidian University); Xingxing Guo (Xidian University); Yue Hao (Xidian University);
Session 1P2c
SC3: X-ray Computed Tomography and Advance Manufacturing
Monday PM, April 25, 2022
Room 2 - Shixin Hall 1
Organized by Wenjuan Sun, Yushu Shi
Chaired by Wenjuan Sun

16:00 The Recent Development of X-ray Computed Tomography for Advanced Manufacturing at the National Physical Laboratory
Wenjuan Sun (National Physical Laboratory);

16:15 Fast Hyperparameter Calibration of Sparsity Enforcing Penalties in Total Generalised Variation Penalised Reconstruction Methods for XCT Using a Planted Virtual Reference Image
Stephanie Chretien (Universite Lyon 2); Camille Giampiccolo (Universite Bourgogne-Franche-Comte); Wenjuan Sun (National Physical Laboratory); Jessica Tulbott (National Physical Laboratory);

16:30 Application of Industrial CT Technology in Additive Manufacturing Field
Jack Zuo (YXLON (Beijing) X-ray Equipment Trading Co., Ltd.); Tao Sun (YXLON (Beijing) X-ray Equipment Trading Co., Ltd.);

16:45 Surface Texture Traceability for XCT
Claudiu L. Giusca (Cranfield University);

17:00 Metrology Extension for X-ray Microscopy
Dingzhong Han (Carl Zeiss (Shanghai) Co., Ltd.);

17:20 The Art of the Iterative XCT Image Reconstruction
Manuchehr Soleimani (University of Bath);

17:35 The Application of Watershed Surface Determination Algorithm in X-ray Computed Tomography for Dimensional Metrology
Xiuyuan Yang (Cranfield University); Wenjuan Sun (National Physical Laboratory); Claudiu L. Giusca (Cranfield University);

17:45 Design and Application of a Novel X-ray 3D Microscope
Ying Xu (Sanging Precision Instruments Co., Ltd.);

Session 1P3a
SC3&SC4: Industry Forum in Photonics, Electronics and Opto-electronics
Monday PM, April 25, 2022
Room 3 - Shixin Hall 2
Organized by Xiaojun Wu, Xinjian Zhou
Chaired by Xiaojun Wu, Sailing He

13:00 Metasurface for Multidimensional Light Sensing
Invited
Yuanma Yang (Tsinghua University);

13:20 Unlocking the Full Potential of Thin-metal-film-based Optoelectronics with Doped Silver
Invited
Cheng Zhang (Huazhong University of Science and Technology); L. Jay Guo (The University of Michigan);

13:40 Ultrasensing Optical Spectroscopy of Plasmonic Nanocavity
Keynote
Hongxing Xu (Wuhan University);

14:10 Near-field Microwave Microscopy: Application to Non-destructive Testing of Integrated Circuit
Invited
Hao Xu (National Institute of Metrology); Wen Guo (National Institute of Metrology); Weijun Liang (National Institute of Metrology); Qialai Gao (National Institute of Metrology);

14:25 0.34THz Direct Modulation Communication System
Invited
Yazin Zhang (University of Electronic Science and Technology of China);

14:45 Silicon Nitride PICs for a Broad Application Range
Invited
Arne Leinse (LioniX International BV); René Heideman (LioniX International); Tom Horner (LioniX International); Douwe Geuzebroek (LioniX International); Ronald Dekker (LioniX International BV); Erik Schreuder (LioniX International);

15:00 Recent Advances in Hollow-core Optical Fibre Technology
Invited
Eric Numkam Fokoua (University of Southampton); Gregory T. Jasion (University of Southampton); Thomas D. Bradley (University of Southampton); He-sham Sakr (University of Southampton); Yong Chen (University of Southampton); Ian A. Davidson (University of Southampton); Kerrianne Harington (University of Southampton); Austin Taranta (University of Southampton); Gianluca Guerra (University of Southampton); John R. Hayes (University of Southampton); David J. Richardson (University of Southampton);

15:15 Transforming Medical Needles with Light and Sound
Invited
Wenfeng Xia (King’s College London);
16:00 Terahertz Semiconductor Dual-comb Spectrometers
Invited
Hua Li (Shanghai Institute of Microsystem & Information Technology, Chinese Academy of Sciences); Ziping Li (Shanghai Institute of Microsystem & Information Technology, Chinese Academy of Sciences); Yiran Zhao (Shanghai Institute of Microsystem & Information Technology, Chinese Academy of Sciences); Kang Zhou (Shanghai Institute of Microsystem & Information Technology, Chinese Academy of Sciences); J. C. Cao (Shanghai Institute of Microsystem & Information Technology, Chinese Academy of Sciences);

Session 1P3b
SC2&SC3: Organic and Hybrid Optoelectronics

Monday PM, April 25, 2022
Room 3 - Shixin Hall 2
Organized by Yuyi Feng, Dawei Di
Chaired by Yuyi Feng, Dawei Di

16:20 Structure Design and Stability Study of Perovskite Solar Invited Cells
Peng Cui (North China Electric Power University); Jun Ji (North China Electric Power University); Hao Huang (North China Electric Power University); Xinzin Wang (North China Electric Power University); Luyao Yan (North China Electric Power University); Haoran Jiang (North China Electric Power University); Xin Liu (North China Electric Power University); Mengyu Wang (North China Electric Power University); Huiying Fan (North China Electric Power University); Longqing Cong (South China University of Science and Technology); Yan Lai (Nanjing University); Jie Luo (Souochow University);

16:40 Device Physics and Material Chemistry of Quantum-dot Invited Light-emitting Diodos
Yizheng Jin (University of Surrey);

17:00 Real-time Observation of Ion Migration in Perovskite Invited and its Influence on Device Stability
Cheng Li (Xiamen University);

17:20 Perovskite Ion Migration and its Impact on Device Performance and Characterisation
Dongchen Lan (Zhejiang University);

17:40 A Rapid and Robust Light-and-solution-triggered in-situ Invited Crafting of Organic Passivating Membrane over Metal Halide Perovskites for Markedly Improved Stability and Photocatalysis
Mengye Wang (Sun Yat-sen University);

13:00 High-rate Beam Scanning Antenna Based on Coupled Invited Resonators
Qingfeng Zhang (South University of Science and Technology of China); Hongxin Zhou (South University of Science and Technology of China);

13:20 Optically and Voltage Reconfigurable Metamaterials
Kanglong Chen (Beihang University); Cun-Jun Ruan (Beihang University);

13:35 Millimeter-wave Transmission Lines of Spoof Surface Plasmon Poloritons
Xiaotian Yan (Southeast University); Wen Xuan Tang (Southeast University); Tie Jun Cai (Southeast University);

13:50 Optical Brewster Absorbers Exhibiting Ultra-broadband Reflectionless Absorption and Extreme Angular-asymmetry
Huijing Fan (Souochow University); Jensen Li (Hong Kong University of Science and Technology); Yan Lai (Nanjing University); Jie Luo (Souochow University);

14:05 Enhanced Radiation Characteristics for Vivaldi Antenna Invited Using Spoof Surface Plasmon Polaritons
Yan Zhi Che (Hangzhou Dianzi University); Zhen Liao (Hangzhou Dianzi University);

14:25 Ultrafast Optical Breakdown and Ripple Formation in Silicon and Diamond
Tzveta Apostolova (Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences);

Session 1P4a
SC2: Plasmonic Metamaterials and Their Emerging Applications

Monday PM, April 25, 2022
Room 4 - Mingyi Hall
Organized by Yong Jin Zhou, Wen Xuan Tang
Chaired by Yong Jin Zhou, Wen Xuan Tang

13:35 Millimeter-wave Transmission Lines of Spoof Surface Plasmon Poloritons
Xiaotian Yan (Southeast University); Wen Xuan Tang (Southeast University); Tie Jun Cai (Southeast University);

13:50 Optical Brewster Absorbers Exhibiting Ultra-broadband Reflectionless Absorption and Extreme Angular-asymmetry
Huijing Fan (Souochow University); Jensen Li (Hong Kong University of Science and Technology); Yan Lai (Nanjing University); Jie Luo (Souochow University);

14:05 Enhanced Radiation Characteristics for Vivaldi Antenna Invited Using Spoof Surface Plasmon Polaritons
Yan Zhi Che (Hangzhou Dianzi University); Zhen Liao (Hangzhou Dianzi University);

14:25 Ultrafast Optical Breakdown and Ripple Formation in Silicon and Diamond
Tzveta Apostolova (Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences);
15:15 Ge2Sb2Te5-based Nanocavity Metasurface for Enhancement of Third Harmonic Generation
Yang Li (Southern University of Science and Technology); Xuecai Zhang (Southern University of Science and Technology); Yutao Tang (Southern University of Science and Technology); Wenfeng Cai (Southern University of Science and Technology); Kuan Liu (Dalian University of Technology); Ningbin Mao (Southern University of Science and Technology); Kingfai Li (Southern University of Science and Technology); Junhong Deng (Southern University of Science and Technology); Yanjun Liu (Southern University of Science and Technology); Tun Cao (Dalian University of Technology); Guixin Li (Southern University of Science and Technology);

16:00 High Q Resonant Metasurfaces with Two-dimensional Invited Materials, Phase Change Materials and Beyond
Xingqiao Chen (National University of Defense Technology); Qi Meng (National University of Defense Technology); Qinlin Hong (National University of Defense Technology); Zhihong Zhu (National University of Defense Technology); Xiaodong Yuan (National University of Defense Technology); Shiquao Qin (National University of Defense Technology); Jianfa Zhang (National University of Defense Technology);

16:20 Dual-band Independent Phase Control Based on High Invited Efficiency Metasurface
Jinxing Li (Harbin Institute of Technology); Yueyi Yuan (Harbin Institute of Technology); Qin Wu (Harbin Institute of Technology); Shah Nawaz Barokar (Univ Paris Nanterre); Kuang Zhang (Harbin Institute of Technology);

16:40 Polarization Manipulation by Polarized Laser-induced Invited Nanogratings: Can Metamaterials Work for Cloud Data Storage in Data Era?
Lei Wang (Jilin University); Hua Fan (Tsinghua University); Zhen-Ze Li (Jilin University); Lin Wang (Jilin University); Yi Wang (Tsinghua University); Qidai Chen (Jilin University); Hong-Bo Sun (Tsinghua University);

17:00 Active Control of Polarization State Near an Exceptional Invited Point of Non-Hermitian Graphene Metasurfaces
Tean-Teun Kim (University of Ulster);

17:15 The Metamaterials Driven by Light, Electromagnetic Invited Keynote Forces, Sound and Heat
Nikolay I. Zheludev (University of Southampton);

17:40 Harnessing the Fabrication Imperfection in Invited Nanophotonics-disordered Metasurfaces for Structural Colour Generation and Efficient Light Extraction
Changzhu Liu (University of Northumbria);

17:55 Chiral Responses of Multilayered Metamaterial with Black Phosphorus
Hui Hu (Harbin Engineering University); Zheng Zhu (Harbin Engineering University); Hao Zhang (Harbin Engineering University); Chunjing Guan (Harbin Engineering University); Jin Hui Shi (Harbin Engineering University);

Session 1P5
SC2: Nonlinear Plasmonics and Metasurfaces
Monday PM, April 25, 2022
Room 5 - Gui Hall
Organized by Guixin Li, Yuanmu Yang
Chaired by Guixin Li, Yuanmu Yang

13:00 Metasurfaces Integrated in Fiber Lasers for Linear and Invited Nonlinear Applications
Lili Gui (Beijing University of Posts and Telecommunications);

13:15 Holographic Key Combination Method Based on Cas-Invited caded Metasurface
Lingling Huang (Beijing Institute of Technology);

13:35 Hybrid Nonlinear Optical Metasurfaces: A Versatile Invited Platform for Full Wavefront Control
Kai Wang (Huazhong University of Science and Technology);

13:55 Nonlinear THz-nano Metasurface
Invited Xiaojuan Wu (Beihang University);

14:15 Metasurface Based High-dimensional Quantum Source Invited
Shu-Ming Wang (Nanjing University);

14:35 Engineering Ultrafast Nonlinearities in Plasmonic KeynoteNanostructures
Anatoly V. Zayats (King’s College London);

15:00 Bound State for the Continuum Modes Supported by Invited Dielectric Nanostructures for Nonlinear Optical Applications
Zhanghua Han (Shandong Normal University);

16:00 Ultrafast Plasmon-exciton Coupling: From Enhanced Invited Optical Nonlinear Emission to Rabi Oscillation
Jinhui Zhong (University of Oldenburg); Jue-Min Yi (University of Oldenburg); Dong Wang (Technische Universität Ilmenau); Anke Korte (University of Oldenburg); Abbas Chimeh (University of Oldenburg); Daniel Timmer (University of Oldenburg); Thomas Quenzel (University of Oldenburg); Moritz Gittinger (University of Oldenburg); Martin Sikes (University of Oldenburg); Peter Schaaf (Technische Universität Ilmenau); Erik Runge (Technische Universität Ilmenau); Christoph Lienau (Carl von Ossietzky Universität Oldenburg);

16:15 Second Harmonic Generation Based on Surface Plasmon Polaritons
Junjun Shi (Shandong Normal University); Shunping Zhang (Wuhan University); Hongxing Xu (Wuhan University);
16:30 Tunable Quantum Behavior and Enhanced Nonlinear Optical Response in Plasmonic Hybrids with Controlled Morphology Symmetry
Li Zhou (Wuhan University);

16:45 Local Field Enhancement in Hybrid Metasurfaces and Their Efficient Third Harmonic Generation
Guozong Cai (Xiamen University); Jin Yao (Xiamen University); Na Liu (Xiamen University); Qing Hui Liu (Duke University);

17:00 Giant Enhancement of Second-order Nonlinearity of Epsilon-near-zero Medium by a Plasmonic Metasurface
Junhong Deng (Southern University of Science and Technology); Yutao Tang (Southern University of Science and Technology); Shumei Chen (School of Science, Harbin Institute of Technology (Shenzhen)); King-fai Li (Southern University of Science and Technology); Anatoly V. Zayats (King’s College London); Guixin Li (Southern University of Science and Technology);

17:15 Harmonic Spin-orbit Angular Momentum Cascade in Nonlinear Optical Crystals
Yutao Tang (Southern University of Science and Technology); King-fai Li (Southern University of Science and Technology); Xuecai Zhang (Southern University of Science and Technology); Junhong Deng (Southern University of Science and Technology); Guixin Li (Southern University of Science and Technology); Etienne Brasselet (Université de Bordeaux, CNRS);

17:30 Optically and Chemically Controllable Light Flow in Topological Plasmonic Waveguides Based on Graphene Metasurfaces
Yupei Wang (University College London); Jianwei Yu (Southeast University); Zhishao Lai (University College London); Nicolae-Coriolan Panoiu (University College London);

17:40 Enhancement of Nonlinear Optical Effect by Engineer-invited Plasmonic Energy Band
Jinwei Shi (Beijing Normal University);

Session 1P6a
SC2: Infrared Materials, Devices and Applications

Monday PM, April 25, 2022
Room 6 - Mingrui Hall
Organized by Chuantao Zheng, Su Xu
Chaired by Chuantao Zheng, Su Xu

13:00 Asymmetric Transmission and Polarization Manipulation in Bilayered Metamaterials
Jin Hui Shi (Harbin Engineering University); Tingting Lv (Harbin Engineering University); Guohua Dong (Harbin Engineering University); Chunying Guan (Harbin Engineering University);

13:20 Integrated on-chip Terahertz Plasmonic Devices
Yanfeng Li (Tianjin University);

13:40 A Widely Tunable InGaAs/InGaAsP DBR Laser for Gas Detection
Hongyan Yu (Institute of Semiconductor, Chinese Academy of Science); Mengqi Wang (Institute of Semiconductor, Chinese Academy of Science); Daibing Zhou (Institute of Semiconductor, Chinese Academy of Science); Xuliang Zhou (Institute of Semiconductor, Chinese Academy of Science); Pengfei Wang (Institute of Semiconductor, Chinese Academy of Science); Yejin Zhang (Institute of Semiconductors, Chinese Academy of Science); Jiaqi Pan (Institute of Semiconductors, Chinese Academy of Science); Wei Wang (University of Chinese Academy of Sciences);

14:00 Mid-infrared Chalcogenide Waveguide CH₄ Sensor Based on Surface-enhanced Infrared Absorption Spectroscopy
Mingquan Pi (Jilin University); Chuantao Zheng (Jilin University); Jilin Ji (Jilin University); Huan Zhao (Jilin University); Zhilang Peng (Jilin University); Jiaming Lang (Jilin University); Lei Liang (Changchun Institute of Optics Fine Mechanics and Physics, Chinese Academy of Sciences); Yu Zhang (Jilin University); Yidong Wang (Jilin University); Frank K. Tittel (Rice University);

14:20 Adaptive Infrared Stealth Based on Flexible Carbon Materials
Huichong Chang (Qian Xuesen Laboratory of Space Technology, China Academy of Space Technology); Lin Xiao (Qian Xuesen Laboratory of Space Technology, China Academy of Space Technology);

14:40 Laser Processing of Infrared Materials for Anti-reflection Applications
Xue-Qing Liu (Jilin University);

15:00 Study of Multi-parameter in TDLAS Detection System Based on LabVIEW
Weilin Ye (Shantou University); Weihao Liu (Shantou University); Zikun Xia (Shantou University); Xupeng Xiao (Shantou University); Xiaohua Xu (Shantou University); Tao Wu (Shantou University); Fuping Wu (Shantou University);

16:00 High-efficiency Anomalous Refraction in Huygens’ Metasurface
Yicheng Li (Harbin Engineering University); Ruiqiang Zhao (Harbin Engineering University); Chunying Guan (Harbin Engineering University); Zheng Zhu (Harbin Engineering University); Jin Hui Shi (Harbin Engineering University);

16:15 Mid-infrared Supercontinuum Laser Sources Based on Fluorotellurite Glass Fibers
Zhizhu Jia (Jilin University); Guanshi Qin (Jilin University);
16:30 Two-stage Semiconductor Optical Amplifier with Wide-spectrum, High-power and High-gain
Lei Liang (Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences); Xin Li (Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences); Li Qin (Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences); Huan Zhao (Jilin University); Yongqi Chen (Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences); Yubing Wang (Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences); Yue Song (Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences); Yuzin Lei (Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences); Peng Jia (Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences); Chuantao Zheng (Jilin University); Lijun Wang (Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences);

16:45 Study of Two-dimensional Plasmon Resonance of a Grating Gate HEMT
Honggang Guo (University of Electronic Science and Technology of China); Ping Zhang (University of Electronic Science and Technology of China); Shaoeng Wang (University of Electronic Science and Technology of China); Shenpeng Yang (University of Electronic Science and Technology of China); Yubin Gong (University of Electronic Science and Technology of China);

17:25 Analysis of Extrinsic Chirality in Layer by Layer Structures Distributed in Non-planar Unit-cell Arrangements at Microwave Frequencies
Oscar Fernandez (University of Cantabria); J. Ben Yamoun (University Abdelmalek Essaadi); Alearo Gomez (University of Cantabria);

17:35 Efficient Conversion from Spoof Surface Plasmon Polaritons to Radiation Mode
Jia-Yuan Yin (Xidian University); Jing-Ya Deng (Xidian University); Li-Xin Guo (Xidian University);

17:45 Second-harmonic Phase and Amplitude Modulations by Use of V-shaped Au/WS2 Synthetic Metasurface
Bingxia Wang (Ningbo University); Kai Wang (Huazhong University of Science and Technology); Xuanmiao Hong (Huazhong University of Science and Technology); Yan Sheng (Ningbo University); Peiziang Lu (Huazhong University of Science and Technology);

Session 1P7
Light Manipulation, Propagation and Applications

13:00 Perfect Optical Coherence Lattices
Chunhao Liang (Shandong Normal University); Xin Liu (Shandong Normal University); Fei Wang (Soochow University); Yangjian Cai (Shandong Normal University & Soochow University);

13:15 Application of Ultrasonic Chirp-wave to Time-reversed Optical Focusing in Turbid Medium Using Phase-conjugate Light
Shaohao Tang (Waseda University); Koichi Shimizu (Waseda University);

13:25 Self-reconstruction of a Twisted Partially Coherent LG Beam
Haijun Wang (Soochow University); Lin Liu (Soochow University); Fei Wang (Soochow University); Yangjian Cai (Shandong Normal University & Soochow University);

13:40 Self-healing of Space-time Nonseparable Flying Electromagnetic Doughnut
Ren Wang (University of Electronic Science and Technology of China); Sheng Liu (University of Electronic Science and Technology of China); Mo-Ran Zhang (University of Electronic Science and Technology of China); Zhi-Qiang Hu (University of Electronic Science and Technology of China); Bing-Zhong Wang (University of Electronic Science and Technology of China);

13:55 Construction and Generation of Anomalous Multi-ramp Jumping Fractional Vortex Beams
Hao Zhang (Soochow University); Lin Liu (Soochow University); Fei Wang (Soochow University); Chengliang Zhao (Soochow University); Yangjian Cai (Shandong Normal University & Soochow University);
14:10 Structure of Transverse Spin in Focused Random Light
Yahong Chen (Soochow University); Fei Wang (Soochow University); Yangjian Cai (Shandong Normal University & Soochow University); Zhong Dong (Soochow University); Andreas Norrman (ETH Zurich); Jose J. Gil (University of Zaragoza); Ari T. Friberg (University of Eastern Finland); Tero Setala (University of Eastern Finland);

14:25 Generation of Partially Coherent Beams with Non-uniformly Correlation Structure
Xinlei Zhu (Soochow University); Lin Liu (Soochow University); Fei Wang (Soochow University); Yangjian Cai (Shandong Normal University & Soochow University);

14:40 Propagation of Radially Polarized Hermite Non-uniformly Correlated Beams in a Turbulent Atmosphere
Shuang Lin (Shandong Normal University); Yangjian Cai (Shandong Normal University & Soochow University); Jiayi Yu (Shandong Normal University);

14:55 Direct Measurement of Complex Wave Field by Exposure Lens
Yun-Yun Lai (Beijing Institute of Technology); Wen-Xiu Dong (Beijing Institute of Technology); Yu-Tong He (Beijing Institute of Technology); Jin Hu (Beijing Institute of Technology);

15:10 Robust Far-field Imaging by Spatial Coherence Engineering
Yonglei Liu (Shandong Normal University); Yangjian Cai (Shandong Normal University & Soochow University); Chunhao Liang (Shandong Normal University);

16:00 Flexible Autofocusing Properties of AAF Beams by Means of a Cross Phase
Xin Liu (Shandong Normal University); Yashar E. Montared (Dalhousie University); Chunhao Liang (Shandong Normal University); Fei Wang (Soochow University); Bernhard J. Hoenders (University of Groningen); Yangjian Cai (Shandong Normal University & Soochow University); Pujuan Ma (Shandong Normal University);

16:15 Reducing Orbital Angular Momentum Crosstalk of the Bessel-Gaussian Beam for Underwater Optical Communications
Hai Zhang (Shandong Normal University); Jiayi Yu (Shandong Normal University); Yangjian Cai (Shandong Normal University & Soochow University);

16:30 Optical Coherence Encryption with Structured Random Light
Deming Peng (Soochow University); Yonglei Liu (Shandong Normal University); Yahong Chen (Soochow University); Fei Wang (Soochow University); Yangjian Cai (Shandong Normal University & Soochow University);

16:45 Measuring Complex Correlation Matrix of Partially Coherent Vector Light via a Generalized Hanbury Brown-Twiss Experiment
Zhen Dong (Soochow University); Yahong Chen (Soochow University); Fei Wang (Soochow University); Yangjian Cai (Shandong Normal University & Soochow University);

17:00 The Evolution of Spectral Intensity and Orbital Angular Momentum of Twisted Hermite Gaussian Schell Model Beams in Turbulence
Rong Lin (Shandong Normal University); Jiaxi Yu (Shandong Normal University); Yangjian Cai (Shandong Normal University & Soochow University);

17:15 Nanoparticle-doped Polymer 1D Photonic Crystals for Nonlinear Optical Applications
Ivan M. Kislyakov (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Jun Wang (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences);

17:30 Single-wall Carbon Nanotubes in Water-organic Milieu as Spectral Selective Laser Intensity Filters
Ivan M. Kislyakov (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Pavel V. Ivanov (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Anastasia V. Venediktova (St. Petersburg State University); Tianju Zhang (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Jun Wang (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Andrey Yu. Vlasov (St. Petersburg State University);

17:45 Angular Phase Accuracy Enhancement Based on Conformal Transform
Runnan Qi (Tongji University); Junhe Zhou (Tongji University);

18:00 Wavelength-controlled Chirp Signal Detection Using Flat Luneburg Lens
Wen-xiu Dong (Beijing Institute of Technology); Yun-Yun Lai (Beijing Institute of Technology); Jin Hu (Beijing Institute of Technology);

Session 1P8a
SC3: Optoelectronic Sensors for Chemical and Biological Applications 2

Monday PM, April 25, 2022
Room 8 - Minghou Hall
Organized by Xiaoyu Cheng, Fan Wang
Chaired by Fan Wang, Xiaoyu Cheng

13:00 Time-resolved Imaging Method for in vivo Detection
Invited
Wei Feng (Fudan University);

13:15 Optical Detection and Regulation of Mitochondrion
Invited
Lin Li (Northwestern Polytechnical University);

13:30 Metabolic Marker for Anti-cancer Drug Resistance
Invited
Revealed by Raman-tagged Single-cell Chemical Microscopy
Shuhua Yue (Beihang University);
13:50 Invited Noninvasive Technique to Evaluate Turbidity in Blood Vessel from Skin Surface Using Backscattered NIR Light
Shiyang Liang (Waseda University); Hiroshi Inoue (Waseda University); Koichi Shimizu (Waseda University);

14:05 Invited Liquid-interfacial Ordered Orientation of Glyceride Iso- mers Lights Up High-resolution Raman Spectroscopy Fingerprints at Room Temperature
Shanshan Du (Hefei University of Technology); Mengke Su (Hefei University of Technology); Chao Wang (University of Science and Technology of China); Zhongzian Ding (University of Science and Technology of China); Yifan Jiang (University of Science and Technology of China); Lingling Liao (University of Science and Technology of China); Honglin Liu (Hefei University of Technology);

14:20 Invited Heterodyne Brillouin Microscopy for Biomechanical Imaging
Michael Taylor A. (The University of Queensland); Amanda W. Kijas (The University of Queensland); Zhao Wang (The University of Queensland); Jan Lauko (The University of Queensland); Alan E. Rowan (The University of Queensland);

14:35 Invited Digital Virus Manipulation Chip with a Large Array of All-dielectric Nanocavities
Yuzhi Shi (Nanyang Technological University); Che Ting Chan (The Hong Kong University of Science and Technology); Yuri Kushar (The Hong Kong Polytechnic University); Din Ping Tsai (The Hong Kong Polytechnic University); Ai Qun Liu (Nanyang Technological University);

14:50 Invited Central Nerve System Derived Extracellular Vesicles in Blood for Diagnosis of Alzheimer’s Disease
Chen Tian (Zhejiang University);

15:05 Invited Carbon Dots with Tunable Optical Properties for Biosensing and Theranostics
Zhiming Liu (South China Normal University); Luoji Mo (South China Normal University); Hao Liu (South China Normal University); Ao Liu (South China Normal University); Yiqiao Chen (South China Normal University);

15:45 Invited Plasmonic MXene Nanoparticles Enabled High-performance Two-dimensional MoS2 Photodetectors
Jihua Zou (University of Electronic Science and Technology of China); Shunyong Wei (University of Electronic Science and Technology of China); Jiang Wu (University of Electronic Science & Technology of China);}

Session 1P8b

SC3: Optical Sensing and Detection 2

Monday PM, April 25, 2022
Room 8 - Minghou Hall
Organized by Jiang Wu
Chaired by Jiang Wu

16:00 Invited 2D Materials for Mid-infrared Photonics and Optoelectronics
Qi Jie Wang (Nanyang Technological University);
Session 1P9a
SC3: Photonic Crystals and Subwavelength Structures

Monday PM, April 25, 2022
Room 9 - Tianren Hall
Organized by Dingshnan Gao, Dan Zhang
Chaired by Dingshan Gao, Dan Zhang

13:00 A Switchable Multifunctional Modulator Realized by the Stacked Graphene-based Hyperbolic Metamaterial
Yu Ma (Nanjing University of Posts and Telecommunications); Hai Feng Zhang (Nanjing University of Posts and Telecommunications);

13:15 Thermally Tunable Polarization-insensitive Ultra-broadband Absorber in a Terahertz Metamaterial Sustained by the Coupled Toroidal Dipole Modes
Hao Pan (Nanjing University of Posts and Telecommunications); Hai Feng Zhang (Nanjing University of Posts and Telecommunications);

13:30 Realizing Ultra-bandwidth Cross-polarization Conversion by a Double-layer Metasurface
Yu-Peng Li (Nanjing University of Posts and Telecommunications); Hai Feng Zhang (Nanjing University of Posts and Telecommunications); Hao Pan (Nanjing University of Posts and Telecommunications); Li Zeng (Nanjing University of Posts and Telecommunications);

13:45 A Gravity Tailored Ultra-broadband Absorber Based on High-impedance Surface
Hao Zhang (Nanjing University of Posts and Telecommunications); Hao Pan (Nanjing University of Posts and Telecommunications); Hai Feng Zhang (Nanjing University of Posts and Telecommunications);

Session 1P9b
SC2: Active and Reconfigurable Metasurfaces: Fundamentals and Applications 1

Monday PM, April 25, 2022
Room 9 - Tianren Hall
Organized by Yuancheng Fan, Qian Zhao, Jin Hui Shi
Chaired by Qian Zhao, Jin Hui Shi

17:00 Artificial Optical Nonlinearity Generated by Metamaterial
Yongzheng Wen (Tsinghua University);
17:20 Dyakonov Surface Waves at the Interfaces of Strong Anisotropy
Jingbo Sun (Tsinghua University); Yan Li (Tsinghua University); Yongzheng Wen (Tsinghua University); Ji Zhou (Tsinghua University);

17:40 Design and Inverse Design Method of Metasurface Array Invited for High Performance and Multifunctions
Yang Bai (University of Science and Technology Beijing); Chuanbao Liu (University of Science and Technology Beijing); Ji Zhou (Tsinghua University); Qian Zhao (Tsinghua University); Lijie Qiao (University of Science and Technology Beijing);

18:00 Application of Two-dimensional Photonic-crystal Array for Optical Switches
Guoyan Dong (University of Chinese Academy of Sciences);

18:20 Dispersion Engineering of Spoof Surface Plasmon Polaritons
Jiafu Wang (Air Force Engineering University);

Session 1P10a
SC3: Integrated Quantum Photonics 2

Monday PM, April 25, 2022
Room 10 - Tianhong Hall
Organized by Chaoyuan Jin, Feng Liu
Chaired by Chaoyuan Jin, Feng Liu

13:00 Superconducting Nanowire Single Photon Detectors for Quantum Information
Lizing You (Shanghai Institute of Microsystem and Information Technology (SIMIT), Chinese Academy of Sciences);

13:20 A Single Quantum Dot in an Open Microcavity
Richard J. Warburton (University of Basel);

13:35 Integrated Quantum Photonics with Quantum Dots
Anthony Mark Fox (University of Sheffield);

13:50 Solid-state Sources for Single Photons with Orbital Angular Momentum on a Semiconductor Chip
Bo Chen (Sun Yat-sen University); Jin Liu (Sun Yat-Sen University); Xue-Hua Wang (Sun Yat-Sen University);

Session 1P10b
SC3: Quantum Information Processing and Devices 1

Monday PM, April 25, 2022
Room 10 - Tianhong Hall
Organized by Hai-Zhi Song, Guangwei Deng
Chaired by Hai-Zhi Song, Guangwei Deng

14:10 Fully Connected Quantum Network Based on Spontaneous Four-wave-mixing Quantum Light Source
Wei Zhang (Tsinghua University);

14:30 Bright Room Temperature Near Infrared Single Photon Emission of AlGaN Film with Single Point Defects
Yingzian Xue (East China Normal University); Feilang Chen (University of Electronic Science and Technology of China); Zhiyun Fang (East China Normal University); Shiyu Zhang (East China Normal University); Qian Li (Microsystem and Terahertz Research Center, China Academy of Engineering Physics); Mo Li (University of Electronic Science and Technology of China); Jianbin Kang (Microsystem and Terahertz Research Center, China Academy of Engineering Physics); Jian Zhang (University of Electronic Science and Technology of China); Si Shen (East China Normal University); Botao Wu (East China Normal University); E Wu (East China Normal University);

14:40 Heralded Entanglement Distribution between Two Absorptive Quantum Memories
Xiao Liu (University of Science and Technology of China); Jun Hu (University of Science and Technology of China); Zong-Quan Zhou (University of Science and Technology of China); Chuan-Feng Li (University of Science and Technology of China, CAS); Guang-Can Guo (University of Science and Technology of China, CAS);

14:55 Simultaneous Ground-state Cooling of Multiple Mechanical Resonators
Jie-Qiao Liao (Hunan Normal University);

15:15 Interaction-free Quantum Spectroscopy
Yu Chen (East China Normal University); Yu-Jie Cai (East China Normal University); Xing-Tong Li (East China Normal University); Kun Huang (East China Normal University); Jin-Ming Liu (East China Normal University); E Wu (East China Normal University);

16:00 Topological Hybrid Nano-cavity for Coupling Transition Invited
Cucui Lu (Beijing Institute of Technology);

16:20 Quantum Calibration and Applications of Multipixelphoton Counter
E Wu (East China Normal University);

16:30 Spectro-temporal Manipulation of Biphoton States at Telecom Wavelength
Rui-Bo Jin (Wuhan Institute of Technology); Ryosuke Shimizu (University of Electro-Communications);

16:45 Boosting the Performance of Reference-frame-independent Measurement-device-independent Quantum Key Distribution
J. Y. Liu (Nanjing University of Posts and Telecommunications); X. Y. Zhou (Nanjing University of Posts and Telecommunications); Qin Wang (Nanjing University of Posts and Telecommunications);
17:00 Quantum Control of Room Temperature Mechanical
Invited Resonators
Chao Meng (The University of Queensland);
Amy Van der Hei (The University of Queensland);
Soroush Khamedi (The University of Queensland);
George A. Brawley (The University of Queensland);
James S. Bennett (The University of Queensland);
Elizabeth Bridge (The University of Queensland);
Michael Vannier (Imperial College London);
Warwick P. Bowen (University of Queensland);
17:15 Quantifying Quantum Coherence of Gaussian States and
Invited Optical Cat States
Xiaolong Su (Shanxi University); Haijun Kang (Shanxi University);
Miao Zhang (Shanxi University); Meihong Wang (Shanxi University);

Session 1P11a
SC2: Hyperbolic Polaritons in the Emerging Layered Materials 2
Monday PM, April 25, 2022
Room 11 - Tianhe Hall
Organized by Peining Li, Zhigao Dai
Chaired by Peining Li, Zhigao Dai
13:00 Nanophotonics with Phonon Polaritons in 2D Materials
Keynote
Rainer Hillenbrand (CIC nanoGUNE);
13:25 Natural Hyperbolic Plasmons in WTe2 Thin Films
Invited Hugen Yan (Fudan University);
13:45 Manipulation of Mid-infrared Electromagnetic Fields
Invited with Biaxial Hyperbolic Phonon Polaritons
Huanjun Chen (Sun Yat-sen University); Zebo Zheng (Sun Yat-sen University);
Fengsheng Sun (Sun Yat-sen University); Wachao Huang (Sun Yat-sen University);
Shaohong Deng (Sun Yat-sen University); Ningsheng Xu (Sun Yat-sen University);
14:05 Probing Hyperbolic Phonon Polaritons in vdW Material
Invited als with Cryogenic s-SNOM
De-Bo Hu (National Center for Nanoscience and Technology); Qingsen Dai (National Center for Nanoscience and Technology);
14:25 Infrared Nano-imaging of Local Strain in Hexagonal
Invited Boron Nitride and Bilayer Graphene
Zhiwen Shi (Shanghai Jiao Tong University);
14:45 Near-field Thermal Radiation between Hyperbolic Materials
Xianglei Liu (Nanjing University of Aeronautics and Astronautics); Chunzhou Dong (Nanjing University of Aeronautics and Astronautics);
15:00 The Detection of Phonon Polaritons in Monolayer h-BN
Invited Ning Li (National Center for Nanoscience and Technology); Xiangdong Gao (National Center for Nanoscience and Technology); Xiaozhong Yang (National Center for Nanoscience and Technology); Qing Dai (National Center for Nanoscience and Technology); Peng Gao (Peking University);

Session 1P11b
SC2: Advances in Terahertz Metasurfaces
Monday PM, April 25, 2022
Room 11 - Tianhe Hall
Organized by Shulin Sun, Qiong He
Chaired by Shulin Sun
16:00 Metasurface for Terahertz Special Beams Generation
Invited Yan Zhang (Capital Normal University); Huan Zhao (Capital Normal University); Xinke Wang (Capital Normal University);
16:20 Reconfigurable and Programmable Terahertz Metasurfaces Based on Liquid Crystal and Vanadium Dioxide
Invited Jingbo Wu (Nanjing University); Benwen Chen (Nanjing University); Weili Li (Nanjing University); Caifang Zhang (Nanjing University); Kebin Fan (Nanjing University); Biobing Jin (Nanjing University); Jian Chen (Nanjing University); Peiheng Wu (Nanjing University);
16:40 Dynamical Control of Terahertz Wavefronts with Cascaded Metasurfaces
Invited Shiyi Xiao (Shanghai University);
17:00 ENZ-enhanced Integrated Terahertz Generator-manipulators Using Nonlinear Metasurfaces
Invited Xueqian Zhang (Tianjin University); Yongchang Lu (Tianjin University); Xi Peng (Tianjin University); Qingwei Wang (Tianjin University); Li Niu (Tianjin University); Quan Xu (Tianjin University); Jianguang Han (Tianjin University);
17:15 Helicity-delinked Surface Wave Manipulations with Metasurfaces
Invited Shiqing Li (Fudan University); Zhuo Wang (Fudan University); Xueqian Zhang (Tianjin University); Shaohua Dong (Fudan University); Weili Zhang (Tianjin University); Qiong He (Fudan University); Shulin Sun (Fudan University); Lei Zhou (Fudan University);
17:30 Dynamical Control of Terahertz Wavefronts with Graphene Metasurfaces
Invited Xiaodong Cai (Shanghai University); Shiyi Xiao (Shanghai University);
17:45 A Coupled Theory for Analyzing the Coupled Metal Spiral Structure
Yu Chen (Zhejiang University); Tao Fu (Zhejiang University); Ranzhu Zhou (Guangdong University of Science and Technology); Ziyuan Wang (Guangdong University of Electronic Technology); Yongkong Bai (Guangdong University of Electronic Technology);

14:30 Towards a Calibration-free Approach to Deep Learning
Invited

14:00 Recent Advances in Neuro-transfer Function Techniques
Invited

13:00 Inverse-design of a Wideband FSS with Dual-band Absorption Performance Based on Target-driven Deep Neural Network
Juqun Wang (Zhejiang University); Bin Zheng (Zhejiang University); Jiangtao Huangfu (Zhejiang University); Rui Xi (Zhejiang University); Hongsheng Chen (Zhejiang University);

13:15 Investigation on the Generalization Ability of Electric Flux Density Learning Method
Tiantian Yin (National University of Singapore); Xudong Chen (National University of Singapore);

13:25 Study on Non-linear Multiphysics Joint Inversion Algorithms
Invited

13:45 Recent Advances in Neuro-transfer Function Techniques for EM Parametric Modeling and Optimization
Feng Feng (Tsinghua University); Jianan Zhang (Carleton University); Qi-Jun Zhang (Carleton University);

14:00 Application of Generative Adversarial Network-based Inversion Algorithm in Imaging Two-dimensional Lossy Biaxial Anisotropic Scatterer
Invited

14:10 Towards a Calibration-free Approach to Deep Learning based Single-incidence Inverse Scattering
Girija Ramesan Karthik (Indian Institute of Science); Prasanta Kumar Ghosh (Indian Institute of Science);

14:30 Machine Learning-incorporated Electromagnetic Modeling and Imaging
Invited

14:50 SAR Open Set Recognition Based on Counterfactual Framework
Invited

FocusSession.SC5: Machine Learning for Electromagnetic Inverse Problems 2

Monday PM, April 25, 2022
Room 12 - Mingdu Hall 2
Organized by Zhun Wei, Xudong Chen
Chaired by Zhun Wei, Xudong Chen

13:00 Inverse-design of a Wideband FSS with Dual-band Absorption Performance Based on Target-driven Deep Neural Network
Juqun Wang (Zhejiang University); Bin Zheng (Zhejiang University); Jiangtao Huangfu (Zhejiang University); Rui Xi (Zhejiang University); Hongsheng Chen (Zhejiang University);

13:15 Investigation on the Generalization Ability of Electric Flux Density Learning Method
Tiantian Yin (National University of Singapore); Xudong Chen (National University of Singapore);

13:25 Study on Non-linear Multiphysics Joint Inversion Algorithms
Invited

13:45 Recent Advances in Neuro-transfer Function Techniques for EM Parametric Modeling and Optimization
Feng Feng (Tsinghua University); Jianan Zhang (Carleton University); Qi-Jun Zhang (Carleton University);

14:00 Application of Generative Adversarial Network-based Inversion Algorithm in Imaging Two-dimensional Lossy Biaxial Anisotropic Scatterer
Invited

14:10 Towards a Calibration-free Approach to Deep Learning based Single-incidence Inverse Scattering
Girija Ramesan Karthik (Indian Institute of Science); Prasanta Kumar Ghosh (Indian Institute of Science);

14:30 Machine Learning-incorporated Electromagnetic Modeling and Imaging
Invited

14:50 SAR Open Set Recognition Based on Counterfactual Framework
Invited

FocusSession.SC5: Microwave Remote Sensing of Coastal and Marine Environments 1

Monday PM, April 25, 2022
Room 12 - Mingdu Hall 2
Organized by Xiaofeng Yang, Gang Zheng
Chaired by Xiaofeng Yang, Gang Zheng

16:00 Using the 50-60 GHz and 118 GHz Passive Microwave Measurements for Surface Pressure Joint Retrieval over the Oceans
Zijin Zhang (National Space Science Center, Chinese Academy of Sciences); Xiaolong Dong (National Space Science Center, Chinese Academy of Sciences);

