

20**16**

PHOTONICS ASIA

**TECHNICAL
PROGRAM**

**EXHIBITION
GUIDE**

WWW.SPIE.ORG/PA

Beijing International Convention Center,
Beijing, China

Conferences: 12–14 October 2016

SPIE.



Supported by:

China Association for Science
and Technology (CAST)

National Natural Science
Foundation, China (NSFC)

PHOTONICS ASIA EXHIBITION

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LISTING

Respected Exhibitors and Guests,

As Asia's leading event in laser, optics and photonics, PHOTONICS ASIA 2016 has been organized by the Chinese Optical Society (COS) and the International Society for Optics and Photonics (SPIE). This exhibition will be supported by Messe Muenchen Shanghai Co.,Ltd. as exhibition organizing partner will offer a very valuable exhibition opportunity for your products in one of the world's largest economy and rapidly expanding market.

On behalf of organizers and exhibitors we are looking forward to seeing you at the exhibition and exhibition technical seminar and wish all of you a happy and wonderful stay at Beijing!

2016 Exhibition Dates and Hours:

Exhibitor Registration and Move-in

Tuesday, 11 October, 15:00pm to 22:00 pm

Exhibition Time

Wednesday to Thursday, 12-13 October, 9:00 am to 18:00 pm

Friday, 14 October, 9:00 am to 13:30 pm

Exhibitor Technical Seminar

Wednesday to Friday, 12-14 October, 13:00 pm to 13:30 pm

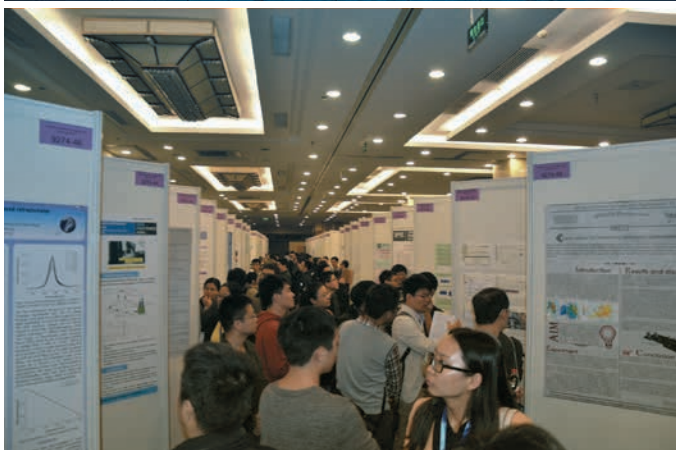
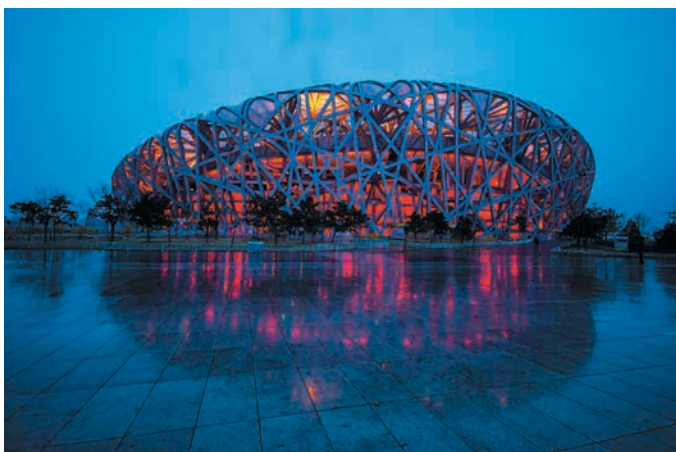


Exhibition Organizing Partner:



Main Exhibitors (Alphabetical):





SPIE.

SPIE is the international society for optics and photonics, a not-for-profit organization founded in 1955 to advanced light-based technologies. The Society serves nearly 225,000 constituents from approximately 150 countries, offering conferences, continuing education, books, journals, and a digital library in support of interdisciplinary information exchange, professional growth, and patent precedent. SPIE provided \$3.2 million in support of education and outreach programs in 2013.