16:15 Coastal Wind Retrieval from the Rotating Fan-beam Scatterometer Onboard CFOSAT
Wenming Liu (Nanjing University of Information Science and Technology); Shuyan Lang (National Satellite Ocean Application Service);

16:30 Estimating Tropical Cyclone Wind Speed with Bayesian Nonparametric General Regression
Sheng Wang (University of Macau); Xiaofeng Yang (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Ka-Veng Yuen (University of Macau);

16:45 Precipitation Inversion from MWHTS Data Using Tensorflow Framework
Kangwen Liu (National Space Science Center, Chinese Academy of Sciences); Jieying He (National Space Science Center, Chinese Academy of Sciences); Huoan Chen (Colorado State University);

17:00 A Deep Learning-based Model for Cold Anticyclonic Eddies and Warm Cyclonic Eddies Detection in the Kuroshio Extension
Yingjie Liu (Institute of Oceanology, Chinese Academy of Sciences); Qian Liu (Institute of Oceanology, Chinese Academy of Sciences); Xiaofeng Li (Institute of Oceanography, Chinese Academy of Sciences);
17:15 A Machine-learning-based Model to Inverse Internal Solitary Wave Amplitude from Satellite Image
Xudong Zhang (Institute of Oceanology, Chinese Academy of Sciences); Haoyu Wang (Institute of Oceanology, Chinese Academy of Sciences); Shuo Wang (The University of Birmingham); Yanliang Liu (First Institute of Oceanography, Ministry of Natural Resources); Weidong Yu (Sun Yat-Sen University); Xiaofeng Li (Institute of Oceanography, Chinese Academy of Sciences);

17:30 Automatic Waterline Extraction of Tidal Flats from SAR Images Based on Deep Convolutional Neural Networks
Shuangshang Zhang (Institute of Oceanology, Chinese Academy of Sciences); Qing Xu (Ocean University of China); Xiaofeng Li (Institute of Oceanography, Chinese Academy of Sciences);

17:45 Radar Backscattering Simulation of Oil Emulsions on Sea Surface
Tingyu Meng (Aerospace Information Research Institute, Chinese Academy of Sciences); Xiaofeng Yang (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Kun-Shan Chen (Guilin University of Technology);

17:55 Multi-satellite Observation of a Harmful Algal Bloom in the Beibu Gulf, South China Sea
Shaoqiong Fu (Second Institute of Oceanography, Ministry of Natural Resources); Xiulin Lou (Second Institute of Oceanography, Ministry of Natural Resources); Jingsong Yang (Second Institute of Oceanography, State Oceanic Administration); Pengbin Wang (Second Institute of Oceanography, Ministry of Natural Resources); Weibing Guan (Second Institute of Oceanography, State Oceanic Administration); Dingtian Fu (Second Institute of Oceanography, Ministry of Natural Resources);

Session 1P13a
SC5: Electromagnetic/Acoustic and Machine Learning Techniques in Oil & Gas Exploration: Modeling, Inversion, and Interpretations 2

Monday PM, April 25, 2022
Room 13 - Mingdu Hall 3
Organized by Decheng Hong, Hu Li
Chaired by Decheng Hong, Xizhou Yue

13:00 A Distance-independent Algorithm for Simulation and Analysis of Acoustic Waves in Single-well Imaging
Hengshan Hu (Harbin Institute of Technology); Jiaqi Xu (Harbin Institute of Technology);

13:20 A Novel Method for Extracting Resistivity Anisotropy from EM Resistivity Logging While Drilling
Peng Kang (China University of Petroleum (Beijing)); Jie Gao (China University of Petroleum (Beijing)); Hang Chen (China University of Petroleum (Beijing));

13:35 Resistivity Optimization in Different Electrical Logs of Tight Gas Reservoirs: A Case Study in the Northern Ordos
Zhou Xiang (Chengdu University of Technology); Kesai Li (Chengdu University of Technology); Hucheng Deng (Chengdu University of Technology); Bin Yang (Chengdu University of Technology); Yan Liu (Chengdu University of Technology);

13:45 Study on the Responses of Multi-component Electromagnetic Logging-while-drilling Based on Frequency Domain Finite Difference Method in Cylindrical Coordinate System
Jiarong Zhang (China University of Petroleum (East China)); Shaogui Deng (China University of Petroleum (East China)); Pan Zhang (China University of Petroleum (East China)); Liangyun Cai (China University of Petroleum (East China));

Zhongyu Yin (China University of Petroleum (East China)); Lei Wang (China University of Petroleum (East China)); Yiren Fan (China University of Petroleum (East China)); Zhen Yang (Sinopac Matrix Corporation); Yizhi Wu (China University of Petroleum (East China));

14:10 3-D Generalized Born Nonlinear Approximation and Pixel-based Inversion of Multi-component Ultra-deep EM Looking Ahead Measurement While Drilling
Hongjian Wang (Jilin University); Haosen Wang (Hebei Institute of Architecture and Civil Engineering); Shihan Shen (Jilin University); Changchun Yin (Jilin University);

14:30 Robust Integrated Computation of Tensor Green’s Functions for General Homogeneous Anisotropic Media with an Equivalent Boundary Approach
Tinlong Liu (Yanshan University); Peng Zhang (Yanshan University); Yan Bai (China Petroleum Logging Co.); Qingshan Song (China Petroleum Logging Co.); Guanglong Xing (Yanshan University);

14:45 Development and Application of New Directional Electromagnetic Resistivity Logging Tool While Drilling
Xizhou Yue (Well-tech R&D Institute, China Oilfield Services Limited); Mingwe Ma (Well-tech R&D Institute, China Oilfield Services Limited); Guoqi Li (Well-tech R&D Institute, China Oilfield Services Limited); Tianlin Liu (Well-tech R&D Institute, China Oilfield Services Limited);

15:00 A Novel Hybrid Simulation Algorithm of Transient Electromagnetic Logging Response for Hydraulic Fracturing Network
Liangyun Cai (China University of Petroleum (East China)); Shaogui Deng (China University of Petroleum (East China)); Xiyong Yuan (China University of Petroleum); Yizhi Wu (China University of Petroleum (East China));
15:10 Recognition and Evaluation of Multi-frequency Electromagnetic Wave Logging Data to Reservoir Waterflooded Degree
Meiling Zhang (Northeast Petroleum University); Ou Xiu (Northeast Petroleum University); Zhang Yang (Northeast Petroleum University); Jian-Ru Lin (Northeast Petroleum University);
16:00 Reconstruction of Subsurface Objects by LSM and FWI from Limited-aperture Electromagnetic Data
Miao Zhong (Xiamen University); Yanyin Chen (Xiamen University); Jianwen Li (Xiamen University); Feng Han (Xiamen University);
16:15 Single-channel Speech Enhancement Based on Priori SNR Estimation in DCCRN Networks
Liheng Cui (Chongqing University of Posts and Telecommunications); Yufan Chen (Chongqing University of Posts and Telecommunications); Yi Zhou (Chongqing University of Posts and Telecommunications); Yu Zhao (Chongqing University of Posts and Telecommunications);

Session 1P13b
Remote Sensing, Inverse Problems, Imaging, Radar and Sensing 2
Monday PM, April 25, 2022
Room 13 - Mingdu Hall 3
Chairred by Jing-Hui Qiu

16:30 MEO-SAR in-orbit Elevation Antenna Pattern Determination Using Nano Calibration Satellite
Tian Qiu (Aerospace Information Research Institute, Chinese Academy of Science); Jun Hong (Aerospace Information Research Institute, Chinese Academy of Science); Yu Wang (Aerospace Information Research Institute, Chinese Academy of Science); Kaichu Xing (Aerospace Information Research Institute, Chinese Academy of Science); Shaoyan Du (Aerospace Information Research Institute, Chinese Academy of Science); Yang Qi (Aerospace Information Research Institute, Chinese Academy of Science);
16:45 Study of Chirp-mismatch SAR Echo Imaging and Application Based on Active Radar Transponder
Guikun Liu (University of Chinese Academy of Sciences); Liang Li (University of Chinese Academy of Sciences); Jun Hong (Institute of Electronics, Chinese Academy of Science); Feng Ming (Aerospace Information Research Institute, Chinese Academy of Sciences);
17:00 A Neural Network Approach to Direction-of-Arrival Estimation Over Sea Surface from Bistatic Radar Scattering
Xiuyi Zhao (Aerospace Information Research Institute, Chinese Academy of Sciences); Ying Yang (Nanjing University of Science and Technology); Kun-Shan Chen (Guilin University of Technology);

17:15 Effect Analysis of the Core Algorithm in Fast Fourier Transform Spectrometer (FFTS)
Haowen Xu (National Space Science Center, Chinese Academy of Sciences); Hao Lu (National Space Science Center, Chinese Academy of Sciences); Zhenzhan Wang (National Space Science Center/Center for Space Science and Applied Research, Chinese Academy of Sciences);
17:30 Improving Training Efficiency of LSTMs While Forecasting Precipitable Water Vapours
Mayank Jain (University College Dublin Belfield); Piyush Yadav (University of Delhi); Yee Hui Lee (Nanyang Technological University Singapore); Soumyabrata Dev (The ADAPT SFI Research Centre);
17:40 Stability Estimates of LIDAR Range Profile Feature Extraction Techniques under Random Time Shifts
Fedor Borisovich Baulin (Bauman Moscow State Technical University); Evgeny Vladlenovich Burgi (Bauman Moscow State Technical University);
17:50 Design of a Health-monitoring Device for Surveillance of Power Modules Based on Fluctuations of the Local Magnetic Field
Haosu Huai (Albert-Ludwigs-University Freiburg); N. Steiner (Albert-Ludwigs-University Freiburg); R. Ruiz (Albert-Ludwigs-University Freiburg); A. Schiffmacher (University of Freiburg); Juergen Wilde (University of Freiburg);
18:05 Radiometer Can Be Used for Disclosing Stealth
Jing-Hui Qiu (Harbin Institute of Technology); Hao Liu (Harbin Institute of Technology); Chao Wu (Harbin Institute of Technology); Oleksandr Denisov (Harbin Institute of Technology); Hongmei Li (Harbin Institute of Technology);

Session 1P14a
SC2&SC4: Antennas and Radomes Based on Metamaterials/Metasurfaces
Monday PM, April 25, 2022
Room 14 - Mingdu Hall 5
Organized by Jiafu Wang, Cheng Jin
Chairred by Jiafu Wang

13:00 Multi-domain Joint Designed W-band Transmission-reflection Cavity Metasurface Antenna for Coincidence Imaging
Mengran Zhao (Xi’an Jiaotong University); Shitao Zhu (Xi’an Jiaotong University); Mengyao Tao (Xi’an Jiaotong University); Juan Chen (Xi’an Jiaotong University); Anxue Zhang (Xi’an Jiaotong University);
13:15 W-band Frequency-Polarization-Diverse Metasurface Antenna for Coincidence Imaging
Mengyao Tao (Xi’an Jiaotong University); Mengran Zhao (Xi’an Jiaotong University); Ningning Zhou (Xi’an Jiaotong University); Shitao Zhu (Xi’an Jiaotong University);
13:30 Single-layer Efficient Broadband Polarization Conversion Metasurface Based on Multiple Plasmon Resonances
Zhongtao Zhang (Air Force Engineering University); Jiafu Wang (Air Force Engineering University); Yuziang Jia (Air Force Engineering University); Hongya Chen (Air Force Engineering University); Mingde Feng (Air Force Engineering University); Ruichao Zhu (Air Force Engineering University); Shaobo Qu (Air Force Engineering University);

13:45 Dynamically Tunable Electromagnetic Stealth Metasurface Based on Anisotropic Binary Coding Theory
Hong Xin Xu (Shanghai University); Yanrui Chen (Shanghai University); Yong Jin Zhou (Shanghai University); Shigui Xiao (Shanghai University);

14:00 Coding Metasurface Design via Intelligence Algorithm
Ruichao Zhu (Air Force Engineering University); Jiafu Wang (Air Force Engineering University); Sai Sui (Air Force Engineering University); Tianshuo Qiu (Air Force Engineering University); Xinmin Fu (Air Force Engineering University); Tonghao Liu (Air Force Engineering University); Zhenzu Wang (Air Force Engineering University); Xiaofeng Wang (Air Force Engineering University); Shaobo Qu (Air Force Engineering University);

14:15 Linear Polarization Independent Planar Retro-reflectors Based on Anisotropic Binary Coding Theory
Yuziang Jia (Air Force Engineering University); Jiafu Wang (Air Force Engineering University); Meng Ding (Space Engineering University); Ruichao Zhu (Air Force Engineering University); Yajuan Han (Air Force Engineering University); Xinmin Fu (Air Force Engineering University); Hong Zhang (Air Force Engineering University); Tiejun Li (Air Force Engineering University); Shaobo Qu (Air Force Engineering University);

14:30 Compact Multi-beam Antennas for Full-azimuth and Hemispherical Scan Coverage
Yury Gennadievich Pasternak (Voronezh State Technical University); V. A. Pendyurin (Voronezh State Technical University); Sergey Mikhailovich Fedorov (Voronezh State Technical University);

Maxim A. Dubovitskiy (National Research University “Moscow Power Engineering Institute”);

14:50 Pattern Synthesis of Linear Phased Arrays with Artificial Neural Network
Yang Hong (University of Electronic Science and Technology of China); Wei Shao (University of Electronic Science and Technology of China);

15:00 Radiation Property Optimization and Enhancement for Omnidirectional Antennas
Jiang Xiong (University of Electronic Science and Technology of China); Lidong Huang (University of Electronic Science and Technology of China); Yifan Xiong (University of Electronic Science and Technology of China); Yali Hu (University of Electronic Science and Technology of China); Haoliang Chen (University of Electronic Science and Technology of China);

15:15 Work-in-Progress: Fast Synthesis, Detection and Correction of Large Planar Array
You-Feng Cheng (Southwest Jiaotong University); G. Bai (Southwest Jiaotong University); F. Peng (Southwest Jiaotong University); C. Liao (Southwest Jiaotong University);

16:00 Making Small Antennas Look Big: Modifying the Local Environment
Leanne Dawn Stanfield (University of Exeter); Alastair P. Hibbins (University of Exeter); J. Roy Sambles (University of Exeter); A. W. Powell (University of Exeter); Simon A. R. Horsley (University of Exeter);

16:10 User-effect Alleviation for Handset Antennas Using Pattern Synthesis
Hui Li (Dalian University of Technology);

16:25 An Efficient Approach to the Synthesis of Sum and Difference Beam Patterns for Subarrayed Monopulse Radar Arrays
Xiaowen Zhao (National Space Science Center, Chinese Academy of Sciences); Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences);

16:40 Low Cost Reconfigurable One-bit Phased Array Antenna for Mobile Communication
Yan Wang (Fudan University); Feng Xu (Fudan University);

16:55 Modified Null Broadening Beamforming Approach of Virtual Array Transformation
Yu Zhao (Chongqing University of Posts and Telecommunications); Liheng Cui (Chongqing University of Posts and Telecommunications); Xugang Sui (Chongqing University of Posts and Telecommunications);
Session 1P14c
SC4: Multi-mode Antennas for Modern Communication Systems
Monday PM, April 25, 2022
Room 14 - Mingdu Hall 5
Organized by Neng-Wu Liu, Sheng Sun
Chaired by Neng-Wu Liu, Sheng Sun

17:10 A Low-profile Wideband Dielectric Resonant Antenna under Multi-resonant Modes
Tian-Kun Sun (Xidian University); Neng-Wu Liu (Xidian University); Lei Zhu (University of Macau); Guang Fu (Xidian University);

17:30 Multi-resonant Antennas: Design Approach and Applications
Wen-Jun Lu (Nanjing University of Posts and Telecommunications);

17:45 UWB-MIMO Antenna with Band-notched Structure
Baoqing Huang (Anhui University); G. S. Cheng (Anhui University);

18:00 The Pattern Reconfigurable Array Design for Lens Feeding
Juan Lei (Xidian University); Chunbin Zhong (Xidian University); Yu Kong (Beijing Electro-mechanical Engineering Institute); Shijiu Chen (Beijing Electro-mechanical Engineering Institute);

18:10 Wideband Crossover Design with Its Application in Butler Matrix
Shiyuan Zhang (University of Electronic Science and Technology of China); Yiqiang Yan (University of Electronic Science and Technology of China); Xiaohuan Xue (University of Electronic Science and Technology of China); Sheng Sun (University of Electronic Science and Technology of China);

Session 1P15a
SC1: The Electrodynamics-quantum Mechanics and Numerical Modeling 2
Monday PM, April 25, 2022
Room 15 - Mingdu Hall 6
Organized by Jianwei You, Zheng-Yu Huang
Chaired by Jianwei You

00:00 Theoretical Models and Simulation Methods for Quantum Plasmonics
Zhubao Lan (University College London); Jianwei You (Southeast University);

00:00 Entanglement Decay of Microwave Photon Pairs in Atmosphere in a Quantum Illumination Radar Scheme
Sylvain Borderieux (ENSTA Bretagne); Arnaud Coatanhay (ENSTA Bretagne); Ali Khenchaf (ENSTA Bretagne);

Session 1P15b
SC1: Advanced Multiphysics in the Emerging Electromagnetics and Optoelectronics: Theory, Modeling and Application
Monday PM, April 25, 2022
Room 15 - Mingdu Hall 6
Organized by Ming Fang, Kaikun Niu
Chaired by Ming Fang, Kaikun Niu

14:05 Steady-state Analysis of Bipolar Transistor
Yeqiang Yan (Anhui Province Key Laboratory of Target Recognition and Feature Extraction); Xingang Ren (Anhui Province Key Laboratory of Target Recognition and Feature Extraction); Shaping He (Anhui University); Xiaotao Huang (Lingnan Normal University); Zhixiang Huang (Anhui Province Key Laboratory of Target Recognition and Feature Extraction);

14:20 An Octagonal Iterative Fractal Antenna with Notch Band and UWB Characteristics
Yong Cai (Anhui University); Shaping He (Anhui University); Xingang Ren (Anhui University); Zhixiang Huang (Anhui University);

14:35 The Hybrid Metamaterial for Improved Efficiency in Wireless Power Transfer Systems
Jian Feng (Anhui University); Ming Fang (Anhui University); Ke Xu (Anhui University); Zhi-Xiang Huang (Anhui University);

14:50 Quantifying Efficiency Loss of Perovskite Solar Cells with an Equivalent Circuit Model
Wei E. I. Sha (Zhejiang University);

15:10 Design of Miniaturized UWB Low Noise Amplifier Based on 65 nm CMOS Technology
Qing Gao (Anhui University); Yating Chen (Anhui University); Xianliang Wu (Anhui University);
Session 1P15c
SC1: Efficient Modeling of Electromagnetic Fields in Complex Structures/Materials/Media

Monday PM, April 25, 2022
Room 15 - Mingdu Hall 6
Organized by Yongpin Chen, Yi Ren
Chaired by Yi Ren

16:00 Using Electric Field to Monitor the Continuous Casting Rongshan Qin (The Open University);
16:10 The Derivation and Application of a Symmetry Relationship in Layered Medium Green’s Function for Surface Integral Equation Shuo Wang (Beihang University); Qiang Ren (Beihang University); Xunweng Dang (Science and Technology on Electromagnetic Scattering Laboratory); Zhaoguo Hou (Science and Technology on Electromagnetic Scattering Laboratory);
16:25 An Efficient and Accurate Nystrom Method for Calculating Scattering Properties of 2D Gratings with 1D Periodicity Xuyang Bai (Zhejiang University); Shurun Tan (Zhejiang University/University of Illinois at Urbana-Champaign Institute);
16:40 1-D Inversion of Vortex Electromagnetic Wave in the Stratified Media for Thermal Barrier Coatings Bingyang Lian (Dongguan University of Technology); Yuanguo Zhou (Xi'an University of Science and Technology); Kaiyang Cheng (Dongguan University of Technology); Yang Yang (University of Electronic Science and Technology of China); Fei Shen (Dongguan University of Technology); Yu-Bin Gong (University of Electronic Science and Technology of China);
16:55 An Efficient Radiation Analysis of Finite-sized Antenna Array by DGFM-MoM-CMT Xuefeng Cheng (Chongqing University of Posts and Telecommunications); Yi Ren (Chongqing University of Posts and Telecommunications);
17:05 A Novel Framework of Singularity Cancellation Transformations for Strongly Near-singular Integrals Ming-Da Zhu (Xidian University);

Session 1P16a
SC1: Advances in Modeling and Optimization Methods for Realistic Applications

Monday PM, April 25, 2022
Room 16 - Mingdu Hall 7
Organized by Mengmeng Li, Ming Jiang
Chaired by Ming Jiang, Mengmeng Li

13:00 Artificial Doppler and Micro-Doppler Effect Induced by Time-modulated Metasurface Ziyang Lai (Nanjing University of Science and Technology); Xingya Yang (Nanjing University of Science and Technology); Mengmeng Li (Nanjing University of Science and Technology); Da-Zhi Ding (Nanjing University of Science and Technology); Rashan Chen (Nanjing University of Science and Technology);
13:15 A Hybrid Domain Decomposition Method to Accelerate the Scattering Analysis from Multiple Moving Objects Xiong Yang (University of Electronic Science and Technology of China); Jun Hu (University of Electronic Science and Technology of China);
13:30 An Efficient Hybrid Method for Analysis of Large Antenna Arrays Hafeng Liang (Ningbo University); Hanru Shao (Ningbo University);
13:45 A Novel Approach to Analyse the Band Gap of Mushroom-like Electromagnetic Band Gap Structure Guanya Li (University of Electronic Science and Technology of China); Hai-Yan Chen (University of Electronic Science and Technology of China); Qingting He (University of Electronic Science and Technology of China); Yuguang Huang (University of Electronic Science and Technology of China); Li Zhang (University of Electronic Science and Technology of China); Linbo Zhang (University of Electronic Science and Technology of China); Xiao Long Weng (University of Electronic Science and Technology of China); Jianxiang Xie (University of Electronic Science and Technology of China); Difei Liang (University of Electronic Science and Technology of China); Long-Jiang Deng (University of Electronic Science and Technology of China);
14:00 Passive Monopulse Amplitude-comparison Three-dimensional Direction-finding Based on Six-element Antenna Array Qilun Yang (Science and Technology on Electronic Information Control Laboratory); Longbiao Hu (Science and Technology on Electronic Information Control Laboratory); Xuying Zhang (Science and Technology on Electronic Information Control Laboratory); Yanfei Li (Science and Technology on Electronic Information Control Laboratory);
14:15 Beyond-5G Wireless Systems: An Opportunity for Applied Electromagnetics and Metamaterials Communities Filiberto Bilotti (“Roma Tre” University); Mirko Barbuto (“Niccolò Cusano” University); Michela Longhi (Niccolò Cusano University); Angelica Viola Marini (“Roma Tre” University); Alessio Monti (Niccolò Cusano University); Davide Ramaccia (“Roma Tre” University); Luca Stefanini (“Roma Tre” University); Alessandro Toscano (“Roma Tre” University); Stefano Vellucci (“Roma Tre” University);
14:50 Optical Properties of Nanoporous Gold Sponges Using Model Structures Obtained from Three-dimensional Phase-field Simulation

Sebastian Bohm (Technische Universität Ilmenau-Institute of Physics and Institute of Micro- and Nanotechnologies); Malte Grunert (Technische Universität Ilmenau); Hauke Lars Honig (Technische Universität Ilmenau); Dong Wang (Technische Universität Ilmenau); Peter Schaaf (Technische Universität Ilmenau); Erich Runge (Technische Universität Ilmenau); Jinhai Zhong (University of Oldenburg); Christoph Lienau (Carl von Ossietzky Universität Oldenburg);

15:00 Realistic 3D Channel Model for Chipless RFID System Considering RFID Tag RCS and Multipath Components

Mohamed El-Hadidy (The University of Duisburg-Essen); T. Ould Mohamed (IMST GmbH);

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Session 1P16b

SC4: Microwave/Millimeter Wave Circuits and Systems for Emerging Applications

Monday PM, April 25, 2022
Room 16 - Mingdu Hall 7
Organized by Yongchae Jeong, Girdhari Chaudhary
Chaired by Yongchae Jeong, Girdhari Chaudhary

16:00 A Method to Stabilize the Output Voltage of a Wireless Power Transfer System Using Variable Capacitance

Zhong-Wei Zhao (University of Electronic Science and Technology of China); Zhizhang (David) Chen (Dalhousie University); Peng Cheng (University of Electronic Science and Technology of China);

16:15 Compressive Direction of Arrival Estimation with Wavechaotic Antennas

Okan Yurduseen (Queen’s University Belfast); T. V. Hoang (Queen’s University Belfast); M. A. B. Abbasi (Queen’s University Belfast); V. Fusco (Queen’s University Belfast);

16:25 The Design of Class-F Power Amplifier by Using Asymmetrical Composite Right-/Left-handed Transmission Line

Phanam Pech (Jeonbuk National University); Suyeon Kim (Jeonbuk National University); Daehan Lee (Jeonbuk National University); Muhammad A. Chaudhary (Ajman University); Yongchae Jeong (Jeonbuk National University);

16:35 Design of Matching Networks with Bandpass Filtering Response Using Stepped Impedance Resonator

Jaehun Lee (Jeonbuk National University); Phanam Pech (Jeonbuk National University); Girdhari Chaudhary (Jeonbuk National University); Jonguk Lim (Sunchonnamyang University); Yongchae Jeong (Jeonbuk National University);

16:45 Low Profile Patch Antenna Surrounded by Mushroom-type Resonators for Highly Integrated Wireless Devices at 60GHz

I. Kaid Omar (Université Paris-Saclay); Frederic Aniel (Univ. Paris-Sud); Nicolas Zerounian (Univ. Paris 11); Badreddine Ratni (Univ. Paris 11);

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Session 1P16c

Waveguide, Circuit and Microwave Technologies

Monday PM, April 25, 2022
Room 16 - Mingdu Hall 7
Chaired by Er Ping Li

17:00 A Compact Bandpass Filter Using 2.5-D Spoof Surface Plasmon Polaritons with Wide Out-of-band Suppression

Hong-Bin Zhu (Shanghai Jiao Tong University); Lei Ji (Shanghai Jiao Tong University); Xiao-Chun Li (Shanghai Jiao Tong University); Jun-Fa Mao (Shanghai Jiao Tong University);

17:15 WR15 Six-port Interferometric Set-up for Millimeter-wave Characterization for Harsh Environments

Naval Abaleh (University of Lille); Denis Pomorski (University of Lille); Mohamed Sbeache (University of Lille); Clément Lenoir (University of Lille); Kamel Hadadi (University of Lille);

17:25 Filter-free Band-limited Digital Predistortion of Power Amplifiers for 5G Wireless Transmitters

Kang Han (Beijing University of Posts and Telecommunications); Zhijun Liu (Beijing University of Posts and Telecommunications); Xin Hu (Beijing University of Posts and Telecommunications); Weidong Wang (Beijing University of Posts and Telecommunications);

17:40 A Novel Dynamic Neuro-space Mapping Network Model for SOIFET Radio Frequency Switches

Sichen Yang (Zhejiang University); Jiefeng Zhou (Zhejiang University); Chenghan Wu (Zhejiang University); Er Ping Li (Zhejiang University — UIUC Institute);

17:55 Design and Fabrication of Compact Waveguide Filter with Complementary Split-ring Resonators (CSRR)

Sergey V. Krutov (Southern Federal University); Daria V. Lonkina (Southern Federal University); P. V. Makhno (Southern Federal University); A. B. Kleshchenkov (Southern Federal University); V. V. Makhno (Southern Federal University);

18:05 A Method to Obtain Initial Solution of Electromagnetic Power Divider for Inverse Design Based on Time-reversal Technique

Jin-Pin Liu (University of Electronic Science and Technology of China); Ren Wang (University of Electronic Science and Technology of China); Bing-Zhong Wang (University of Electronic Science and Technology of China);
Session 1P0
Online Poster Session

Monday PM, April 25, 2022
Room Online ROOM

1 Minimal State Space Realization on Delay Rational Green’s Function-based Macromodel
Xing Yu Wang (Tongji University); Mei Song Tong (Tongji University);

2 Spatio-Temporal Data Prediction of Braking System Based on Residual Error
Ji Xuan Wan (Tongji University); Kai Ting Zhou (Tongji University); Ying Liu (Tongji University); Mei Song Tong (Tongji University);

3 On-chip Current Sensing Technique for H-bridge Driver System
Pei Si Xu (Tongji University); Mei Song Tong (Tongji University);

4 Range Migration Correction Method Based on Improved Keystone Transform for GPS-based Passive Radar
Jiahao Lu (Naval University of Engineering); Binbin Wang (Naval University of Engineering); Hao Cha (Naval University of Engineering); Qigue Liu (Unit 43, Peoples Liberation Army 92941);

5 A Novel Target Detection Method for GNSS-based Bistatic Radar
Binbin Wang (Naval University of Engineering); Hao Cha (Naval University of Engineering); Zibo Zhou (Air Force Early Warning Academy); Jiahao Lu (Naval University of Engineering);

6 LMS Adaptive Filter Detection Based on Wavelet Transform in Spectrum Monitoring
Xin He (Hainan University); Zhenjia Chen (Hainan University); Yonghui Zhang (Hainan University);

7 Radio Frequency Fingerprint Feature Extraction Based on I/Q Data Distribution Features
Po Shao (Hainan University); Zhenjia Chen (Hainan University);

8 An RF I/Q Sample Data Set Acquisition Method Based on Environmental Characteristic Parameters
Ran Chen (Hainan University); Zhenjia Chen (Hainan University);

9 An X-band Power Amplifier Using IPD Technology on a Glass Substrate
Minsoo Park (Korea Electronics Technology Institute); Hongsoo Yoon (Korea Electronics Technology Institute); Jong Min Yook (Korea Electronics Technology Institute); Jein Yu (Korea Electronics Technology Institute); Jong-Gwan Yook (Yonsei University); Dongsu Kim (Korea Electronics Technology Institute);

10 A Plasma Feature Imaging Based on SOM Algorithm
Fei Xu (Anhui Province Key Laboratory of Target Recognition and Feature Extraction); Y. Bo (Anhui Province Key Laboratory of Target Recognition and Feature Extraction); L. X. Yang (Anhui Province Key Laboratory of Target Recognition and Feature Extraction); Integration Extraction Method Aided Biased Balance Detection on Linear Optical Sampling Systems
Xiyu Zhang (Xidian University); Li-Xin Guo (Xidian University); Chunlei Dong (Xidian University); Xiaoming Meng (Xidian University);

11 Study on Electromagnetic Scattering Characteristics of Complex Ground Background
Xiu-Zhang (Xidian University); Li-Xin Guo (Xidian University); Chunlei Dong (Xidian University); Xiaoming Meng (Xidian University);

12 Ground Penetrating Radar Localization System — A Complement to Autonomous Vehicle Localization Solutions
Zhi-Kang Ni (Aerospace Information Research Institute, Chinese Academy of Sciences); Shengbo Ye (Aerospace Information Research Institute, Chinese Academy of Sciences); Guangyou Fang (Aerospace Information Research Institute, Chinese Academy of Sciences);

13 A Low-profile Wideband Wide-scan Phased Antenna Array
Henghe Tang (Beijing University of Posts and Telecommunications); Yongjun Wang (Beijing University of Posts and Telecommunications); Chao Li (Beijing University of Posts and Telecommunications); Jinyun Liu (Beijing University of Posts and Telecommunications); Qi Zhang (Beijing University of Posts and Telecommunications); Lu Han (Beijing University of Posts and Telecommunications); Xianda Ren (Beijing University of Posts and Telecommunications); Xiangjun Xin (Beijing University of Posts and Telecommunications);

14 Nonlinearity Optimization of Mode-locked Fiber Laser Based on SESAM
Hangyu Zhang (The 14th Research Institute, CETC);

15 Nonlinearity Optimization of Mode-locked Fiber Laser Based on SESAM
Hangyu Zhang (The 14th Research Institute, CETC);

16 Nonlinearity Optimization of Mode-locked Fiber Laser Based on SESAM
Hangyu Zhang (The 14th Research Institute, CETC);

17 Nonlinearity Optimization of Mode-locked Fiber Laser Based on SESAM
Hangyu Zhang (The 14th Research Institute, CETC);

18 Nonlinearity Optimization of Mode-locked Fiber Laser Based on SESAM
Hangyu Zhang (The 14th Research Institute, CETC);

19 Nonlinearity Optimization of Mode-locked Fiber Laser Based on SESAM
Hangyu Zhang (The 14th Research Institute, CETC);

20 Nonlinearity Optimization of Mode-locked Fiber Laser Based on SESAM
Hangyu Zhang (The 14th Research Institute, CETC);
SC2&SC3: Ultrafast Laser-matter Interactions and Nanofabrications 1

Tuesday AM, April 26, 2022

Room 1 - Midtown Hall

Organized by Xuewen Wang, Yanlei Hu

Chaired by Xuewen Wang, Yanlei Hu

08:00 Invited
Femtosecond Laser Induced In-volume Nanostructures and Their Applications
Jingyu Zhang (Huazhong University of Science and Technology); Qiang Cao (Huazhong University of Science and Technology); Jichao Gao (Huazhong University of Science and Technology); Zhi Yan (Huazhong University of Science and Technology); Jie Tian (Huazhong University of Science and Technology); Peiyao Li (Huazhong University of Science and Technology); Sijuan Liu (Huazhong University of Science and Technology); Qiangya Xie (Huazhong University of Science and Technology); Weiliang Chen (Huazhong University of Science and Technology);

08:20 Invited
Femtosecond Laser Ablation: Fundamentals and Applications
Dongshi Zhang (Shanghai Jiao Tong University); Zhuguo Li (Shanghai Jiao Tong University);

08:40 Invited
Visualizing Carrier Transport in Perovskites
Ti Wang (Wuhan University);

09:00 Invited
Femtosecond Laser Induced Synthesis, Assembly and 3D Structuring of Functional Nanomaterials
Wei Xiong (Huazhong University of Science and Technology);

09:20 Invited
Three Dimensional Laser Nanolithography and Its Applications in Nanophotonics
Yang Cao (Jinan University);

09:40 Invited
Nanophotonic Data Storage Enabled by Laser Interactions with Nanomaterials
Qiming Zhang (University of Shanghai for Science and Technology); Min Gu (University of Shanghai for Science and Technology);

10:30 Invited
3D Waveguide Preparation by Femtosecond Laser Direct Writing
Zhen-Nan Tian (Jilin University); Ze-Zheng Li (Jilin University); Zong-Da Zhang (Jilin University); Qi-Dai Chen (Jilin University);

10:45 Invited
Two-photon Lithography for Achieving Cross-scale Micronano Structures with High Resolution
Mei-Ling Zheng (Technical Institute of Physics and Chemistry, Chinese Academy of Sciences);

10:30 Invited
Ultrafast Laser Direct Writing: From Chemistry to Photonics
Dezhi Tan (Zhejiang Lab);

10:45 Invited
Fabrication of Lasing Regimes Switchable Distributed Bragg Reflector Fiber Laser by Using Femtosecond Laser Tuo Chen (Xi’an Jiaotong University); Ruidong Le (Xi’an Jiaotong University); Jinhai Si (Xi’an Jiaotong University); Yuxing Hou (Xi’an Jiaotong University); Jin Huang (Xi’an Jiaotong University); Xun Hou (Xi’an Jiaotong University);
11:00 Self-aligned Laser-induced Periodic Surface Structure for Large-area Controllable Nanopatterning
Jiaxu Huang (Southern University of Science and Technology); Kang Xu (Southern University of Science and Technology); Shaolin Xu (Southern University of Science and Technology);

Session 2A2a
SC3: Molecular Vibrational Spectroscopy and Imaging

Tuesday AM, April 26, 2022
Room 2 - Shixin Hall 1
Organized by Delong Zhang, Minbiao Ji
Chaired by Delong Zhang

08:00 Optical-based Dual-frequency Intravascular Ultrasound
Lei Wang (Beihang University); Pu Wang (Beihang University);

08:15 Watching Life at Molecule Level by Advanced Chemical Keynote Microscopy
Ji-Xin Cheng (Boston University);

08:40 AI-based Stimulated Raman Scattering Microscopy Enables Rapid and Accurate Cancer Diagnosis
Shahua Yue (Beihang University);

08:55 Spectroscopic Imaging for Membrane Potential Measurement
Hyeon Jeong Lee (Zhejiang University);

09:10 Bringing Molecular Vibrational Spectroscopy to Phase Microscopy
Delong Zhang (Zhejiang University);

09:25 Probing a Local Bio-nano-environment with Coherent Keynote Anti-stokes Raman Scattering Microspectroscopy
Vladislav V. Yakovlev (Texas A&M University); J. T. Harrington (Texas A&M University); A. D. Shatov (Texas A&M University); H. Zhu (Zhejiang University); D. Wang (Zhejiang University); D. Zhang (Zhejiang University);

09:40 Label-free Volumetric Imaging by Dual-modality Optical-Raman Projection Tomography
Nan Wang (Xidian University); Xinyu Wang (Xidian University); Tianguo Yan (Xidian University); Hui Xie (Xidian University); Shouping Zhu (Xidian University); Xuej Chen (Xidian University);

Session 2A2b
SC3: Programmable Optical Devices and Circuits 1

Tuesday AM, April 26, 2022
Room 2 - Shixin Hall 1
Organized by Yiwei Xie, Rajesh Kumar
Chaired by Yiwei Xie, Rajesh Kumar

10:30 Phase-change Materials for Dynamically Reconfigurable Keynote Integrated Nanophotonic and Metaphotonic Devices
Ali Addi (Georgia Institute of Technology);

10:45 Photonic Integrated Circuits for Programmable Microwave Keynote Crowns Signal Generation and Processing
Jianping Yao (University of Ottawa);

11:10 New Frontiers in Hybrid Photonic Integration for Advanced Keynote Microwave Photonics
Benjamin J. Eggleton (University of Sydney);

11:35 Tailoring Light Using Programmable Optical Devices
Jian Wang (Huazhong University of Science and Technology);

Session 2A3
SC2&SC3: Photonics Empowered by Artificial Intelligence 2

Tuesday AM, April 26, 2022
Room 3 - Shixin Hall 2
Organized by Yongmin Liu, Junsuk Rho, Wei Ma
Chaired by Junsuk Rho, Wei Ma

08:00 Inverse Design of Large-scale Aperiodic Meta-optics Keynote
Zhaoyi Li (Harvard University); Raphael Pestourie (Massachusetts Institute of Technology); Joosun Park (Korea Institute of Science and Technology); Steven G. Johnson (Massachusetts Institute of Technology); Federico Capasso (Harvard University);

08:25 Integrated Metasystem for Fourier Optics and Machine Learning
Zi Wang (University of Delaware); Lorry Chang (University of Delaware); Tingyi Gu (University of Delaware);

08:40 Neural Networks for Photronics and Photonics for Neural Keynote Networks
Marin Soljačić (Massachusetts Institute of Technology);

09:05 Inverse Design and Forward Modelling in Nanophotonics Invited Using Deep-learning
Junsuk Rho (Pohang University of Science and Technology (POSTECH));

09:20 The Application of Deep Neural Network for Nanophotonic Design
Li Gao (Nanjing University of Posts and Telecommunications);

09:40 Topology Optimization for Micro/Nano Optics Invited
Yongbo Deng (Changchun Institute of Optics, Fine Mechanics and Physics (CIOMP), Chinese Academy of Sciences);
10:30 Efficient Design of 3D Chiral Plasmonic Metasurfaces Assisted by Intelligent Algorithms
Xianglai Liao (Beijing University of Posts and Telecommunications); Lili Gai (Beijing University of Posts and Telecommunications); Chuanshuo Wang (Beijing University of Posts and Telecommunications); Maogu Feng (Beijing University of Posts and Telecommunications); Tian Zhang (Beijing University of Posts and Telecommunications); Kun Xu (Beijing University of Posts and Telecommunications);

10:40 Accelerating the Innovation Cycle of Nanophotonic Systems Design
Jonathan A. Fan (Stanford University);

10:55 Deep Learning Based Modeling of Photonic Crystal Nanocavities
Renjie Li (The Chinese University of Hong Kong); Xiaozhe Gu (The Chinese University of Hong Kong); Ke Li (The Chinese University of Hong Kong); Zhaoya Zhang (The Chinese University of Hong Kong);

11:10 Tactile Sensor Using a Single Optical Fiber Path and Invited AI-based Image Recognition
Zheming Ding (Westlake University); Ziyang Zhang (Westlake University);

11:30 A Brewster Route to Nanophotonic Cherenkov Detectors
Xiao Lin (Zhejiang University); Hao Hu (Nanyang Technological University); Sajan Easo (Rutherford-Appleton Laboratory (STFC)); Yi Yang (Massachusetts Institute of Technology); Yichen Shen (Massachusetts Institute of Technology); Kezhen Yin (Mantalone Corporation); Michele Piero Blago (European Organization for Nuclear Research (CERN)); Ido Kaminer (Technion, Israel Institute of Technology); Baile Zhang (Nanyang Technological University); Hongsheng Chen (Zhejiang University); John D. Joannopoulos (Massachusetts Institute of Technology); Marin Soljačić (Massachusetts Institute of Technology); Yu Luo (Nanyang Technological University);

08:00 Observation of Topological $Z_2$ Exciton-polaritons in Invited Transition Metal Dichalcogenide Monolayers
Mengyao Li (City College of New York); Ivan S. Sinev (ITMO University); Fedor Beninetskiy (ITMO University); Tatjana Ivanova (ITMO University); Ekaterina Khestanova (ITMO University); Svetlana Kishechkina (City College of New York); Anton Vakulenko (City College of New York); Vinod M. Menon (City University of New York); Dmitry N. Krichman (University of Sheffield); Andrea Alù (City University of New York); Anton K. Samusev (ITMO University); Alexander B. Khanikaev (Graduate Center of City University of New York);

08:15 Topological Optical Frequency Combs and Dissipative Invited Kerr Super-solitons
Sunil Mittal (University of Maryland); Gregory Moille (National Institute of Standards and Technology); Kartik Srinivasan (National Institute of Standards and Technology); Yanne K. Chembo (University of Maryland); Mohammad Hafezi (University of Maryland);