Founded in 1979, The Chinese Optical Society (COS) was a nongovernmental organization of scientific and technological workers in the field of optics and optical engineering. COS was organized to advance the technology development of optics and promote the communication of scientists, engineers, educators and students.

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COS | **ASIA**

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COS—Chinese Optical Society

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Wei Xiong, Chinese Optical Society (China)

Welcome

SPIE/COS Photonics Asia showcases the power of photonics technologies and applications. Photonics and optical science and engineering are becoming increasingly important as society gradually moves from electron-based to photon-based technologies and industries. Specifically, photonics is becoming increasingly important in health care and medicine, nanotechnologies, environment and energy, manufacturing, information systems and communications, displays, defense and aerospace, entertainment and multimedia, energy and green lighting, etc. China is the fastest growing market for the global optics and photonics industries.

Since 2001, SPIE/COS Photonics Asia has been the must-attend event for the global photonics community who need to keep current with what is happening in the Asian optics and photonics industries, and for developing new partnerships and new markets within and around China. Many Asian countries are investing heavily to transition from microelectronics-dominated to photonics-based industries. Asian economies are becoming more and more important to the health of the global economy in the 21st century, and Asian Photonics markets are rapidly expanding. SPIE/COS Photonics Asia 2016 will provide a unique forum for the reporting and review of new developments in photonics and optoelectronics ranging from material and devices to advanced systems and applications. Cutting-edge technologies, applications, product announcements and demonstrations, market analysis and investment opportunities will be discussed in various conference sections and product exhibitions. SPIE/COS Photonics Asia includes a plenary session with visionary speakers, parallel technical sessions, a social banquet, and an interactive poster session/reception.

We extend our sincere greetings to you, and hope that your experience at SPIE/COS Photonics Asia 2016 is a very exciting and rewarding experience.

GENERAL CHAIRS:



Robert Lieberman
SPIE President,
Lumoptix (USA)



Guangcan Guo
COS President,
University of Science
and Technology of
China (China)



PLENARY EVENTS

Opening Ceremony and Plenary Session

Wednesday 12 October 2016 • 9:00 to 12:00
Location: Conv. Hall No. 2, Level 2

9:00:
Opening Ceremony

9:20:
SPIE Fellow Recognition Ceremony

9:25:
**Wang Daheng Award Ceremony and
COS Fellow Recognition Ceremony**

9:40:
**Freeform Optics Opening up a Bright Future for
Imaging Instrumentation**



Jannick Rolland

R.E. Hopkins Ctr. for Optical Design and Engineering (USA), NSF/IUCRC Ctr. for Freeform Optics (USA), and The Institute of Optics, Univ. of Rochester (USA)

Abstract: Freeform surfaces in optical system design have already transformed the lighting industry and have started to revolutionize the imaging industry following recent advances that empower innovation in optical instrumentation. In the context of imaging, an historical highlight about freeform optics will be followed with a discussion of key concepts and discoveries in optical aberration theory that are currently guiding the design of freeform imaging systems for manufacturing with nanometer-class accuracy. Freeform manufacturing, enabled by maturing techniques that include polishing, ion beam finishing, diamond machining, milling, and magnetorheological finishing, will be discussed. Building on simultaneous theoretical as well as rapid technical advances across industries from design to assembly, three design case studies will be discussed to highlight the emerging benefits of freeform optics in imaging systems as well as the design for manufacture process. With the emergence of high definition displays and sensors, together with the constant quest for more compact and higher performance optical imaging technologies across a wide range of applications, freeform optics opens the path for a rich space of solutions that will enable the science of tomorrow.

Biography: **Jannick Rolland** is the Brian J. Thompson Professor of Optical Engineering at the Institute of Optics at the University of Rochester and Director of the NSF I/UCRC Center for Freeform Optics (CeFO). She also directs of the R.E. Hopkins Center for Optical Design and Engineering and the ODALab that synergize with CeFO. Passionate about translating inventions out of the research laboratory to benefit society, she co-founded LighTopTech Corp., a startup focused on advanced optical metrology, where she serves as Chief Technology Officer. She earned an Optical Engineering Diploma from the Institut D'Optique Théorique et Appliquée in France and an MS and PhD in Optical Science from the University of Arizona. Professor Rolland is a Fellow of OSA, SPIE, and NYSTAR, and she served on the Editorial Board of Presence (MIT Press) (1996-2006) as well as Associate Editor of Optical Engineering (1999-2004) and IEEE publications (2007-2016). She was a Director at Large on the OSA Board of Directors (2010-2013) and currently serves as Topical Editor of Optics Letters. She is the recipient of the 2014 David Richardson Medal.