08:30 Gyromagnetic Topological Photonic Crystals Invited
Baile Zhang (Nanyang Technological University);

08:45 Experimental Discovery of Topological Wannier Cycles Invited
Jian-Hua Jiang (Soochow University);

09:05 Lasing in Nanostructured Lattices Invited
Renmin Ma (Peking University);

09:25 Manipulate Light in Artificial Lattice with Synthetic Di- Invited mensions
Luqi Yuan (Shanghai Jiao Tong University);

09:45 Photonic Type-III Nodal Loop and Topological Phase Transitions at Bilayer Metasurfaces Invited
Haotao Li (Soochow University); Bo Hou (Soochow University); Chuanpeng Hu (Shenzhen Fantwave Tech. Co., Ltd);

10:30 Chiral Mode Conversion by Encircling the Exceptional Invited Points in Dissipative Thermal Systems
Wen-Xi Huang (Huazhong University of Science and Technology); Pei-Chao Cao (Huazhong University of Science and Technology); Ying Li (Zhejiang University); Xuefeng Zhu (Nanjing University);

10:50 Topological Fractal Photonics Invited
Zhaoju Yang (Zhejiang University);

11:10 Higher-order Topological Phases in Tunable C- Symmetric Photonic Crystals Invited
Hai-Xiao Wang (Guangxi Normal University); Li Liang (Guangxi Normal University); Bin Jiang (Soochow University); Jian-Hua Jiang (Soochow University);
11:25 Floquet Quadrupole Photonic Crystals Protected by Space-time Symmetry
Jicheng Jin (University of Pennsylvania); Li He (University of Pennsylvania); Jian Lu (University of Pennsylvania); Eugene J. Mele (University of Pennsylvania); Bo Zhen (University of Pennsylvania);

11:35 Optical Signal Multiplexing and Selective Localization in Dual-band Valley Topological Photonic Crystal
Guochao Wei (Harbin Institute of Technology (Shenzhen)); Jun Jun Xiao (Harbin Institute of Technology);

11:50 Vortex States in an Acoustic Weyl Crystal with a Topological Lattice Defect
Qiang Wang (Nanyang Technological University); Yong Ge (Jiangsu University); Hong-Xiang Sun (Jiangsu University); Haoran Xue (Nanyang Technological University); Ding Jia (Jiangsu University); Yi-Jun Guan (Jiangsu University); Shou-Qi Yuan (Jiangsu University); Baile Zhang (Nanyang Technological University); Y. D. Chong (Nanyang Technological University);

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**Session 2A5a**

**SC2: Acoustic Metasurfaces and Their Applications**

**Tuesday AM, April 26, 2022**

**Room 5 - Gui Hall**

Organized by Yun Jing, Yong Li
Chaired by Yun Jing

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08:00 Acoustic Metamaterials for Sound Manipulation and Beaming
Bin Liang (Nanjing University);

08:20 Reconfigurable Surface Acoustic Wave Devices by Gate Tunable Thin-film Transistors
Chen Shen (Rowan University); Shuheng Lu (Duke University); Zhenhua Tian (Mississippi State University); Tony Jun Huang (Duke University); Aaron D. Franklin (Duke University); Steven A. Cummer (Duke University);

08:35 Pillared Metasurface for Manipulating Flexural Waves
Yabin Jin (Tongji University); Wan Wang (Tongji University); Julio Iglesias (Institut FEMTO-ST, CNRS, Université de Bourgogne Franche-Comté 15B Avenue des Montboucons); Abdelkrim Khelf (Georgia Institute of Technology); Bahram Djafarirouhani (IEEMN-DHS, Institut d’Electronique);

08:55 Efficient Mode Converter and Orbital-angular-momentum Generator via Gradient-index Metamaterials
Chuan Jie Hu (Xiamen University); Huangyang Chen (Xiamen University);

09:05 Design Method of Broadband Acoustic Metasurfaces Based on the Transmission-line Theory
Tsutomu Nagayama (Kagoshima University);

09:15 Acoustic Vortex Diffraction and Manipulation Using Phase Gradient Metasurfaces
Xiao Li (Nanjing University of Aeronautics and Astronautics); Dazhong Dong (Nanjing University of Aeronautics and Astronautics); Youwen Liu (Nanjing University of Aeronautics and Astronautics); Yafeng Xu (Soochow University); Yangyang Fu (Nanjing University of Aeronautics and Astronautics);

09:30 Broadband Acoustic Ventilation Barriers
Xu Wang (Tongji University); Dongxing Mao (Tongji University); Yong Li (Tongji University);

09:45 Acoustic Field Manipulations with Geometric-phase Meta-atoms
Bingyu Liu (Beijing Institute of Technology); Lingling Huang (Beijing Institute of Technology);
11:30 Giant Enhancement of Second Harmonic Generation from a Nanocavity Metasurface
Xuecai Zhang (Southern University of Science and Technology); Junhong Deng (Southern University of Science and Technology); Mingke Jin (Southern University of Science and Technology); Yang Li (Southern University of Science and Technology); Ningbin Mao (Southern University of Science and Technology); Yu-tao Tang (Southern University of Science and Technology); Xuan Liu (Southern University of Science and Technology); Wenfeng Cai (Southern University of Science and Technology); Yao Wang (Southern University of Science and Technology); Kingfai Li (Southern University of Science and Technology); Yanjun Liu (Southern University of Science and Technology); Guixin Li (Southern University of Science and Technology);

11:45 Optical Metasurface-based Masquerade
Invited
Kun Huang (University of Science and Technology of China);

Session 2A6b
SC2: Non-Hermitian Physics and Its Applications in Light and Sound 1
Tuesday AM, April 26, 2022
Room 6 - Mingrui Hall
Organized by Guancong Ma, Kun Ding
Chaired by Guancong Ma

08:00 Moiré Chiral Metamaterials: Fundamentals and Applications
Invited
Zilong Wu (The University of Texas at Austin); Yao-ran Liu (The University of Texas at Austin); Yue-ning Zheng (The University of Texas at Austin);

08:15 Twist Degree of Freedom — From 2D Material Growth Invited to Photonic Crystals
Invited
Jie Yao (University of California);

08:30 Phononic Analog of Bilayer Graphene
Invited
Yun Jing (The Pennsylvania State University);

08:45 On-demand Field Shaping for Enhanced Magnetic Resonance Imaging Using an Ultrathin Reconfigurable Metasurface
Invited
Yang Zhao (University of Illinois at Urbana-Champaign); Hanwei Wang (University of Illinois at Urbana-Champaign); Yan-Sheng Chen (University of Illinois at Urbana-Champaign);

09:00 Observation of Ideal Type-II Weyl Points in Twisted One-dimensional Dielectric Photonic Crystals
Invited
Ying Chen (Huazhao University); Hai-Xiao Wang (Guangxi Normal University); Qiaoliang Bao (The Hong Kong Polytechnic University); Jian-Hua Jiang (Soochow University); Huanyang Chen (Xiamen University);

09:15 Twisted Polaritons
Keynote
Andrea Alù (City University of New York);

09:40 Cavity Control of Excitons in Twisted Heterobilayers
Invited
Long Zhang (Xiamen University); Eunice Paik (University of Michigan); Pengcheng Wu (University of Maryland); Shaocong Hou (University of Michigan); G. William Burg (University of Texas at Austin); Emmanuel Tutuc (University of Texas at Austin); Stephen R. Forrest (University of Michigan); Hui Deng (University of Michigan);

10:30 Light Localization and Steering in Photonic Moiré Lattices
Invited
Fangwei Ye (Shanghai Jiao Tong University);

10:50 The Near-field Radiative Heat Transfer of Hyperbolic Materials
Invited
Xiaohu Wu (Shandong Institute of Advanced Technology);
Session 2A7a
SC2&SC3: Cavity Optomechanics 1

Tuesday AM, April 26, 2022
Room 7 - Mingsi Hall
Organized by Yong-Chun Liu, Zhangqi Yin
Chaired by Yong-Chun Liu, Zhangqi Yin

08:00 Quantum Optomechanics with Virtual Photons
Invited
Tongcang Li (Purdue University);

08:15 Measurement of High-order Phonon Correlations in a
Invited Superfluid Optomechanical Resonator
Yogesh Patil (Yale University);

08:30 Quantum Simulation of Cavity Optomechanics
Invited
Jie-Qiao Liao (Hunan Normal University);

08:50 Phonon Lasing and Mode Squeezing with Mechanical
Invited Resonators
Guangwei Deng (University of Electronic Science and Technology of China);

09:10 Multi-mode Interactions and Synchronizations in the Si-
Invited PhC Cavity Optomechanics
Yongjun Huang (University of Electronic Science and Technology of China);

Session 2A7b
SC3: Supercontinuum and Frequency Combs: Fundamental Physics and Applications 1

Tuesday AM, April 26, 2022
Room 7 - Mingsi Hall
Organized by Feng Li, Zhe Kang
Chaired by Feng Li, Zhe Kang

09:30 Dynamical Methods for Studying Stability and Noise in
Invited Frequency Comb Sources
Curtis R. Menyuk (University of Maryland Baltimore County); Logan Courtwright (University of Maryland Baltimore County); Zhen Qi (University of Maryland Baltimore County); Shaokang Wang (University of Maryland Baltimore County); Thomas F. Carruthers (University of Maryland Baltimore County);

09:45 Integrated Lithium-niobate Electro-optic Devices
Invited
Mengjie Yu (Harvard University);

10:00 Lasing from an Organic Micro-helix
Invited
Hao-Li Zhang (Lanzhou University);

10:15 Soliton Microcombs: Integrated Photonics Powering
Invited Metrology
Qi-Fan Yang (Peking University);

10:30 Microresonator Frequency Combs Generated by MgF2
Invited Crystalline Microresonator and SiN Microring for Telecom Applications
Takasumi Tanabe (Keio University); Shun Fujii (Keio University); Soma Kogure (Keio University); Satoki Kawanishi (Keio University);

Session 2A8
SC3: Organic Photonics 1

Tuesday AM, April 26, 2022
Room 8 - Minghou Hall
Organized by Qing Liao, Hongbing Fu
Chaired by Hongbing Fu, Qing Liao

08:00 Lasing from an Organic Micro-helix
Invited
Hao-Li Zhang (Lanzhou University);

08:20 Difluoroboron Diketonate-based Luminescent Materials
Invited
Qing Zheng Yang (Beijing Normal University);

08:40 Organic Microlaser Materials and Devices
Invited
Yong Sheng Zhao (Institute of Chemistry, Chinese Academy of Sciences);

09:00 Regulation of Polarized Emissions of Organic
Invited Nano/Microstructures
Yu Wu Zhong (Institute of Chemistry, Chinese Academy of Sciences);

09:20 High Mobility Emissive Organic Semiconductors and
Invited Devices
Huanli Dong (Institute of Chemistry, Chinese Academy of Science);

09:40 Two-dimensional Inorganic Molecular Crystals
Invited
Tianyou Zhai (Huazhong University of Science and Technology);

10:00 Two-dimensional Crystals of Organic Semiconductors
Invited
Wenping Hu (Tianjin University);

10:20 Controlled Synthesis of Organic Low-dimensional Pho-
Invited tonic Structures: From Single to Multistage
Xue-Dong Wang (Soochow University);

10:40 Low-dimensional Lead Halide Perovskite Laser for
Invited Multi-color Displays
Haihua Zhang (Tianjin University);

11:00 Rational Design of Conductive Polymers for Flexible
Invited Thermoelectric Device
Hui Li (Institute of Ceramics, Chinese Academy of Sciences);
11:30 Efficient Singlet Fission via a High-lying $3^1A_g$ Dark Intermediate State
Long Wang (Taiyuan University of Technology); Hongbing Fu (Capital Normal University); Jinian Yao (Institute of Chemistry, Chinese Academy of Sciences);

11:45 Coherent Primary Charge Separation in Reaction Center Revealed by Two-dimensional Electronic Spectroscopy
Fei Ma (Institute of Botany, Chinese Academy of Sciences); L.-J. Yu (Institute of Botany, Chinese Academy of Sciences); R. van Grondelle (VU University Amsterdam);

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Session 2A9a
SC3: Room Temperature Exciton-polariton and Polaritonic Devices
Tuesday AM, April 26, 2022
Room 9 - Tianren Hall
Organized by Qing Zhang, Xinfeng Liu
Chaired by Qing Zhang, Xinfeng Liu

08:00 Self-assembled Organic Solid-state Lasers
Invited
Hongbing Fu (Capital Normal University);

08:20 Exciton-polariton in One-dimensional Perovskite Nanowires
Qing Zhang (Peking University);

08:40 The Enhancements of Light-matter Interactions in Arrayed Plasmonic Nanostructures
Zhang-Kai Zhou (Sun Yat-Sen University);

09:00 Direct Measurement of Berry Curvature and Quantum Metric Tensor in an Organic Optical Microcavity
Feng Li (Xi’an Jiaotong University);

09:20 Tunable Single-mode Lasing from Exciton-polaritons in Symmetry Broken Traps
Chuan Tian (Huazhong University of Science & Technology); Linqi Chen (Shanghai Institute of Optics and Fine Mechanics); Hongxing Dong (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Science); Weihang Zhou (Huazhong University of Science and Technology);

09:40 Exploring the Strong Coupling Regime in Two-dimensional Semiconductors
Xiaolong Hu (Wuhan University);

10:00 Optical Properties of Organic Materials in the Open Cavity
Yiming Li (Xi’an Jiaotong University);

10:45 Measuring 3D Orientation of Nanocrystals via Polarized Luminescence of Rare-earth Dopants
Peng Li (Xi’an Jiaotong University);

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Session 2A9b
Optics Sensor, Optical Network and Others
Tuesday AM, April 26, 2022
Room 9 - Tianren Hall
Chaired by John Alexander Crosse, Dengwei Zhang

11:00 Faraday Rotations, Ellipticity and Circular Dichroism in Van der Waals Heterostructures
John Alexander Crosse (New York University Shanghai); P. Moon (New York University Shanghai & New York University);

11:15 Electrically Pumped Topological Laser
Yongquan Zeng (Wuhan University);

11:30 Atmospheric Humidity Analysis over Tibetan Plateau Based on FY-3C/D MWHTS Observations
Jieying He (National Space Science Center, Chinese Academy of Sciences); Guo Yang (National Satellite Meteorological Center China Meteorological Administration); Shengwei Zhang (National Space Science Center, Chinese Academy of Sciences); Na Li (National Space Science Center, Chinese Academy of Sciences);

11:45 Investigation on Calibration and Validation for FY-3 Series Microwave Humidity Sounders
Jieying He (National Space Science Center, Chinese Academy of Sciences); Guo Yang (National Satellite Meteorological Center China Meteorological Administration); Shengwei Zhang (National Space Science Center, Chinese Academy of Sciences); Na Li (National Space Science Center, Chinese Academy of Sciences);

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Session 2A10a
SC3: Quantum Information Processing and Devices
Tuesday AM, April 26, 2022
Room 10 - Tianhong Hall
Organized by Hai-Zhi Song, Guangwei Deng
Chaired by Hai-Zhi Song, Guangwei Deng

08:00 Superconducting Nanowire Single-photon Detectors and Invited Multi-photon Detectors
Xiaolong Hu (Tianjin University);
08:20 Quantum Teleportation System through Fiber Networks Invited on Campus  
Quiang Zhou (University of Electronic Science and Technology of China); Si Shen (University of Electronic Science and Technology); Chenzhi Yuan (University of Electronic Science and Technology); Zichang Zhang (University of Electronic Science and Technology of China); Ruiming Zhang (University of Electronic Science and Technology of China); Yanru Fan (University of Electronic Science and Technology of China); You Wang (University of Electronic Science and Technology of China); Hai-Zhi Song (Southwest Institute of Technical Physics);

08:40 High-performance Optical Nonreciprocity Using Atomic Invited Ensembles  
Yong-Chuan Liu (Tsinghua University);

09:00 Unidirectional and Chiral Energy Transfer by Phase-matching of the PT- and Anti-PT-symmetric Couplings Invited  
Yu-Long Liu (Beijing Academy of Quantum Information and Science); Tie-Fu Li (Tsinghua University);

09:20 Plasmonic-enhanced Spin Defects in Hexagonal Boron Nitride for Quantum Sensing Invited  
Tongcang Li (Purdue University);

09:35 “BAMA” Formulation: Efficient Quantization of Electromagnetic Fields in Finite-sized Absorbing, Dispersive, and Inhomogeneous Media Invited  
Dong-Youp Na (Purdue University); Weng Cho Chew (Purdue University);

09:45 Twin-photon Vector Spatial Modes and Corresponding Quantum Interference Invited  
Zhi-Han Zhu (Harbin University of Science and Technology); Carmelo Rosales-Guzmán (Harbin University of Science and Technology); Baosen Shi (University of Science and Technology of China);

10:30 Evolution and Interconversion of Polarization Singularities in the Momentum Space of Photonic Crystal Slabs Invited  
Jianlong Liu (Harbin Engineering University); Weimin Ye (National University of Defense Technology);

10:45 Bound States in the Continuum and Lasing Modes in Non-Hermitian Systems Invited  
Qianfu Song (Sichuan/Southwest University of Science and Technology); Dezhuan Han (Chongqing University);

11:00 Topologically Enabled Intensity Flattened Phase Shifting in Photonic Crystal Slab  
Zixuan Zhang (Peking University); Xuefan Yin (Kyoto University); Zihao Chen (Peking University); Feifan Wang (Peking University); Weiwei Hu (Peking University); Chao Peng (Peking University);

11:15 Polarization Singularities of Photonic Quasicrystals in Momentum Space  
Zhiyuan Che (Fudan University); Yanbin Zhang (Fudan University); Wenzhe Liu (Fudan University); Maozong Zhao (Fudan University); Jiajun Wang (Fudan University); Wenjie Zhang (Fudan University); Fang Guan (Fudan University); Xiaohan Liu (Fudan University); Wei Liu (National University of Defense Technology); Lei Shi (Fudan University); Jian Zi (Fudan University);

11:30 Polarization Singularities in Light Scattering by Small Particles  
Jie Peng (City University of Hong Kong); Wei Liu (National University of Defense Technology); Shubo Wang (City University of Hong Kong);

11:40 Generating Optical Vortex Beams by Momentum-space Polarization Vortices Centered at Bound States in the Continuum  
Bo Wang (Fudan University); Wenzhe Liu (Fudan University); Maozong Zhao (Fudan University); Yiwen Zhang (Fudan University); Jiajun Wang (Fudan University); Ang Chen (Fudan University); Fang Guan (Fudan University); Xiaohan Liu (Fudan University); Lei Shi (Fudan University); Jian Zi (Fudan University);

Session 2A11a  
SC2&SC3: Intelligent Photonics  
Tuesday AM, April 26, 2022  
Room 11 - Tianhe Hall  
Organized by Cuicui Lu, Lili Gui  
Chaired by Cuicui Lu, Lili Gui

08:00 Computing with Natural Waves Invited  
Zhong Yu (University of Wisconsin-Madison);

08:15 Intelligent Signal Processing by Neuromorphic Silicon Photonics Invited  
Chaoran Huang (The Chinese University of Hong Kong); Thomas Ferreira De Lima (Princeton University); Simon Bilodeau (Princeton University); Weipeng Zhang (Princeton University); Hsuan-Tung Peng (Princeton University); Bhavin J. Shastri (Queen’s University); Paul Pruncal (Princeton University);

08:30 Tunable and Transient Plasmonic Structures Invited  
Li Gao (Nanjing University of Posts and Telecommunications);

08:50 Photonic Integrated Circuits with Inverse Design Invited  
Kiyoul Yang (Stanford University);
09:05 Data-driven Models for the Inverse Design of Complex Multi-functional Metasurfaces
Wei Ma (Zhejiang University);

09:25 Flat Optics for Optical Image Processing
Invited You Zhou (Vanderbilt University); Jason G. Valentine (Vanderbilt University);

09:40 A Deep Mixture Density Network Model for Inverse Design of Photonic Structures
Rohit Unni (University of Texas at Austin); Kan Yao (University of Texas at Austin); Yuebing Zheng (The University of Texas at Austin);

09:50 Nanophotonic Devices Based on Intelligent Algorithm
Hongyi Yuan (Beijing Institute of Technology); Cuicui Lu (Beijing Institute of Technology);

09:50 Nanophotonic Devices Based on Intelligent Algorithm
Hongyi Yuan (Beijing Institute of Technology); Cuicui Lu (Beijing Institute of Technology);

09:50 Nanophotonic Devices Based on Intelligent Algorithm
Hongyi Yuan (Beijing Institute of Technology); Cuicui Lu (Beijing Institute of Technology);

09:50 Nanophotonic Devices Based on Intelligent Algorithm
Hongyi Yuan (Beijing Institute of Technology); Cuicui Lu (Beijing Institute of Technology);

09:50 Nanophotonic Devices Based on Intelligent Algorithm
Hongyi Yuan (Beijing Institute of Technology); Cuicui Lu (Beijing Institute of Technology);

09:50 Nanophotonic Devices Based on Intelligent Algorithm
Hongyi Yuan (Beijing Institute of Technology); Cuicui Lu (Beijing Institute of Technology);

10:30 Thermal Emission: Ultrafast Control and Planck Spectroscopy
Yuzhe Xiao (University of Wisconsin);

10:45 Plasmonic Nanostructures and Their Application in Optoelectronics
Pierre Berini (University of Ottawa);

10:55 High-performance Optical Sensors Enabled by Active Plasmon Lasers
Invited Tao Wang (Hangzhou Dianzi University); H. Zhang (Hangzhou Dianzi University); J. Sun (Hangzhou Dianzi University); I. De Leon (Tecnologico de Monterrey); R. P. Zaccaria (Cizzi Institute of Biomedical Engineering, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences); H. Chen (Zhejiang University); G. Wang (Hangzhou Dianzi University);

11:15 Sodium-based Plasmonic Nanolaser with a Record-low Threshold at Near-infrared Invited Yi-Fei Mao (Peking University); Renmin Ma (Peking University);

11:35 Mie-resonant Metaphotonics and Metasurfaces
Keynote Yuri S. Kivshar (Australian National University);

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Session 2A12a
FocusSession.SC5: Microwave Remote Sensing of Coastal and Marine Environments 2

Tuesday AM, April 26, 2022
Room 12 - Mingdu Hall 2
Organized by Xiaofeng Yang, Gang Zheng
Chaired by Xiaofeng Yang, Gang Zheng

08:00 Qualifying Ocean Surface Wave Signatures in the Return Vectors of a Space-borne Scatterometer in Simulations
Xingou Xu (National Space Science Center, Chinese Academy of Sciences); Xiaolong Dong (National Space Science Center, Chinese Academy of Sciences); Sai-bun Tjuatja (University of Texas at Arlington);

08:15 Variability of Wind Energy in the South China Sea
Yisheng Zhang (Beijing Applied Meteorology Institute); Yongcan Cheng (PIESAT Information Technology Co., Ltd.); Yizhi Li (Zhejiang Huadong Surveying and Engineering Safety Technology Co., Ltd);

08:30 Classifying Sea Ice Types with a U-Net Model from Dual-polarized Sentinel-1 Images and GLCM Texture Feature
Yan Huang (Chinese Academy of Sciences and Center for Ocean Mega-Science, Chinese Academy of Sciences); Yibin Ren (Institute of Oceanology, Chinese Academy of Sciences); Xiaofeng Li (Institute of Oceanography, Chinese Academy of Sciences);

08:45 The Preliminary Airborne Flight Experiment Results of Doppler Scatterometer
Qingliu Bao (Beijing PIESAT Information Technology Co., Ltd.); Di Zhu (National Space Science Center, Chinese Academy of Sciences); Xiaolong Dong (National Space Science Center, Chinese Academy of Sciences);

09:00 Wind Speed Estimation for Tropical Cyclone from Combined Active and Passive Measurements
Kunsheng Xiang (Piesat Information Technology Co., Ltd.); Xiaobin Yin (Ocean University of China);

09:15 Estimation of Wind Induced Ocean Microwave Emission at C- and X-band Frequencies from the AMSR2 Measurements over the Arctic Waters
Elizaveta V. Zabolotskikh (Russian State Hydrometeorological University); B. Chapron (Russian State Hydrometeorological University);

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Session 2A12b
Remote Sensing, Inverse Problems, Imaging, GPR, Radar and Sensing 1

Tuesday AM, April 26, 2022
Room 12 - Mingdu Hall 2
Chaired by Shurun Tan
Session 2A13a

**Focus Session SC5: Physical Modeling and Applications in GNSS Reflectometry and other SoOp Observables 2**

Tuesday AM, April 26, 2022
Room 13 - Mingdu Hall 3
Organized by Rashmi Shah, Mehmet Kurum
Chaired by Mehmet Kurum, Rashmi Shah

08:00 GNSS-R for High Precision Altimetry Applications
Y. Jade Morton (University of Colorado); Carolyn Roessler (University of Colorado); Yang Wang (University of Colorado); Brian Breitsch (University of Colorado); Margaret Scott (University of Colorado); R. Steve Nerem (University of Colorado);

08:10 Signals of Opportunity Synthetic Aperture Radar for High Resolution Remote Sensing of Land Surfaces
Simon H. Yueh (California Institute of Technology);
Rashmi Shah (NASA JPL/California Institute of Technology);
Xiaolan Xu (California Institute of Technology);
Bryan W. Stiles (California Institute of Technology);
Javier Bosch-Lluis (California Institute of Technology);
Garth Franklin (California Institute of Technology);
Devin Cody (California Institute of Technology);
Mehmet Ogut (California Institute of Technology);
Chi-Chih Chen (California Institute of Technology);

08:35 Retrieve Vegetation Optical Depth from CYGNSS Data Using the Physical Model
Xiaolan Xu (California Institute of Technology);
Simon H. Yueh (California Institute of Technology);
Rashmi Shah (NASA JPL/California Institute of Technology);
Akiko Hayashi (California Institute of Technology);

08:45 An Attempt to Resolve Some of the Ambiguity in the Interpretation of GNSS-R Surface Reflectivity Observations over Land
Clara Chew (University Corporation for Atmospheric Research);

08:55 A Comprehensive Change Detection Algorithm for Spaceborne GNSS-R Soil Moisture Retrievals over Complex Terrain
Mohammad Al-Khaldi (University Corporation for Atmospheric Research);
Joel T. Johnson (The Ohio State University);
Scott Gleason (University Corporation for Atmospheric Research);

09:05 Preliminary Complex DDM Simulations of SMAP Cal/Val Sites Using the SoOp Coherent Bistatic Model (SCoBi)
Dylan Ray Boyd (Mississippi State University);
Mehmet Kurum (Mississippi State University);

09:15 Calculations of Coherent Waves and Incoherent Waves Using Analytical Kirchhoff Solutions (AKS) with Land Surface Spectrum from Lidar Measurements
Haokui Xu (University of Michigan); Jigue Zhu (University of Michigan); Leung Tsang (University of Michigan); Bowen Ren (University of Michigan); Alexandra Bringer (The Ohio State University); Joel T. Johnson (The Ohio State University);

09:25 Application of LIDAR Digital Elevation Models to CYGNSS Land Modeling
Erik Hodges (University of Southern California);
James Campbell (University of Southern California);
Amer Melebari (University of Southern California);
Alexandra Bringer (The Ohio State University); Joel T. Johnson (The Ohio State University);
Mahla Moghaddam (University of Illinois at Urbana-Champaign);
09:35  Understanding the Impact of Surface Roughness on GPS Land Reflected Signals
Alexandra Bringez (The Ohio State University); J. T. Johnson (The Ohio State University); T. Wang (The Ohio State University);

Session 2A13b
SC5: Remote Sensing of Water and Energy Cycles 1

Tuesday AM, April 26, 2022
Room 13 - Mingdu Hall 3
Organized by Hui Lu, Jiancheng Shi
Chaired by Hui Lu, Jiancheng Shi

10:30 Observations of the Water Cycle from Imaging Spec-troscopy
Jeff Dozier (University of California);

10:55 Remote Sensing of Snow Water Equivalent Based on X and Ku Band Radar Observations: Data Analysis and Retrieval
Jiyue Zhu (University of Michigan); Leung Tsang (University of Michigan); Do Hyuk Kang (NASA Goddard Space Flight Center); Edward J. Kim (NASA Goddard Space Flight Center);

11:05 Multi-frequency NMM3D Simulations of Vegetation Effects Using a Hybrid Method for Remote Sensing of Soil Moisture
Weihui Gu (University of Michigan); Leung Tsang (University of Michigan); Andreas Collander (California Institute of Technology); Simon H. Yueh (California Institute of Technology);

11:15 Leveraging Artificial Intelligence for Enhanced Satellite Retrievals of Orographic Precipitation
Haoran Chen (Colorado State University); Robert Cifelli (NOAA Physical Sciences Laboratory); Pingping Xie (NOAA Climate Prediction Center);

11:25 Quantifying the Hydrometeorological Impacts of Lowering Operational Weather Radar Scan Elevation Angle
Liangwei Wang (Colorado State University); Haoran Chen (Colorado State University);

11:35 Tomography Imaging of Terrestrial Snow for SWE Retrieval Using Frequency-angular Correlation Functions and Asymmetrical Distorted Born’s Approximation
Huakui Xu (University of Michigan); Leung Tsang (University of Michigan); Xiaolan Xu (California Institute of Technology);

Session 2A14a
SC4: Wide Aperture Antenna/Array

Tuesday AM, April 26, 2022
Room 14 - Mingdu Hall 5
Organized by Wei Wang, Qingsheng Zeng
Chaired by Wei Wang, Yanbin Luo

08:00 Design of a Wide-beam Waveguide Slot Antenna for Anti-interference Applications
Honggi Li (Shanghai Jiao Tong University); Xiaohan Zhang (Shanghai Jiao Tong University); Xue-meng Chen (Shanghai Jiao Tong University); Rong-Hong Jin (Shanghai Jiao Tong University); Jun-Ping Geng (Shanghai Jiao Tong University); Xian-ling Liang (Shanghai Jiao Tong University);

08:25 A Ka Full Band Dual Circularly Polarized Antenna for Satellite Applications
Yanbin Luo (The 38th Research Institute of China Electronics Technology Group Corporation); Wei Wang (The 38th Research Institute of China Electronics Technology Group Corporation); Qingsheng Zeng (Nanjing University of Aeronautics and Astronautics); M. Chen (The 38th Research Institute of China Electronics Technology Group Corporation); Hongtao Zhang (East China Research Institute of Electronic Engineering); Z. Zheng (The 38th Research Institute of China Electronics Technology Group Corporation); Y. Wei (Xi’an Satellite Control Center); Tayeb Ahmed Denidni (University of Quebec);

08:40 A Compact Polarization and Pattern Reconfigurable Patch Antenna with Frequency Tailored by Digital Coding Method
Jie Wu (Anhui University); Wei Wang (East China Research Institute of Electronic Engineering); Zhi-Xiang Huang (Anhui University);

08:55 A Transmitting and Receiving Coplanar Distribution Design for Limited Scan Phased Array
Zhi Zheng (The 38th Research Institute of China Electronics Technology Group Corporation); Wei Wang (East China Research Institute of Electronic Engineering); Yanbin Luo (The 38th Research Institute of China Electronics Technology Group Corporation); M. Chen (The 38th Research Institute of China Electronics Technology Group Corporation); Hongtao Zhang (East China Research Institute of Electronic Engineering); Qingsheng Zeng (Nanjing University of Aeronautics and Astronautics);
09:10 An Overview of Investigations on Non-foster Electrical Small Antennas with Negative Impedance Matching Circuits
Tian Qiu (Nanjing University of Aeronautics and Astronautics); Qingsheng Zeng (Nanjing University of Aeronautics and Astronautics); Yandong Zhang (Nanjing University of Aeronautics and Astronautics); Yuqiu Shang (Nanjing University of Aeronautics and Astronautics); Yong Wu (Nanjing University of Aeronautics and Astronautics); Jiangmei Tang (Nanjing University of Aeronautics and Astronautics);

09:20 Comparative Studies of Fabry-Perot Resonator Antennas in Microwave and Terahertz Bands
Hongjiang Zhang (China Academy of Launch Vehicle Technology); Qingsheng Zeng (Nanjing University of Aeronautics and Astronautics); Yuqiu Shang (Nanjing University of Aeronautics and Astronautics); Yong Wu (Nanjing University of Aeronautics and Astronautics); Jiangmei Tang (Nanjing University of Aeronautics and Astronautics); Feng Chen (University of Aeronautics and Astronautics);

09:30 Dual-Polarized Frequency-Selective Transmission Structure with Two-sided Absorption Bands
Zhefei Wang (Nanjing University of Information Science and Technology); Qingsheng Zeng (Nanjing University of Aeronautics and Astronautics); Tian Qiu (Nanjing University of Aeronautics and Astronautics); Zhenjiang Zhao (Université du Québec); Tayeb Ahmed Denidni (University of Quebec);

11:00 Design of Near-omnidirectional Wideband Metamaterial Absorber Based on Characteristic Mode Analysis
Ting Shi (University of Electronic Science and Technology of China); Ming-Chun Tang (Chongqing University); Xuesong Yuan (University of Electronic Science and Technology of China);

12:55 Design of Dielectric Resonator Antennas Using Sub-structure Surface Integral Equation-based Characteristic Mode Analysis
Boguan Ma (University of Electronic and Science and Technology of China); Shaode Huang (Chongqing University); Chao-Fu Wang (University of Electronic Science and Technology of China);

Session 2A14b
SC1: Advances on Applications of Characteristic Modes to Antenna Analysis and Design

Tuesday AM, April 26, 2022
Room 14 - Mingdu Hall 5
Organized by Shaode Huang, Jihong Gu
Chaired by Shaode Huang, Jihong Gu

10:30 Analysis of Antennas with Composite Structure Using Invited Theory of Characteristic Modes
Chao-Fu Wang (National University of Singapore);

10:45 A Metasurface Omnidirectional Antenna Design Using CMA
Fangzheng Ji (Hefei University of Technology); Zhixin Wang (Hefei University of Technology); Li Ying Nie (University of Electronic Science and Technology of China); Zhaoneng Jiang (Hefei University of Technology);

11:00 Electromagnetic Behavior Study of Conformal Cylindrical Stratified Structures with Theory of Characteristic Modes
Jihong Gu (National University of Singapore); Chao-Fu Wang (National University of Singapore);
09:00 A Finite Volume Scheme for Thermal Simulation Using Locally Refined Semi-structured Grids
Zhaoquan Huang (Shanghai Jiao Tong University); Min Tang (Shanghai Jiao Tong University);
09:15 A Physics-based Compact Model for Set Process of Resistive Random Access Memory (RRAM) with Graphene Electrode
Xingyu Zhai (Zhejiang University); Wen-Yan Yin (Zhejiang University); Yanbin Yang (The Zhejiang Intelligence Institute in Chengdu Tianfu District); Wenchao Chen (Zhejiang University);
09:30 New Multiphysics Methods for Integrated Circuits and Keynote Systems
Qing Huo Liu (Duke University); Ke Chen (Xiamen University); Yu Jia (Duke University); Jie Liu (Xiamen University); Na Liu (Xiamen University); Qi Qiang Liu (Xiamen University); Shi Jie Wang (Xiamen University); Mingwei Zhuang (Xiamen University);
10:30 Quantum Maxwell’s Equations Made Simple Keynote
Weng Cho Chew (Purdue University); Dong-Youp Na (Purdue University); Peter Bermel (Purdue University); Thomas E. Roth (Purdue University); Christopher Jayun Ryu (University of Illinois); Kudeki Erhan (University of Illinois);
10:55 Next-generation Multi-frequency Microwave Imaging System for Real-time Thermal Therapy Monitoring
Yuan Pang (University of Southern California); Kazem Bakian-Dogahch (University of Southern California); Mahta Moghaddam (University of Southern California);
11:05 Parallel Multiphysics Simulation of System-in-Package on High-performance Computing Architectures
Weijie Wang (Institute of Applied Physics and Computational Mathematics); Yannan Liu (Institute of Applied Physics and Computational Mathematics); Shaoliang Hu (Institute of Applied Physics and Computational Mathematics); Zhenqiao Zhao (Institute of Applied Physics and Computational Mathematics); Haijing Zhou (Institute of Applied Physics and Computational Mathematics);
11:20 Thermo-mechanical Reliability Analyses Based on the SETD Method for Electronic Devices
Qi Qiang Liu (Xiamen University); Mingwei Zhuang (Xiamen University); Weichen Zhan (Xiamen University); Na Liu (Xiamen University); Qing Huo Liu (Duke University);
11:35 A Parallel Multiphysics Simulation of Phased Array Antennas Based on Finite Element Infrastructure
Yan-Nan Liu (CAEP Software Center for High Performance Numerical Simulation); Wei-Jie Wang (CAEP Software Center for High Performance Numerical Simulation); Shao-Liang Hu (CAEP Software Center for High Performance Numerical Simulation); Zhen-Guo Zhao (CAEP Software Center for High Performance Numerical Simulation); Hai-Jing Zhou (Institute of Applied Physics and Computational Mathematics);
11:50 Geometric Diode Modeling for Energy Harvesting Applications
Nicola Pelagalli (Marche Polytechnic University); Martino Aldrigo (IMT Bucharest); Mircea Dragoman (IMT Bucharest); Mircea Modreanu (Tuland National Institute); Davide Mencarelli (Marche Polytechnic University); Luca Pierantonio (Marche Polytechnic University);

Session 2A15b
SC1: Advanced Techniques in Multiphysics Modeling

Tuesday AM, April 26, 2022
Room 15 - Mingdu Hall 6
Organized by Qiwei Zhan, Weijie Wang
Chaired by Qiwei Zhan, Weijie Wang

10:00 High Sensitivity Receiver Using Radiometer
Invited
Nan-Nan Wang (Harbin Institute of Technology); Wei Li (Harbin Institute of Technology); Jing-Hui Qiu (Harbin Institute of Technology);
11:00 Terahertz Digital Beam Steering via Modularly Reconfigurable HEMT-embedded Metasurfaces
Feng Lan (University of Electronic Science and Technology of China); Gaiju He (University of Electronic Science and Technology of China); Yibo Pan (University of Electronic Science and Technology of China); Yalan Yang (University of Electronic Science and Technology of China); Ziqiang Yang (University of Electronic Science and Technology of China); Ziqiang Yang (University of Electronic Science and Technology of China);
11:20 Imaging Using Two-beam Self-mixing Interferometry with a Terahertz Quantum Cascade Laser
Yan Xie (Tsinghua University); Weidong Chu (Institute of Applied Physics and Computational Mathematics); Yingxin Wang (Tsinghua University); Ziran Zhao (Tsinghua University);
11:40 Dual-electron-beams Steering Direction Tunable THz Radiation Waves at a Fixed Frequency
Daofan Wang (Guilin University of Electronic Technology); Tao Fu (Guilin University of Electronic Technology); Ziquan Zhou (Guilin University of Electronic Technology);
09:10 Broadband Terahertz Diffuse Scattering on Convolutional Coding Metasurfaces
Guju He (University of Electronic Science and Technology of China); Feng Lan (University of Electronic Science and Technology of China); Yibo Pan (University of Electronic Science and Technology of China); Yaxin Zhang (University of Electronic Science and Technology of China); Tianyang Song (University of Electronic Science and Technology of China); Zongjian Shi (University of Electronic Science and Technology of China); Ziqiang Yang (University of Electronic Science and Technology of China);

09:25 Dual-band Trifunctional Coding Metasurfaces Based on Independent Control of Transmission and Reflection
Yaxin Zhang (University of Electronic Science and Technology of China); Feng Lan (University of Electronic Science and Technology of China); Yaxin Zhang (University of Electronic Science and Technology of China); Guju He (University of Electronic Science and Technology of China); Luayang Wang (University of Electronic Science and Technology of China); Ziqiang Yang (University of Electronic Science and Technology of China);

10:30 Polarimetric Imaging of Ship Using Passive Millimeter-wave
Yayun Cheng (Harbin Institute of Technology); Jiaran Qi (Harbin Institute of Technology); Jing-Hai Qiu (Harbin Institute of Technology);

10:40 Reflective Terahertz Pulsed Imaging with Compressed Sensing
Xinke Wang (Capital Normal University); Yan Zhang (Capital Normal University);

10:55 Ultra-wideband Linear Polarization Expansions on Collectively Zigzag-like Inter-coupling Metasurfaces
Munan Yang (University of Electronic Science and Technology of China); Feng Lan (University of Electronic Science and Technology of China); Tianyang Song (University of Electronic Science and Technology of China); Guju He (University of Electronic Science and Technology of China); Yibo Pan (University of Electronic Science and Technology of China); Yaxin Zhang (University of Electronic Science and Technology of China); Ziqiang Yang (University of Electronic Science and Technology of China); Zongjian Shi (University of Electronic Science and Technology of China);

11:10 Reduction of the Port Reflection Coefficient on SSPP through Quadratic Polynomial Sinusoidal Transition
Yujian Wang (University of Electronic Science and Technology of China); Feng Lan (University of Electronic Science and Technology of China); Yufeng Deng (University of Electronic Science and Technology of China); Luayang Wang (University of Electronic Science and Technology of China); Tianyang Song (University of Electronic Science and Technology of China); Yaxin Zhang (University of Electronic Science and Technology of China); Ziqiang Yang (University of Electronic Science and Technology of China);
**Session 2P1b**

**SC2&SC3: Ultrafast Laser-matter Interactions and Nanofabrications 2**

**Tuesday PM, April 26, 2022**

**Room 1 - Midtown Hall**

Organized by Xuewen Wang, Yanlei Hu

Chaired by Xuewen Wang, Yanlei Hu

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Title</th>
<th>Institution</th>
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</thead>
<tbody>
<tr>
<td>16:25</td>
<td>Invited</td>
<td>Characterization of Acoustic Deformation Potential of ( \text{Mg}_3\text{Sb}_2 ) via Coherent Acoustic Phonon Dynamics</td>
<td>Liang Guo (Southern University of Science and Technology)</td>
</tr>
<tr>
<td>16:40</td>
<td>Hao Wu</td>
<td>A New Method to Pattern Liquid Metal Based on Femtosecond Laser for Flexible Electronic Devices</td>
<td>(University of Science and Technology of China)</td>
</tr>
<tr>
<td>16:50</td>
<td>Shaojun Jiang</td>
<td>High-performance and Multifunctional Magnetically Responsive Liquid Manipulator</td>
<td>(University of Science and Technology of China)</td>
</tr>
<tr>
<td>17:00</td>
<td>Rui Li</td>
<td>Smart Microactuator Fabricated by Asymmetric Femtosecond Bessel Beam for Microparticles/Cells Manipulation</td>
<td>(University of Science and Technology of China)</td>
</tr>
</tbody>
</table>

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**Session 2P1c**

**SC3: Optical Fiber Based Lasers: Dynamics and Applications**

**Tuesday PM, April 26, 2022**

**Room 1 - Midtown Hall**

Organized by Chengbo Mou, Hongyan Fu

Chaired by Chengbo Mou

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<tr>
<th>Time</th>
<th>Speaker</th>
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<th>Institution</th>
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</thead>
<tbody>
<tr>
<td>17:10</td>
<td>Invited</td>
<td>Random Fiber Grating Based Lasers</td>
<td>Xuewen Shu (Huazhong University of Science and Technology)</td>
</tr>
<tr>
<td>17:30</td>
<td>Jin Zhang Wang</td>
<td>Ultrashort Pulse Generation from a Tm-doped Fiber Laser</td>
<td>(Shenzhen University)</td>
</tr>
<tr>
<td>17:45</td>
<td>Invited</td>
<td>Diverse Pulsating Solitons in Spatiotemporal Mode-locked Fiber Laser</td>
<td>Guang-Xin Liu (South China Normal University); Jin-Gan Long (South China Normal University); Jia-Wen Wu (South China Normal University); Zhi-Chao Luo (South China Normal University); Wen-Cheng Xu (South China Normal University); Aiping Luo (South China Normal University);</td>
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**Session 2P2a**

**SC3: Programmable Optical Devices and Circuits 2**

**Tuesday PM, April 26, 2022**

**Room 2 - Shixin Hall 1**

Organized by Yiwei Xie, Rajesh Kumar

Chaired by Yiwei Xie, Rajesh Kumar

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<th>Time</th>
<th>Speaker</th>
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<th>Institution</th>
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<tbody>
<tr>
<td>13:00</td>
<td>Invited</td>
<td>Towards Non-volatile Programmable Photonics</td>
<td>Oded Raz (Eindhoven University of Technology); Jimmy Melskens (Eindhoven University of Technology); Ripatta Stabile (Eindhoven University of Technology); Francesco Pagliano (Eindhoven University of Technology); Chenhui Li (Eindhoven University of Technology); Christian C. M. Spronken (TU/E); Berta Gumi-Audenis (TU/E); Emilia Lazdanaité (Eindhoven University of Technology); Wilhelmus M. M. Kessels (Eindhoven University of Technology); Rja K. Voets (TU/E); Mahir Asif Mohammed (Eindhoven University of Technology);</td>
</tr>
<tr>
<td>13:15</td>
<td>Invited</td>
<td>Technologies for Large-scale Programmable Photonic Circuits</td>
<td>Wim Bogaerts (Ghent University — IMEC); Lukas Van Iseghem (Ghent University — IMEC); Xiangfeng Chen (Ghent University — IMEC); Iman Zand (Ghent University — IMEC); Hong Deng (Ghent University — IMEC); Mi Wang (Ghent University — IMEC); Katta Pradeep Nagarjan (Ghent University — IMEC); Muhammad Umar Khan (Ghent University — IMEC);</td>
</tr>
</tbody>
</table>
### Session 2P2b

**Optical Signal Processing in Advanced Optical Transmission Networks**

**Tuesday PM, April 26, 2022**

**Room 2 - Shixin Hall 1**

Organized by Feng Wen, Mingming Tan

Chaired by Feng Wen, Mingming Tan

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>13:30</td>
<td>Challenges and Advances of High Speed Intra-data Center Interconnects</td>
<td>Jinlong Wei (ADVA Optical Networking SE);</td>
</tr>
<tr>
<td>13:45</td>
<td>Polymer Optical Fiber Random Lasers</td>
<td>Invited</td>
</tr>
<tr>
<td>14:05</td>
<td>High-capacity Two-dimensional Indoor Optical Wireless Communication Enabled by Steered Infrared Beams</td>
<td>Chao Li (Anhui University); Zhijia Hu (Anhui University);</td>
</tr>
<tr>
<td>14:25</td>
<td>Using Volterra Nonlinear Equalizer and Probabilistic Shaping in an IM/DD System</td>
<td>Tengyuan Liu (Tongji University); Yuheng Wang (Tongji University); Junhe Zhou (Tongji University);</td>
</tr>
<tr>
<td>14:40</td>
<td>Raman Amplification Optimization in Short-reach High Data Rate Coherent Transmission Systems</td>
<td>Mingming Tan (Aston Institute of Photonics Technology); Md Asif Iqbal (Aston University); Lukasz Krzczanowicz (Aston University); Ian. D. Phillips (Aston University); Paul Harper (Aston University); Władek Forsysik (Aston University);</td>
</tr>
<tr>
<td>14:55</td>
<td>Carrier Phase Recovery for Synthesized 16-QAM Signals with Hierarchical Blind Phase Search Algorithm</td>
<td>Hong-Bo Zhang (Chengdu University of Information Technology); Guo-Wei Lu (Tokai University); Qianwu Zhang (Shanghai University);</td>
</tr>
<tr>
<td>15:05</td>
<td>Simulation of Laser-excited Optical Pulse Propagation over New Silica 100-µm-core Multimode Optical Fiber with Reduced Differential Mode Delay</td>
<td>Anton V. Bourdine (Povolzhskiy State University of Telecommunications and Informatics (PSUTI)); Vladimir A. Burdin (Povolzhskiy State University of Telecommunications and Informatics (PSUTI)); Alexander E. Zhukov (JSC “Scientific Production Association State Optical Institute Named after Varilov S.I.”);</td>
</tr>
<tr>
<td>15:15</td>
<td>Experimentally Research on 6-mode Division Multiplexing Optical Transmission System</td>
<td>Jue Wang (Beijing University of Posts and Telecommunications); Feng Tian (Beijing University of Posts and Telecommunications); Tianze Wu (Beijing University of Posts and Telecommunications); Chuxuan Wang (Beijing University of Posts and Telecommunications);</td>
</tr>
<tr>
<td>15:30</td>
<td>Spectral Features with the Temporal and Spatial Mode-coupling Dynamic in a Few-mode System</td>
<td>Tianfeng Zhao (University of Electronic Science and Technology of China); Feng Wen (University of Electronic Science and Technology of China); Kun Qiu (University of Electronic Science and Technology of China);</td>
</tr>
<tr>
<td>15:45</td>
<td>Mode Decomposition with the Mode Selective Time-resolved Algorithm</td>
<td>Pavel S. Anisimov (Huawei Technologies Co., Ltd.); Viacheslav V. Zemyanov (Huawei Technologies Co., Ltd.); Jiezhong Guo (Huawei Technologies Co., Ltd.);</td>
</tr>
<tr>
<td>15:55</td>
<td>Design of Few-mode Erbium-doped Fiber Amplifiers with Tunable Differential Mode Gain</td>
<td>Yan Xu (University of Electronic Science and Technology); Bao-Jian Wu (University of Electronic Science and Technology of China); Xinrui Jiang (University of Electronic Science and Technology); Haomiao Guo (University of Electronic Science and Technology);</td>
</tr>
<tr>
<td>16:10</td>
<td>Tuning Thermal Coefficient of Delay of Photonic-bandgap Hollow-core Fiber by Surface-mode Coupling</td>
<td>Fei Yu (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Yazhou Wang (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Zhengran Li (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Ying Han (Yanshan University); Lili Hu (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences);</td>
</tr>
<tr>
<td>16:25</td>
<td>Optical Dispersion Compensation through a Nonlinear-optical Loop Mirror (NOLM)-based Optical Reservoir</td>
<td>Yingke Yang (University of Electronic Science and Technology of China); Feng Wen (University of Electronic Science and Technology of China); Feng Yang (Lab of Holographic Optical Sensing, Marolabs Co., Ltd.); Kun Qiu (University of Electronic Science and Technology of China);</td>
</tr>
</tbody>
</table>

### Session 2P2c

**SC4: Researches and Applications of Reconfigurable Intelligent Metasurfaces (RIS)**

**Tuesday PM, April 26, 2022**

**Room 2 - Shixin Hall 1**

Organized by Jiaqi Han, Yu Zhao

Chaired by Yu Zhao

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>16:00</td>
<td>A Double-layer 1-bit Reconfigurable Intelligent Surface</td>
<td>Jiaqi Han (Xidian University); Long Li (Xidian University); Xiangjun Ma (Xidian University); Silong Chen (Xidian University); Tong Wang (Xidian University);</td>
</tr>
</tbody>
</table>
17:25 Shared-aperture Multiplexed Vortex Beam with Converged Divergence and Direction Control Based on Coding Chiral Metamirrors
Wenhao Li (Zhejiang University); Rui Xi (Zhejiang University); Yadong Ren (Zhejiang University); Xinyu Wu (Zhejiang University); Yihao Yang (Zhejiang University); Jiangdao Huangfu (Zhejiang University); Zaojia Wang (Zhejiang University); Long Li (Xidian University); Hongsheng Chen (Zhejiang University);

17:40 Linear and Nonlinear Homogenization of Plasmonic and All-dielectric Metasurfaces
Qun Ren (Tianjin University); Jiaqi Han (Xidian University);

17:55 Digital Coding Metasurface Based on the Liquid Metal
Siran Wang (Southeast University); Qiang Cheng (Southeast University); Tie Jun Cui (Southeast University);

18:10 A Dual-polarized 2-bit Digital Coding Reconfigurable Metasurface
Jingcheng Liang (Southeast University); Qiang Cheng (Southeast University); Tie Jun Cui (Southeast University);

18:25 A Single-layered Wideband Dual-polarized Transparent Metasurface for Transmission Enhancement in Sub-6G Band
Ruize Jiang (Southeast University); Qiang Cheng (Southeast University); Tie Jun Cui (Southeast University);

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Session 2P3

SC3: Low-dimensional Semiconductor Optoelectronics and Integration 2

Tuesday PM, April 26, 2022
Room 3 - Shixin Hall 2
Organized by Anlian Pan, Xiao Wang
Chaired by Xiao Wang

13:00 Tailoring Photocarrier Dynamics in Low-dimensional Invited Materials for Photonic Devices
Fengqiu Wang (Nanjing University);

13:20 Deterministic Assembly of Functional Nanomaterial for Invited Heterogeneously Integrated Nanophotonic Structures
Jie Bian (Nanjing University); Zaiqin Man (Nanjing University); Weihua Zhang (Nanjing University);

13:40 Coherent Emitter and Spin-photon Interface Based on Invited Semiconductor Nanowires
Shu La Chen (Hunan University); Xiao Wang (Hunan University); Anlian Pan (Hunan University);

14:00 Light Generation by Plasmonic Hexagonal Boron Nitride Invited Tunnel Junctions
Kai Braun (Eberhard Karls University Tuebingen); Lukas Jakob (University of Tuebingen); Florian Laible (University of Tuebingen); Monika Fleischer (University of Tuebingen); Alfred J. Meixner (Eberhard-Karls-University Tuebingen);

14:15 Memristive Two-dimensional Materials for In-memory Invited Computing
Linfeng Sun (Beijing Institute of Technology);

14:35 Energy Funnel and Interlayer Exciton Tuning in Low-dimensioned Semiconductors
Lihui Li (Hunan University); Weihao Zheng (Hunan University); Xiyujuan Zhu (Hunan University);

14:55 Strong Coupling between Exciton and Plasmon in a Invited Monolayer WS2/Ag Nanocavity
Kai Wang (Huazhong University of Science and Technology);

15:15 Low-dimensional Antimonide and Photoelectronic De-invites
Zaizeng Yang (Shandong University);

16:00 Synthesis and Properties of Novel 2D Materials
Invited Jiadong Zhou (Beijing Institute of Technology);

16:20 High Performance Photodetection Based on Topological Invited Semimetals
Dong Sun (Peking University);

16:40 On-chip Integrated 3D Microcavities
Keynote Oliver G. Schmidt (TU Chemnitz);

17:05 Theoretical Study of Two-dimensional Electronic Material-invieds and Devices
Shengli Zhang (Nanjing University of Science and Technology);

17:25 Ultrafast Photo-response Studies in 2D-material Based Photodetectors by Time-resolved Photocurrent Technique
Zhouxiaosong Zeng (Hunan University); Kai Braun (Eberhard Karls University Tuebingen); Xiao Wang (Hunan University);

17:40 Tunable Optical Responses of Graphene Films by Inter-invaledication
Gangbing Zeng (National University of Defense Technology); Chenxi Zhang (National University of Defense Technology); Rengyan Zhang (National University of Defense Technology); Yinlong Tan (National University of Defense Technology); Tian Jiang (National University of Defense Technology);

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Session 2P4a

SC2: Topological Phenomena in Classical Optics and Quantum Optics 2

Tuesday PM, April 26, 2022
Room 4 - Mingyi Hall
Organized by Luqi Yuan, Da-Wei Wang, Zhaoju Yang
Chaired by Luqi Yuan, Zhaoju Yang
13:00  Topological Photonics  
  **Keynote**  
  Mordechai (Moti) Segev (Technion — Israel Institute of Technology);  
  13:25  Probing Rotated Weyl Physics on Nonlinear Lithium  
  Invited  
  Ziwei Yan (Nanjing University); Qiang Wang (Nanyang Technological University); Meng Xiao (Wuhan University); Yu-Le Zhao (Nanjing University); Shining Zhu (Nanjing University); Hui Liu (Nanjing University);  
  13:45  Fractional Mode Charge and Bulk-disclination Correlations  
  Invited  
  Jian-Hua Jiang (Soochow University);  
  14:05  Topological Lasers  
  Invited  
  Remnin Ma (Peking University);  
  14:25  Selecting Plasmonic Higher-order Topological States with Far-field Polarizations  
  Invited  
  Yuan-Zhen Li (Zhejiang University); Su Xu (Jilin University); Hongsheng Chen (Zhejiang University); Fei Gao (Zhejiang University);  
  14:45  Parity Time Symmetry for Stable and Efficient Wireless Power Transfer  
  Invited  
  Chao Zeng (Tongji University); Yong Sun (Tongji University); Kejia Zhu (Tongji University); Ziwei Gao (Tongji University); Yunhui Li (Tongji University); Hong Chen (Tongji University);  
  15:05  Experimental Observation of Multiple Topological Edge States  
  Invited  
  Yinan Wang (Nanjing University); Shiwai Leung (Nanjing University); Feifei Li (Nanjing University); Hailing Wang (Guangxi Normal University); Yin Poo (Nanjing University);  
  16:00  Quantum Simulation in Room-temperature Flying Atoms  
  Invited  
  Han Cai (Zhejiang University); Ruosong Mao (Zhejiang University); Jiefei Wang (Zhejiang University); Xingqi Xu (Zhejiang University); Shiyao Zhu (Zhejiang University); Da-Wei Wang (Zhejiang University);  
  16:15  Nonlinear Control of PT-symmetry and Topological States  
  Invited  
  Shiqi Xia (Nankai University); Dimitrios Kaltsas (University of Crete); Daohong Song (Nankai University); Ioannis Komis (University of Crete); Jingjun Xu (Nankai University); Alexander Szameit (University of Rostock); Hrvoje Buljan (University of Zagreb); Konstantinos G. Makris (University of Crete); Zhiqiang Chen (Nankai University);  
  16:30  Bloch Oscillations in One-dimensional Subwavelength Atomic Chains  
  Invited  
  Luoji Wang (Shanghai Jiao Tong University); Xianfeng Chen (Shanghai Jiao Tong University); Luqi Yuan (Shanghai Jiao Tong University);  

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**Session 2P4b**  
**SC2: Topological Metamaterials for Photons, Phonons and Polaritons 2**  
**Tuesday PM, April 26, 2022**  
**Room 4 - Mingyi Hall**  
Organized by Jian-Hua Jiang, Yihao Yang  
Chaired by Jian-Hua Jiang, Yihao Yang  

16:45  Momentum Space Toroidal Moment in Photons  
Invited  
Biao Yang (Hong Kong University of Science and Technology);  
17:00  Far-field Polarizations Selection of Plasmonic Higher-order Topological States  
Invited  
Yuanzen Li (Zhejiang University); Su Xu (Jilin University); Hongsheng Chen (Zhejiang University); Fei Gao (Zhejiang University);  
17:20  Photonic Crystals and Metamaterials towards 2D and 3D Topological Phases  
Invited  
Minkyoung Kim (Pohang University of Science and Technology (POSTECH)); Junsk Rho (Pohang University of Science and Technology (POSTECH));  
17:35  Second-order Topological Modes in All-dielectric Systems  
Jan Kosata (ETH Zürich); Oded Zilberberg (ETH Zürich);  
17:45  Surface-acoustic-wave Computing of the Grover Quantum Search Algorithm with Metasurfaces  
Invited  
Jie Ren (Tongji University);  
18:05  Double-bowl State in Photonic Dirac Nodal Line Semimetal  
Hui Liu (Nanjing University);
14:00 Full-stokes Vectorial Holography Based on Complex Amplitude Metasurface
   Lingling Huang (Beijing Institute of Technology);

14:20 Highly Transparent Coding Metasurface for Microwave Scattering Reduction
   Heyan Wang (Harbin Institute of Technology); Yujia Sun (Harbin Institute of Technology); Yilei Zhang (Harbin Institute of Technology); Bowen Luo (Harbin Institute of Technology); Yunfei Liu (Harbin Institute of Technology); Zhegang Lu (Harbin Institute of Technology); Jizun Tan (Harbin Institute of Technology);

14:35 Manipulating Nonclassical Light with Quantum Meta-surfaces
   Fei Ding (University of Southern Denmark);

14:50 Simultaneous Generation of Image Concealment and Hybrid Hologram with Geometric Metasurfaces
   Yuttana Intaravanne (Heriot-Watt University); Xianzhong Chen (Heriot-Watt University);

15:00 Metasurfaces for Controlling Structured Light
   Keynote
   Lei Zhou (Fudan University);

16:00 Nonvolatile Optically Reconfigurable Radiative Metasurface
   Qiang Li (Zhejiang University);

16:20 The Vortex Beam Generator Based on Bound States in the Continuum and Split-ring Metasurfaces
   Kaixiang Cheng (Jiangnan University); Tairong Bai (Jiangnan University); Jicheng Wang (Jiangnan University);

16:40 Metalens Imaging: From Design to Prototype
   Invited
   Beibei Xu (Nanjing University); Yunwei Zhao (Nanjing University); Xin Ye (Nanjing University); Xiao Qian (Nanjing University); Chen Chen (Nanjing University); Shi-Ning Zhu (Nanjing University); Tao Li (Nanjing University);

17:00 Vectorial Metasurface from Hologram to Image Prints
   Invited
   Zilan Deng (Jinan University); Xiangping Li (Jinan University);

17:20 Immersion Silicon Metasurfaces for Versatile Applications of Photonics Devices
   Invited
   Haowen Liang (Sun Yat-Sen University);

17:40 Versatile Optical Field Manipulation Using Dielectric Metasurfaces
   Invited
   Cheng Zhang (Huazhong University of Science and Technology);

18:00 Nonlinear Diatomic Metasurface for Real and Fourier Space Image Encoding
   Invited
   Ningbin Mao (Southern University of Science and Technology); Junhong Deng (Southern University of Science and Technology); Xuecai Zhang (Southern University of Science and Technology); Yutao Tang (Southern University of Science and Technology); Mingke Jin (Southern University of Science and Technology); Yang Li (Southern University of Science and Technology); Xuan Liu (Southern University of Science and Technology); King-fai Li (Southern University of Science and Technology); Kun Wai Cheah (Hong Kong Baptist University); Hong Wang (Southern University of Science and Technology); Jack Ng (Southern University of Science and Technology); Guizin Li (Southern University of Science and Technology); L. Jay Guo (The University of Michigan);

18:15 Compact Stereo Waveguide Display Enabled by a Polarization-multiplexed In-coupling Metagrating
   Zeyang Liu (Huazhong University of Science and Technology); Cheng Zhang (Huazhong University of Science and Technology); Wenqi Zhu (National Institute of Standards and Technology); Henri J. Lezec (National Institute of Standards and Technology); Amit K. Agrawal (National Institute of Standards and Technology); L. Jay Guo (The University of Michigan);

Session 2P6a
SC2: Non-Hermitian Physics and Its Applications in Light and Sound 2
Tuesday PM, April 26, 2022
Room 6 - Mingrui Hall
Organized by Guancong Ma, Kun Ding
Chaired by Guancong Ma

13:00 Willis Water-wave Metamaterial
   Invited
   Yan Meng (The Hong Kong University of Science and Technology); Yiran Hao (The Hong Kong University of Science and Technology); Sébastien Guenneau (Imperial College London); Shubo Wang (City University of Hong Kong); Jensen Li (Hong Kong University of Science and Technology);

13:20 Non-Hermitian Mechanics
   Invited
   Corentin Coulais (University of Amsterdam);

13:35 From Static to Dynamic Metamaterials: Instabilities and Non-Hermitian Effects
   Invited
   Emanuele Galiffi (Imperial College London); Paloma A. Huidobro (University of Lisbon); John B. Pendry (Imperial College London);

13:45 Revealing the Missing Dimension at an Exceptional Point
   Invited
   Renmin Ma (Peking University);
14:05 Topological Properties of Boundary Condition-sensitive Systems
Yizin Xiao (The Hong Kong University of Science and Technology); Che Ting Chan (The Hong Kong University of Science and Technology); Ning Zhu

14:30 Wave Control and Suppression of Scattering by Non-Hermitian Index Tailoring
Stefan Rotter (Vienna University of Technology (TU Wien));

14:55 Probing Non-Hermitian Bound States with Angle-Resolved Resolved Thermal Emission
Fan Zhong (Southeast University); Kun Ding (Fudan University); Ye Zhang (Nanjing University); Shining Zhu (Nanjing University); Che Ting Chan (The Hong Kong University of Science and Technology); Hui Liu (Nanjing University);

15:15 Encircling Exceptional Points in Quantum Non-Hermitian Systems
Xu-Lin Zhang (Jilin University);

Session 2P6b
SC3: Excitation, Propagation, and Manipulation of Polaritons in 2D Materials

Tuesday PM, April 26, 2022
Room 6 - Mingrui Hall
Chaired by Lin Chen, Zhang-Kai Zhou
Organized by Lin Chen, Zhang-Kai Zhou

16:00 Enhancing Energy Conversion of Near-field Thermophotovoltaic System with Multi-junction Cells and Multilayer Emitter
Wenbin Zhang (Shanghai Jiao Tong University); Boxiang Wang (Shanghai Jiao Tong University); Changying Zhao (Shanghai Jiao Tong University);

16:15 Three-dimensional Near-field Analysis through Peak Force Scattering-type Near Field Optical Microscopy
Xiaojing Xu (Lehigh University); Haomin Wang (Lehigh University);

16:30 Near-field Probing of Image Polaritons in van der Waals Invited Crystals
Min Seok Jang (Korea Advanced Institute of Science and Technology);

16:45 Nano-infrared Characterization of Coupled Graphene Plasmon Systems
Weiwu Luo (Nankai University); Alexey B. Kuzmenko (University of Geneva); Jialin Qi (Nankai University); Ni Zhang (Nankai University); Wei Cai (Nankai University); Jingjun Xu (Nankai University);

17:00 Tunable Plasmonic Resonances in Graphene Origami on W-shaped Silicon
Tingting Zhai (Universite de Technologie de Troyes); Shijian Wang (Universite de Technologie de Troyes); Kuan-Ting Wu (Universite de Technologie de Troyes); Wei Yen Woon (National Central University); Rafael Salas-Montiel (Institut Charles Delaunay/L2N CNRS, Universite de Technologie de Troyes); Remi Vincent (Universite de Technologie de Troyes);

17:10 Encircling Exceptional Points in Quantum Non-Hermitian Systems
Xu-Lin Zhang (Jilin University);

Session 2P6c
SC2: Light-matter Interaction and Optical Field Manipulation in Metasurfaces and Metamaterials 2

Tuesday PM, April 26, 2022
Room 6 - Mingrui Hall
Chaired by Qing Dai

17:35 Manipulating the Light Scattering of a Metallic Metacylinder with Engineered Topological Charge
Yanan Cao (Soochow University); Yanggang Fu (Nanjing University of Aeronautics and Astronautics); Jianhua Jiang (Soochow University); Lei Gao (Soochow University); Yadong Xu (Soochow University);

17:50 Freely Tailoring Far-field Scattering of Surface Plasmons
Shulin Sun (Fudan University); Weikang Pan (Fudan University); Fujun Gao (Fudan University); Zhuo Wang (Fudan University); Qiong He (Fudan University); Lei Zhou (Fudan University);

18:05 Controlling Photonic Spin Hall Effect via Exceptional Points
Xinxing Zhou (Hunan Normal University);

Session 2P7a
SC3: Supercontinuum and Frequency Combs: Fundamental Physics and Applications 2

Tuesday PM, April 26, 2022
Room 7 - Mingsi Hall
Chaired by Feng Li, Zhe Kang
Organized by Feng Li, Zhe Kang

13:00 Supercontinuum Generation in Fibers and Chip-scale Devices
Qian Li (Peking University Shenzhen Graduate School); Feng Ye (Peking University Shenzhen Graduate School); Kaibin Lin (Peking University Shenzhen Graduate School);

13:20 Nyquist Soliton Kerr Comb with Ultra-smooth Spectrum
Xiaozhao Xue (Tsinghua University);
13:35 Programmable Photonic RF Filter Based on Two-soliton Microcombs
Huashan Yang (Nanjing University of Aeronautics and Astronautics); Hao Zhang (Nanjing University of Aeronautics and Astronautics); Zongxin Ju (Nanjing University of Aeronautics and Astronautics); Yifan Wu (Nanjing University of Aeronautics and Astronautics); Jijun He (Nanjing University of Aeronautics and Astronautics); Shilong Pan (Nanjing University of Aeronautics and Astronautics);

13:45 Integrated Frequency Combs for Microwave Photonics
Jijun He (Swiss Federal Institute of Technology Lausanne (EPFL));

13:55 Recent Progresses in Dispersion Engineering for Broadband Nonlinear Applications
Yushuo Guo (Tianjin University); Liuyuan Xu (Tianjin University); Yuhao Guo (Tianjin University); Yuke Zhai (Tianjin University); Lin Zhang (Tianjin University);

14:15 Vector Supercontinuum Process in Photonic Waveguides
Invited Yongyuan Chu (Shanghai University); Tuo Liu (Shanghai University); Hairun Guo (Shanghai University);

14:35 Photonic Flywheel in a Monolithic Fiber Resonator
Invited Zhen-Da Xie (Nanjing University);

14:55 Wavelength Conversion in Photonic Crystal Fibres
Keynote Philip St. John Russell (Max Planck Institute for the Science of Light);

Session 2P7b
SC2&SC3: Cavity Optomechanics 2
Tuesday PM, April 26, 2022
Room 7 - Mingsi Hall
Organized by Yong-Chun Liu, Zhangqi Yin
Chaired by Yong-Chun Liu, Zhangqi Yin

16:00 Accurate Measurement of the Single-photon Optomechanical Coupling Rate via a Hopf Bifurcation
Invited P. Piergentili (University of Camerino); W. Li (University of Camerino); R. Natali (University of Camerino); David Vitali (University of Camerino); Giovanni Di Giuseppe (University of Camerino);

16:15 Generating Entanglement between Distant Optically Levitated Nanoparticles
Invited Guoyao Li (Beijing Institute of Technology); Zhangqi Yin (Beijing Institute of Technology);

16:35 Research on Lithium Niobate-based Photonic Crystal with Wide Bandgap
Invited Dingwei Chen (University of Electronic Science and Technology of China); Jianbo Wu (University of Electronic Science and Technology of China); Xiang Zheng (University of Electronic Science and Technology of China); Xing Yan (University of Electronic Science and Technology of China); Changmin Hu (University of Electronic Science and Technology of China); Jian Li (University of Electronic Science and Technology of China); Yongjun Huang (University of Electronic Science and Technology of China); Guangjun Wen (University of Electronic Science and Technology of China);

16:55 Sympathetic Cooling of a Radio-frequency LC Circuit Using an Optoelectromechanical System at the Quantum Limit
Nicola Malossi (University of Camerino); P. Piergentili (University of Camerino); J. Li (Zhejiang University); E. Serra (6INFN, Trento Institute for Fundamental Physics and Application); R. Natali (University of Camerino); Giovanni Di Giuseppe (University of Camerino); David Vitali (University of Camerino);

17:05 Quantum States Generation in Cavity Magnomechanics and Optomagnonics
Invited Jie Li (Zhejiang University);

17:25 Magnetic Field Sensor Based on Centimeter-scale Resonator Embedded with Terfenol-D
Changqiu Ya (Hangzhou Dianzi University); Shuchang Ma (Hangzhou Dianzi University); Z. Y. Chen (Hangzhou Dianzi University);

17:40 Design of Optical Gyroscope Based on the Cavity Optomechanics Structure
Jamal Nassir Ahmed Hassan (University of Electronic Science and Technology of China); Xing Yan (University of Electronic Science and Technology of China); Jianbo Wu (University of Electronic Science and Technology of China); Dingwei Chen (University of Electronic Science and Technology of China); Yongjun Huang (University of Electronic Science and Technology of China); Guangjun Wen (University of Electronic Science and Technology of China);

17:50 Cavity Optomechanical Cooling beyond the Thermal Decoherence Limit
Invited Yong-Chun Liu (Tsinghua University);

Session 2P8a
SC3: Organic Photonics 2
Tuesday PM, April 26, 2022
Room 8 - Minghou Hall
Organized by Qing Liao, Hongbing Fu
Chaired by Hongbing Fu, Qing Liao

13:00 Nonfused Ring Electron Acceptors for Organic Solar Cells
Invited Hui Huang (University of Chinese Academy of Sciences);
13:20 Assembling-induced Organic Room-temperature Phosphorescence
   Xiang Ma (East China University of Science and Technology);

13:40 The Domain Distribution Control of Quasi-2D Perovskite toward Enhanced Blue Light Emissions
   C. H. Wang (Beijing Institute of Technology); D. B. Han (Beijing Institute of Technology); G. Dai (Beijing Institute of Technology); S. Chang (Beijing Institute of Technology); Haizheng Zhong (Beijing Institute of Technology);

14:00 Photofunctional Molecular Cocrystals: Design, Assembling, and Applications
   Dong Peng Yan (Beijing Normal University);

14:20 Polariton Luminescence in Organic Molecular Systems
   Boris D. Fainberg (Holon Institute of Technology); V. A. Osipov (Holon Institute of Technology);

14:30 Optical Spin-orbit Interaction in an Organic Semiconductor Microcavity
   Xuekai Ma (Paderborn University); Jialuan Ren (Capital Normal University); Qing Liao (Capital Normal University); Hongbing Fu (Capital Normal University); Stefan Schumacher (Universität Paderborn);

14:40 Rational Construction of Highly Tunable Crystalline Donor-acceptor Materials Based on Coordination Polymer Platform
   Xiao-Ting Liu (Nankai University); Bin-Bin Qian (Nankai University); Hong-Xiang Nie (Nankai University); Bo Zhang (Nankai University); Ze Chang (Nankai University); Xian-He Bu (Nankai University);

14:55 Polariton Transport and Lasing in Organic Disordered Microcavities
   Shaocong Hou (Wuhan University);

15:10 Photoactivatable Chemiluminescent Probes Enabling Bright Duplex Optical Imaging
   Zhiquan Guo (East China University of Science and Technology);

16:00 Organic and Organic/Inorganic Hybrid Nonlinear Optical Molecular Materials
   Jialiang Xu (Nankai University);

16:15 Carrier Recombination Dynamics in Group III–V Semiconductors
   Xianshao Zou (Guangzhou University); Wei Zhang (Guangzhou University);

16:30 Magnetically Controlled Assembly of Microspheres for Tunable Organic Microlasers
   Chuang Zhang (Institute of Chemistry, Chinese Academy of Science);

16:45 Vibronic Coherent Photocurrent Generation at the D/A Interface of Organic Heterojunction Diodes
   Qingzen Bian (Nanjing University of Posts and Telecommunications);

Session 2P8b
Nanophotonics, Biophotonics and Advanced Photonic Materials 2

Room 8 - Minghou Hall
Chaired by Liqiang Wang

17:00 Tunneling Loss Inhibition with a Black-hole Index Cavity
   Qingtao Ba (Xiamen University); Yangyang Zhou (Xiamen University); Jinhui Chen (Xiamen University); Huayang Chen (Xiamen University);

17:15 Correlation of Sleepiness Scale with Hemoglobin Concentration Variation: Experimental fNIRS Validation
   Yun-Hsuan Chen (Westlake University); Chaoming Pang (Westlake University); Emma Z. Chen (Westlake University); Leizu Huang (Westlake University); Mohamad Sawaan (Westlake University);

17:30 Self-learning Plasmon Structures Design via a Deep Neural Network
   Zhengchang Liu (Peking University); Yu Li (Peking University); Zheyu Pang (Peking University);

17:45 Controlling Electromagnetic Wave by Optic-null Medium
   Fei Sun (Taiyuan University of Technology); Yichao Liu (Taiyuan University of Technology); Yibiao Yang (Taiyuan University of Technology); Zhihui Chen (Taiyuan University of Technology); Sailing He (Royal Institute of Technology & Zhejiang University);

18:00 Microcavity Phonon Polaritons — from Weak to Ultrastrong Phonon-Photon Coupling
   María Barra-Burillo (CIC nanoGUNE BRTA); Unai Muniaín (Donostia International Physics Center); Sara Catalano (CIC nanoGUNE BRTA); Marta Auretore (CIC nanoGUNE BRTA); Félix Casanova (CIC nanoGUNE); Luis E. Hueso (CIC nanoGUNE BRTA); Javier Aizpurua (Donostia International Physics Center (DIPC)); Ruben Estebar (Donostia International Physics Center); Rainer Hillenbrand (CIC nanoGUNE);

18:10 Plasmon-induced Trap State Emission from Single Quantum Dots
   Jinyang Huang (University of Cambridge); Olufowemi S. Ojambo (University of Cambridge); Rohit Chikkaraddy (University of Cambridge); Kamil Sokolowski (University of Cambridge); Qifang Wan (University of Cambridge); Colin Darkan (University of Cambridge); Oran A. Scherman (University of Cambridge); Jeremy J. Baumberg (University of Cambridge);
**Session 2P9a**

**FocusSession.SC3: Advanced Photonic Technologies for Spectroscopic Applications 1 & 2**

**Tuesday PM, April 26, 2022**

**Room 9 - Tianren Hall**

Organized by Wei Dong Chen, Vincenzo Spagnolo, Ulrike Willer

Chaired by Ulrike Willer, Lei Dong

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**13:00** In Situ Monitoring of Trace Gases and Aerosol Extinction in Chamber Using Near-UV Broadband Cavity-enhanced Absorption Spectroscopy  
Meng Wang (University of Shanghai for Science and Technology); Jun Chen (University of Shanghai for Science and Technology);

**13:15** Measurement of HONO Using Mobile Monitoring  
W. Y. Liu (University of Shanghai for Science and Technology); Jun Chen (University of Shanghai for Science and Technology); Shengrong Lou (Shanghai Academy of Environmental Science);

**13:30** Carbon Monoxide Detection in SF$_6$ Matrix for Partial Discharge Recognition with Quartz-enhanced Photoacoustic Spectroscopy  
Pietro Patimisco (Università degli Studi di Bari and Politecnico di Bari); Stefano Dello Russo (Università degli Studi di Bari and Politecnico di Bari); Andrea Zifarelli (Università degli Studi di Bari and Politecnico di Bari); Angelo Sampaolo (University and Politecnico of Bari); Marilena Giglio (University and Politecnico of Bari); Bo Sun (Shanghai University); Lei Dong (Shanghai University); Vincenzo Spagnolo (University and Politecnico of Bari);

**13:45** Design and Application of Mini-multi-pass Cells Based on Aberration Theory  
Lei Dong (Shanghai University); Ruyue Cui (Shanghai University); Hongpeng Wu (Shanghai University); Weidong Chen (Université du Littoral Côte d’Opale); Vincenzo Spagnolo (University and Politecnico of Bari); Liantuan Xiao (Shanghai University); Suotang Jia (Shanghai University);

**14:05** Ultra-sensitive Optical Gas Sensors with Photoacoustic Spectroscopy  
Wei Ren (The Chinese University of Hong Kong);

**14:20** TDLAS Sensors Based on Quartz Tuning Forks Employed as Photodetectors  
Angelo Sampaolo (University and Politecnico of Bari); Stefano Dello Russo (Università degli Studi di Bari and Politecnico di Bari); Andrea Zifarelli (Università degli Studi di Bari and Politecnico di Bari); Tingling Wei (Shanghai University); Lei Dong (Shanghai University); Pietro Patimisco (Università degli Studi di Bari and Politecnico di Bari); Frank K. Tittel (Rice University); Vincenzo Spagnolo (University and Politecnico of Bari);

**14:35** Methane Isotopologues Detection Using Quartz-enhanced Photoacoustic Spectroscopy  
Marilena Giglio (University and Politecnico of Bari); Angelo Sampaolo (University and Politecnico of Bari); Pietro Patimisco (Università degli Studi di Bari and Politecnico di Bari); Stefano Dello Russo (Università degli Studi di Bari and Politecnico di Bari); Maria Grazia Olivieri (University and Politecnico of Bari); Vincenzo Spagnolo (University and Politecnico of Bari);

**14:45** Use of Infrared Excitation for the Detection of Ceroplasta in Sugar Beets  
Ulrike Willer (Clausthal University of Technology);

**15:00** Etched Fiber Bragg Gratings for the Detection of Volatile Organic Compounds  
Maryam Maleki (Clausthal University of Technology); Ludmila Eisein (Clausthal University of Technology); Eike G. Hübner (Fraunhofer Heinrich Hertz Institute); Günter Flachenecker (Fraunhofer Heinrich Hertz Institute); Wolfgang Schade (Clausthal University of Technology); Ulrike Willer (Clausthal University of Technology);

**16:00** 3-wavelength Photoacoustic Spectrophone for Filter-free Measurement of Aerosol Particle Light Absorption  
Gaozuan Wang (Zhejiang University); Pierre Kulinski (Université du Littoral Côte d’Opale); Hongming Yi (Université du Littoral Côte d’Opale); Patrice Hubert (Université de Lille 1); Alexandre Deguine (Université de Lille 1); Denis Petitprez (Université de Lille 1); Eric Fertein (University of the Littoral Opal Coast); Marc Fourmentin (Université du Littoral Côte d’Opale); Karine Deboudt (Université du Littoral Côte d’Opale); Pascal Flament (Université du Littoral Côte d’Opale); Julien M. Rey (IQE-ETH Zurich); Markus W. Sigrist (ETH Zurich); Dean S. Venables (University College Cork); Wei Dong Chen (Université du Littoral Côte d’Opale);