10:20: **Tea/Coffee Break**

10:40:

**Innovative Large Wide field Astronomical Telescope:
LAMOST**



Xiangqun Cui

Nanjing Institute of Astronomical Optics and Technology/
National Astronomical Observatory, Chinese Academy of
Sciences (China)

Abstract: LAMOST, Large Sky Area Multi-Object Fiber Spectroscopic Telescope, is one of the most innovative telescope configurations in the world with the both wide field-of-view and the large aperture, four-thousand optical fibers, and sixteen spectrographs equipped. LAMOST has the capability to observe and capture tens of millions of spectra of celestial objects such as stellar, galaxies, and quasars.

Biography: **Cui Xiangqun** is an academican of the Chinese Academy of Sciences, and also an academican of the Third World Academy of Science, the 12th president of Chinese Astronomical Society, the former director of NIAOT. She got her MSC and PhD in Purple Mountain Observatory, CAS in China. During the years of 1985 to 1986 she visited and worked in Jodrell Bank Observatory in England for radio telescopes, and from 1986 to 1994 she worked in European Southern Observatory (ESO) in Germany for the VLT project, which is a 4x8.2 meter telescope array located at the Chile Paranal. From 1994 to the present she has worked for Large Sky Area Multi-Object Fiber Spectroscopic Telescope (LAMOST), for which she successfully led LAMOST project to be built, which is one of the most innovative telescope configurations in the world. Cui resolved a series of the technical challenge problems in LAMOST especially in active optics: This effort not only helped realize the innovative conceptualization of the LAMOST project, but also helped initiate new progress in active optics and large optical telescopes. Cui Xiangqun is also one of the initiators for Chinese Antarctic astronomy at Dome A, and the leader of Antarctic telescopes. She has been working for Chinese Thirty-meters class extremely large telescope since 2000, to prepare to build a next-generation optical telescope in China.

11:20:

Quantum Dot Photonics: From Science to Practical Implementation



Yasuhiko Arakawa

Institute of Industrial Science, The Univ. of Tokyo (Japan)
and Institute for Nano Quantum Information Electronics, The
Univ. of Tokyo (Japan)

Abstract: Recent advances in growth and physics of quantum dots have led to the commercialization of quantum dot lasers for telecommunications and other applications. Moreover, single quantum dots coupled to photonic crystal nanocavities have enabled the investigation of fundamental physics such as solid-state cavity quantum electrodynamics (QED). In this presentation, we discuss the current state of the art of quantum dot lasers, and also future prospects including their application to hybrid silicon photonics and the development of ultra-small nanolasers. We also describe the demonstration of a single photon emission from a III-Nitride nanowire-based quantum dot operating above room temperature.

Biography: **Yasuhiko Arakawa** received his BE, ME, and PhD degree in Electronics and Electrical Engineering from the University of Tokyo in 1975, 1977 and 1980, respectively. In 1980, he joined the University of Tokyo as an assistant professor and became a full professor in 1993. He is currently the director of Research Center for Photonics Electronics Convergence, Institute of Industrial Science and the director of Institute for Nano Quantum Information Electronics, the University of Tokyo. He served as a member of Science Council of Japan (2008-2014), a project leader of FIRST Program (2011-2014), and the President of International Commission of Optics (ICO) (2014-2017). He has been awarded Fellows of IEEE, OSA, JSAP, and IEICE. His major research fields include physics, growth, and photonics applications of the quantum dot. In 2015, he contributed to various activities of International Year of Light and Light-based Technology (IYL2015). Prof. Arakawa has received several major awards including Leo Esaki Award (2004), IEEE/LEOS William Streifer Award (2004), Fujiwara Award (2007), Prime Minister Award (2007), Medal with Purple Ribbon (2009), IEEE David Sarnoff Award (2009), C&C Award (2010), Welker Award (2011), and OSA Nick Holonyak Jr. Award (2011).