**16:15** Development and Deployment of an Incoherent Broadband Cavity-enhanced Absorption Spectroscopy Instrument for Autonomous Field Measurements of HONO and NO$_2$ in a Rural Area  
Yongshuo Meng (Université du Littoral Côte d’Opale); Gaozuan Wang (Zhejiang University); Cécile Coeur (Université du Littoral Côte d’Opale); Alexandre Tomas (IMT Lille Douai, Univ. Lille); Wei Dong Chen (Université du Littoral Côte d’Opale);
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<th>Time</th>
<th>Session 2P9b</th>
<th>Session 2P10</th>
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<tr>
<td>16:30</td>
<td>Single Cell Optical Manipulation and Molecular Detection&lt;br&gt;Hongbao Xin (Jinan University); Baojun Li (Jinan University);</td>
<td>Coherent Frequency Upconverter for Mid-infrared&lt;br&gt;Jianan Fang (East China Normal University); Yingqi Wang (East China Normal University); E Wu (East China Normal University); Ming Yan (East China Normal University); Kun Huang (East China Normal University); Heping Zeng (East China Normal University);</td>
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<tr>
<td>16:50</td>
<td>Pulling Biological Cells with NIR Laser Mediated Photonic Nanojet&lt;br&gt;Yuzuan Ren (Fudan University);</td>
<td>Quantification of Wigner Negativity Remotely Generated via Einstein-Podolsky-Rosen Steering&lt;br&gt;Yu Xiang (Peking University); Shubeng Liu (Peking University); Jiajie Guo (Peking University); Qihuang Gong (Peking University); Nicolas Treps (Sorbonne Université); Qiong Yi He (Peking University); Mattia Walschaers (Sorbonne Université);</td>
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<tr>
<td>17:05</td>
<td>Fluid and Particles Manipulation Based on Photothermal Waveguides&lt;br&gt;Xiaobo Xing (South China Normal University); Fangjing Luo (South China Normal University); Zongbao Li (Tongren University); Haiyan Wang (Guangdong Industry Technical College); Jianlin Huang (Guangzhou Institute of Measurement and Testing Technology);</td>
<td>Implementation of Quantum Synchronization over a 20-km Fiber Distance Based on Frequency-correlated Photon Pairs and HOM Interference&lt;br&gt;Yuting Liu (National Time Service Center, Chinese Academy of Sciences); Runai Quan (National Time Service Center, Chinese Academy of Sciences); Xiaoxiang (National Time Service Center, Chinese Academy of Sciences); Huibo Hong (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); Show-Gang Zhang (National Time Service Center, Chinese Academy of Sciences);</td>
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<tr>
<td>17:20</td>
<td>An Integrated Lab-on-a-Disc Platform for Droplet-based Bioassays&lt;br&gt;Wangzi Zhang (The Chinese University of Hong Kong); Yuye Wang (The Chinese University of Hong Kong); Yuanyuan Wei (The Chinese University of Hong Kong); Shiqing Liu (The Chinese University of Hong Kong); Zhenming Xie (The Chinese University of Hong Kong); Siu-Kai Kong (The Chinese University of Hong Kong); Aaron Ho-Pui Ho (The Chinese University of Hong Kong);</td>
<td>Optical Metrology with Electro-optical Frequency Combs and Single-photon Detectors&lt;br&gt;Ming Yan (East China Normal University); Xinyi Ren (East China Normal University); Heping Zeng (East China Normal University);</td>
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<td>17:35</td>
<td>Fabrication and Applications of LOC-SERS Chip with Tunable “Hot Spots”&lt;br&gt;Li Zhu (Southeast University); Yu Lu (Southeast University); Zhuyuan Wang (Southeast University); Yiping Cui (Southeast University);</td>
<td>Generation and Manipulation of Continuous Variable Non-classical States&lt;br&gt;Xiaojun Jia (Shanxi University); Zhikui Yan (Shanxi University); Kunchi Peng (Shanxi University);</td>
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<td>17:50</td>
<td>A New Method for Single-molecule Nanopore Sequencing Based on Ultra-centrifugation&lt;br&gt;Jianxin Yang (The Chinese University of Hong Kong); Aaron Ho-Pui Ho (The Chinese University of Hong Kong);</td>
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<td>18:00</td>
<td>Characteristics of the Large, Dye-doped Droplet Lasers Emission: Wavelength Shift, Lasing Delay, and Inelastic Scattering Resonances&lt;br&gt;Ionut-Relu Andrei (National Institute for Laser, Plasma and Radiation Physics); Mihai Boni (National Institute for Laser, Plasma and Radiation Physics); Angela Staicu (National Institute for Laser, Plasma and Radiation Physics); Mihail Lucian Pascu (National Institute for Laser, Plasma and Radiation Physics);</td>
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</table>
14:35 Solid-state Quantum Memory Based on Erbium Doped Fibre
Invited
Qiyan Zhou (University of Electronic Science and Technology of China); Shihai Wei (University of Electronic Science and Technology of China); Bo Jing (University of Electronic Science and Technology of China); Xueying Zhang (University of Electronic Science and Technology of China); Jinya Liao (University of Electronic Science and Technology of China); Guangwei Deng (University of Electronic Science and Technology of China); You Wang (Southwest Institute of Technical Physics); Hai-Zhi Song (Southwest Institute of Technical Physics); Daniel Oblak (University of Calgary);
Li-Juan Zhang (Nanjing University);
Jin-Shi Xu (University of Science and Technology of China);
Kai Sun (University of Science and Technology of China); Jiajie Guo (University of Science and Technology of China); Chonghao Zhai (University of Science and Technology of China); Tanumoy Pramanik (University of Science and Technology of China); Xiaofei Xiao (Imperial College London); Qiong Yi He (Imperial College London); Nicholas A. Gусken (Imperial College London); Michael P. Nielsen (Imperial College London); Stefan Alexander Maier (Imperial College London); Rupert Francis Oulton (Imperial College London); Hui Yan (South China Normal University);
14:55 Measuring the Quantum Measurement
Invited
00:00 Self-avoiding Quantum Walk in Fast Protein Folding
Invited
Christopher Um (Cornell University);
Theodore A. Luty (Cornell University);
15:15 High Dimensional and Multi-mode Optical Quantum
Simulation
Invited
Jianwei Wang (electronics, Chinese Academy of Sciences);
You Wang (Southwest Institute of Technical Physics);
Daniel Oblak (University of Calgary);
Jin-Shi Xu (University of Science and Technology of China);
Yan Yang (Peking University);
16:00 Experimental Investigation of Einstein-Podolsky-Rosen Steering
Invited
Jiajie Guo (University of Science and Technology of China); Chonghao Zhai (University of Science and Technology of China); Tanumoy Pramanik (University of Science and Technology of China); Xiaofei Xiao (Imperial College London); Qiong Yi He (Imperial College London); Nicholas A. Gусken (Imperial College London); Michael P. Nielsen (Imperial College London); Stefan Alexander Maier (Imperial College London); Rupert Francis Oulton (Imperial College London); Hui Yan (South China Normal University);
16:20 Demonstration of Generalised Multipath Wave-particle Duality on a Quantum Nanophotonic Chip
Invited
Yaohao Deng (Peking University); Xiaojing Chen (Peking University); Tananoy Pramanik (Peking University); Jun Mao (Peking University); Jueming Bao (Peking University); Chonghao Zhai (Peking University); Tianxiang Dai (Peking University); Huhong Yuan (Peking University); Jiajie Guo (Peking University); Shao-Ming Fei (Capital Normal University); Marcus Huber (Institute for Quantum Optics and Quantum Information — IQOQI Vienna, Austrian Academy of Sciences); Bo Tang (Institute of Microelectronics, Chinese Academy of Sciences); Yan Yang (Institute of Microelectronics, Chinese Academy of Sciences); Zhihua Li (Institute of Microelectronics, Chinese Academy of Sciences); Qiong Yi He (Peking University); Qihuang Gong (Peking University); Jianwei Wang (Peking University);
16:35 Quantum Light Source Based on Atomic Ensemble and Its Applications
Invited
Jietai Jing (East China Normal University);
Guo-Yong Xiang (University of Science and Technology of China, CAS);
16:55 Zero-trade-off Multi-parameter Quantum Estimation
Invited
Xiaolong Su (Shanxi University);
17:15 Sudden Death and Distillation of Gaussian Quantum
Invited
Steering
Xiaolong Su (Shanxi University);
17:35 Continuous Variable Multiparticle Entanglement: From Triple Photons to Nonlinear Waveguide Arrays
Invited
David Barral (Universite Paris-Saclay); A. Henry (Universite Paris-Saclay); Ariel Levenson (Laboratoire de Photonique et de Nanostructures (CNRS UPR20)); Nadia Belabas (Universite Paris-Saclay); Kamel Bencheikh (Universite Paris-Saclay);
17:50 Quantum Networks Based on Cold Atomic Ensemble and Narrowband Photons
Invited
Hui Yan (South China Normal University);
Session 2P11b
SC2: Chiral Photonics and Spin Photonics

Tuesday PM, April 26, 2022
Room 11 - Tianhe Hall
Organized by Yuntian Chen, Hailiu Luo
Chaired by Shubo Wang, Haoliang Qian

13:50 Nonreciprocity and Non-Hermiticity in Spinning Resonators
Shubo Wang (City University of Hong Kong); Hongkang Shi (Huazhong University of Science and Technology); Zheng Yang (City University of Hong Kong); Yuntian Chen (Huazhong University of Science and Technology);

14:05 Highly Degenerate Photonic Waveguide Structures Generating Non-Abelian Geometric Phases
Julien Pinske (University of Rostock); Vera Neef (University of Rostock); Alexander Szameit (University of Rostock); Stefan Scheel (University of Rostock);

14:15 Photonic Band Structure and Field Response of Nonlocal Metamaterials
Yachao Liu (Shenzhen University); Guo Ping Wang (Shenzhen University);

14:30 Gap Opening Induced by Rotation Operation in Two-dimensional Photonic Crystals
Zihao Yu (Central China Normal University); Rui Zhou (Central China Normal University); Yangjie Liu (Huabei University); Hai Liu (Central China Normal University);

14:45 Photonic Spin Hall Effect in a S4-symmetry Metasurface
Jiaqing Liu (Nanjing University of Aeronautics and Astronautics); Xiao Li (Nanjing University of Aeronautics and Astronautics); Jiaqi Tao (Nanjing University of Aeronautics and Astronautics); Dazhong Dong (Nanjing University of Aeronautics and Astronautics); Youwen Liu (Nanjing University of Aeronautics and Astronautics); Yangyang Fu (Nanjing University of Aeronautics and Astronautics);

16:35 Type-I Weyl Points Induced by Negative Coupling in Photonic Crystal
Zhaozian Su (Beijing Institute of Technology);

16:50 Toggling Near-field Directionality via Polarization Control of Surface Waves
Yuhan Zhang (Zhejiang University); Xiaolin (Zhejiang University); Jing Jiang (Beijing Information Science and Technology University); Yi Yang (Massachusetts Institute of Technology); Gui-Geng Liu (Nanyang Technological University); Haoran Xue (Nanyang Technological University); Tong Low (University of Minnesota); Hongsheng Chen (Zhejiang University); Baile Zhang (Nanyang Technological University);

17:05 Microwave Vortex Beam Generation Based on Spoof Plasmon Ring Resonators
Zhen Liao (Hangzhou Dianzi University); Xin Zhang (Hangzhou Dianzi University); Yongmin Liu (Northeastern University);

17:20 Spin Hall Effect of Transversely Spinning Light
Liang Peng (Hangzhou Dianzi University); Su Xu (Jilin University); Shuang Zhang (University of Hong Kong);

17:35 High-Q Sensors Based on Spoof Localized Surface Plasmons
Di Bao (Southeast University); Tie Jun Cui (Southeast University);

Session 2P12a
SC5: Electromagnetic Sensing and Imaging for Biomedical Applications

Tuesday PM, April 26, 2022
Room 12 - Mingdu Hall 2
Organized by Maokun Li, Ke Zhang
Chaired by Maokun Li

13:00 Imaging Human Thorax Using Acoustic Wave through First Arrival Traveltome Tomography with Supervised Descent Learning Technique
Tong Zhang (Tsinghua University); Rui Guo (Tsinghua University); Haolin Zhang (Tsinghua University); Hongyu Zhou (Tsinghua University); Maokun Li (Tsinghua University); Fan Yang (Tsinghua University); Shenheng Xu (Tsinghua University);

13:15 Human Arm Imaging System Based on Machine Learning Inverse Scattering Approach
Naikke Du (Beijing Institute of Technology); Daohan Yang (Beihang University); Xizheng Ye (Beijing Institute of Technology);

13:30 Deep Learning-based Cardiac-related Signal Separation for Chest Electrical Impedance Tomography
Ke Zhang (Tsinghua University); Maokun Li (Tsinghua University); Fan Yang (Tsinghua University); Shenheng Xu (Tsinghua University); Aria Abubakar (Schlumberger Houston Formation Evaluation);
13:45 An Advanced Magnetic Induction Tomography Setup for Biomedical 3D-imaging throughout the Depth of a Voluminous Body
Martin Klein (University of Applied Sciences Ruhr West); Daniel Erni (University of Duisburg-Essen, Campus Duisburg); Dirk Rueter (University of Applied Sciences Ruhr West);

13:55 A Preliminary Approach on Osteoporosis Diagnostic Bruno Basile (B. & B. San); Angela Dell’Avversano (TTC Medical S.r.l.); Antonio Cuccaro (TTC Medical S.r.l.);

14:05 A Method of Moments Based Methodology for the Prediction of Entomological Targets’ Radar Cross Section from C-band to K-band
Omar Alzaabi (Khalifa University); Mohammad M. Al-Khaldi (University Corporation for Atmospheric Research); Mohamed Alkhathib (Pennsylvania State University); Diego Pénalosa (Pennsylvania State University); Julio Urbina (Pennsylvania State University);

14:25 A Value Piking Method for Mixed Boundary Conditions in Inverse Scattering Problems
Fan Yin (University of Science and Technology of China); Chang Chen (University of Science and Technology of China); Weidong Chen (University of Science and Technology of China);

14:35 Magnetotelluric Inversion Enhanced by Seismic Poststack Data Based on Deep Learning
Hongyu Zhou (Tsinghua University); Rui Guo (Tsinghua University); Maokun Li (Tsinghua University); Fan Yang (Tsinghua University); Shenheng Xu (Tsinghua University); Aria Abubakar (Schlumberger Houston Formation Evaluation);

14:50 Nonlinear Electromagnetic Inversion of Damaged Experimental Data by a Receiver Approximation Machine Learning Method
Hao-Jie Hu (Xiamen University); Li-Ye Xiao (Xiamen University); Qing Huo Liu (Duke University);

15:05 Combined Machine Learning — Inversion Scheme for Super-resolution 3-dimensional Microwave Human Brain Imaging
Lei Zhao (Xiamen University); Li-Ye Xiao (Xiamen University); Yu Cheng (Xiamen University); Qing Huo Liu (Xiamen University);

15:20 High-resolution Automotive Radar Point Cloud Imaging and Processing
Mengjie Jiang (Nanjing Hauweye Electronic Technology Co. Ltd.); Gang Xu (Southeast University); Hao Pei (Southeast University); Hui Zhang (Southeast University);

15:35 Utilization of Simulated SAR Data for Data Augmentation Based on the Adversarial Encoding Network
Yu Wang (Aerospace Information Research Institute, Chinese Academy of Sciences); Shaoqun Tao (Aerospace Information Research Institute, Chinese Academy of Sciences);

15:45 Off-grid DOA Estimation for Temporally Correlated Source via Robust Block-SBL in Mutual Coupling
Huafei Wang (Hainan University); Xianpeng Wang (Hainan University); Mengying Huang (Hainan University); Xiang Lan (Hainan University); Liangtian Wan (Dalian University of Technology);

16:00 Self-supervised Human Pose Recovery for Through-wall Radar Based on Convolutional Neural Networks
Zhijie Zheng (Aerospace Information Research Institute, Chinese Academy of Sciences); Jun Hong (Aerospace Information Research Institute, Chinese Academy of Sciences);

16:15 Robust Phase Error Correction and Coherent Processing for Automotive TDMA-MIMO Radar
Yuzhi Chen (Southeast University); Gang Xu (Southeast University); Mengjie Jiang (Nanjing Hauweye Electronic Technology Co. Ltd.); Hui Zhang (Southeast University);

16:30 Discrimination of Single-channel Radar Micro-doppler of Human Joints Based on Kinect Sensor
Xianxian He (National Space Science Center, Chinese Academy of Sciences); Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences); Xiaojin Shi (National Space Science Center, Chinese Academy of Sciences);

Session 2P12c
SC5: Machine Learning and Deep Learning for Radar Signal Processing and Imaging

Tuesday PM, April 26, 2022
Room 12 - Mingdu Hall 2
Organized by Xianpeng Wang, Gang Xu
Chaired by Xianpeng Wang, Guang-Cai Sun

16:45 High-resolution Automotive Radar Point Cloud Imaging and Processing
Mengjie Jiang (Nanjing Hauweye Electronic Technology Co. Ltd.); Gang Xu (Southeast University); Hao Pei (Southeast University); Hui Zhang (Southeast University); Kunpeng Guo (Nanjing Hauweye Electronic Technology Co. Ltd.);

17:00 Off-grid DOA Estimation for Temporally Correlated Source via Robust Block-SBL in Mutual Coupling
Huafei Wang (Hainan University); Xianpeng Wang (Hainan University); Mengying Huang (Hainan University); Xiang Lan (Hainan University); Liangtian Wan (Dalian University of Technology);

17:15 Discrimination of Single-channel Radar Micro-doppler of Human Joints Based on Kinect Sensor
Xianxian He (National Space Science Center, Chinese Academy of Sciences); Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences); Xiaojin Shi (National Space Science Center, Chinese Academy of Sciences);
13:45 Simulations of GNSS-R Signal and Validation over Vegetated Surfaces
Laura Dente (University of Rome Tor Vergata); Leila Guerriero (University of Rome Tor Vergata); Davide Comite (Sapienza University of Rome); Nazzareno Pierdicca (Sapienza University of Rome);

13:55 A Semi-empirical Model on the Standard Deviation of Spaceborne GNSS-R Wind Speed Measurements
Weiqiang Li (Institute of Space Sciences (ICE, CSIC)); Yang Nan (Wuhan University); Estel Cardellach (Institute of Space Studies (ICE, CSIC)); Antonio Rius (Institute of Space Studies (ICE, CSIC)); Shironge Ye (Wuhan University); Jingshan Liu (Wuhan University);

14:10 Significant Wave Height Estimation from CYGNSS Delay-doppler Map Average Observations
Shuangen Jin (Nanjing University of Information Science and Technology); Shuai Yang (Shanghai Astronomical Observatory, Chinese Academy of Sciences); Qingyan Yan (Nanjing University of Information Science and Technology); Yan Jia (Nanjing University of Posts and Telecommunications);

14:25 Use of GNSS-R CYGNSS Measurements in Arid Zones
Mehrez Zrbi (CESBIO (CNRS/IRD/CNES/UPS)); Nazzareno Pierdicca (Sapienza University of Rome);

Session 2P13b
SC5: Remote Sensing of Water and Energy Cycles 2

Tuesday PM, April 26, 2022
Room 13 - Mingdu Hall 3
Organized by Hui Lu, Jiancheng Shi
Chaired by Hui Lu, Jiancheng Shi

16:10 Time Series Remote Sensing of Land Use Changes and Influences on Runoff and Sediment Yield in Dongjiang River Basin, China
Hongyan Ma (Guangzhou Institute of Geochemistry); Jizhong Qiu (Chengzhu Natural Resources Bureau); Yunpeng Wang (Guangzhou Institute of Geochemistry, Chinese Academy of Sciences);

16:10 Improving Terrestrial Energy and Water Cycle Simulation Using Remote Sensing
Hui Lu (Tsinghua University);

16:25 Satellite Constellations for Water Cycle and Global Invited Change Studies
Jian-Cheng Shi (Institute of Remote Sensing Applications, CAS);
16:45 Soil Moisture Retrievals Using a Multi-Channel Collaborative Algorithm (MCCA) Tiantie Zhao (Aerospace Information Research Institute, Chinese Academy of Sciences); Jiancheng Shi (National Space Science Center, Chinese Academy of Sciences); Zhiqing Peng (Aerospace Information Research Institute, Chinese Academy of Sciences); Panpan Yao (Aerospace Information Research Institute, Chinese Academy of Sciences); Organized by Huan-Chu Huang, Siyang Sun

17:00 A Long-term Total Precipitable Water Product Based on Microwave Radiometer Dabin Ji (Aerospace Information Research Institute, Chinese Academy of Sciences); Jiancheng Shi (National Space Science Center, Chinese Academy of Sciences); Hui Letu (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences (CAS)); Qiying Sun (Aerospace Information Research Institute, Chinese Academy of Sciences);

17:15 Detecting Rainfall Events Leveraging Climate Knowledge Graphs Jiantao Wu (University College Dublin); Fabrizio Orlandi (The ADAPT SFI Research Centre); Declan O’Sullivan (Trinity College Dublin); Soumyabrata Dev (Beijing-Dublin International College);

17:25 Role of Temporal Information for Multi-step Ahead Forecasting of Solar Irradiance T. A. Fathima (Indian Institute of Technology Bombay); Vasudevan Nedumpozhimana (ADAPT SFI Research Centre); Jiantao Wu (University College Dublin); Yee Hui Lee (Nanyang Technological University Singapore); Soumyabrata Dev (Beijing-Dublin International College);

Session 2P14a
Antenna Designs, Solutions, Measurements, and Trends for 5G and Beyond

Tuesday PM, April 26, 2022
Room 14 - Mingdu Hall 5
Organized by Huan-Chu Huang, Siyang Sun
Chaired by Huan-Chu Huang, Siyang Sun

13:00 The mm-wave Active Phased-array Antenna Module Design for 5G Applications Cheng-Nan Hu (Oriental Institute of Technology); Ping-Xiang Wang (Oriental Institute of Technology); Xin-Zhi Chen (Oriental Institute of Technology); Chia-Chuan Wu (Oriental Institute of Technology); Invited

13:15 Status and Analysis of RF Conformance Test for Millimeter-wave Devices Xiangqian Sun (China Academy of Information and Communications Technology); Yuanyuan Liu (China Academy of Information and Communications Technology); Yu Zhou (China Academy of Information and Communications Technology);

13:30 LTCC Dual-polarization Array Antenna with Scalability by Tiling Based on 4 × 4 Elements for 5G (28 GHz) Base Station and CPE Daisuke Yamashita (NGK Spark Plug Co., Ltd.);

13:40 Demystifying Self-healing Property of Accelerating Beams for Obstacles Circumvention in Communication Applications Daniele Inserra (University of Electronic Science and Technology of China); Guangjun Wen (University of Electronic Science and Technology of China);

13:50 A Novel Test Scheme for Crossly-polarized Electromagnetic Wave Based on Pseudo-random Codes Renzhou Gui (Tongji University); Han Nie (Tongji University); Hao Liang (Tongji University); Mei Song Tong (Tongji University);

14:00 Miniaturized Three-in-one Module of Wideband Dual-polarized Millimeter-wave Antennas-in-Package as Non-millimeter-wave Antennas (AiPaA) for Mobile Phones Huan-Chu Huang (Etheta Communication Technology Co., Ltd.); Zhirong Qi (Etheta Communication Technology Co., Ltd.); Dasong Gao (Etheta Communication Technology Co., Ltd.); Junyong Liu (East China Research Institute of Microelectronics); Jingue Li (East China Research Institute of Microelectronics); Hong Lin (Etheta Communication Technology Co., Ltd.);

14:15 Ray-tracing Based 28 GHz Channel Characterization for Outdoor Millimeter Wave Communications Yu Zhou (China Academy of Information and Communications Technology); Yuan Dong (China Academy of Information and Communications Technology); Yuanyuan Liu (China Academy of Information and Communications Technology); Xiangqian Sun (China Academy of Information and Communications Technology);

14:30 Dual-band Antenna Integrated with Solar Cells for WLAN and 5G Wi-Fi Applications Hui Wang (Tianjin University); Wenzing An (Tianjin University);

14:40 Machine Learning Based MIMO Antenna Arrays Optimization for 5G/6G Maxim A. Dubovitsky (National Research University “Moscow Power Engineering Institute”);

14:50 Analysis of EIRP Measurement Grid for 5G Millimeter Wave User Equipment Yuanyuan Liu (China Academy of Information and Communications Technology); Rui Zhang (China Academy of Information and Communications Technology); Yu Zhou (China Academy of Information and Communications Technology);
### Session 2P14b

**Recent Advances in Flexible and Reconfigurable Antennas**

**Tuesday PM, April 26, 2022**

**Room 14 - Mingdu Hall 5**

Organized by Lingnan Song, Meng Wang  
Chaired by Lingnan Song

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>16:00</td>
<td>A Textile-tailored Surrogate-based Antenna Optimization Technique with High Accuracy and Efficiency</td>
<td>Botian Zhang (University of California); Lingnan Song (Beihang University); Yahya Rahmat-Samii (University of California);</td>
</tr>
<tr>
<td>16:15</td>
<td>A W-band Circularly Polarized Antenna</td>
<td>Zhenjie Yan (Jimei University); Jun Xiao (University of California); Tongyu Ding (Jimei University); Honglin Lan (Jimei University); Qiubo Ye (Jimei University);</td>
</tr>
<tr>
<td>16:30</td>
<td>A Tunable Dipole Antenna Controlled by Motor</td>
<td>Tingun Lai (Zhejiang University); Xinyu Hong (Zhejiang University); Yinger Zhang (Zhejiang University); Zhengjie Huang (Zhejiang University); Hengjian Ma (Zhejiang University); Jiangtao Huangfu (Zhejiang University);</td>
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<tr>
<td>16:45</td>
<td>A Low-profile Slot Antenna with Frequency and Pattern Reconfigurability</td>
<td>Ge Zhao (Tongji University); Yi Zhou (Tongji University); Yunqing Zhang (Soochow University); Mei Song Tong (Tongji University);</td>
</tr>
<tr>
<td>17:00</td>
<td>A Ka-band Phased-array Antenna Based on Liquid Crystal Phase Shifter</td>
<td>Xiao Yu Li (Tongji University); Di Jiang (University of Electronic Science and Technology of China); Juan Liu (Beijing Institute of Remote Sensing Equipment); Mei Song Tong (Tongji University);</td>
</tr>
<tr>
<td>17:15</td>
<td>A Polarization and Frequency Reconfigurable Antenna Based on Liquid Metal</td>
<td>Zhaojie Min (Beihang University); Min Wang (Beihang University); Zhe Zhang (Beihang University); Aixin Chen (Beihang University);</td>
</tr>
<tr>
<td>17:30</td>
<td>A Dual-band Pattern Reconfigurable Antenna Based on Liquid Metal</td>
<td>Min Wang (Beihang University); Xuedong Fu (Beihang University); Zhaojie Min (Beihang University); Zhe Zhang (Beihang University); Aixin Chen (Beihang University);</td>
</tr>
<tr>
<td>17:45</td>
<td>Liquid Metal Antenna: Application and Fabrication</td>
<td>Zhifu Liu (Central South University); Yuanjuan Zhu (Central South University); Yan Ma (Central South University); Meng Wang (Central South University); Jian Dong (Central South University);</td>
</tr>
<tr>
<td>18:00</td>
<td>Compact Fractal Based MIMO Antenna with Tunable Band Notching Characteristics for UWB Applications</td>
<td>Bhargava Punna (Vignan’s Foundation for Science Technology and Research (Deemed to be University)); Pachiyamanan Muthusamy (Vignan’s Foundation for Science Technology and Research (Deemed to be University));</td>
</tr>
<tr>
<td>18:10</td>
<td>Compact Fractal Based MIMO Antenna with Reconfigurable Band Notching Characteristics for UWB Applications</td>
<td>Bhargava Punna (Vignan’s Foundation for Science Technology and Research (Deemed to be University)); Pachiyamanan Muthusamy (Vignan’s Foundation for Science Technology and Research (Deemed to be University));</td>
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</table>

### Session 2P15a

**SC1: Advanced Numerical Approaches in Computational Electromagnetics**

**Tuesday PM, April 26, 2022**

**Room 15 - Mingdu Hall 6**

Organized by Yuxian Zhang, Changyou Li  
Chaired by Changyou Li

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>13:00</td>
<td>A Wideband Irregular Circular Polarization Antenna Analyzed by Characteristic Mode Theory</td>
<td>Qiubo Ye (Jimei University); Ping Chen (Jimei University); Jun Xiao (Jimei University); Zhuo Yang (Jimei University);</td>
</tr>
<tr>
<td>13:15</td>
<td>Learning-based Electromagnetic Inverse Scattering with Mixed Boundaries</td>
<td>Youyou Huang (Hefei University of Technology); Rencheng Song (Hefei University of Technology);</td>
</tr>
<tr>
<td>13:30</td>
<td>Application of Microwave-induced Thermal Acoustic Tomography on Composites Detection</td>
<td>Kang An (Northwestern Polytechnical University); Changyou Li (Northwestern Polytechnical University); Jun Ding (Northwestern Polytechnical University);</td>
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<tr>
<td>13:45</td>
<td>Characterization of One-way Edge Modes at the Interface of Topological Photonic Crystals and a PEC Wall Using the Coupled Integral Equation — Foldy-Lax Multiple Scattering Method</td>
<td>Zhaoyang Peng (Zhejiang University); Shurun Tan (Zhejiang University/University of Illinois at Urbana-Champaign Institute);</td>
</tr>
<tr>
<td>14:00</td>
<td>Electromagnetic Imaging of Damages in Fiber-reinforced Laminates Based on Deep Learning Techniques</td>
<td>Zicheng Liu (Northwestern Polytechnical University); Changyou Li (Northwestern Polytechnical University); Yu Zhong (FINIAC Pte. Ltd.);</td>
</tr>
<tr>
<td>14:15</td>
<td>The Electromagnetic Wave Propagation Property in Rectangular Waveguide Filled with Biaxial Anisotropic Material</td>
<td>Kai Sun (Northwestern Polytechnical University); Changyou Li (Northwestern Polytechnical University);</td>
</tr>
</tbody>
</table>
16:00 A Theoretical Model for Nonlinear Waves Observed in Space Plasmas
Jiankui Shi (Center for Space Science and Applied Research, CAS); Z. Wang (Center for Space Science and Applied Research, CAS); Z. W. Cheng (Center for Space Science and Applied Research, CAS); M. N. S. Qureshi (Government College University); Klaus Torkar (Space Research Institute, AAS);

16:10 Polarized Light Scattering in Random Media: A Random Matrix Model
Niall Byrne (Imperial College London); Matthew R. Foreman (Imperial College London);

16:20 Topology Optimal Design of NRD Guide Devices Using Simulated Annealing Like Scheme
Naoya Hieda (Muroran Institute of Technology); A. Iguchi (Muroran Institute of Technology); Y. Tsuji (Muroran Institute of Technology); T. Kashiwa (Kitami Institute of Technology);

16:30 Bayesian Optimization of Three-dimensional Plasmonic Devices
Hiroki Maruyama (Muroran Institute of Technology); A. Iguchi (Muroran Institute of Technology); Y. Tsuji (Muroran Institute of Technology); T. Kashiwa (Kitami Institute of Technology);

16:40 On the Correlation between Near Infrared Spectrum from the Sky and Weather Parameters
Yasuho Ohtera (Toyama Prefectural University); Haruyasu Tanaka (Toyama Prefectural University); Tomohisa Takaya (Toyama Prefectural University); Yuki Okura (Toyama Prefectural University);

T. Bashir (Muroran Institute of Technology); K. Morimoto (Muroran Institute of Technology); A. Iguchi (Muroran Institute of Technology); Yasuhide Tsuji (Muroran Institute of Technology); T. Kashiwa (Kitami Institute of Technology);

17:00 Temperature Sensing Characteristics of Surface Acoustic Wave Brillouin Scattering in Optical Microfibers
Yi Liu (Taiyuan University of Technology); Yuanqi Gu (Taiyuan University of Technology); Pengfei Chen (Taiyuan University of Technology); Rongrong Guo (Taiyuan University of Technology); Yao Yao (Taiyuan University of Technology); Yajun You (North University of China); Wenjun He (North University of China); Xiaojian Chou (North University of China);

17:10 A Spectral Galerkin Modal Method for Applications in Photonics
Nan Zhang (City University of Hong Kong); Ya Yan Lu (City University of Hong Kong);
14:30 Cherenkov Radiation Based on Effective Surface Plasmon Polaritons
Juan-Feng Zha (Peking University); Chao-Hai Du (Peking University); Zi-Wen Zhang (Peking University); Zi-Chao Gao (Peking University); Fan-Hong Li (Peking University); Si-Qi Li (Peking University); Pu-Kun Liu (Peking University);

14:45 Improvement of Output Power and Bandwidth for Extended Interaction Klystron in G-band Feng Zhang (Beihang University); Wenbo Wang (Beihang University); Cun-Jun Ruan (Beihang University);

15:00 Technologies of Frequency Selective Surfaces and Metasurfaces for Highly Effective Spectral Discrimination in the Terahertz Band Sergei A. Kuznetsov (Institute of Semiconductor Physics SB RAS); Alexander V. Gelfand (Institute of Semiconductor Physics SB RAS); Pavel Alexandrovich Lazorskiy (Institute of Semiconductor Physics SB RAS); Victor N. Fedorinin (Institute of Semiconductor Physics SB RAS); Andrey V. Arzhannikov (Novosibirsk State University); Nazar A. Nikolaev (Novosibirsk State University); Alexander A. Mamrashev (Institute of Automation and Electrometry SB RAS); Alina A. Rybak (Novosibirsk State University); Alexander N. Gentseliev (Budker Institute of Nuclear Physics SB RAS); Victor P. Bessmel'tsev (Budker Institute of Nuclear Physics SB RAS);

16:35 Parameter Analysis of Two-color Laser Sources for Terahertz Wave Radiation from Liquid Water Tao Shen (Kunming University of Science and Technology); Zezhong Tian (Kunming University of Science and Technology); Huayang Wang (Kunming University of Science and Technology); J. Zhang (Kunming University of Science and Technology); J. Liu (Kunming University of Science and Technology);

**Session 2P16c**

**SC4: Emerging RF and mm-wave ICs for Wireless Sensing and Communication**

**Tuesday PM, April 26, 2022**

**Room 16 - Mingdu Hall 7**

Organized by Keping Wang, Kaixue Ma
Chaired by Bin Zheng

17:00 A RF Frequency Tripler with High Output Power in 180nm CMOS Xinke Zhao (Jiangsu University); Leijuan Xu (Jiangsu University);

17:10 100mW G-band MMIC Power Amplifier Based on 50nm GaN HEMT Technology Fangjin Guo (University of Electronic Science and Technology of China); Yuehang Xu (University of Electronic Science and Technology of China); Shaobing Wu (Nanjing Electronic Devices Institute); Hongqi Tao (Nanjing Electronic Devices Institute); Erchen Ma (Nanjing Electronic Devices Institute); Tangsheng Chen (Nanjing Electronic Device Institute); Weibo Wang (Southeast University);

17:25 A D Band Zero Bias Detector Chip Using Schottky Diode Dongfeng Ji (Nanjing Electronic Devices Institute); Bin Niu (Science and Technology on Monolithic Integrated Circuits and Modules Laboratory); Hong-Qi Tao (Science and Technology on Monolithic Integrated Circuits and Modules Laboratory); Tangsheng Chen (Science and Technology on Monolithic Integrated Circuits and Modules Laboratory); Weibo Wang (Southeast University);

17:40 Design of a Low-output-resistance Reference Buffer Providing High and Low Reference Voltages for High Speed ADCs Bingbing Ma (Fudan University); Longbo Fan (Fudan University); Na Yan (Fudan University); Hongtao Xu (Fudan University);
**Session 3A1a**  
**SC3: Integrated Lithium Niobate Photonics**  
**Wednesday AM, April 27, 2022**  
**Room 1 - Midtown Hall**  
Organized by Zejie Yu, Xiankai Sun  
Chaired by Zejie Yu

08:00 Thin-film Lithium Niobate Photonics for Millimeter-wave Applications  
Cheng Wang (City University of Hong Kong);  
08:15 Lithium Niobate for Nonlinear Integrated Photonics  
Invited  
Xiao Peng Hu (Nanjing University);  
08:35 High-performance Integrated Photonic Devices on thin-film Lithium Niobate  
Invited  
Susan Fathpour (University of Central Florida);  
08:50 High-speed LNOI Devices  
Invited  
Xinlan Cai (Sun Yat-Sen University);  
09:10 Nonlinear Photonics on the Integrated Lithium Niobate Platform  
Invited  
Qiang Lin (Zhejiang University);  
09:25 Integrated Acousto-optics on Thin-film Lithium Niobate  
Invited  
Bingcheng Pan (Zhejiang University, Zijingang Campus); Huan Li (Zhejiang University); Daoxin Dai (Zhejiang University);  
09:45 Optical Filters Based on Thin-film Lithium Niobate  
Invited  
Jinsong Xia (Huazhong University of Science and Technology (HUST));  
10:00 Super-resolution Microscopy and Instrument  
Invited  
Cuifang Kuang (Zhejiang University);  
10:50 Label-free Subdiffraction Bioimaging Using Optical Superoscillations  
Invited  
Guanghui Yuan (University of Science and Technology of China);  
11:00 Monolayer Supercritical Lens with Sub-diffraction Limited Focusing Property  
Fei Qin (Jinan University);  
11:20 Fast Super-resolution Two-photon Microscopy, Its Principle and Applications  
Laru Dai (National Center for Nanoscience and Technology);  
11:35 Flat Field Super-resolution Metalenses  
Gang Chen (Chongqing University);

**Session 3A1b**  
**SC3: Superresolution Optical Devices and Systems**  
**Wednesday AM, April 27, 2022**  
**Room 1 - Midtown Hall**  
Organized by Gang Chen  
Chaired by Gang Chen

10:30 Using Dynamic Plasmonic Colors for High Density Data Storage and Kaleidoscopic Cryptography  
Maowen Song (Nanjing University); Ting Xu (Nanjing University);  
10:50 Harnessing Microstructures for Tunable Structural Color  
Invited  
Lauren Zarzar (Penn State University);  
11:20 Nanoscale 3D Printing Based Structural Colors  
Invited  
Hao Wang (Singapore University of Technology and Design); Joel K. W. Yang (Singapore University of Technology and Design);  
11:40 Structural Color Device as Decorative Element in Consumer Products  
Invited  
Gangyao Zhan (Soochow University); Hao Zhong (Soochow University); Su Shen (Soochow University);  
12:00 Controllable Generation of Large-scale Highly-regular Gratings for Structural Coloring Applications  
Invited  
Jiao Geng (Westlake University); Xiaoguo Fang (Westlake University); Leizhang Liu (Westlake University); Guangnan Yao (Westlake University); Liye Xu (Westlake University); Fengjiang Liu (Westlake University); Weisui Tang (Westlake University); Liping Shi (Westlake University); Min Qiu (Westlake University);  
12:20 Design of Multilayered Reflective Structural Colors Assisted by Particle Swarm Optimization  
Danyan Wang (Huazhong University of Science and Technology); Cheng Zhang (Huazhong University of Science and Technology);
Session 3A2b
SC3: Optical Interconnect Technologies for Datacom and Computercom 1

Wednesday AM, April 27, 2022
Room 2 - Shixin Hall 1
Organized by Binhao Wang, Stanley Cheung
Chaired by Binhao Wang, Stanley Cheung

10:30 High Speed Silicon Photonic Modulation for Datacenter Invited Interconnect
Fan Zhang (Peking University);
10:45 Quantum Dot Lasers and Integration with Si Photonic Invited Integrated Circuits
Yating Wan (University of California Santa Barbara); Chen Shang (University of California Santa Barbara); Rosalyn Koscia (University of California Santa Barbara); Chao Xiang (University of California Santa Barbara); Arthur C. Gossard (University of California Santa Barbara); John E. Bowers (University of California Santa Barbara);
11:00 Photonic Devices on Thin Film Lithium Niobate Invited Liu Liu (International Research Center for Advanced Photonics);
11:15 In-Situ Cross-linking and Chemical Anti-corrosion Strategy Invited for Efficient and Operationally Stable Perovskite Solar Cells
Junfeng Fang (East China Normal University); Xiaodong Li (East China Normal University);
11:30 Suppressing Interfacial Nonradiative Losses for Perovskite Light-emitting Diodes Invited Baodan Zhao (Zhejiang University);
11:45 Electrical Degradation of Polymer Light-emitting Diodes Invited Quan Niu (South China University of Technology);
12:00 Extremely Low Driving Voltage Organic Light-emitting Devices and Their Applications Invited Yuan Liu (Beijing Information Science & Technology University);
12:15 Ultrafast Dynamics of Organic and Organic-inorganic Hybrid Materials and Devices Invited Jiangbin Zhang (National University of Defense Technology);
12:30 Environmental Effects on the Photophysics of Hybrid Perovskites Invited Hong-Hua Fang (Tsinghua University);
12:45 Acousto-activated Liquid Marble-based Micro-reactor for Quantitative SERS Detection of ALP Invited Zufang Huang (Fujian Normal University); Weiming Lin (Fujian Normal University);
13:00 Engineering Two-dimensional Layered Perovskites for Efficient and Stable Solar Cells Invited Wenhui Li (Southern University of Science and Technology); Lai Xue (Southern University of Science and Technology); Xiaoyu Gu (Southern University of Science and Technology); Yuniu Zhang (Southern University of Science and Technology); Dongya Pan (Southern University of Science and Technology); Gongqiang Li (Nanjing Tech University (NanjingTech)); Aung Ko Ko Kyaw (Southern University of Science and Technology);
13:15 Theory and Experiments of Integrating Transistors with Various Photoelectric Devices Invited Chuan Liu (Sun Yat-sen University);
13:30 Efficient Doping of Organic Semiconductors for High-performance Devices Invited Yuanyuan Hu (Hunan University);
13:45 Higher-order Topological Sound Transport in Synthetic Perovskite Dimensions Invited H. Chen (University of Missouri); H.K. Zhang (Beijing Institute of Technology); Q. Wu (University of Missouri); Y. Huang (Beijing Institute of Technology); H. Nguyen (University of Missouri); E. Prodan (Yeshiva University); X.M. Zhou (Beijing Institute of Technology); Guoliang Huang (University of Missouri);
14:00 Steering Sound with Synthetic Pseudo-spin-hall Effect in Acoustic Metamaterials Invited Matthew Weiner (City College of the City University of New York); Xiang Ni (City College of the City University of New York); Andrea Alù (City University of New York); Alexander B. Khanikaev (Graduate Center of City University of New York);
14:15 Some Novel Topological Acoustic Phenomena Utilizing the Third Dimension Invited Baile Zhang (Nanyang Technological University);

Session 3A3
SC2&SC3: Organic and Hybrid Optoelectronics 2

Wednesday AM, April 27, 2022
Room 3 - Shixin Hall 2
Organized by Yuyi Feng, Dawei Di
Chaired by Yuyi Feng, Dawei Di

08:00 In-Situ Cross-linking and Chemical Anti-corrosion Strategy for Efficient and Operationally Stable Perovskite Solar Cells Invited
Junfeng Fang (East China Normal University); Xiaodong Li (East China Normal University);
08:20 Suppressing Interfacial Nonradiative Losses for Perovskite Light-emitting Diodes Invited Baodan Zhao (Zhejiang University);
08:40 Electrical Degradation of Polymer Light-emitting Diodes Invited Quan Niu (South China University of Technology);
09:00 Extremely Low Driving Voltage Organic Light-emitting Devices and Their Applications Invited Yuan Liu (Beijing Information Science & Technology University);
09:20 Ultrafast Dynamics of Organic and Organic-inorganic Hybrid Materials and Devices Invited Jiangbin Zhang (National University of Defense Technology);
08:45 Topological States in Bilayer Phononic Crystals
Invited
Weigun Deng (South China University of Technology); Xueqin Huang (South China University of Technology); Jinyang Lu (South China University of Technology); Gang Chen (Shanzhi University); Zhengyou Liu (Wuhan University);

09:00 Inducing Topological Corner Modes in Arbitrary Geometry through Dirac Vortices
Invited
Xiaoziao Wu (The University of Hong Kong); Yan Meng (The Hong Kong University of Science and Technology); Yuran Hao (The Hong Kong University of Science and Technology); Ruo-Yang Zhang (The Hong Kong University of Science and Technology); Jensen Li (Hong Kong University of Science and Technology); Xiang Zhang (University of Hong Kong);

Session 3A4b
SC2: Topological Metamaterials/Electric Circuits

Wednesday AM, April 27, 2022
Room 4 - Mingyi Hall
Organized by Yuntian Chen, Ruo-Yang Zhang
Chaired by Lingtian Chen, Ruo-Yang Zhang

09:10 Fractional Charges and Defects in High-order Microwave Invited Topological Insulators
Christopher W. Peterson (University of Illinois at Urbana-Champaign); Sasaki Yamada (University of Illinois at Urbana-Champaign); Tianhe Li (University of Illinois at Urbana-Champaign); Mao Lin (University of Illinois at Urbana-Champaign); Wentao Jiang (University of Illinois at Urbana-Champaign); Wladimir A. Benlazaro (University of Illinois at Urbana-Champaign); Taylor L. Hughes (University of Illinois at Urbana-Champaign); Gaurav Bahl (University of Illinois);

09:25 Experimental Observation of Non-Abelian Topological Charges and Bulk-edge Correspondence
Invited Biao Yang (Hong Kong University of Science and Technology);

09:40 Photonic Dirac Nodal Line Semimetal
Invited
Mengying Hu (Nanjing University); Ye Zhang (Nanjing University); Xi Jiang (Nanjing University); Tong Qiao (Nanjing University); Qiang Wang (Nanjing University); Shining Zhu (Nanjing University); Meng Xiao (Wuhan University); Hui Liu (Nanjing University);

10:05 Topological Properties of Polarization Singularities in Invited Scattering Systems
Shubo Wang (City University of Hong Kong); Jie Peng (City University of Hong Kong); Ruo-Yang Zhang (The Hong Kong University of Science and Technology);

11:00 Riemannian Geometry in Momentum Space for Pseudo-Hermitian Systems
Invited
Hongwei Jia (Hong Kong University of Science and Technology); Ruo-Yang Zhang (Hong Kong University of Science and Technology); Jing Hu (Hong Kong University of Science and Technology); C. T. Chan (Hong Kong University of Science and Technology);

11:10 The Topological Edge Modes and Tamm Modes in Superconductor
Invited Schrieffer-Heeger LC-resonator Circuits
Invited
Hai-Xiao Wang (Guangxi Normal University); Ping-Lan (National Central University);

11:30 Bound States at Partial Dislocation Defects in 2D and 3D High-order Topological Insulator Metamaterials
Invited
Sasha S. Yamada (University of Illinois at Urbana-Champaign); Tianhe Li (University of Illinois at Urbana-Champaign); Mao Lin (University of Illinois at Urbana-Champaign); Christopher W. Peterson (University of Illinois at Urbana-Champaign); Taylor L. Hughes (University of Illinois at Urbana-Champaign); Gaurav Bahl (University of Illinois);

Session 3A5a
SC2: Active and Reconfigurable Metasurfaces: Fundamentals and Applications 2

Wednesday AM, April 27, 2022
Room 5 - Gui Hall
Organized by Yuancheng Fan, Qian Zhao, Jin Hui Shi
Chaired by Qian Zhao, Jin Hui Shi

08:00 Active Tuning of Asymmetric Transmission and Circular Dichroism in Symmetry Broken Chiral Metamaterial
Guohua Dong (Harbin Engineering University); Chunhua Qin (Harbin Engineering University); Yuziang Li (Harbin Engineering University); Chuanying Guan (Harbin Engineering University); Jin Hui Shi (Harbin Engineering University);

08:15 Graphene-based Optically Transparent and Dynamically Tunable Metasurface with Anisotropic Modulations
Invited
Jin Zhang (Shanghai Jiao Tong University); Weiren Zhu (Shanghai Jiao Tong University);
08:30 Switched Ultra-broadband Metamaterials Absorber and Polarization Converter with Vanadium Dioxide
Buxiong Qi (Lanzhou University); Yunrui Zhao (Lanzhou University); Wenguang Chen (Lanzhou University); Jingezi Zhang (Lanzhou University); Tao Ming Niu (Lanzhou University); Zhong-Lei Mei (Lanzhou University);

08:45 Thermally Reconfigurable Fano Resonance in Water Brick Pair Metamaterial
Jing Xu (Northwestern Polytechnical University); Yuancheng Fan (Northwestern Polytechnical University); Quanhong Fu (Northwestern Polytechnical University); Fuli Zhang (Northwestern Polytechnical University);

09:00 Excitation of Pure Toroidal Dipole Based on a Single Dielectric Disk
Ruisheng Yang (Northwestern Polytechnical University); Quanhong Fu (Northwestern Polytechnical University); Fuli Zhang (Northwestern Polytechnical University); Yuancheng Fan (Northwestern Polytechnical University);

09:15 Active Control of Terahertz Toroidal Excitations in a Hybrid Metasurface with Electrically Biased Silicon Layer
Ruisheng Yang (Northwestern Polytechnical University); Quanhong Fu (Northwestern Polytechnical University); Fuli Zhang (Northwestern Polytechnical University); Yuancheng Fan (Northwestern Polytechnical University);

09:30 A Tunable Dual-band Metamaterial Filter
Jianchun Xu (Beijing University of Posts and Telecommunications); Ke Bi (Beijing University of Posts and Telecommunications);

09:45 Broadband High-reflective Omnidirectional Mixed-quasi-periodic Multilayer
Huanhuan Wang (University of Chinese Academy of Sciences); Guogan Dong (University of Chinese Academy of Sciences);

10:30 Ultrasensitive Biosensing Platform Based on Exceptional Point in Nonreciprocal Reflection Structure
Chengdong Tao (University of Science and Technology Beijing); Chuanbao Liu (University of Science and Technology Beijing); Yang Bai (University of Science and Technology Beijing);

11:05 Integrating Single-photon Sources On-a-chip
Omer Yesilyurt (Purdue University); Zhazgylk A. Kudyshev (Purdue University); Alexandra Bolasseva (Purdue University); Vladimir M. Shalaev (Purdue University); Alexander V. Kildishev (Purdue University);

11:15 Suppressing Meta-holographic Artifacts by Laser Coherence Tuning
Yaniv Eliezer (Yale University); Geyang Qu (Harbin Institute of Technology (Shenzhen)); Wenhong Yang (Harbin Institute of Technology); Yujie Wang (Harbin Institute of Technology); Hasan Yilmaz (Yale University); Shumin Xiao (Harbin Institute of Technology); Qinghai Song (Harbin Institute of Technology); Hui Cao (Yale University);

11:25 Time Domain Implementation of Lorentz-convoluted Models for Optical Materials with Disorder
Ludmila J. Prokopeva (Purdue University); Sam Peana (Purdue University); Sarah Choudhury (Purdue University); Alexander V. Kildishev (Purdue University);

Session 3A6a
SC2: Thermal Metamaterials and Devices 1

Wednesday AM, April 27, 2022
Room 6 - Mingrui Hall
Organized by Ying Li, Wei Li
Chaired by Qiang Li, Ying Li

08:00 Temperature-adaptive Radiative Coating for All-season Household Thermal Regulation by VO₂ Based Metamaterials
Kechao Tang (Peking University); Kaichen Dong (University of California); Jiachen Li (University of California); Madeleine P. Gordon (University of California); Finnegan G. Reicherts (East Bay Innovation Academy); Hyungjin Kim (Lawrence Berkeley National Laboratory); Yoonsoo Rho (University of California); Qingjun Wang (University of California); Chang-Yu Lin (University of California); Ali Javey (University of California); Jeffrey J. Urban (Lawrence Berkeley National Laboratory); Jie Yao (University of California); Rommen Levinson (Lawrence Berkeley National Laboratory); Junqiao Wu (University of California);

08:20 Thermal Manipulation and Thermal Rectification in One-dimensional Heterostructures
Xianfan Xu (Tongji University);

08:40 Near-field Radiation Assisted Smart Skin for Spacecraft Thermal Control
Deyu Xu (Harbin Institute of Technology); Junming Zhao (Harbin Institute of Technology); Lihua Liu (Harbin Institute of Technology);

09:00 Ballistic Heat Conduction vs. Nanophotonic Control of Thermal Radiation: From Boltzmann to Maxwell
Zhen Chen (Southeast University);

Session 3A5b
SC2: Light-matter Interaction in Photonic/Plasmonic Metastructures 1

Wednesday AM, April 27, 2022
Room 5 - Gui Hall
Organized by Alexander V. Kildishev, Lian Shen
Chaired by Lian Shen, Ludmila J. Prokopeva

10:50 High-order Accurate Schemes for Dispersive Maxwell Equations on Complex Geometries Using Overset Grids
William D. Henshaw (Rensselaer Polytechnic Institute);
09:20 Control over Emissivity for Infrared Camouflage
Invited
Qiăng Li (Zhejiang University);

09:40 Thermal Metamaterials Design via Machine Learning
Invited
Run Hu (Huazhong University of Science and Technology);

10:30 Enabling Photovoltaic Technologies in Harsh Climates with Pulse Electro-thermal Desnowing, Defrosting, and Deicing
Lōng-nan Li (University of Illinois at Urbana-Champaign); Siavash Khodakarami (University of Illinois at Urbana-Champaign); Xiao Yan (University of Illinois at Urbana-Champaign); Kazi Faizel Rabbi (University of Illinois at Urbana-Champaign); Alperen Gunay (University of Illinois at Urbana-Champaign); Andrew Stillwell (University of Illinois at Urbana-Champaign); Nenad Miljkovic (University of Illinois at Urbana-Champaign); Wei Li (University of Chinese Academy of Sciences);

10:45 Inverse Design and Fundamental Limits of Near-field Thermal Radiation
Weiliang Jin (Stanford University); Sean Molesky (Princeton University); Prashanth S. Venkataram (Princeton University); Alejandro W. Rodriguez (Princeton University); Shanhui Fan (Stanford University);

10:55 A Simple Mushroom-like Ultra-broadband Metamaterial Absorber with Multi Resonance Modes
Yanning Liu (University of Electronic Science and Technology of China); Wenzin Li (University of Electronic Science and Technology of China); Xiaolong Weng (University of Electronic Science and Technology of China); Peng Zhang (Shenyang Aircraft Design and Research Institute); Yu Gong (Shenyang Aircraft Design and Research Institute); Li Zhang (University of Electronic Science and Technology of China); Peiheng Zhou (University of Electronic Science and Technology of China); Long-Jiang Deng (University of Electronic Science and Technology of China);

11:10 Dynamic Thermal Material and Thermal Topology
Guoqiang Xu (National University of Singapore); Cheng-Wei Qiu (National University of Singapore);

11:40 Pseudo-Random Sequence (PRS) Space-time-modulated Metasurfaces: General Concept and Fundamental Operations
Xiaoyi Wang (Polytechnique); Christophe Caloz (Ecole Polytechnique de Montreal);

11:50 Electromagnetic Waves in Time-modulated Material Media and Transmission Lines
José Gabriel Gaziola-Luna (National Institute of Astrophysics, Optics and Electronics); Peter Halesi (Instituto Nacional de Astrofísica Optica y Electronica);

Session 3A7a
SC3: Light Propagation, Transformations and Manipulations

Wednesday AM, April 27, 2022
Room 7 - Mingsi Hall
Organized by Xinzhong Li, Zhili Lin
Chaired by Xinzhong Li, Zhili Lin

08:00 Optical Vortex Lattice: A Rediscovery of Orbital Angular Momentum
Xinzhong Li (Henan University of Science and Technology);

08:15 Evolution of Spatiotemporal Intensity of Partially Coherent Pulsed Beams with Spatial Cosine-Gaussian and Temporal Laguerre-Gaussian Correlations in Still, Pure Water
Chaoliang Ding (Luoyang Normal University); Olga Krotkova (University of Miami); Dmitri Horoshko (B. I. Stepanov Institute of Physics, NASB);

08:25 Correlation Induced Orbital Angular Momentum Changes
Yongtao Zhang (Minnan Normal University); Olga Krotkova (University of Miami); Yangjian Cai (Shandong Normal University & Soochow University); Greg Gbur (University of North Carolina at Charlotte);

08:40 Photoacoustic Generation in Human Brain with Embedded Blood Vessel: Modeling and Simulation
Xi Yang (Westlake University); Yun-Huaan Chen (Westlake University); Mohammad Sawan (Westlake University);

08:55 Light Beam Scanner Based on Optical Metasurface Lens
Yuehe Ge (Fuzhou University); Jingru Wang (Huaqiao University); Zhizhang (David) Chen (Dalhousie University);

09:10 Focal Field Modulation Based on Polarization Rotation of Vector Beams
Hehe Li (Henan University of Science and Technology); C. H. Ma (Henan University of Science and Technology); M. M. Tang (Henan University of Science and Technology); X. Z. Li (Henan University of Science and Technology);
09:25 Controllable Manipulation of Composite Multisingularity Vortex Array
Yaqiang Zhang (Henan University); Zhenkun Wu (Henan University); Guanchen Wu (Xi’an Jiaotong University); Peng Li (Henan University); Feng Wen (Xi’an Jiaotong University); Yuzong Gu (Henan University);
09:40 Numerical Simulations of High Intensity Laser-Plasma Interactions by the FDTD Method
Zhili Lin (Huazhao University); Xudong Chen (Huazhao University); Xiangyu Zhu (Huazhao University); Xiaovue Zhang (Huazhao University);
Guangming Qu (Institute of Semiconductors, Chinese Academy of Sciences); Siqian Xu (Institute of Semiconductors, Chinese Academy of Sciences); Yiyun Zhang (Institute of Semiconductors, Chinese Academy of Sciences); Xiaoyan Yi (Institute of Semiconductors, Chinese Academy of Sciences); Xiaoyan Yi (Institute of Semiconductors, Chinese Academy of Sciences); Jinmin Li (Institute of Semiconductors, Chinese Academy of Sciences);
11:00 Stability Study of Silver Electrode in Organic-inorganic Perovskite Solar Cells  
Zhen Yan (Wuhan University of Technology); Hongye Chen (Wuhan University of Technology); Min Li (Wuhan University of Technology); Mingyu Li (Wuhan University of Technology); Wallace C. H. Choy (The University of Hong Kong); Haijui Lu (Wuhan University of Technology);

11:15 Room-temperature Solution-processed Hole Transport Layer for Realizing High-performance Perovskite Solar Cells  
Dan Ouyang (Qingdao University); Wallace C. H. Choy (The University of Hong Kong);

11:25 Light Manipulations in Perovskite Based Optoelectronics  
Qing Ci (Anhui University); Xingang Ren (Anhui University);

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**Session 3A9**  
**SC3: Nonlinear Optics in 2D Materials**  
**Wednesday AM, April 27, 2022**  
**Room 9 - Tianren Hall**  
Organized by Weitao Liu, Tao Jiang  
Chaired by Weitao Liu, Tao Jiang

08:00 Ultrafast Carrier Relaxation of Monolayer WS₂  
Invited  
Xiaoyong Hu (Peking University); Qiuchen Yan (Peking University); Xiaotao Wang (Peking University);

08:20 Two-dimensional Materials Optical Fiber and Devices  
Invited  
Kaihui Liu (Peking University);

08:35 Optical Study of Graphene Moiré Superlattices  
Invited  
Zhiqiang Li (Sichuan University);

08:55 Strong Second Harmonic Generation from Bilayer Graphene with Symmetry Breaking by Molecular Adsorption  
Invited  
Xuetao Gan (Northwestern Polytechnical University);

09:15 Ultrafast Spectroscopy in Two Dimensional Materials: Carrier Coupling Dynamics and Valley Regulation  
Invited  
Tian Jiang (National University of Defense Technology); Ke Wei (National University of Defense Technology);

09:35 Third Order Optical Nonlinearity of Massless Dirac Fermions  
Invited  
Jin Luo Cheng (Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences);

10:00 Nonlinear All-optical Switch Based on Inverse Design Method  
Invited  
Huizin Qi (Peking University); Xiaoyong Hu (Peking University);

10:45 Tuning Quantum Coherence in Transition Metal Dichalcogenides  
Dí Huáng (The University of Texas at Austin); Kevīn Šampion (The University of Texas at Austin); Ji-amin Quan (The University of Texas at Austin); Yue Ni (The University of Texas at Austin); Takashi Taniguchi (National Institute for Materials Science); Kenji Watanabe (National Institute for Materials Science); Xiao-qin Li (The University of Texas at Austin);

10:55 Giant and Nonreciprocal Second Harmonic Generation from Layered Antiferromagnetism in Bilayer CrI₃  
Zeyuan Sun (Fudan University); Shiwei Wu (Fudan University);

11:10 Near-field Mapping and Time-domain Dynamics of Photonic Topological States in Plasmonic Nanochains  
Qiuchen Yan (Peking University); Xiaoyong Hu (Peking University);

11:25 2D Materials for Nonlinear Quantum Photonics  
Invited  
Zhipei Sun (Aalto University);

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**Session 3A10**  
**SC3: Nonlinear Optics: Fundamentals and Its Applications 1**  
**Wednesday AM, April 27, 2022**  
**Room 10 - Tianhong Hall**  
Organized by Haibin Wu, Zhaoyang Zhang  
Chaired by Zhaoyang Zhang, Haibin Wu

08:00 Light Induced Space-time Patterns in a Superfluid Fermi Gas  
Invited  
Haibin Wu (East China Normal University);

08:20 Towards On-demand Heralded Single-photon Sources via Photon Blockade  
Invited  
Jiangshan Tang (Nanjing University); Lei Tang (Nanjing University); Haodong Wu (Nanjing University); Keyu Xia (Nanjing University);

08:40 Topological Dynamics and Sensing with Exceptional Points  
Invited  
Haitan Xu (Peking University);

09:00 Phase Diagram and Self-Organizing Dynamics in a Thermal Ensemble of Strongly Interacting Rydberg Atoms  
Invited  
Dong-Sheng Ding (University of Science and Technology of China); Hannes Busche (Durham University); Baosen Shi (University of Science and Technology of China); Guang-Can Guo (University of Science and Technology of China, CAS); Charles S. Adams (Durham University);

09:20 Optical Harmonic Generations of Silicon Boosted by Bound States in Continuum  
Invited  
Xuetao Gan (Northwestern Polytechnical University);
08:40 All-optical Devices in Electromagnetically Induced Atomic Lattice
Jinpeng Yuan (Shanxi University); Hengfei Zhang (Shanxi University); Lirong Wang (Shanxi University); Liantuan Xiao (Shanxi University); Suotang Jia (Shanxi University);
10:30 Coherent Control Rydberg Multi-wave Mixing
Junling Che (Xi’an University of Posts and Telecommunications);
10:45 Self-induced Transparency in Strongly Interacting Rydberg Gases
Zhengyang Bai (East China Normal University); Charles S. Adams (Durham University); Guoziang Huang (East China Normal University); Weibin Li (University of Nottingham);
11:00 Quantum Phase Transition and Novel Quantum States Invited of Ultra-cold Atoms in Optical Lattices
Xiaojil Zhou (Peking University);
11:20 High-capacity Nonlinear Multiplexing Holography in Invited PPLN Crystals
Yong Zhang (Nanjing University);

Session 3A11a
Nanophotonics, Biophotonics and Advanced Photonic Materials I

Wednesday AM, April 27, 2022
Room 11 - Tianhe Hall
Chaired by Koichi Shimizu, Julian Samuel Goodwin Evans

08:00 Manipulating Nonlinear Optical Response via Domain Invited Control in Nanocrystal-in-glass Composite
Xu Feng (South China University of Technology); Huakang Yu (South China University of Technology); Shifeng Zhou (South China University of Technology);
08:20 Full Control of Far-field Thermal Radiative Properties with Nonreciprocal Materials and Nanophotonic Designs
Bo Zhao (University of Houston);
08:30 Prediction of Quality Attributes of Fresh Unpasteurized Milk Using Dielectric Spectroscopy Coupled to Chemometric Tools
T. Caquizua (Universidad Nacional Autónoma de Chota); Y. Columbe (Universidad Nacional Autónoma de Chota); M. Rubio (Universidad Nacional Autónoma de Chota); J. Oblitas (Universidad Privada del Norte); H. Arteaga (Universidad Nacional Autónoma de Chota); W. Castro (Universidad Nacional de Frontera);
08:40 Elimination of Scattering Blur by Deep Learning in Optical Transillumination Imaging of Human Body
Ni Phan Van (Waseda University); Trung Nghia Tran (Ho Chi Minh City University of Technology); Hiroshi Inujima (Waseda University); Koichi Shimizu (Waseda University);
08:50 Infrared Detectors Enhanced by Integrated Photonic Structures
Jing Zhou (Shanghai Institute of Technical Physics, Chinese Academy of Sciences); Shangkan Guo (Shanghai Institute of Technical Physics, Chinese Academy of Sciences); Zeshi Chu (Shanghai Institute of Technical Physics, Chinese Academy of Sciences); Jie Deng (Shanghai Institute of Technical Physics, Chinese Academy of Sciences); Wei Lu (Shanghai Institute of Technical Physics, Chinese Academy of Sciences);
09:05 TiN-based Tamm-FP Coupling Infrared Perfect Absorber with a Narrowed Linewidth
Simeng Liu (China Jiliang University); Jinghao Wu (China Jiliang University); Yan-Long Meng (China Jiliang University); Yi Li (China Jiliang University); Shangzhong Jin (China Jiliang University);
09:20 Second Order Central Moment Estimation of Single and Multiple Scattering Intensities in Full-field Reflective Tissue Imaging under Coherent Illumination
Peng Miao (Shanghai Jiao Tong University); Cheng Wang (Shanghai Jiao Tong University);
09:35 Self-assembled Photonic Materials from Liquid Crystalline Biomaterials
Julian Samuel Goodwin Evans (Zhejiang University);

Session 3A11b
SC3: Luminescent/Optoelectronic Materials and Devices I

Wednesday AM, April 27, 2022
Room 11 - Tianhe Hall
Organized by Hongwei Song, Wen Xu
Chaired by Hongwei Song, Wen Xu

10:30 Stable Red-emitting Perovskite Quantum Dots and Invited Their Applications in QLEDs
Rongyun Xie (Xiamen University);
10:50 Eu²⁺ Doped Solid-state Phosphors for LED Applications Invited
Zhiqun Xia (South China University of Technology);
11:10 Efficient Quantum Dot Light-emitting Diodes Based on Invited CaPbX₃
Jizhong Song (Zhengzhou University);
Renren Deng (Zhejiang University);
11:50 Highly Thermotolerant Metal Halide Perovskite Solids
Yang Li (Guangzhou Medical University);
Session 3A12a
Remote Sensing of Atmosphere, Ocean and Land using GNSS and Other Sensors 1
Wednesday AM, April 27, 2022
Room 12 - Mingdu Hall 2
Organized by Shuanggen Jin
Chaired by Shuanggen Jin

08:00 Development and Assessment of CYGNSS Characterization of Tropical Cyclones Using Matched Filter Retrievals
Mohammad Al-Khaldi (University Corporation for Atmospheric Research); Joel T. Johnson (The Ohio State University); Stephen J. Katzberg (NASA Langley Research Center); Younghan Kang (The Ohio State University); Ethan J. Kubatko (The Ohio State University); Scott Gleason (University Corporation for Atmospheric Research);

08:10 A Schematic of Track-wisely Calibrating CyGNSS Data
Qingyan Yan (Nanjing University of Information Science and Technology); Shuanggen Jin (Nanjing University of Information Science and Technology); Weimin Huang (Memorial University of Newfoundland); Ting Hu (Nanjing University of Information Science and Technology); Yan Jia (Nanjing University of Posts and Telecommunications);

08:25 The Sensitivity Analysis on GNSS-R Soil Moisture Retrieval
Yan Jia (Nanjing University of Posts and Telecommunications); Shuanggen Jin (Nanjing University of Information Science and Technology); Qingyan Yan (Nanjing University of Information Science and Technology); Patrizia Savi (Politecnico di Torino);

08:40 Soil Moisture Retrieval from Spaceborne GNSS-R Data Using a Regression Model
Qingyan Yan (Nanjing University of Information Science and Technology); Shuanggen Jin (Nanjing University of Information Science and Technology); Weimin Huang (Memorial University of Newfoundland); Yan Jia (Nanjing University of Posts and Telecommunications); Ting Hu (Nanjing University of Information Science and Technology);

08:55 Arctic Sea-ice Type Recognition Based on the Surface Wave Investigation and Monitoring Instrument of the China-French Ocean Satellite
Meijie Liu (Qingdao University); Xi Zhang (First Institute of Oceanography, Ministry of Natural Resources of China); Ping Chen (Huazhong University of Science and Technology); Jin Wang (Qingdao University); Shilei Zhong (Qingdao University);

09:00 Satellite Passive Microwave Sea Ice Concentration Retrieval Errors over the Russian Arctic Seas
Elizaveta V. Zubolotskikh (Russian State Hydrometeorological University); Margarita Andreeva Zhivotovskaya (Russian State Hydrometeorological University (RSHU)); E. Balashova (Russian State Hydrometeorological University); E. V. Lueva (Russian State Hydrometeorological University); B. Chapron (Russian State Hydrometeorological University);

09:20 Uplifting Air Quality Data Using Knowledge Graph
Jiantao Wu (University College Dublin); Fabrizio Orlando (The ADAPT SFI Research Centre); Isabella Gallini (University College Dublin); Enrico Pisoni (European Commission, Joint Research Centre (JRC)); Soumyabrata Dev (Beijing-Dublin International College);

09:30 Extraction of Nondirectional Wave Spectrum from Wide-beam HF Radar Sea Echo for Low Current Case
Min Deng (Wuhan University); Chen Zhao (Wuhan University); Zezong Chen (Wuhan University); Fan Ding (Wuhan University);

Session 3A12b
SC5: Microwave and Infrared Brightness Temperature of Earth Surface
Wednesday AM, April 27, 2022
Room 12 - Mingdu Hall 2
Organized by Lixin Wu, Ramesh P. Singh
Chaired by Lixin Wu

10:30 An Assessment of MWHTS Onboard FY-3C/D Over Quasi-Stable Scenes
Jieying He (National Space Science Center, Chinese Academy of Sciences); Yang Guo (National Satellite Meteorological Center China Meteorological Administration); Shengwei Zhang (National Space Science Center, Chinese Academy of Sciences);

10:45 Comparative Analysis of Regional MBT Background Field and Anomaly Information of Two Earthquakes Occurring in Bayan Har Block
Yuan Qi (Central South University); Lixin Wu (Central South University); Wenfei Mao (Central South University); Yifan Ding (Central South University); Yingjia Liu (Central South University);

11:00 Seismic Thermal Anomaly Analysis Using Multi-source Satellite Data: A Case Study of Ms 6.2 Zhangbei Earthquake in 1998
Yingjia Liu (Central South University); Lixin Wu (Central South University); Yuan Qi (Central South University); Wenfei Mao (Central South University); Yifan Ding (Central South University);

11:15 Application of a New Two-step Method in the Extraction of Seismic Microwave Anomaly
Mei Ji (Northeastern University); Shanjun Liu (Northeastern University); Limei Song (Tianjin Research Center of Surveying);
11:30 Exploring the Characteristics of Multi-frequency Microwave Brightness Temperature Anomaly in Lake: A Case Study of the Mw 7.3 Sarpol Zahab Earthquake in 2017
Yifan Ding (Central South University); Lizin Wu (Central South University); Yuan Qi (Central South University); Wenfei Mao (Central South University); Yingjia Liu (Central South University);

08:00 On the Color Visualization of Three-component Model-based Decomposition for Polarimetric SAR Data
Xun Wang (National Space Science Center, Chinese Academy of Sciences); Dong Li (National Space Science Center, Chinese Academy of Sciences); Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences); Jiefang Yang (National Space Science Center, Chinese Academy of Sciences); Liting Liang (National Space Science Center, Chinese Academy of Sciences);

11:45 The Urban Thermal Environment Based on Long Time Series: A Case Study of Qingdao, China
Zhijun Jiao (China University of Petroleum (East China)); Jinyan Ding (China University of Petroleum (East China)); Genyun Sun (China University of Petroleum (East China)); Zhimei Zhang (China University of Petroleum (East China));

08:25 Scattering from Random Rough Surfaces from C to Ku Band with \( kh \) up to 15 for Remote Sensing of Snow Water Equivalent and Soil Moisture
Jigae Zhu (University of Michigan); Leung Tsang (University of Michigan); Tien-Hao Liao (California Institute of Technology);

08:35 A Comparative Study of Dense Random Media Scattering and Bistatic Scattering in Signals of Opportunities
Leung Tsang (University of Michigan); Jigoe Zhu (University of Michigan); Weihui Gu (University of Michigan); Bowen Ren (University of Michigan); Haokui Xu (University of Michigan);

08:50 An Unsupervised Classification of PolSAR Image Based on Polarimetric Scattering Similarity and Complex Wishart Classifier
Jiatong Li (National Space Science Center, Chinese Academy of Sciences); Dong Li (National Space Science Center, Chinese Academy of Sciences); Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences); Jiefang Yang (National Space Science Center, Chinese Academy of Sciences); Liting Liang (National Space Science Center, Chinese Academy of Sciences);

09:05 Simulation on SRAL Echo over Complex Terrain Surfaces Using Hybrid Scattering Modeling Method
Zhangy Zhu (Soochow University); Hai Zhang (Institute of Electronic Engineering, China Academy of Engineering Physics); Peng Xu (Fudan University);

09:20 A Comparative Study of Dense Random Media Scattering Using Discrete Dipole Approximation and Improved Born Approximation in Snow Remote Sensing
Chunzeng Luo (Zhejiang University/University of Illinois at Urbana-Champaign Institute); Shurun Tan (Zhejiang University/University of Illinois at Urbana-Champaign Institute);

09:35 Effects of Vegetation and Forests, Dense Media Scattering and Bistatic Scattering in Signals of Opportunities
Leung Tsang (University of Michigan); Jigoe Zhu (University of Michigan); Weihui Gu (University of Michigan); Bowen Ren (University of Michigan); Haokui Xu (University of Michigan);

10:30 A Reference Ocean Surface Emission and Backscatter Model from Microwaves to Infrared
Emmanuel P. Dinnat (NASA Goddard Space Flight Center and Chapman University); Stephen English (European Centre for Medium-Range Weather Forecasts); Catherine Prigent (Centre National de la Recherche Scientifique); Magdalena D. Angelova (Naval Research Laboratory); Thomas Meissner (Remote Sensing Systems); Lise Kilic (Centre National de la Recherche Scientifique); Jacqueline Boutin (LOCEAN/CNRS/Sorbonne Universite); Stuart Newman (Met Office); Benjamin Johnson (NOAA Center for Weather and Climate Prediction); Simon H. Yueh (California Institute of Technology); Masahiro Kazumori (Japan Meteorological Agency); Fuchong Weng (Center for Meteorological Research, China Meteorological Administration); Michael H. Bettenhausen (Naval Research Laboratory); Ad Stoffelen (Royal Netherlands Meteorological Institute (KNMI)); Christophe Accadia (EUMETSAT);
10:40 Seawater Dielectric Measurements at 700 MHz
Invited
Roger H. Lang (The George Washington University); Y. Zhou (Lincoln Agritech Ltd., Lincoln University); David M. Le Vine (NASA Goddard Space Flight Center);
Xiaobin Yin (Ocean University of China); Minggao He (Ocean University of China); Kunsheng Xiang (Piesat Information Technology Co., Ltd.); Yan Li (Piesat Information Technology Co., Ltd.);
11:15 The Chinese Ocean Salinity Satellite: Present and Performance Simulation
Yan Li (Piesat Information Technology Co., Ltd.); Xiaobin Yin (Ocean University of China); Wu Zhou (National Satellite Ocean Application Service); Mingsen Lin (National Satellite Ocean Application Service); Hao Liu (National Space Science Center, Chinese Academy of Sciences); Yinan Li (China Academy of Space Technology (Xi’an));
11:30 Toward Satellite SSS Products Validation Based on Extended Collocation Analysis
Jin Wang (Qingdao University); Meijie Liu (Qingdao University); Weifu Sun (The First Institute of Oceanography of the Ministry of Natural Resources of China);
11:45 Direction Dependence of the Fully Polarimetric Wind-induced Ocean Emissivity at L-band: Modeling and Anisotropy Analyses
Yanlei Du (Tsinghua University); Wentao Ma (Aerospace Information Research Institute, Chinese Academy of Sciences); Xiaofeng Yang (Aerospace Information Research Institute, Chinese Academy of Sciences); Jian Yang (Tsinghua University);
11:30 High-scanning Rate Leaky-wave Antenna for Millimeter Wave Application
Kuiwen Xu (Hangzhou Dianzi University); Quan Wang (Hangzhou Dianzi University);
11:45 Fixed Frequency Beam Steering Antenna Array Based on Plasmonic Metamaterials for 5G Communication
Yong Jin Zhou (Shanghai University); Hao Xiang Li (Shanghai University);

Session 3A14a
SC4: Novel Beam Steering Antennas and Their Applications

Wednesday AM, April 27, 2022
Room 14 - Mingdu Hall 5
Organized by Kuiwen Xu, Jianmin Zhao
Chaired by Kuiwen Xu, Jianmin Zhao

08:00 A Wideband C-shaped Open Slot Array for Millimeter-wave Applications
Guang-Hua Sun (City University of Hong Kong); Hang Wong (City University of Hong Kong);
08:10 Ultra-thin, Beam Steerable, Electrically Small Huygens Dipole Antenna and Arrays
Wei Lin (University of Technology Sydney); Richard W. Ziolkowski (University of Technology Sydney);
08:25 A Dual-polarized Lens Antenna Using LTCC Based Phase-shifting Surface for D Band Applications
Qing-Yi Guo (Shenzhen University); Xue Ren (Shenzhen University); Wenlong He (Shenzhen University);
08:40 A 2-D Beam Steering Dual-polarized High-gain Compact Folded Transmitarray Based on LTCC with SIW Structures
Ye Dong (Zhejiang University); Xingyu Wu (Zhejiang University); Wenhao Li (Zhejiang University); Yudong Ren (Zhejiang University); Yihao Yang (Zhejiang University); Jiangtao Huangfu (Zhejiang University); Long Li (Xidian University); Bin Zheng (Zhejiang University); Rui Xi (Zhejiang University); Hongsheng Chen (Zhejiang University);
08:55 3D Printed Ultrabroadband Dual Linear Polarized High Gain Flat Lens Antenna Based on Impedance Matching Metamaterials
Jin Chen (Beijing Institute of Technology);
09:10 A Wideband High Gain Taper Slot Antenna for 5G Millimeter-wave Imaging System Application
Yao Zhang (Xiamen University); Kai Huang (Xiamen University); Li Gao (Mediatek);
09:25 A Ka-band Wideband Linearly-polarized Magneto-electric Dipole Antenna
Shanqing Mao (Harbin Institute of Technology); Kai Xu Wang (Harbin Institute of Technology); Hang Wong (City University of Hong Kong);
Session 3A15a
SC1&SC5: Electromagnetic Theory in Geophysics and Interdisciplines

Wednesday AM, April 27, 2022
Room 15 - Mingdu Hall 6
Organized by Naixing Feng, Qingtao Sun
Chaired by Naixing Feng, Jinghe Li

08:00 A New Solution of DC Potential Field for Charged Lossy Dielectric Media
Tong Mu (Guilin University of Technology); Jinghe Li (Guilin University of Technology); Chenglong Wu (Guilin University of Technology); Naixing Feng (Shenzhen University);

08:15 Efficient Finite-volume Modeling of the Three-dimensional Responses of the Ultra-deep Look ahead Tool with Annular Antenna Recesses
Lei Yu (Jilin University); Hongnian Wang (Jilin University);

08:25 Modeling Thin Material Surfaces with a Mesh-split Impedance Transition Boundary Condition
Yiqian Mao (Duke University); Queci Zhan (Zhejiang University); Dezhi Wang (Duke University); Runren Zhang (Duke University); Qing Huo Liu (Duke University);

08:35 Efficient ME-PML-based SC-ADI-FDTD Method and Its Applications in 3D VLF Subsurface Sensing Problems
Juan Shen (Shenzhen University); Yuxian Zhang (Shenzhen University); William Thomas Joines (Duke University);

09:00 Sensitivity Function of LWD Azimuth Electromagnetic Tool with Annular Antenna Recesses
Lei Yu (Jilin University); Hongnian Wang (Jilin University);

09:15 Efficient Finite-volume Modeling of the Three-dimensional Responses of the Ultra-deep Look ahead Tool with Annular Antenna Recesses
Yazhou Wang (Jilin University); Hongnian Wang (Jilin University); Zhuangzhuang Kang (Jilin University);

09:30 A Novel Method for Detecting the Freezing Wall Extending State Based on Focused DC Principle
Qiangang Liu (China University of Petroleum (East China)); Shaoqi Deng (China University of Petroleum (East China)); Xiyong Yuan (China University of Petroleum);

09:40 Effect of Non-uniform Magnetic Field on Radial Oscillation of Electron Beam in a Low-magnetic-field Drift Tube
Guangshuai Zhang (Northwest Institute of Nuclear Technology); Jun Sun (Northwest Institute of Nuclear Technology); Ping Wu (Northwest Institute of Nuclear Technology); Zhiqiang Fan (Northwest Institute of Nuclear Technology); Ye Hua (Northwest Institute of Nuclear Technology); Nongchao Tan (Tsinghua University); Ruidong Hou (Northwest Institute of Nuclear Technology);

10:30 Numerical Simulation and Response Analysis of Transient Electromagnetic Logging through Casing
Shiyu Chen (China University of Petroleum (East China)); Yiren Fan (China University of Petroleum (East China)); Lei Wang (China University of Petroleum (East China)); Yizhi Wu (China University of Petroleum (East China));

10:40 Fast Physics-data driven Modelling of Array Laterolog Responses in Horizontal Well Using Deep Neural Network
Zhou Fang (China University of Petroleum (East China)); Yiren Fan (China University of Petroleum (East China)); Lei Wang (China University of Petroleum (East China)); Yizhi Wu (China University of Petroleum (East China)); Zhen Yang (Sinopec Matrix Corporation);

Session 3A15b
SC1: Advances of Numerical Techniques in Computational Electromagnetics 1

Wednesday AM, April 27, 2022
Room 15 - Mingdu Hall 6
Organized by Mei Song Tong, Yunjing Zhang, Chunxia Yang
Chaired by Mei Song Tong, Chunxia Yang

11:00 Broadband Green’s Function-KKR-Multiple Scattering Method for Calculations of Bands and Band Field in Topological Photonics and Acoustics
Tien-Hao Liao (California Institute of Technology); Rouxing Gao (University of Michigan); Leung Tsang (University of Michigan); Shurun Tan (Zhejiang University);

11:10 E-polarized Plane Wave Diffraction by a Slit in a Material Screen
Takashi Nagasaka (Chuo University); Kazuya Kobayashi (Chuo University);

11:20 Comparison of Different Series Expansions of Electromagnetic Fields in Radiowave Propagation Problems
Alican Uysal (Istanbul Technical University); Funda Akleman (Istanbul Technical University);
11:30  Removal of DC Spurious Modes for Maxwell’s Eigen-value Problem with Absorbing Boundary Condition
Shi Jie Wang (Xiamen University); Jie Liu (Xia-
men University); Mingwei Zhuang (Xiamen University);
Ke Chen (Xiamen University); Qing Hua Liu (Duke Uni-
versity);
11:45  Diffraction by a Semi-infinite Parallel-plate Waveguide
with Five-layer Material Loading: The Case of H Polar-
ization
Kewen He (Chuo University); Dongtian Zhang (Chuo Uni-
versity); Kazuyo Kobayashi (Chuo University);

Session 3A16a
SC4: Microwave Integrated Passive Circuits and Devices
Wednesday AM, April 27, 2022
Room 16 - Mingdu Hall 7
Organized by Wenjie Feng, Guangxu Shen
Chaired by Yongrong Shi, Guangxu Shen

08:00  Overview of Microwave/Millimeter-wave Forward-wave
Invited Directional Coupler Based on the Periodic Structure Concept
Yongrong Shi (Nanjing Electronic Devices Institute);
08:20  Recent Advance of Integrated Passive Device Bandpass
Invited Filters Using Lumped and Distributed Elements
Guangxu Shen (Nanjing University of Posts and Telecommunications);
08:40  A Low-loss CPW-DWG-CPW Transition
Qi Sun (Shanghai Jiao Tong University); Lei Ji (Shang-
hai Jiao Tong University); Xiao-Chun Li (Shanghai Jiaotong University); Jun-Fa Mao (Shanghai Jiao Tong University);
08:55  A Low-loss Transition for Substrate Integrated Coax-
ial Line to Grounded Coplanar Waveguide Based on Bayesian Optimization Approach
Yu Zhu (Shanghai Jiao Tong University); Xiao-Chun Li (Shanghai Jiaotong University); Jun-Fa Mao (Shanghai Jiao Tong University);
09:10  A Miniaturized Low-loss, 3 GHz RF Filter Using BAW
Resonators
Xiaotong Xu (South China University of Technology); Haoshen Zhu (South China University of Technology); Wenjie Feng (Nanjing University of Science and Technology); Wenquan Che (South China University of Technology); Quan Xue (South China University of Technology);
09:25  Development of Reconfigurable Band Stop Filter Using
Metamaterial for WLAN Application
Khyati Dipsinh Chavda (Shantial Shah Engineering Col-
lege); A. K. Saravaiya (Government Engineering Col-
lege);
09:35  Design of a Compact Combinle Filter Fabricated by
Lithography-based Ceramic Manufacturing (LCM)
Zhenming Tian (CENIDE — Center for Nanointe-
gration Duisburg-Essen); Ran He (CENIDE — Center for Nanointegration Duisburg-Essen); Han Gao (CENIDE — Center for Nanointegration Duisburg-Essen); Masoud Sakaki (CENIDE — Center for Nanointegration Duisburg-Essen); Niels Benson (CENIDE — Center for Nanointegration Duisburg-Essen); Peter Hilden-
hagen (RF-Frontend GmbH); Daniel Erni (University of Duisburg-Essen, Campus Duisburg); Andreas Rennings (University of Duisburg-Essen);
09:45  A Resonator-type Sensor with Enhanced Sensitivity for
Noninvasively Detecting the Variation of Permittivity of Liquids
Yunjiang Zhang (Soochow University); Peng Li (Soo-
chow University); Xingli He (Soochow University); Mei Song Tong (Tongji University);

Session 3A16b
SC4: Novel Frequency-Selective Structures
Wednesday AM, April 27, 2022
Room 16 - Mingdu Hall 7
Organized by Zhongxiang Shen, Bo Li
Chaired by Bo Li

10:30  Frequency Selective Rasorber Based on Hybrid Diffusion
Menggao Li (Nanyang Technological University); Zhongxiang Shen (Nanyang Technological University);
10:40  Energy-selective Structures with Power-dependent Non-
reciprocal Characteristics
Lin Zhou (Nanyang Technological University); Zhongzi-
ang Shen (Nanyang Technological University);
10:50  A Novel Linear-polarization Rotator Based on Orthogo-
nally Parallel-coupled Slotlines
Tao Wei (Nanjing University of Posts and Telecommu-
nications); Hanzuan Li (Nanjing University of Posts and Telecommunications); Bo Li (Nanjing University of Posts and Telecommunications); Chong-Hu Cheng (Nanjing University of Posts and Telecommunications);
11:05  Antenna Gain Enhancement and RCS Reduction Based
on Frequency Selective Rasorbers
Yufeng Yu (Hangzhou Dianzi University); Yili Zhang (Hangzhou Dianzi University); Guotai Xie (Hangzhou Dianzi University);
11:20  A Slot Antenna Array with Reconfigurable RCS Using
Liquid Absorber
Yukun Zou (Nanjing University of Aeronautics and As-
tronautics); Xiang-Kun Kong (Nanjing University of Aeronautics and Astronautics);
11:35 A Reconfigurable Frequency-selective Rrasorber with Wide Passband Design Using Characteristic Mode Analysis
He Wang (Nanjing University of Aeronautics and Astronautics); Xiang-Kun Kong (Nanjing University of Aeronautics and Astronautics);