Photonics Asia Banquet

Wednesday 12 October 2016 • 18:30 to 21:00
 Location: Banquet Hall, 2nd Floor,
 Beijing North Star Continental Grand Hotel

Join us for the official SPIE/COS Photonics Asia banquet. Banquet tickets are NOT included with the price of registration. Tickets can be purchased at the registration desk on site.



Poster Session

Thursday 13 October 2016 • 13:00 to 14:30
 Location: Conv. Hall No. 4, Level 1

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors can set up presentations between 10:00 and 12:00. Posters that are not set up by 12:00 will be considered a No-Show and will not be published in the conference Proceedings. Poster presentation guidelines can be viewed at <http://spie.org/PAPosterGuidelines>.

PHOTONICS ASIA EXHIBITION



Don't miss your chance to speak face-to-face with suppliers.

As Asia's leading event in lasers, optics, and photonics, Photonics Asia 2016 has been organized by the COS and SPIE. We invite you to walk the floor in Beijing and see first-hand the latest technologies related to optics and photonics technologies at the Photonics Asia 2016 Exhibition. This exhibition will again be supported by Messe Muenchen Shanghai Co., Ltd. as exhibition organizing partner.

EXHIBITION DATES AND HOURS

Tuesday, 11 October	
Exhibitor Registration and Move-in	15:00 to 22:00
Wednesday to Thursday, 12-13 October	
Exhibition	9:00 to 18:00
Friday, 14 October	
Exhibition	9:00 to 13:30
Wednesday to Friday, 12-14 October	
Exhibition Technical Seminar	13:00 to 13:30

FEATURED TECHNOLOGIES:

- Lasers: High-Power, Semiconductor
- Optics in Healthcare and Biomedical Optics
- Optics: Holography, Diffractive, Quantum and Nonlinear
- Optoelectronics: Devices and Integration, Imaging and Multimedia Technology
- Optical Design and Testing; Metrology and Applications
- Advanced Sensor Systems and Applications
- Infrared, Millimeter Wave, and Terahertz Technologies
- Nanophotonics and Micro/Nano Optics
- Plasmonics
- Real-time Photonic Measurements, Data Management and Processing

EXHIBITION ORGANIZING PARTNER:

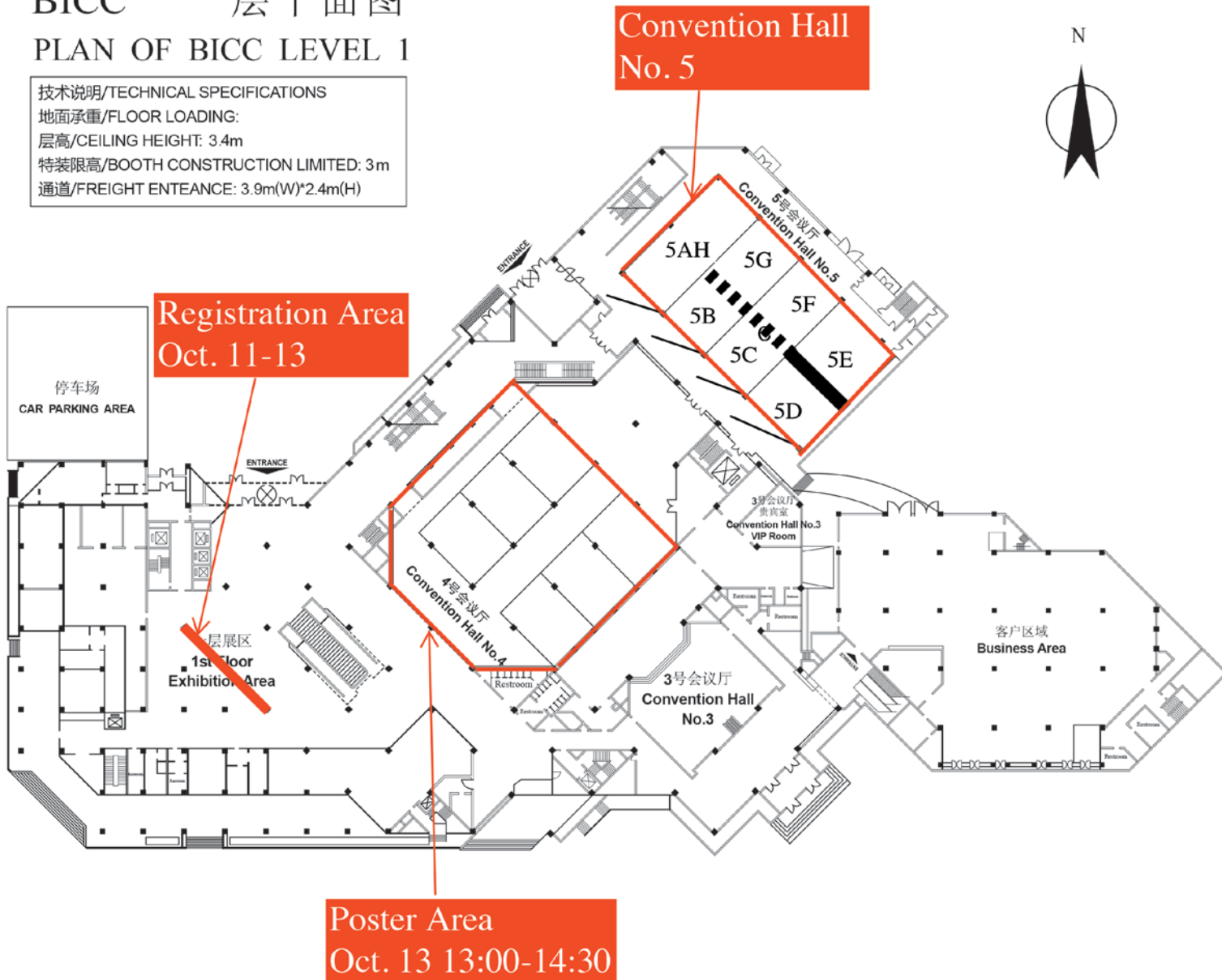




BEIJING INTERNATIONAL CONVENTION CENTER FLOOR PLANS

BICC 一层平面图 PLAN OF BICC LEVEL 1

技术说明/TECHNICAL SPECIFICATIONS
 地面承重/FLOOR LOADING:
 层高/CEILING HEIGHT: 3.4m
 特装限高/BOOTH CONSTRUCTION LIMITED: 3m
 通道/FREIGHT ENTRANCE: 3.9m(W)*2.4m(H)