11:50 Three-dimensional Bandpass FSS with High Selectivity Based on Circular Waveguide Structure
Weng Li (Shenzhen University); Guowen Chen (Shenzhen University); Ruixiang Liao (South China University of Technology); Sai-Wai Wong (Shenzhen University); Yin Li (Shenzhen University);

14:40 Rapid Biosensing SARS-CoV-2 Antibodies in Human Serum
Sumin Bian (Westlake University); Mohamad Sawan (Westlake University);

Session 3P1a
SC3: Fiber Sensing Technology and Fiber-based Devices

Wednesday PM, April 27, 2022
Room 1 - Midtown Hall
Organized by Xuewen Shu, Shengnan Wu
Chaired by Xuewen Shu, Shengnan Wu

13:00 Raman Fiber Sensors for Monitoring of Bioprocesses
Yinan Ruan (University of Adelaide); Puyang Wu (Guilin University of Electronic Technology); Kai Lin (Guilin University of Electronic Technology); Shijie Deng (Guilin University of Electronic Technology);

13:20 Direct Laser Writing Spiral Sagnac Waveguide for Sensing
Dengwei Zhang (Zhejiang University); Zhihang Zhang (Zhejiang University); Heming Wei (Shanghai University); Jianrong Qu (Zhejiang University); Sridhar Krishna Swamy (Northwestern University);

13:40 A High Sensitivity Surface Plasmon Resonance Biosensor Based on Photonic Crystal Fibers for Refractive Index Sensing
Haoran Wang (Xiamen University); Sijie Chen (Xiamen University); Weiya Dai (Xiamen University); Xun Cai (Xiamen University); Hongyan Fu (Xiamen University);

Xiaobo Xing (South China Normal University); Zhidong Zheng (South China Normal University); Zongbao Li (Tongren University); Haiyan Wang (Guangdong Industry Technical College); Jianlin Huang (Guangzhou Institute of Measurement and Testing Technology);

14:10 Optical Fiber Sensor Strain Sensing Cable Characterization through Swept Wavelength Interferometry
Filippo Bastianini (Sestosensor S.r.l.); Francesco Falcetti (Università degli Studi di Bologna); Leonardo Rossi (IMM Institute); Pawel Bacheraki (Fibrain Sp. z o.o. Wspólna 4A); Raffaella Di Sante (Università degli Studi di Bologna); Gabriele Bolognini (Consiglio Nazionale delle Ricerche, IMM Institute);

14:20 Rapid Biosensing SARS-CoV-2 Antibodies in Human Serum
Sumin Bian (Westlake University); Mohamad Sawan (Westlake University);

Session 3P1b
Electromagnetic Radiation Sources Based on Free-electron Beams

Wednesday PM, April 27, 2022
Room 1 - Midtown Hall
Organized by Weihao Liu
Chaired by Weihao Liu, Min Hu

14:40 High-efficiency Threshold-less Terahertz Cherenkov Radiation in Graphene Hyperbolic Grating
Min Hu (University of Electronic Science and Technology of China); Xiaojingyan Zhang (University of Electronic Science and Technology of China); Zhaoying Zhang (University of Electronic Science and Technology of China); Xueying Wang (University of Electronic Science and Technology of China); Tianyu Zhang (University of Electronic Science and Technology of China); Xingxing Xu (University of Electronic Science and Technology of China); Tao Zhao (University of Electronic Science and Technology of China); Shengguang Liu (University of Electronic Science and Technology of China);

15:00 Dielectric-supported Rhombus-shaped Meander-line Slow-wave Structure for a V-band Dual-sheet Beam Traveling Wave Tube
Yuxin Wang (University of Electronic Science and Technology of China); Yang Dong (University of Electronic Science and Technology of China); Shaomeng Wang (University of Electronic Science and Technology of China); Yubing Geng (University of Electronic Science and Technology of China);

15:15 Recent Results on Development of Sub-GW Long-pulse THz-band FEL
Nikolai Yu. Peskov (Institute of Applied Physics, RAS); A. V. Arzhannikov (Budker Institute of Nuclear Physics RAS); P. A. Bak (Budker Institute of Nuclear Physics, RAS); V. I. Belousov (Institute of Applied Physics RAS); Naum S. Ginzburg (Institute of Applied Physics, RAS); D. A. Nikiforov (Institute of Applied Physics RAS); E. S. Sandalov (Budker Institute of Nuclear Physics RAS); S. L. Sinitsky (Budker Institute of Nuclear Physics RAS); D. I. Sobolev (Institute of Applied Physics RAS); A. A. Starostenko (Budker Institute of Nuclear Physics, RAS); Vladislav Yu. Zaslavsky (Institute of Applied Physics, RAS); K. I. Zhivankov (Institute of Applied Physics RAS);
16:00 A Microelectronic Terahertz Source Using an Array of Invited Field Emitter Cathodes

Yucheng Liu (University of Science and Technology of China); Weidao Liu (Nanjing University of Aeronautics and Astronautics);

16:30 Investigation of Bistable Frequency Response of SOI Micro-ring Resonators

Ilya A. Ryabev (St. Petersburg Electrotechnical University “LETI”); Andrey A. Nikitin (Saint Petersburg Electrotechnical University “LETI”); Alexander V. Kondrashov (St. Petersburg Electrotechnical University “LETI”); Vitaliy V. Vitko (Saint Petersburg Electrotechnical University “LETI”); Dmitry A. Konkin (Tomsk State University of Control Systems and Radioelectronics); Andrey A. Kokolov (Tomsk State University of Control Systems and Radioelectronics “TUSUR”); Leonid I. Babak (Tomsk State University of Control Systems and Radioelectronics “TUSUR”); Alexey B. Ustinov (Saint Petersburg Electrotechnical University “LETI”);

16:40 Influence of Carrier Screening on Exciton Absorption and Electro-optic Effect

Yuriy D. Sibirmoysky (National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)); Ivan S. Vasil'evskii (National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)); Nikolay I. Kargin (National Research Nuclear University MEPhI (Moscow Engineering Physics Institute));

16:50 Numerical Simulation of a Beam Splitter on a Silicon Chip for the Terahertz Wavelength Range

Sergey Seyatodukh (National Research University Higher School of Economics); F. Faizulina (Moscow State Pedagogical University); Aleksey Prokhodtsov (Research University Higher School of Economics); S. Selivertsov (Moscow State Pedagogical University); G. Chulkova (National Research University Higher School of Economics); G. Goltsman (National Research University Higher School of Economics);

17:00 VCSEL-based Microwave-photonic Circuit for Transceiving Millimeter-wave Signals

Mikhail E. Belkin (MIREA — Russian Technological University); Leonid Zhukov (Russian Technological University, Scientific and Technological Center “Integrated Microwave Photonics”); Alexander S. Sigov (MIREA — Russian Technological University);

17:10 Microwave Photonics Distributed Architecture Enabling a Constellation of Coherent Multistatic Multiband SAR Satellites for Single-pass Imaging

Mirco Scaffardi (CNIT); Giovanni Serafinio (Scuola Superiore Sant’Anna); Salvatore Maresca (Scuola Superiore Sant’Anna); Malik Muhammad Haris Amir (Scuola Superiore Sant’Anna); Gaurav Pandey (Scuola Superiore Sant’Anna); Paolo Ghelfi (TeCIP Institute); A. Bogoni (TeCIP Institute, CNIT);

17:20 On-chip Photonic Crystal Cavity Integrated with Thermal Graphene Source

Aleksii Yu. Kuzin (MPGU — Moscow Pedagogical State University); I. A. Elmanov (Moscow Pedagogical State University); A. V. Elmanov (Moscow Pedagogical State University); P. P. An (Moscow State Pedagogical University); V. V. Kovalyuk (Moscow State Pedagogical University); G. N. Goltsman (Moscow Institute of Electronics and Mathematics);

17:30 Towards the Development of Ultrafast Photodetectors Based on Graphene for the Next-generation Telecommunication Systems

Igor A. Gayduchenko (Moscow State University of Education (MSPU)); P. P. An (Moscow State Pedagogical University); V. Belosenich (Moscow State Pedagogical University); M. Rybin (Prokhorov General Physics Institute, RAS); N. Kaukova (Moscow Pedagogical State University); V. Kovalyuk (Moscow State University of Education (MSPU)); Mikhail E. Belkin (MIREA — Russian Technological University); G. N. Goltsman (Moscow Pedagogical State University);

17:40 Thermo Optical Properties of 3D Photonic Wire Bonding Connecting Silicon Nitride Waveguides

Aleksey Prokhodtsov (Research University Higher School of Economics); V. Kovalyuk (Moscow State Pedagogical University); P. P. An (Moscow State Pedagogical University); D. Chubich (Moscow Institute of Physics and Technology); D. Merkushev (Moscow Institute of Electronics and Mathematics); D. Kolymagin (Moscow Institute of Electronics and Mathematics); R. Ozhegov (Moscow Institute of Electronics and Mathematics); G. Chulkova (Moscow Institute of Electronics and Mathematics); A. Vitukhnovsky (Moscow Institute of Physics and Technology); G. N. Goltsman (Moscow Institute of Electronics and Mathematics);
13:00 Mechanical Size Requirements and Electrical Interfaces for CPO Transceivers
Hideyuki Nasu (Furukawa Electric Co., Ltd.);
Invited

13:15 Low Loss Silicon Nitride for Integrated Photonics
Michael Geiselmann (LIGENTEC SA);
Invited

13:30 Photonic-integrated Circuits for FMCW-LiDAR Applications Based on Grating Couplers with Tilted Grating Teeth
Francisco M. Soares (Soares Photonics); Yu Tian (University of Vigo); Vahram Voskerchyan (University of Vigo); Francisco Javier Diaz-Otero (Universidad de Vigo);
Invited

13:45 A Compact 2D Polarization Splitting Grating Coupler with Lens Tapers
Jintao Xue (Xi’an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences); Binhao Wang (Xi’an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences);
Invited

14:00 Co-design of Segmented Modulator and CMOS Driver for PAM4 Si-photonic Transceivers
Nan Qi (Institute of Semiconductors, Chinese Academy of Sciences); Siquan Ma (Institute of Semiconductors, Chinese Academy of Sciences);
Invited

Session 3P2b
SC3: Optical Microcavities and Photonic Quasiparticles

Wednesday PM, April 27, 2022
Room 2 - Shixin Hall 1
Organized by Qihua Xiong, Feng Li
Chaired by Feng Li, Qihua Xiong

14:30 Manipulation of Strong Light-matter Interactions in Two-dimensional Transition-metal Dichalcogenides Coupled with Nanophotonic Structures
Huanjun Chen (Sun Yat-sen University); Hao Wang (Sun Yat-sen University); Jinzhu Wen (Sun Yat-sen University);
Invited

14:50 Intuitive Azimuthally-propagating-mode Model of Exceptional Points in Optical Whispering Gallery Microcavity Perturbed by Nanoparticles
Haitao Liu (Nankai University); Junda Zhu (Nankai University); Fang Bo (Nankai University); Can Tao (Nankai University); Guoquan Zhang (Nankai University); Jingjun Xu (Nankai University);
Invited

15:10 Manipulating the Light Emission of 2D Semiconductors by Different Stacking and Heterogeneous Integration
Xiao Wang (Hunan University);
Invited

16:00 Optical Nonreciprocity Using Cavity Losses
Yong-Chun Liu (Tsinghua University);
Invited

Session 3P3a
SC3: Singular Optics: Fundamentals and Applications

Wednesday PM, April 27, 2022
Room 3 - Shixin Hall 2
Organized by Jian Wang, Qiwen Zhan
Chaired by Jian Wang

16:20 In-situ Laser Interference for Site-controlled Quantum Dot Epitaxy and Microcavity Photonic Devices
Chaoyuan Jin (Zhejiang University); Yunran Wang (University of Sheffield); Lingfang Wang (Zhejiang University); Jawang Yu (Zhejiang University); Xiaotian Cheng (Zhejiang University); Xin Ling (Zhejiang University); Feng Liu (Zhejiang University); Mark Hopkinson (The University of Sheffield);
Invited

16:40 Giant In-plane Asymmetric Photonic Spin Hall Effect
Xinzhe Zhou (Hunan Normal University);
Invited

17:00 Single Photon Sources Based on III-V Quantum Dot Polariton Condensates
Feng Liu (Zhejiang University);
Invited

17:20 Topological Effects Induced by Josephson Junction in Two-dimensional Distributed Feedback Microcavity Comprising Holographic Photonic Quasicrystal
Anwer Hayat (Zhejiang University); Tianrui Zhai (Beijing University of Technology);
Invited

17:40 Quantum Computing with Exciton Polariton Condensates
Sanjit Ghosh (Beijing Academy of Quantum Information Sciences);
Invited

17:55 Multi-wavelength Quantum Dot Lasing and Coupling in Two-dimensional Distributed Feedback Microcavity Comprising Holographic Photonic Quasicrystal
Anwer Hayat (Zhejiang University); Tianrui Zhai (Beijing University of Technology);
Invited
13:00 Simulation and Experimental Studies on New Optical Manipulation of Relativistic Vortex Cutter
Wenpeng Wang (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Hongxing Dong (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Science); C. Jiang (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); X. M. Lu (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); J. F. Li (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); R. J. Xu (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Y. J. Sun (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); L. H. Yu (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Z. Gao (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Xiaogang Liang (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Yuzin Leng (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Ruzin Li (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences); Z. Z. Xu (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences);

13:15 Three-dimensionally Oriented and Time-varying Orbital Angular Momentum of Light
Chenhao Wan (Huazhong University of Science and Technology);

13:30 Nano-optical Tweezers: For Optical Trapping and Beyond
Invited
Yu Quan Zhang (Shenzhen University); Xiao-Cong Yuan (Shenzhen University);

13:50 Enhanced Chiral Mie-scattering by a Dielectric Sphere within Superchiral Light Field
Invited
Haifeng Hu (University of Shanghai for Science and Technology); Qwen Zhan (University of Shanghai for Science and Technology);

14:10 Vectorial Optical Fields: Manipulation and Applications
Invited
Yongnan Li (Nankai University);

14:30 Detecting Optical Magnetism Using Structured-light Photo-induced Force Microscopy
Invited
Jinwei Zeng (University of California Irvine); Mohammad Alkoobyh (University of California Irvine); Mohsen Rajaei (University of California Irvine); Abid Anjum Sifat (University of California Irvine); Eric Olaf Potma (University of California Irvine); H. Kumar Wickramasinghe (University of California Irvine); Filippo Capolino (University of California Irvine);

14:50 Singular Light Pulse
Invited
Shaohui Yan (Xi’an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences); Baoli Yao (Xi’an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences);

16:00 Continual Existence of Bound States in the Continuum under Structural Perturbations
Invited
Lijun Yuan (Chongqing Technology and Business University); Ya Yan Lu (City University of Hong Kong);

16:15 Ultra-high-Q Photonic Cavity Enabled by Constellation of Topological Charges
Zhao Chen (Peking University); Xuefan Yin (Peking University); Jicheng Jin (University of Pennsylvania); Zhao Zheng (Peking University); Zizuan Zhang (Peking University); Feifan Wang (Peking University); Li He (University of Pennsylvania); Bo Zhen (University of Pennsylvania); Chao Peng (Peking University);

16:30 Bound States in the Continuum Based on the Total Internal Reflection of Bloch Waves
Peng Hu (Chongqing University); Chongwu Xie (Chongqing University); Dezhuan Han (Chongqing University);

16:45 Flatness and Boundness of Photonic Drumhead Surface State in a Metallic Lattice
Invited
Xiaoxi Zhou (Soochow University); Yu Wang (Soochow University); Shanshan Li (Soochow University); Weixin Lu (Wenzheng College of Soochow University); Bo Hou (Soochow University);

17:00 Merging Bound States in the Continuum at Off-high Symmetry Points
Invited
Meng Kang (Wuhan University); Shunping Zhang (Wuhan University); Meng Xiao (Wuhan University); Hongxing Xu (Wuhan University);

17:20 Enhanced Second-harmonic Generation in Photonic Crystal Slabs with Double-resonant Bound-states in the Continuum
Invited
Jitong Wang (University College London); Feng Xia Li (University College London); Nicolae-Coriolan Panoiu (University College London);

17:35 Geometry Symmetry-free Robust Optical Bound States in the Continuum
Invited
Qingjia Zhou (Soochow University); Yanggang Fu (Nanjing University of Aeronautics and Astronautics); Lei Gao (Soochow University); Yudong Xu (Soochow University);

00:00 Strong Coupling in Metallic Groove Array
Invited
Jinwei Shi (Beijing Normal University);
**Session 3P4a**  
**SC2: Topological Acoustics and Phononics — Fundamental Concepts and Advanced Developments 2**  
Wednesday PM, April 27, 2022  
Room 4 - Mingyi Hall  
Organized by Ming-Hui Lu, Xueqin Huang, Xiujuan Zhang  
Chaired by Xiujuan Zhang

13:00 Theory and Experiments of Higher-order Weyl Semimetals  
Jian-Hua Jiang (Soochow University);  
13:20 Acoustic Möbius Insulators from Projective Symmetry  
Tianzi Li (Wuhan University); Juan Du (Wuhan University); Qicheng Zhang (Wuhan University); Yitong Li (Wuhan University); Xiqing Fan (Wuhan University); Fan Zhang (University of Texas at Dallas); Chungin Qiu (Wuhan University);  
13:35 Preserving Chiral Symmetry in Tight-binding Topological Phononic Crystals  
Guangcong Ma (Hong Kong Baptist University);  
13:50 Acoustic Non-Hermitian Skin Effect from Twisted Winding Topology  
Yihao Yang (Zhejiang University);  
14:10 Acoustic Spin-orbit Interactions  
Shubo Wang (City University of Hong Kong); Guangming Ma (Hong Kong Baptist University); Qiong Tong (City University of Hong Kong); Guangcong Ma (Hong Kong Baptist University);  
14:20 Pseudomagnetic Fields Enabled Manipulation of on-chip Elastic Waves  
Mou Yan (South China University of Technology); Weiyin Deng (South China University of Technology); Xueqin Huang (South China University of Technology); Ying Wu (South China University of Technology); Yating Yang (South China University of Technology); Jiuyang Lu (South China University of Technology); Feng Li (South China University of Technology); Zhengyou Liu (Wuhan University);  
14:35 Acoustic Skyrmion Lattice in Velocity Fields  
Hao Ge (Nanjing University); Jian-Hua Jiang (Soochow University); Ming-Hui Lu (Nanjing University); Yan-Feng Chen (Nanjing University);  
14:50 Topological Gallery of Non-Hermitian Whispers  
Johan Christensen (Universidad Carlos III de Madrid);  
15:05 Topological Waves for Robust Signal Processing Applications  
Romain Fleury (Ecole Polytechnique Federale de Lausanne (EPFL));  
15:20 Valley-selective Topological Corner States in Sonic Crystals  
Le Liu (Nanjing University); Xiujuan Zhang (Nanjing University); Ming-Hui Lu (Nanjing University); Yan-Feng Chen (Nanjing University);  
15:40 Coffee Break

**Session 3P4b**  
**SC2&SC3: Topological Polaritons**  
Wednesday PM, April 27, 2022  
Room 4 - Mingyi Hall  
Organized by Cheng-Wei Qiu, Xiulai Xu  
Chaired by Cheng-Wei Qiu

16:00 Perovskite Semiconductor Microcavity Polariton Lasers: Progress and Outlook  
Qihua Xiong (Tsinghua University);  
16:20 Nanophotonic Topological Waveguide and Cavity for Integrated Devices  
Xin-Tao He (Sun Yat-Sen University); Jian-Wen Dong (Sun Yat-Sen University);  
16:40 Light-matter Interaction in Semiconductor Materials at Micro/Nanoscale  
Xinfeng Liu (National Center for Nanoscience and Technology);  
17:00 Multidimensional Optical Multiplexing Mediated by Singular Beams  
Yi Xu (Guangdong University of Technology);  
17:20 Generation of Helical Topological Exciton Polaritons  
Wenjing Liu (Peking University);  
17:40 Chiral Plasmons with Twisted Bilayers  
Xiao Lin (Zhejiang University);  
18:00 Coupling between Topological Photonic Crystal Cavity and Quantum Dots  
Xin Xie (Institute of Physics, Chinese Academy of Science); Sai Yan (Institute of Physics, Chinese Academy of Science); Weizuan Zhang (Beijing Institute of Technology); Jianchen Dang (Institute of Physics, Chinese Academy of Science); Shan Xiao (Institute of Physics, Chinese Academy of Science); Shusha Shi (Institute of Physics, Chinese Academy of Science); Hai-Qiao Ni (Institute of Semiconductors, Chinese Academy of Sciences); Zhichuan Niu (Institute of Semiconductors, Chinese Academy of Sciences); Xiangdong Zhang (Beijing Computational Science Research Center); Xiulai Xu (Institute of Physics, Chinese Academy of Science);
Session 3P5a
SC2: Light-matter Interaction in Photonic/Plasmonic Metastructures 2

Wednesday PM, April 27, 2022
Room 5 - Gui Hall
Organized by Alexander V. Kildishev, Lian Shen
Chaired by Alexander V. Kildishev, Lian Shen

13:00 Modeling of Microstrip Quantum Cascade Lasers
Invited
Christian Jirauschek (Technical University of Munich);

13:15 Photonic Transition Hyperbolic Metamaterials for Efficient Quantum Plasmonic Coupler
Zijian Qin (Zhejiang University); Lian Shen (Zhejiang University);
Xiao Lin (Zhejiang University); Huaping Wang (Zhejiang University);
Hongsheng Chen (Zhejiang University);

13:30 Efficient Field Amplifier via Interface-driven Active Hyperbolic Metamaterial
Lu Song (Zhejiang University); Lian Shen (Zhejiang University);
Zijian Qin (Ocean College, Zhejiang University);
Huaping Wang (Zhejiang University); Hongsheng Chen (Zhejiang University);

13:45 Polarization Beam Splitter Based on Subwavelength-grating Metamaterial Structures for 775 nm
Shan Gao (Zhejiang University); Ming Zhang (Zhejiang University);
Daoxin Dai (Zhejiang University);

14:00 Beyond Absorptive Nonlinearities in Near-zero-index Transparent Conductive Oxides
Wallace Jaffray (Heriot-Watt University); Enrico G. Carmelotta (Heriot-Watt University); Matteo Clerici (Glasgow University); Clayton Devault (Harvard University); Vladimir M. Shalaev (Purdue University); Alexandra Baltasseva (Purdue University); Marcello Ferrera (INRS-EMT);

14:10 Visible to Near-infrared Chip-integrated Tunable Optical Modulators Based on Niobium Plasmonic Nanoantenna and Nano-circuit Metasurface Arrays
Kaveh Defanazari (University of Glasgow); Otto L. Muskens (University of Southampton);

Session 3P5b
SC2: Advances in Metasurface Holography and Structural-color Printing

Wednesday PM, April 27, 2022
Room 5 - Gui Hall
Organized by Junsuk Rho, Guoxing Zheng
Chaired by Junsuk Rho, Zhongyang Li

14:50 Optical Metasurfaces for Polarization Detection and Invited
Generation
Xianzhong Chen (Heriot-Watt University); Yuttana Intarawanne (Heriot-Watt University);

15:05 Immersive Tunability for Meta-optics Display
Zhongyang Li (Wuhan University); Chenjie Dai (Wuhan University);
Chengwei Wan (Wuhan University);

15:20 A Survey of Phase-only Hologram Calculation Methods
Shuming Jiao (Peng Cheng Laboratory);

15:40 Coffee Break

16:00 A New Degree of Freedom Imparting Metasurface Inspired by Malus’s Law
Juan Deng (Zhejiang University of Technology);

16:15 Dynamic Structural Colour Enabled by Floating Thin Films
Zhiyuan Yan (National University of Singapore); Cheng-Wei Qiu (National University of Singapore);

16:30 Actively Switchable Phase and Imaging Control Enabled by Phase-change-dielectrics Hybridized Holographic Metasurface
Ruirui Song (South China University of Technology);
ShaoLin Zhou (South China University of Technology);

16:45 Analog Image Processor Using Huygens’ Metasurface
Zhuochao Wang (Harbin Institute of Technology);
Xu Min Ding (Harbin Institute of Technology);

16:55 Noninterleaved Metasurface for Multi-momentum Metaholograms
Lei Jin (Hangzhou Dianzi University);

17:10 Direct Writing of Structural-color Graphics with Colloidal Inks
Shin-Hyun Kim (Korea Advanced Institute of Science and Technology (KAIST));

17:25 Covert Infrared Displays with Hybrid Planar-plasmonic Cavities
Young Min Song (Gwangju Institute of Science and Technology);

17:40 Chiral Transmission Metasurface for Independent Hologram Imaging with Circular Polarization Preserving Manipulation
Yueqi Yuan (Harbin Institute of Technology);
Kuang Zhang (Harbin Institute of Technology);
Qun Wu (Harbin Institute of Technology);

17:55 Dynamic Metaphotonics for Structural Colors and Holographic Displays
Junsuk Rho (Pohang University of Science and Technology (POSTECH));

Session 3P6a
SC2: Thermal Metamaterials and Devices 2

Wednesday PM, April 27, 2022
Room 6 - Mingrui Hall
Organized by Ying Li, Wei Li
Chaired by Xiangfan Xu, Ying Li
13:00 Diffusive Skin Effect and Topological Heat Funneling
Pet-Chao Cao (Huazhong University of Science and Technology); Ying Li (Zhejiang University); Yu-Gui Peng (Huazhong University of Science and Technology); Minghong Qi (Zhejiang University); Wen-Xi Huang (Huazhong University of Science and Technology); Peng-Qi Li (Huazhong University of Science and Technology); Xuefeng Zhu (Huazhong University of Science and Technology);

13:15 Topology in One-dimensional Thermal Diffusion
Minghong Qi (Zhejiang University); Dong Wang (Zhejiang University); Ying Li (Zhejiang University); Hongsheng Chen (Zhejiang University);

13:30 Nanoscale Surface Dynamics Unveil Nanofluid Thermophysical Properties
Gopal Verma (Université de Bordeaux); Gyanendra Yadav (University of Liverpool); Chaudry S. Saraj (Changchun Institute of Optics, Fine Mechanics and Physics, CAS); Jean-Pierre Delville (Université de Bordeaux); Wei Li (Changchun Institute of Optics, Fine Mechanics and Physics, CAS);

13:45 Near-field Thermal Transport between Twisted Bilayer Graphene
Fuwei Yang (Peking University); Bai Song (Peking University);

14:00 Near-field Radiative Thermal Diode with Large Rectification Based on Thin Films
Qiuzhang Li (Peking University); Haiya He (Peking University); Qun Chen (Tsinghua University); Bai Song (Peking University);

14:15 A Selective Emitter for Dew-harvesting in Dry Climates
Minghao Dong (Southeast University); Zheng Zhang (Southeast University); Yu Shi (Stanford University); Xiaodong Zhao (Southeast University); Shanhui Fan (Stanford University); Zhen Chen (Southeast University);

14:55 Multichannel-independent Tunable Metasurface for Dynamic Beam Control
Ke Chen (Nanjing University); Qi Hu (Nanjing University); Na Zhang (Nanjing University); Junming Zhao (Nanjing University); Tian Jiang (Nanjing University); Yijun Feng (Nanjing University);

15:15 Wireless Channel Design and Optimization Method for 1-bit Programmable Metasurface
Hanting Zhao (Peking University); Menglin Wei (Peking University); Zhuo Wang (Peking University); Hongrui Zhang (Peking University); Ya Shuang (Peking University); Lianlin Li (Peking University);

16:00 An Active Metamaterial Antenna with Tunable Zero-order Resonances
Zhanheng Liu (Shanghai University); Hongtao Liu (Shanghai University); Yong Luo (Shanghai University);

16:15 Babinet Principle for Complementary Metasurfaces on the Interface of Different Substrates
Xiaobo Liu (Xi’an Jiaotong University);

16:30 Optically-driven Programmable Electromagnetic Metasurfaces
Xin Ge Zhang (Southeast University); Wei Xiang Jiang (Southeast University);

16:45 Metamaterials Based Intelligent Microwave Human Behavior Recognition
Hongrui Zhang (Peking University); Zhuo Wang (Peking University); Hanting Zhao (Peking University); Menglin Wei (Peking University); Ya Shuang (Peking University); Lianlin Li (Peking University);

Session 3P6c

SC2: Space and Time Varying Metamaterials 2

Wednesday PM, April 27, 2022
Room 6 - Mingrui Hall
Organized by Fu Liu, Sergei A. Tretyakov
Chaired by Fu Liu, Sergei A. Tretyakov

17:05 Spatiotemporal Effective Media for Acoustic Waves
Xinhua Wen (Hong Kong University of Science and Technology); Xinghong Zhu (Hong Kong University of Science and Technology); Hong Wei Wu (Hong Kong University of Science and Technology); Jensen Li (Hong Kong University of Science and Technology);

17:25 Nonlinear Time-Floquet System for Neuromorphic Analog Computing
Ali Momeni (Swiss Federal Institute of Technology in Lausanne (EPFL)); Romain Fleury (Ecole Polytechnique Federale de Lausanne (EPFL));

17:40 Time-varying Components for Enhancing Wireless Transfer of Power and Information
P. Jayatharathnage (Aalto University); Fu Liu (Xi’an Jiaotong University); Mohammad-Sajjad Mirnoosa (Aalto University); Xu-Chen Wang (Aalto University); Romain Fleury (Ecole Polytechnique Federale de Lausanne (EPFL)); Sergei A. Tretyakov (Aalto University);
Session 3P7a
SC2: Electromagnetic Radiation with Charged Particles

Wednesday PM, April 27, 2022
Room 7 - Mingsi Hall
Organized by Zhaoyun Duan, Xiao Lin
Chaired by Xiao Lin, Zhaoyun Duan

13:00 Quantum Aspects of the Interaction between Free Electron, Light, and Photonic Nanostructures
F. Javier García de Aboio (ICFO — Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology);

13:25 Tunable Cherenkov Radiation of Phonon Polaritons in Silver Nanowire/Hexagonal Boron Nitride Heterostructures
Zhixiong Shi (Shanghai Jiao Tong University);

13:45 Ultrafast Electron Microscopy for Nanophotonics
Kangpeng Wang (Technion-Israel Institute of Technology); Raphael Dahan (Technion-Israel Institute of Technology); Yuval Adin (Technion-Israel Institute of Technology); Michael Yannai (Technion-Israel Institute of Technology); Ido Kaminer (Technion, Israel Institute of Technology);

14:05 Low Velocity Favored Transition Radiation
Jialin Chen (Zhejiang University); Hongsheng Chen (Zhejiang University); Xiaolin Zhejiang University);

14:20 Plasma Frequency Reduction Factors of Sheet Electron Beam in Rectangular Waveguide
Hanwen Tian (University of Electronic Science and Technology of China); Hongyang Guo (University of Electronic Science and Technology of China); Ningjie Shi (University of Electronic Science and Technology of China); Shaomeng Wang (University of Electronic Science and Technology of China); Zhan-Liang Wang (University of Electronic Science and Technology of China); Yu-Bin Gong (University of Electronic Science and Technology of China);

14:35 Spatiotemporal Imaging of 2D Polariton Wavepacket Dynamics Using Free Electrons
Yanie Kurman (Technion-Israel Institute of Technology); Raphael Dahan (Technion-Israel Institute of Technology); Hanan Herzig Shenfuz (ICFO-Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology); Kangpeng Wang (Technion-Israel Institute of Technology); Michael Yannai (Technion-Israel Institute of Technology); Yuval Adin (Technion-Israel Institute of Technology); Ori Reinhardt (Technion-Israel Institute of Technology); Luis Henrique Galvao Tizei (Université Paris-Saclay, CNRS); Steffi Y. Woo (Université Paris-Saclay, CNRS); Jiahan Li (Kansas State University); James H. Edgar (Kansas State University); Mathieu Kociak (Université Paris-Saclay, CNRS); Frank H. L. Koppens (ICFO-Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology); Ido Kaminer (Technion, Israel Institute of Technology);

14:50 Nanostructure-tailored Free-electron Radiation in a Modified Scanning Electron Microscope
Yi Yang (Massachusetts Institute of Technology); Charles Roques-Carmes (Massachusetts Institute of Technology); Steven E. Kooi (Massachusetts Institute of Technology); Haoming Tang (Harvard University); Justin Berez (Massachusetts Institute of Technology); Eric Mazur (Harvard University); Ido Kaminer (Technion, Israel Institute of Technology); John D. Joannopoulos (Massachusetts Institute of Technology); Marin Soljačić (Massachusetts Institute of Technology);

15:05 P-band High Efficiency Klystron Based on Metamaterial nanostructure
Xuanming Zhang (University of Electronic Science and Technology of China); Xin Wang (University of Electronic Science and Technology of China); Shengkan Jiang (University of Electronic Science and Technology of China); Zhan-Liang Wang (University of Electronic Science and Technology of China); Hua-Rong Gong (University of Electronic Science and Technology of China); Yu-Bin Gong (University of Electronic Science and Technology of China); Zhaoyun Duan (University of Electronic Science and Technology of China);

Session 3P7b
SC2: Optics with Twistorics and Polaritonics Nano-optics 2

Wednesday PM, April 27, 2022
Room 7 - Mingsi Hall
Organized by Peining Li, Jianing Chen
Chaired by Peining Li
13:00 Wideband and Multi-band Dual-circularly-polarized Reflect-/Transmit-arrays
Zhao Jiang (Southeast University); X. F. Tong (Southeast University); Y. Li (Southeast University);
13:20 Breaking the Trade-off between Gain and Aperture Size via Zero-index Metamaterial-based Antenna
Yang Li (Tsinghua University);
13:40 All-dielectric Metamaterial Achromatic Gradient Solid Immersion Lens with Large Numerical Aperture for Terahertz Super Resolution Focusing and Magnified Far Field
Jin Chen (Beijing Institute of Technology);

Session 3P8b
SC2: Applications of Terahertz Metamaterials in Electromagnetic Devices

Wednesday PM, April 27, 2022
Room 8 - Minghou Hall
Organized by Ke Bi, Xiaojian Fu
Chaired by Xiaojian Fu

16:00 Rare Earth Orthoferrite Tuning of Transmitted Waves as Natural Metamaterials
Xinzhi Zeng (University of Science & Technology Beijing);
16:15 Coding Metasurfaces for Terahertz Beam Manipulation
Xiaojian Fu (Southeast University);
16:30 Aluminum Based and Lithography-free Touching Nanoparticle Metamaterial
Xiaoming Liu (Northeastern University);
16:45 Spook Localized Surface Plasmons (SLSPs) for Terahertz Sensing
Xuanru Zhang (Southeast University); Tie Jun Cui (Southeast University);
17:00 A CMOS Sub-terahertz Power Amplifier for Short-distance Data Center Communication
Jiang Luo (Hangzhou Dianzi University);
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:15</td>
<td>Terahertz Whispering-gallery Modes in Metal Structure on a Silicon Substrate</td>
<td>Hongya Wu (Shijiazhuang Tiedao University);</td>
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<tr>
<td>13:30</td>
<td>Generation and Steering of W-band OAM Beams Based on Liquid Crystal Metasurface</td>
<td>Chen Xi Liu (Southeast University); Fei Yang (Southeast University); Xiaojian Fu (Southeast University); Junwei Wu (Southeast University); Jun Yang (Hefei University of Technology);</td>
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<tr>
<td>13:45</td>
<td>Active Terahertz Modulator and Slow Light Metamaterial Devices with Hybrid Graphene-superconductor Coupled Split-ring Resonator Arrays</td>
<td>Samane Kalhor (University of Glasgow); Stephan J. Kindness (University of Cambridge); Robert Wallis (University of Cambridge); Harvey E. Beere (University of Cambridge); Majid Ghanaatshoar (Shahid Beheshti University); Riccardo Degl’Innocenti (University of Lancaster); Michael J. Kelly (University of Cambridge); Stephan Hofmann (University of Cambridge); Hannah J. Joyce (University of Cambridge); David A. Ritchie (University of Cambridge); Kaveh Delfanazari (University of Glasgow);</td>
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<tr>
<td>13:50</td>
<td>Nonlinear Optics in Multimode Devices</td>
<td>Organized by Cosimo Lacava</td>
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<tr>
<td>13:00</td>
<td>Self-organization of Counter-propagating Beams in Multimode Optical Fibers</td>
<td>Kunbao Ji (University of Southampton); Saurabh Jain (University of Southampton); Martin Miguel Angel Náñez-Velázquez (University of Southampton); Ian Davidson (University of Southampton); Jagantha Saha (University of Southampton); David J. Richardson (University of Southampton); Stefan Wabnitz (Sapienza University of Rome); Massimiliano Guasoni (University of Southampotn);</td>
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<tr>
<td>13:10</td>
<td>Intermodal Four Wave Mixing-based Frequency Conversion in Silicon Rich Silicon Nitride Waveguides</td>
<td>Valerio Vitali (University of Southampton); Cosimo Lacava (University of Pavia); Hao Liu (University of Southampton); Thalia Dominguez Bacio (University of Southampton); Frederic Y. Gardes (University of Southampton); Periklis Petropoulos (University of Southampton);</td>
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<tr>
<td>13:30</td>
<td>Difference Frequency Generation in Multimode AlGaAs Waveguides</td>
<td>Jack Haines (University of Southampton); Yohann Franz (University of Southampton); Marco Gandolfi (University of Brescia); Costantino De Angelis (Università degli Studi di Brescia); Massimiliano Guasoni (University of Southampton);</td>
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<tr>
<td>13:40</td>
<td>Nonlinear Mode and Wavelength Conversion in a Highly Nonlinear Few-mode Fiber</td>
<td>Georg Rademacher (National Institute of Information and Communications Technology); Ruben S. Luís (National Institute of Information and Communications Technology); Benjamin J. Puttnam (National Institute of Information and Communications Technology); Yoshinari Aueji (National Institute of Information and Communications Technology); Hideaki Furukawa (National Institute of Information and Communications Technology);</td>
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Session 3P9a
Nonlinear Optics in Multimode Devices

**Wednesday PM, April 27, 2022**

Room 9 - Tianren Hall
Organized by Cosimo Lacava

14:00 Laser 3D Nano-printing of Inorganics for Free-form Micro-optics
Mangiadas Malinauskas (Vilnius University);

14:10 Photonics Technologies for Space: Overview of Italian Space Agency Activities
Marco Di Clemente (Italian Space Agency); Roberto Formaro (Italian Space Agency);

14:20 NICT Activities and Future Research Plan for Space Optical Communications Technology
Dimitar Radkov Kolev (National Institute of Information and Communication Technology); Koichi Shiratama (National Institute of Information and Communication Technology); Alberto Carrasco-Casado (National Institute of Information and Communication Technology); Yoshishiko Saito (National Institute of Information and Communication Technology); Junichi Nakazono (National Institute of Information and Communication Technology); Phuc V. Trinh (National Institute of Information and Communication Technology); Morio Toyoshima (National Institute of Information and Communications Technology);
14:50 Sub-resolution Orientation Imaging Using Polarisation for Remote Sensing Applications
Soon Hock Ng (Swinburne University of Technology); Blake Allan (Deakin University); Daniel Ierodiaconou (Deakin University); Vijayakumar Anand (Swinburne University of Technology); Alexander Babanin (The University of Melbourne); Saulius Juodkazis (Swinburne University of Technology);

15:00 White Light Correlation Holography Using a Random Lens for Astronomical Imaging Applications
Vijayakumar Anand (Swinburne University of Technology); Soon Hock Ng (Swinburne University of Technology); Tomas Katkus (Swinburne University of Technology); Saulius Juodkazis (Swinburne University of Technology);

15:10 Simultaneous Detection of Modal Composition and Wavelength of OAM Fields Using a Hexagonal Vortex Filter
Andra Naresh Kumar Reddy (Hec Photonic Labs); Vijayakumar Anand (Swinburne University of Technology); Vladimir V. Podlipnov (Samara National Research University); Svetlana Nikolaevna Khonina (Samara National Research University); Saulius Juodkazis (Swinburne University of Technology);

Caterina Ciminelli (Politecnico di Bari); G. Brunetti (Politecnico di Bari); Mario Nicola Armenise (Politecnico di Bari);

15:40 Coffee Break

Session 3P9c

SC3: Optical Technologies for Characterization of Cells and Tissues

Wednesday PM, April 27, 2022
Room 3 - He Hall
Organized by Zhiyi Liu, Chunmei Li
Chaired by Zhiyi Liu

16:00 Mapping Cell Migration by Quantitative, Correlative Invited Imaging of Microtubules at Nanoscale Resolution
Zhiyi Liu (Zhejiang University); Wenjie Liu (Zhejiang University); Yushi Yao (Zhejiang University School of Medicine); Jia Meng (Zhejiang University); Shuhao Qian (Zhejiang University); Yubing Han (Zhejiang University); Tao Wang (Zhejiang University School of Medicine); Lingxi Zhou (Zhejiang University); Shengyi Jiang (Zhejiang University); Yifan Yuan (Zhejiang University); Youhua Chen (Zhejiang University); Liang Xu (Zhejiang University); Meng Zhang (Huazhong University of Science and Technology); Jianrong Qiu (Zhejiang University); Tao Han (Zhejiang University); Di Wang (Zhejiang University); Xu Liu (Zhejiang University); Cuiyang Huang (Zhejiang University); Zhihua Ding (Zhejiang University);

16:20 Mapping Functions of Fiber-like Biological Tissues through Highly-quantitative Analysis of Morphological Remodeling
Shuhao Qian (Zhejiang University); Jia Meng (Zhejiang University); Zhihua Ding (Zhejiang University); Jun Qian (Zhejiang University); Zhiyi Liu (Zhejiang University);

16:35 Constrained Polynomial Fit Based k-domain Interpolation in Fourier Domain Optical Coherence Tomography
Tao Han (Zhejiang University); Zhiyi Liu (Zhejiang University); Zhihua Ding (Zhejiang University);

16:40 Research on the Difference between Patients with Inflammatory Bowel Diseases and Healthy Controls by Surface Enhanced Raman Spectroscopy
Binggan Li (University of Shanghai for Science and Technology); Yaling Wu (Tongji University); Zijie Wang (University of Shanghai for Science and Technology); Chao Luo (University of Shanghai for Science and Technology); Zhiqun Liu (University of Shanghai for Science and Technology); Weimin Xu (Shanghai Jiao Tong University School of Medicine); Yilun Zha (Shanghai Jiaotong University School of Medicine); Peng Du (Shanghai Jiao Tong University School of Medicine); Xiaolei Wang (Tongji University); Ruan Yang (University of Shanghai for Science and Technology);

16:55 Identify the Different Stages of Cervical Cancer Progression by Multiphoton Microscopy
Yulan Liu (Fujian Normal University); Xiaohui Han (Fujian Normal University); Liqin Zheng (Fujian Normal University); Lianhua Li (Fujian Normal University); Zhenlin Zhan (Fujian Normal University); Jianhua Chen (Fujian Normal University); XiaoLong Wei (Cancer Hospital of Shantou University Medical College); Jianxin Chen (Fujian Normal University);

17:05 Application of Second Harmonic Generation Imaging and Machine Learning to Human Borderline Ovarian Cancer Diagnosis
Huilin Zhan (Jimei University); Guangzing Wang (Jimei University); Shuangmu Zhuo (Jimei University);

17:15 Classification of Biliary Stricture with Cholecatheter Images Based on Deep Multiple Instance Learning
Liqiang Wang (Zhejiang University); Changjiang Zhou (Research Center for Intelligent Sensing, Zhejiang Lab); Daoyan Gao (Eastern Hepatobiliary Surgery Hospital);

17:30 Discrimination of Blood Species Using Raman Spectroscopy and Machine Learning Technology
Peng Wang (Suzhou Institute of Biomedical Engineering and Technology); Jing Gao (Suzhou Institute of Biomedical Engineering and Technology);

17:40 Terahertz Metasensor Application in Early Diagnosis of Brain Glia
Yan Peng (University of Shanghai for Science and Technology); Chenjun Shi (University of Shanghai for Science and Technology); Olga Cherkasova (Institute of Laser Physics, Siberian Branch of the RAS); Can Sun (University of Shanghai for Science and Technology);

Invited
**Session 3P10a**  
**SC3: Nonlinear Optics: Fundamentals and Its Applications 2**  
**Wednesday PM, April 27, 2022**  
**Room 10 - Tianhong Hall**  
Organized by Haibin Wu, Zhaoyang Zhang  
Chaired by Haibin Wu, Zhaoyang Zhang

13:00 Dissipatively Coupled Optomechanical Systems  
Invited  
Jiteng Sheng (East China Normal University); Haibin Wu (East China Normal University);

13:20 Controlling the Dynamic Behaviors of Light in Immediately Reconfigurable Honeycomb Photonic Lattices  
Zhaoyang Zhang (Xi’an Jiaotong University); Yiqi Zhang (Xi’an Jiaotong University); Peng Li (Xi’an Jiaotong University); Yanpeng Zhang (Xi’an Jiaotong University); Min Xiao (University of Arkansas);

13:40 Breather Lasers and Their Intelligent Control  
Junsong Peng (East China Normal University);

Zhenzhu Bai (Hebei University of Technology); Yulei Wang (Hebei University of Technology); Zhiwei Lu (Hebei University of Technology);

14:10 Quantum Dynamics of Interacting and Spinor Bose Gases  
Jizhou Wu (Shanxi University); Jie Ma (Shanxi University); Yuqing Li (Shanxi University); Wenhuan Liu (Shanxi University); Liqian Xiao (Shanxi University); Suotang Jia (Shanxi University);

14:25 Producing Nonlinear Self-accelerating Beam in Atomic Ensembles  
Zhenkun Wu (Henan University); Kaibo Yang (Henan University); Yagang Zhang (Henan University); Junling Che (Xi’an University of Posts and Telecommunications); Peng Li (Henan University);

14:40 Optical All-pass Filter  
Yuan Yu (Huazhong University of Science and Technology);

14:55 Review of Photonics-based Microwave Phase Noise Measurement Methods  
Siqing Hua (Nanjing Normal University); Jingzhan Shi (Nanjing University of Aeronautics and Astronautics); Xiaozhong Tian (Nanjing Normal University); Yiping Wang (Nanjing Normal University);

15:15 Large Dynamic Frequency Up-conversion by Using Parallel Dual-drive Mach-Zehnder Modulators and Balance Detection  
W. H. Wang (Dalian University of Technology); Y. Bai (Dalian University of Technology); S. L. Fu (Dalian University of Technology); X. X. Su (Dalian University of Technology); C. Wang (University of Kent); Y. Y. Gu (Dalian University of Technology); M. S. Zhao (Dalian University of Technology); Xiyou Han (Dalian University of Technology);

15:30 Broadband Signal Acquisition with Ultra-high Sampling Compression Ratio Based on Continuous-time Photonic Time Stretch and Compressive Sampling  
Bo Yang (Hangzhou Dianzi University); Qing Xu (Hangzhou Dianzi University); Shuna Yang (Hangzhou Dianzi University); Hao Chi (Hangzhou Dianzi University);

15:45 A Magnetically Tunable Slow Light Waveguide  
Shuwai Leung (Nanjing University); Yinan Wang (Nanjing University); Chengpeng Liang (Nanjing University); Fei-Pei Li (Nanjing University); Yin Poo (Nanjing University);

15:50 Approach of Frequency Doubling Digital Modulation Signal Generation Based on Optical Modulation Switch  
Wei Jiang (National Key Laboratory of Science and Technology on Space Microwave); Xiaojian Li (National Key Laboratory of Science and Technology on Space Microwave); Weizhe Qin (National Key Laboratory of Science and Technology on Space Microwave); Jinman Ge (National Key Laboratory of Science and Technology on Space Microwave); Qingui Tan (National Key Laboratory of Science and Technology on Space Microwave);

**Session 3P10b**  
**SC3: Microwave Photonic Technologies, Systems and Applications**  
**Wednesday PM, April 27, 2022**  
**Room 10 - Tianhong Hall**  
Organized by Fangzheng Zhang, Hao Chi  
Chaired by Pei Zhou

16:00 Anti-chromatic Dispersion Transmission of Dual-chirp Waveform Based on a Single DPMZM  
Chongxin Yi (Zhejiang University); Shuna Yang (Hangzhou Dianzi University); Bo Yang (Hangzhou Dianzi University); Tao Jin (Zhejiang University); Hao Chi (Hangzhou Dianzi University);

16:15 Optical All-pass Filter  
Yuan Yu (Huazhong University of Science and Technology);

16:30 Review of Photonics-based Microwave Phase Noise Measurement Methods  
Siqing Hua (Nanjing Normal University); Jingzhan Shi (Nanjing University of Aeronautics and Astronautics); Xiaozhong Tian (Nanjing Normal University); Yiping Wang (Nanjing Normal University);

16:45 Large Dynamic Frequency Up-conversion by Using Parallel Dual-drive Mach-Zehnder Modulators and Balance Detection  
W. H. Wang (Dalian University of Technology); Y. Bai (Dalian University of Technology); S. L. Fu (Dalian University of Technology); X. X. Su (Dalian University of Technology); C. Wang (University of Kent); Y. Y. Gu (Dalian University of Technology); M. S. Zhao (Dalian University of Technology); Xiyou Han (Dalian University of Technology);

17:00 Broadband Signal Acquisition with Ultra-high Sampling Compression Ratio Based on Continuous-time Photonic Time Stretch and Compressive Sampling  
Bo Yang (Hangzhou Dianzi University); Qing Xu (Hangzhou Dianzi University); Shuna Yang (Hangzhou Dianzi University); Hao Chi (Hangzhou Dianzi University);

17:15 A Magnetically Tunable Slow Light Waveguide  
Shuwai Leung (Nanjing University); Yinan Wang (Nanjing University); Chengpeng Liang (Nanjing University); Fei-Pei Li (Nanjing University); Yin Poo (Nanjing University);

17:30 Approach of Frequency Doubling Digital Modulation Signal Generation Based on Optical Modulation Switch  
Wei Jiang (National Key Laboratory of Science and Technology on Space Microwave); Xiaojian Li (National Key Laboratory of Science and Technology on Space Microwave); Weizhe Qin (National Key Laboratory of Science and Technology on Space Microwave); Jinman Ge (National Key Laboratory of Science and Technology on Space Microwave); Qingui Tan (National Key Laboratory of Science and Technology on Space Microwave);
13:20 Rational Interface Engineering for Efficient Blue Perovskite Light-emitting Diodes
Invited
Yang Shen (Soochow University); Jianxin Tang (Soochow University);
13:40 The Synthesis of Cd/Pb-free InP and ZaSe Core-shell Quantum Dots and Application in QLEDs
Invited
Huaibin Shen (Henan University);
14:00 Smart Control of Multi-photon Upconversion in Nanostuctures
Invited
Bo Zhou (South China University of Technology);
14:20 High Pressure Engineering of Luminescent Metal Halides
Invited
Zewei Quan (Southern University of Science and Technology);
14:40 Photonic Inorganic Glasses Activated with Silver Quantum Clusters as Spectral Converting Layers to Improve Organic Solar Cells’ Efficiencies
Invited
Xusheng Qiao (Zhejiang University); Pengcheng Li (Zhejiang University); Wangchen Hao (Zhejiang University); Di Wang (Zhejiang University); Xianping Fan (Zhejiang University); Guodong Qian (Zhejiang University);
15:00 Interfacial Engineering for Improving the Device Performance of Cadmium-free Quantum Dot-based Electroluminescent Device
Invited
Aiwei Tang (Beijing Jiaotong University);
16:00 Theoretical Spectroscopy of Extrinsic and Intrinsic Defects in Phosphors
Invited
Chongqeng Ma (Chongqing University of Posts and Telecommunications);
16:20 High-efficiency Blue Cadmium-free Quantum Dot and Perovskite Light-emitting Diodes
Invited
Kai Wang (Southern University of Science and Technology);
16:35 Light-emitting Devices Based on Lead-free Halide Perovskites
Invited
Zhifeng Shi (Zhengzhou University);
16:55 Carbonized Polymer Dots
Invited
Si Yu Lu (Zhengzhou University);
17:15 Huge Upconversion Luminescence Enhancement by a Cascade Optical Field Modulation Strategy Facilitating Selective Multispectral Narrow-band Near-infrared Photodetection
Invited
Yanan Ji (Jilin University); Wen Xu (Jilin University); Nan Ding (Jilin University); Haiqiao Yang (Jilin University); Hongwei Song (Jilin University); Qingyun Liu (KTH Royal Institute of Technology); Hans Agren (KTH Royal Institute of Technology); Jerker Widengren (Royal Institute of Technology (KTH)); Haichun Liu (Royal Institute of Technology (KTH));
17:30 Rational Ligand Molecule Engineering toward Efficient and Stable Perovskite Solar Cells Exceeding 23% Efficiency
Invited
Cong Chen (Hebei University of Technology);
17:45 Rare Earth Doped Luminescent Nanomaterials and Their Photoelectric Applications
Invited
Donglei Zhou (Jilin University); Hongwei Song (Jilin University);
18:00 Indirect Temperature Measurement for Quasi-continuous-wavelength High Power Laser Diode Bars
Invited
A. N. Aparnikov (Bauman Moscow State Technical University); Fedor Borisovich Baulin (Bauman Moscow State Technical University); Evgeny Vladlenovich Burgi (Bauman Moscow State Technical University); N. E. Orlov (Bauman Moscow State Technical University); V. D. Shashurin (Bauman Moscow State Technical University);

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**Session 3P12a**

Remote Sensing of Atmosphere, Ocean and Land using GNSS and Other Sensors 2

**Wednesday PM, April 27, 2022**

**Room 12 - Mingdu Hall 2**

Organized by Shuanggen Jin

Chaired by Shuanggen Jin, Qingyun Yan

13:00 Inversion of Ocean Wavenumber Spectrum from the Bistatic High-frequency Radar Sea Echoes
Invited
Fan Ding (Wuhan University); Chen Zhao (Wuhan University); Zezong Chen (Wuhan University); Min Deng (Wuhan University);
13:15 A Novel Full-polarization SAR Image Ship Detector Based on Polarization Scattering Characteristics
Invited
Gui Guo (National University of Defense Technology); Chuan Zhang (National University of Defense Technology); Linlin Zhang (National University of Defense Technology);
13:25 Evaluation of Model Simulations of Polar Lows with Satellite Data
Invited
Kirill S. Khvorostovsky (Russian State Hydrometeorological University); K. I. Yarusov (Russian State Hydrometeorological University); Elizaveta V. Zabolotskikh (Russian State Hydrometeorological University);
13:35 Atmospheric Effects on the EM Wave Propagation of an AUV-borne Radar
Invited
Hamza Bounaceur (UMR CNRS 6285); Ali Khenchaf (UMR CNRS 6285); Jean-Marc Le Cailler (IMT Atlantic);
13:45 Multi-instrumental View of the Auroral Oval
Yury V. Yasukevich (Institute of Solar-Terrestrial Physics, SB RAS); E. I. Astafyeva (Univérité de Paris); Alezey V. Oinats (Institute of Solar-Terrestrial Physics, SB RAS); Artem M. Vesnin (Institute of Solar-Terrestrial Physics, SB RAS); Anna S. Yasukevich (Institute of Solar-Terrestrial Physics, SB RAS); A. Vasiliev (Inrkutsk National Research Technical University); A. A. Garashchenko (Inrkutsk National Research Technical University); D. N. Sidorov (Institute of Solar-Terrestrial Physics, SB RAS);

13:55 Spatio-temporal Fluctuations in Downwelling K-band Radiation of Atmosphere in the Presence of Clouds
Dobroslav P. Egorov (Kotel’nikov Institute of Radio Engineering and Electronics of RAS); Boris Georgievich Kutzha (Kotel’nikov Institute of Radio Engineering and Electronics of RAS);

14:05 Mapping and Evaluation of the 2020 Catastrophic Floods in the Yangtze River Basin Using Sentinel-1 Imagery
Minmin Huang (Nanjing University of Information Science and Technology); Shuanggen Jin (Nanjing University of Information Science and Technology); Xueqin Gao (Shouguang Meteorological Bureau);

14:20 Assessing the Performance of Models for Ionospheric Correction for Single-frequency GNSS Positioning
Yury Vladimirovich Yasukevich (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences); Anna S. Yasukevich (Institute of Solar-Terrestrial Physics, SB RAS); Dmitry A. Zatolokin (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences);

14:30 Estimating Ground-level Nitrogen Dioxide Concentration from Satellite Data
Bibhash Pran Das (National Institute of Technology Rourkela); Muhammad Salman Pathan (University College Dublin Belfield); Yee Hui Lee (Nanyang Technological University Singapore); Soumyabrat Dev (The ADAPT SFI Research Centre);

14:40 Predicting Ground-based PM$_{2.5}$ Concentration in Queensland, Australia
Nicholas Danesi (University College Dublin); Mayank Jain (University College Dublin Belfield); Yee Hui Lee (Nanyang Technological University Singapore); Soumyabrat Dev (The ADAPT SFI Research Centre);

14:50 Analyzing Air Pollutant Concentrations in New Delhi, India
Bugra Alparslan (Middle East Technical University (METU)); Mayank Jain (University College Dublin Belfield); Jiantao Wu (University College Dublin); Soumyabrat Dev (Beijing-Dublin International College);

Session 3P12b
SC2: RCS Reduction Techniques Based on Metamaterials/Metasurfaces
Wednesday PM, April 27, 2022
Room 12 - Mingdu Hall 2
Organized by Junming Zhao, Bian Wu
Chaired by Junming Zhao, Ke Chen

16:00 Ultra-miniaturized Narrow-band Metamaterial Absorber for L-band
Biao Chen (Xi’an Key Laboratory of Millimeter Wave and Terahertz Technology); Shining Sun (The Aeronautical Science Key Lab for High Performance Electromagnetic Windows); Yu-Tong Zhao (Xidian University); Biao Wu (Xidian University);

16:15 Optically Transparent Diffusion Metasurface for RCS Reduction
Ke Zhang (Xidian University); Yaqi Wei (Xidian University); Yu-Tong Zhao (Xidian University); Jianzhong Chen (Xidian University); Biao Wu (Xidian University); Tao Su (Xidian University);

16:30 An Electrically Controlled Tunable Absorber Design Based on Frequency Selective Surface
Yan Ma (Central South University); Kexin Liao (Central South University); Zhifu Liu (Central South University); Meng Wang (Central South University); Jian Dong (Central South University);

16:45 Graphene-based Reconfigurable Microwave Metasurfaces for Multi-domain Modulation of Electromagnetic Waves
Weiren Zhu (Shanghai Jiao Tong University);

17:00 Ultra-wideband Frequency-selective Rasorber Combining Diffusion Scattering and Absorption
Kun Duan (Nanjing University); Ke Chen (Nanjing University); Yijun Feng (Nanjing University); Junming Zhao (Nanjing University);

Session 3P13a
SC5: Microwave Remote Sensing of the Water Cycle 2
Wednesday PM, April 27, 2022
Room 13 - Mingdu Hall 3
Organized by Emmanuel P. Dinnat, Jacqueline Boutin
Chaired by Emmanuel P. Dinnat, Jacqueline Boutin
13:00 Multifractal Fusion of Brightness Temperatures to Reduce SMOS Level 2 Sea Surface Salinity Error
Estrella Olmedo (Institute of Marine Science (ICM-CSIC-BEC)); Antonio Turiel (ICM — CMIMA (CSIC), Passeig Maritim de la Barceloneta); Veronica Gonzalez-Gambau (Institute of Marine Science (ICM-CSIC-BEC)); C. Gonzalez-Haro (Institute of Marine Science (ICM-CSIC-BEC)); A. Garcia-Esparri (Institute of Marine Science (ICM-CSIC-BEC));

13:10 Multivariate Convolutional LSTMs for Relative Humidity Forecasting
Zheng Yi Ho (Nanyang Technological University); Mayank Jain (University College Dublin Belfield); Soumyabrata Dev (Beijing-Dublin International College);

13:20 Efficient Forecasting of Precipitation Using LSTM
Muhammad Salman Pathan (University College Dublin Belfield); Mayank Jain (University College Dublin Belfield); Yee Hua Lee (Nanyang Technological University Singapore); Tarek Al Skaf (Wageningen University and Research); Soumyabrata Dev (Beijing-Dublin International College);

13:30 SMOS Salinity Retrieved from New Seawater Dielectric Constant Models at L-band
Jacqueline Boutin (LOCEAN/CNRS/Sorbonne Université); J. L. Vergely (ACRi-s); Y. Zhou (GWU); E. Dinat (Chapman University); R. Subia (ESA);

13:40 SMOS-HR (High Resolution): A SMOS Follow-up for the Study of the Water Cycle
Nemesio Rodríguez-Fernandez (CESBIO); Eric Anterriau (CESBIO); Francois Cabol (CESBIO); Jacqueline Boutin (LOCEAN); Gholam Picard (CESBIO); Thierry Pellarin (CNRS, LTHE); Jérome Vialard (CNRS-IRD-MNHN-Sorbonne Université); Frédéric Vivier (LOCEAN); Ahmad Al Bitar (CESBIO); Philippe Richaume (CESBIO); Arnaud Mialon (CESBIO); Raquel Rodriguez-Suquet (CNES); Louise Yu (CNES); Thierry Amiot (CNES); Cecile Cheymole (CESBIO); Ali Khazali (CESBIO); Yann H. Kerr (Centre d’Études Spatiales de la Biosphère (CESBIO/CRS/IR/Flow/CNES/UPS));

13:55 Sea Surface Salinity Estimation with C-/X-band Radiometer in Large and Warm River Plumes
Nicolas Real (IFREMER, Univ. Brest); Marie Montiero (CNRS-IRD-MNHN-Sorbonne Université); Clément Boyer De Montgut (IFREMER, Univ. Brest); Jérome Vialard (CNRS-IRD-MNHN-Sorbonne Université); Sébastien Guimbard (Ocean Scope);

14:10 The Copernicus Imaging Microwave Radiometer (CIMR) Expansion Mission
Craig Donlon (European Space Agency, ESTEC); Rolf Midthassel (European Space Agency, ESTEC); Marcello Sallusti (European Space Agency, ESTEC); Mariel Trigiane (European Space Agency, ESTEC); Benedetta Fiorelli (European Space Agency, ESTEC); Martin Peccia (European Space Agency, ESTEC); Claudio Galeazzi (European Space Agency, ESTEC);

Session 3P13b
SC5: Advances in Random Medium Scattering Theory and Microwave Remote Sensing 2

Wednesday PM, April 27, 2022
Room 13 - Mingdu Hall 3
Organized by Shurun Tan, Yanlei Du
Chairied by Shurun Tan, Yanlei Du

16:00 Circularly Polarized Bistatic Scattering and Propagation over Terrain Profile with Random Roughness
Xue-Yuan Chen (Hubei University of Technology); Peng Xu (Hubei University of Technology);

16:15 Theoretical View on the Possibilities of Multi-frequency Remote Sensing of the Water Surface
Yuriy A. Titchenko (Institute of Applied Physics, Russian Academy of Science); Vladimir Yurievich Karaev (Institute of Applied Physics, Russian Academy of Sciences); Mariya S. Ryabkova (Institute of Applied Physics, Russian Academy of Sciences); Eugenev M. Moshkov (Institute of Applied Physics, Russian Academy of Sciences); Kiril A. Povuz (Institute of Applied Physics, Russian Academy of Sciences); Roman V. Belyaev (Institute of Applied Physics, Russian Academy of Sciences);

16:25 Multiscale Roughness Influence on Microwave Scattering and Emission in Soil Moisture Response
Ying Yang (Nanjing University of Science and Technology); Kun-Shan Chen (Guilin University of Technology);

16:40 Analysis of Spatial Decorrelation of Rough Sea Surfaces in Radar Scattering
Mingde Guo (Aerospace Information Research Institute, Chinese Academy of Sciences); Ying Yang (Nanjing University of Science and Technology); Rui Jiang (Jimei University); Kun-Shan Chen (Guilin University of Technology);

16:55 Recent Activities of GNSS-R in CAST-XIAN
Cheng Jing (Space Research Institute of Electronics and Information Technology); Xinkuang Niu (China Academy of Space Technology-Xi’an (CAST-XIAN)); Feng Lu (National Satellite Meteorological Center (NSMC), China Meteorological Administration); Zhaoguang Bai (DFH Satellite Co. Ltd.); Wei Wan (Peking University); Weiqiang Li (Institut d’Estudis Espacials de Catalunya (IEEC)); Yanlei Du (Aerospace Information Research Institute, Chinese Academy of Sciences);

17:10 Physical Characterizations of Scattering and Emissions from Sea Foams at Millimeter Waves — A Numerical Study
Rui Jiang (Jimei University); Kun-Shan Chen (Guilin University of Technology);
17:25 Simulation of SAR Imaging of Ship under Sea Clutter
Yuhua Guo (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Huangyin Yue (Institute of UAV Application Research, Tianjin and CAS); Hufeng Shi (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences);

17:35 Modeling of Spatial-temporal Sea Clutter with I/Q Components Based on the Data-driven Approximation of Koopman Theory
Yanming Zhang (The University of Hong Kong); L. J. Jiang (The University of Hong Kong);

17:45 Progress in Testing and Optimizing the Wide-band Array-shaped Microwave Calibration Target
Ming Jin (Beijing University of Chemical Technology); Ming Bai (Beihang University);

13:00 Extrapolated Virtual Antenna Array for Enhancement of Resolution of Uniform Linear Array
Yury Gennadievich Pasternak (Voronezh State Technical University); V. A. Pendyurin (Voronezh State Technical University); I. V. Popov (Voronezh State Technical University); Sergey Mihajlovich Fedorov (Voronezh State Technical University);

13:10 A Novel Method for Decoupling and Broadening Beamwidth of Phased Array Antenna
Guang-Wei Yang (Queen Mary University of London);

13:25 A Broadband Planar Folded Patch Antenna with Omnidirectional Radiation
Wei Shi (National University of Defense Technology); Shiyan Yu (Nanjing Telecommunication Technology Research Institute); Bin Liu (National University of Defense Technology);

13:35 An Overview of Metamaterial Absorbers and Their Applications on Antennas
Peng Mei (Aalborg University); Gert Froland Pedersen (Aalborg University); Qi Liu (Hangzhou Dianzi University); Xian Qi Lin (University of Electronic Science and Technology of China); Shuai Zhang (Aalborg University);

13:50 Generation of Directive Sub-THz Beams by Modulated Metasurfaces
David González-Ovejero (Université de Rennes 1); Olivier de Sugasan (Université de Rennes 1); Xavier Morvan (Université de Rennes 1); Laurent Le Coq (Université de Rennes 1);

14:00 High-gain Metasurface Antenna with Low Profile
Kang Wang (Zhejiang University); Hao Gang Wang (Zhejiang University);

14:15 A Wideband Circularly Polarized Leaky-wave Antenna
Jingzheng Lu (Shanghai Jiao Tong University); Jun-Ping Geng (Shanghai Jiao Tong University); Weinan Gao (Shanghai Jiao Tong University); Da Su (Shanghai Jiao Tong University); Yangzhou Zhang (Shanghai Jiao Tong University); Jing Zhang (Shanghai Jiao Tong University); Chaofan Ren (Shanghai Jiao Tong University); Kun Wang (Shanghai Jiao Tong University); Han Zhou (Shanghai Jiao Tong University); Chong He (Shanghai Jiao Tong University); Xianling Liang (Shanghai Jiao Tong University); Ronghong Jin (Shanghai Jiao Tong University);

14:30 A Wideband and High-gain Waveguide Slot Array Loaded with an Anisotropic Metamaterial Layer
Jiashuai Xu (Xiamen University); Miao Zhang (Xiamen University); Christopher Pan (Yunshan Technologies Co., Ltd.); Qing Hao Liu (Duke University);

14:45 Electrically Small Huygens Source Antennas and Arrays: From Theory to Practice
Ming-Chun Tang (Chongqing University); Xiaoming Chen (Chongqing University); Zhentian Wu (Chongqing University); Ting Shi (Chongqing University); Richard W. Ziolkowski (University of Technology Sydney);

15:00 Miniaturized Metamaterial-based Antenna and Its Wideband Wide-angle Scanning Phased Array
Yan Li (Sun Yet-Sen university); Shaoqiu Xiao (Sun Yet-Sen university);

15:15 A Versatile Slot Antenna Fed by a 2 × 2 Reconfigurable Network
Weinan Gao (Shanghai Jiao Tong University); Jun-Ping Geng (Shanghai Jiao Tong University); Kun Wang (Shanghai Jiao Tong University); Jingzheng Lu (Shanghai Jiao Tong University); Nian Chen (Shanghai Jiao Tong University); Han Zhou (Shanghai Jiao Tong University); Chaofan Ren (Shanghai Jiao Tong University); Silei Yang (Shanghai Jiao Tong University); Rong-Hong Jin (Shanghai Jiao Tong University); Xianling Liang (Shanghai Jiao Tong University);
**Session 3P14c**

**Microstrip Antennas, Array Antennas, Theory and Radiation**

**Wednesday PM, April 27, 2022**

**Room 14 - Mingdu Hall 5**

Chaired by Yingsong Li, Ren Wang

16:00 Antipodal Vivaldi Antenna for On-chip Millimeter-wave Wireless Communication
Ming-An Chung (National Taipei University of Technology); Bing-Ruei Chuang (National Taipei University of Technology);

16:10 Design of Element-rotated Linear, Planar and Conformal Arrays with Shaped Power Patterns
Yanhai Liu (University of Electronic Science and Technology of China); Ming Li (University of Electronic Science and Technology of China); Shu-Lin Chen (University of Technology Sydney (UTS)); Jun Hu (University of Electronic Science and Technology of China); Y. Jay Guo (University of Technology Sydney (UTS));

16:25 Wide-beam Vivaldi Antenna
Jinjing Ren (Southeast University); Zhongguan Yu (Southeast University); Qi Tang (Science and Technology on Near-surface Detection Laboratory);

16:40 A New Method for Improving Isolation of GPR Antenna
Xuchun Shang (Shanghai Jiao Tong University); Bin Yuan (Shanghai Jiao Tong University); YeXiao Gu (Suzhou Kehongfangyuan Electronics Technology Co., Ltd); Wenzuan Shi (Shanghai Jiao Tong University); Jinmin Qi (Shanghai Jiao Tong University);

16:55 Wide-angle Scanning Tightly Coupled Dipole Array with a Wide Band from 4.72 GHz to 22.22 GHz
Tian-Qi Zhao (University of Electronic Science and Technology of China); Bing-Zhong Wang (University of Electronic Science and Technology of China); Changhui Hu (Southwest Jiaotong University); Ren Wang (University of Electronic Science and Technology of China);

17:10 Electronically Controlled Leaky-wave Antenna with Fixed-frequency Scanning Capability
Si-Yuan Gao (University of Electronic Science and Technology of China); Bing-Zhong Wang (University of Electronic Science and Technology of China); Ren Wang (University of Electronic Science and Technology of China);

17:25 GEO SAR Antenna Three-dimensional Pointing Error Calibration Method Based on Two Ground Receivers
Kaichu Xing (Aerospace Information Research Institute, Chinese Academy of Science); Jun Hong (Institute of Electronics, Chinese Academy of Science); Yu Wang (Aerospace Information Research Institute, Chinese Academy of Science); Tian Qi (Aerospace Information Research Institute, Chinese Academy of Science); Shaoyan Du (Aerospace Information Research Institute, Chinese Academy of Science);

17:40 Millimeter-wave Slot Array Antenna with Low Sidelobe Levels for Foreign Object Debris
Jianhong Chen (Beijing Institute of Technology); Cheng Jin (Beijing Institute of Technology); Lingwen Kong (Beijing Institute of Technology); Binchao Zhang (Beijing Institute of Technology); Qihao Le (Beijing Institute of Technology); Pengyu Zhang (Beijing Zhongyan Satcom Technology co., ltd); Buning Tian (Beijing Institute of Technology); Hangcheng Han (Beijing Institute of Technology);

17:55 Non-periodic and Conformal Antenna Arrays Design Using Parallel Evolutionary Algorithm Based on GA and PSO
Maxim A. Dubovitskiy (National Research University “Moscow Power Engineering Institute”); Mikhail S. Mikhailov (National Research University “Moscow Power Engineering Institute”);

**Session 3P15a**

**SC1: Advances of Numerical Techniques in Computational Electromagnetics 2**

**Wednesday PM, April 27, 2022**

**Room 15 - Mingdu Hall 6**

Organized by Mei Song Tong, Yunjing Zhang, Chunxia Yang

Chaired by Mei Song Tong, Yunjing Zhang

13:00 A Quasi-Helmholtz Decomposition Method for Solving Surface Integral Equations Involved in Electromagnetic Scattering Problems
Ting Zang (Shanghai Jiao Tong University); Gaobiao Xiao (Shanghai Jiao Tong University); Shifeng Huang (Shanghai Jiao Tong University); Rui Liu (Shanghai Jiao Tong University);

13:15 A 6 × 24 Dual-polarized Low-sidelobe Corporate-fed Horn Array with Cross-type E-plane Waveguide Power Dividers
Zewei Li (Xiamen University); Yaziang Wu (Xiamen University); Miao Zhang (Xiamen University); Jiro Hirokawa (Tokyo Institute of Technology); Qing Hao Liu (Duke University);

13:30 An Elementwise Stability Estimation Algorithm for Explicit Discontinuous Galerkin Time Domain Method
Zhen Guo Ban (Xidian University); Yan Shi (Xidian University);
13:40 A Low-Memory DGTD and FETD Method for Electromagnetic-circuit-thermal Co-simulation
Pan Pan Wang (Xidian University); X. Y. Liu (Xidian University); Z. S. Xue (Xidian University); Huan Huan Zhang (Xidian University);

13:50 An Effective Extraction Method of Common Characteristic Basis Functions for 3D Rough Surfaces Scattering Computation
Jiaxin Wan (Fudan University); Hongxia Ye (Fudan University); Mei Song Tong (Tongji University);

14:05 Accurate Modeling and Analysis for Electromagnetic Problems with Changeable Geometries and Materials
Ze Yuan Lu (Tongji University); Xiao Jiao Huang (Tongji University); Li Zhang (Tongji University); Mei Song Tong (Tongji University);

14:20 Application of Equivalent Principle Algorithm in Modeling of Radio Wave Propagation
Liangshuai Guo (Tsinghua University); Maokun Li (Tsinghua University); Fan Yang (Tsinghua University); Shenheng Xu (Tsinghua University);

14:35 Simulation of 2-D Electromagnetic Scattering from Bloch (Floquet) Periodic Structures in Layered Media by Using the Spectral-element Spectral-integral Method
Jianwen Wang (Xiamen University); Jie Liu (Xiamen University); Lixiao Wang (Xiamen University); Qing Huo Liu (Duke University);

14:50 Higher Order Impedance Boundary Condition with Integral Method for the Scattering Problem in Electromagnetism
Christian Daveau (University CY Cergy Paris); Molka Kacem (University CY Cergy Paris); Soumaya Oueslati (University CY Cergy Paris); Stefan Bornhofen (University CY Cergy Paris); Brice Naisseline (University of CY Cergy Paris);

15:00 Fault Correction of Tunable Metasurfaces for Radar Cross Section Reduction
Jing Rui Wang (Tongji University); Yun Jing Zhang (Soochow University); Mei Song Tong (Tongji University);

15:15 A Novel Electromagnetic Reconstruction Algorithm for Dielectric Objects Using Neural Networks
Da Wang (Shanghai Normal University); Chanzia Yang (Shanghai Normal University); Jian Zhang (Tongji University); Mei Song Tong (Tongji University);

Session 3P15b
New Constructive Methods for Solving Boundary Value Problems of Electrodynamics and Digital Signal Processing

Wednesday PM, April 27, 2022
Room 15 - Mingdu Hall 6
Organized by Alexander Nikolaevich Bogolyubov, Victor Filippovich Kravchenko
Chaired by Alexander Nikolaevich Bogolyubov

16:00 Fundamental Properties of Metamaterial Interface’s Waves: Definitions, Classification, and Numerical Study
Yuriy K. Sirenko (O. Ya. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine & V. M. Karazin Kharkiv National University); Sei Seitenovich Sautbekov (Al-Farabi Kazakh National University); Meray S. Sautbekova (Al-Farabi Kazakh National University); Petro Nikolaevich Melezhik (O. Ya. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine); Anothiy W. Yashina (O. Ya. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine);

16:10 Long-lived Bloch Wave in All-dielectric Photonic Crystal
Alexander Nikolaevich Bogolyubov (M. V. Lomonosov Moscow State University); Zhanna O. Dombrovskaya (M. V. Lomonosov Moscow State University); A. D. Nikitchenko (M. V. Lomonosov Moscow State University);

16:20 Influence of the Earth’s Ionosphere on the Polarization Characteristics of Radio Waves in the Megahertz Range
Dobroslav P. Egorov (Kotel’nikov Institute of Radio Engineering and Electronics of RAS); Andrew S. Kryukoysky (Russian New University); Boris Georgievich Kutzuz (Kotel’nikov Institute of Radio Engineering and Electronics of RAS); Dmitriy S. Lukin (Russian New University); Dmitry V. Rastyagoev (Russian New University);

Session 3P15c
SC1: Progress of the Time-domain Methods and Applications

Wednesday PM, April 27, 2022
Room 15 - Mingdu Hall 6
Organized by Hong-Xing Zheng, Xiang-Hua Wang
Chaired by Hong-Xing Zheng
16:40 Extension of the LOD-FDTD Method to Accurately Investigate the Transmission Properties of the Magnetized Graphene-based Structures
Jian-Yun Gao (Tianjin Vocational Institute); Xiang-Hua Wang (Tianjin University of Technology and Education);

16:55 Circuit Modeling and Analysis of on Chip Interconnection Structure in RRAM-based Crossbar Array Based Using Neuron Spike Model
Lidan Fang (China Jiliang University); Yan Li (China Jiliang University); Shaojie Xu (China Jiliang University); Ning Jin (China Jiliang University); Er Ping Li (Zhejiang University — UIUC Institute);

17:10 A Soft Source Implementation Technique on Face-centered Cubic Grids for FDTD Method
Xinsong Wang (Beihang University); Guangzi Chen (Beihang University); Xiang-Hua Wang (Tianjin University of Technology and Education); Wanch Du (Beihang University); Donglin Su (Beihang University);

17:25 Application of Fluctuation Analysis to Biomedical Signals Using Empirical Mode Decomposition
Dmitry M. Klionskiy (Saint Petersburg Electrotechnical University “LETI”);

17:35 Fundamental Implicit FDTD Implementation with Crank-Nicolson Scheme for Electromagnetic Analysis
Haolin Jiang (Nanjing University of Information Science and Technology); Peiyu Wu (Beihang University); Yong-Jun Xie (Beijing University of Aeronautics and Astronautics);

13:40 Cylindrically Symmetric DC and AC Magnetic Field Computation and Implementation with FreeFem++
Yanpu Zhao (Wuhan University);

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Session 3P16b
SC1: Advances in Computational Methods for Electromagnetic Scattering and Inverse Scattering

Wednesday PM, April 27, 2022
Room 16 - Mingdu Hall 7
Organized by Xiao-Min Pan, Yang G. Liu
Chaired by Ping Li, Bo O. Zhu, Yang G. Liu

14:00 Numerically Stable Formulas of the Spherically Layered Media Theory for Small Arguments and Large Orders
Bo O. Zhu (Nanjing University);

14:15 Study on Near-field Electromagnetic Scattering Characteristics of Targets Irradiated by Antenna Beam
Ce Guo (Xidian University); Lizix Guo (Xidian University); Chonggang Jia (Xidian University); Guangbin Guo (Xidian University);

14:30 Homogenization Based Fast Computation of Electromagnetic Scattering by Inhomogeneous Objects with Honeycomb Structures
Xiao-Wei Yuan (Beijing Institute of Technology); Ming Jiang Gu (Beijing Institute of Technology); Zeng Yang (Beijing Institute of Technology); Ming-Lin Yang (Beijing Institute of Technology); Xin-Qing Sheng (Beijing Institute of Technology);

14:45 Ionospheric Influence on Space-based Target Scattering Problems
De-Hua Kong (Peking University); Shao-Xin Huang (Peking University); Xio-Yang He (Peking University); Mingyao Xia (Peking University);

15:00 An Efficient Hybrid Technique of FEBI and PO for Scattering from Inhomogeneous Structures with Large Platform
Yang G. Liu (Institute of Applied Physics and Computational Mathematics); Chao-Fu Wang (National University of Singapore); Haijing Zhou (Institute of Applied Physics and Computational Mathematics);

15:15 Terahertz Scattering Characteristics of Rough Metallic and Dielectric Corner Reflectors
Xiaoao Zhang (Xi’an University of Post & Telecommunications); Xian Su (China Academy of Space Technology); Jichao Yang (China Academy of Space Technology);

16:00 A Hybrid Robin Transmission Condition and Discontinuous Galerkin Method in Solving Electromagnetic Wave Equation
Shi-Min Liu (Shanghai Jiaotong University); Kaikun Niu (Anhui University); Zhi-Xiang Huang (Anhui University); Ping Li (Shanghai Jiao Tong University);
16:20 Augmented Surface Integral Equations for Low-frequency Modeling of Composite Objects
Li Zhang (Tongji University); Mei Song Tong (Tongji University);

Session 3P16c
Computational Electromagnetics, EMC, and Hybrid Methods

Wednesday PM, April 27, 2022
Room 16 - Mingdu Hall 7
Chaired by Haitao Liu, Na Liu

16:35 Multi-scale Numerical Modeling of Nanosystems Based on Finite Element Method Analysis Applied to Near-field Microwave Impedance Microscopy
Diego Tami (Universidade Federal de Minas Gerais); Douglas A. A. Ohlberg (Universidade Federal de Minas Gerais); Jhonattan C. Ramirez (Universidade Federal de Minas Gerais); Gilberto Medeiros-Ribeiro (Universidade Federal de Minas Gerais); Cássio Gonçalves do Rego (Universidade Federal de Minas Gerais);

16:45 Coordinate Transformation Method for Modeling General Three-dimensional Photonic Structures with Curved Boundaries
Haitao Liu (Nankai University);

17:00 The Improvement of PML Absorption for Hyperbolic Media
Juntao Dong (Xiamen University); Sicen Tao (Xiamen University); Chengyang Wang (Xiamen University); Guoziong Cai (Xiamen University); Huanyang Chen (Xiamen University); Na Liu (Xiamen University);

17:15 Development of High-Q Sensor for NQR Detection of Dangerous Materials
Sultonazar Manaduzizoe (Gebze Technical University); N. Gazale Çağıcıoğlu (Gebze Technical University); Rian Ryzhov (Gebze Technical University); Georgy Moz Zhukhin (Gebze Technical University); Bulat Rameev (Gebze Technical University);

17:25 Effect of the Arrangement Structure of Nickel Fibers in Electromagnetic Shielding Fabric on Its Wave Absorbing Performance
Yayan Li (Zhongyuan University of Technology); Zhe Liu (Xi’an Polytechnic University); Jiajia Duan (Zhongyuan University of Technology); Sijia He (Xi’an Polytechnic University); Ying Wei (Xi’an Polytechnic University); Xiuchen Wang (Xi’an Polytechnic University);

17:40 Simulator of UHF Signal of the Partial Discharge
Tomas Hejtmanek (Brno University of Technology); Petr Drexler (Brno University of Technology); M. Skoda (Brno University of Technology);

17:50 Electromagnetic-circuital-thermal Multiphysics Simulation of Microwave Amplifier
Zheng Lang Jia (Xidian University); Z. S. Xue (Xidian University); X. Y. Liu (Xidian University); Huan Huan Zhang (Xidian University);

18:00 Temporal Simulation of Arbitrarily Curved Metasurface with GSTCs Based DGD Method
Qiang Ren (Beihang University); Shaowen Tian (Beihang University); Kaiming Wu (Beihang University);