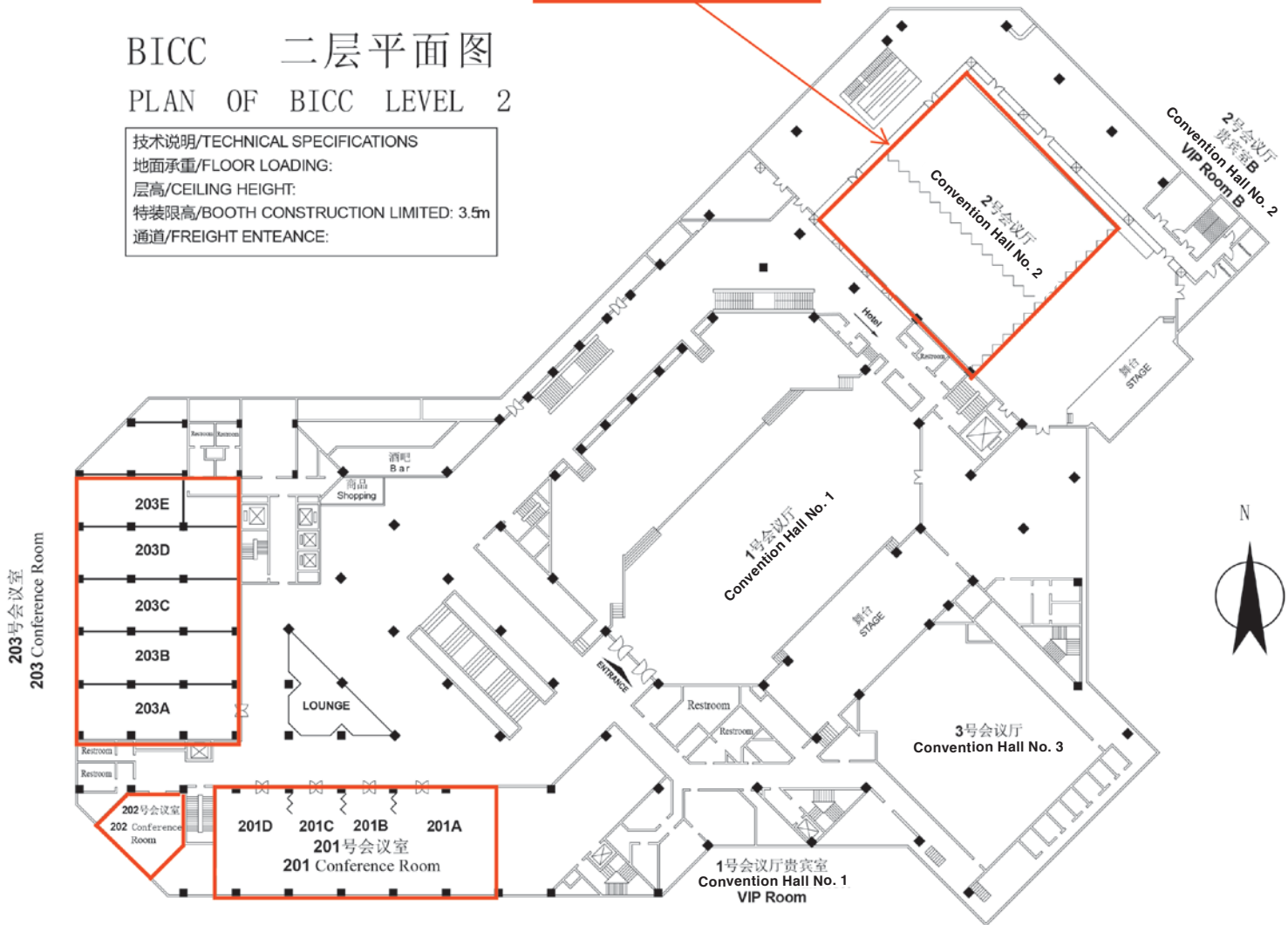


CONF #	CONF TITLE	ROOM ASSIGNMENT
	Opening Ceremony	Convention Hall No.2
10016	High-Power Lasers and Applications VIII	5D
10017	Semiconductor Lasers and Applications VII	203A
10018	Advanced Laser Processing and Manufacturing	202
10019	Optoelectronic Devices and Integration VI	201B
10020	Optoelectronic Imaging and Multimedia Technology IV	203B
10021	Optical Design and Testing VII	201A
10022	Holography, Diffractive Optics, and Applications VII	5C+5F
10023	Optical Metrology and Inspection for Industrial Applications IV	201D
10024	Optics in Health Care and Biomedical Optics VII	5B+5G
10025	Advanced Sensor Systems and Applications VII	201C
10026	Real-time Photonic Measurements, Data Management, and Processing II	203C
10027	Nanophotonics and Micro/Nano Optics III	203D
10028	Plasmonics II	203E
10029	Quantum and Nonlinear Optics IV	5E
10030	Infrared, Millimeter-Wave, and Terahertz Technologies IV	5A+5H

Opening Ceremony
Plenary Talk
Oct. 12 Morning

BICC 二层平面图
PLAN OF BICC LEVEL 2

技术说明/TECHNICAL SPECIFICATIONS
地面承重/FLOOR LOADING:
层高/CEILING HEIGHT:
特装限高/BOOTH CONSTRUCTION LIMITED: 3.5m
通道/FREIGHT ENTEANCE:



DAILY EVENTS SCHEDULE

TIME	WEDNESDAY • 12 OCTOBER 2016							
9:00 to 18:00	EXHIBITION							
9:00 to 12:00	OPENING CEREMONY AND PLENARY SESSION							
12:00 to 13:30	Lunch/Exhibition Break							
	CONF. 10016	CONF. 10017	CONF. 10018	CONF. 10019	CONF. 10020	CONF. 10021	CONF. 10022	
Afternoon	SESSION 1: Laser Applications	SESSION 1: VCSELS		SESSION 1: Integrated Optics and Photonic Integrated Circuits	SESSION 1: Computational Imaging I	SESSION 1: Novel Optical System Design	SESSION 1: Digital Holography I	
	SESSION 2: Other Lasers and Applications	SESSION 2: Semiconductor Lasers I		SESSION 2: Devices for Photonic Applications I	SESSION 2: 3D Image/Video System	SESSION 2: Imaging and Display Systems	SESSION 2: Digital Holography II	
THURSDAY • 13 OCTOBER 2016								
Morning	SESSION 3: High Power Lasers I	SESSION 3: Microwave Photonics I	SESSION 1: Advanced Laser Processing and Manufacturing I	SESSION 3: Emerging Optoelectronic Applications	SESSION 3: Computational Imaging II	SESSION 3: Design and Fabrication Methods	SESSION 3: 3D Holographic Imaging and Displays I	
	SESSION 4: High Power Lasers II	SESSION 4: Microwave Photonics II	SESSION 2: Advanced Laser Processing and Manufacturing II	SESSION 4: Devices for Photonic Applications II	SESSION 4: Image Analysis/Retrieval	SESSION 4: Freeform Optics and Optimization	SESSION 4: 3D Holographic Imaging and Displays II	
13:00 to 14:30	POSTER SESSION							
Afternoon	SESSION 5: Fiber Lasers	SESSION 5: Semiconductor Lasers II	SESSION 3: Advanced Laser Processing and Manufacturing III	SESSION 5: Optical Fibers	SESSION 5: Optics	SESSION 5: Core Development and Illumination Optics	SESSION 5: Diffraction in Nanostructures	
		SESSION 6: Laser Applications I					SESSION 6: Image/Video Processing	SESSION 6: Microscopy and Interferometry
FRIDAY • 14 OCTOBER 2016								
							Sessions 7, 8 run currently with 9, 10	
Morning	SESSION 6: High Field Laser Physics	SESSION 7: Laser Applications II		SESSION 6: Photonic Materials and Devices/ Detectors I			SESSION 7: Optical Metrology	SESSION 9: Computational Holography I
	SESSION 7: Ultrafast Lasers	SESSION 8: Laser Applications III		SESSION 7: Photonic Materials and Devices/ Detectors II			SESSION 8: Applications	SESSION 10: Computational Holography II

DAILY EVENTS SCHEDULE

TIME	WEDNESDAY • 12 OCTOBER 2016								
9:00 to 18:00	EXHIBITION								
9:00 to 12:00	OPENING CEREMONY AND PLENARY SESSION								
12:00 to 13:30	Lunch/Exhibition Break								
	CONF. 10023	CONF. 10024		CONF. 10025	CONF. 10026	CONF. 10027	CONF. 10028	CONF. 10029	CONF. 10030
		Sessions 1, 2 run currently with 3, 4							
Afternoon	SESSION 1: Optical Metrology Methods I	SESSION 1: Advanced Optical Techniques for Clinical Medicine I	SESSION 3: Multimodal Biomedical Imaging	SESSION 1: Fiber Grating Sensors	SESSION 1: Microwave Photonics Signal Processing I	SESSION 1: Silicon Photonics	SESSION 1: Plasmonic Metamaterials	SESSION 1: Quantum Optics I	SESSION 1: THz Generation and Detectors I
	SESSION 2: Optical Metrology Methods II	SESSION 2: Advanced Optical Techniques for Clinical Medicine II	SESSION 4: Tissue Optics	SESSION 2: Optical Sensors Based on Mode Interference and Resonators	SESSION 2: Microwave Photonics Signal Processing II	SESSION 2: Lasers and Amplifiers	SESSION 2: Applications of Plasmonics I	SESSION 2: Quantum Optics II	SESSION 2: THz Generation and Detectors II
THURSDAY • 13 OCTOBER 2016									
Morning	SESSION 3: Optical Metrology Methods III	SESSION 5: Microscopy and Imaging I		SESSION 3: Distributed and Remote Sensors	SESSION 3: Optical Frequency Combs	SESSION 3: Integrated Optics and Surface Plasmons	SESSION 3: Theories of Plasmonics	SESSION 3: Quantum Optics III	SESSION 3: THz Spectroscopy I
	SESSION 4: Optical Metrology Methods IV	SESSION 6: Microscopy and Imaging II		SESSION 4: Methods for Sensor Interrogation and Data Processing	SESSION 4: Ultrafast Phenomenon	SESSION 4: Resonator and Nonlinear Photonics	SESSION 4: Theory and Experiments	SESSION 4: Quantum Optics IV	SESSION 4: THz Spectroscopy II
13:00 to 14:30	POSTER SESSION								
Afternoon	SESSION 5: Optical Metrology Methods V	SESSION 7: Nano/Biophotonics		SESSION 5: Chemical and Biological Sensors	SESSION 5: Optical Imaging and Microscopy	SESSION 5: Nanophotonics	SESSION 5: Applications of Plasmonics II	SESSION 5: Nonlinear Optics I	SESSION 5: THz Imaging
	SESSION 6: Optical Metrology Methods VI								SESSION 6: THz Devices and Propagation I
FRIDAY • 14 OCTOBER 2016									
Morning	SESSION 7: Optical Metrology Applications I	SESSION 8: Photon Therapeutics		SESSION 6: New Materials, Principles, Methods, and Modeling Related to Optical Sensing I	SESSION 6: Photonic Devices	SESSION 6: Waveguides and Passive Devices	SESSION 6: Quantum Plasmonics	SESSION 6: Nonlinear Optics II	SESSION 7: Infrared
	SESSION 8: Optical Metrology Applications II	SESSION 9: Biomedical Spectroscopy		SESSION 7: New Materials, Principles, Methods, and Modeling Related to Optical Sensing II	SESSION 7: Microwave Photonics for Measurement	SESSION 7: Quantum Optics	SESSION 7: Nanoscale Plasmonics	SESSION 7: Nonlinear Optics III	SESSION 8: THz Devices and Propagation II
									SESSION 9: Others

CONFERENCE 10016

LOCATION: ROOM 5D

Wednesday–Friday 12–14 October 2016 • Proceedings of SPIE Vol. 10016

High-Power Lasers and Applications VIII

Conference Chairs: **Ruxin Li**, Shanghai Institute of Optics and Fine Mechanics (China); **Upendra N. Singh**, NASA Langley Research Ctr. (USA); **Robert F. Walter**, Schafer Corp. (USA)

Program Committee: **Willy L. Bohn**, BohnLaser Consult (Germany); **Robert L. Byer**, Stanford Univ. (USA); **Dianyuan Fan**, Shanghai Institute of Optics and Fine Mechanics (China); **Tomoo Fujioka**, Tokai Univ. (Japan); **Mali Gong**, Tsinghua Univ. (China); **Shibin Jiang**, AdValue Photonics, Inc. (USA); **Do-Kyeong Ko**, Gwangju Institute of Science and Technology (Korea, Republic of); **Zejin Liu**, National Univ. of Defense Technology (China); **DeYuan Shen**, Fudan Univ. (China); **Yi Su**, Institute of Applied Electronics (China); **Shuangchun Wen**, Shenzhen Univ. (China); **Zuyan Xu**, Technical Institute of Physics and Chemistry (China); **Jianquan Yao**, Tianjin Univ. (China); **Tai Hyun Yoon**, Korea Univ. (Korea, Republic of); **Jirong Yu**, NASA Langley Research Ctr. (USA); **Heping Zeng**, East China Normal Univ. (China); **Xiaomin Zhang**, China Academy of Engineering Physics (China); **Shouhuan Zhou**, North China Research Institute of Electro-optics (China)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

- 9:00: **Opening Ceremony**
- 9:20: **SPIE Fellow Recognition Ceremony**
- 9:25: **Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony**
- 9:40: **Freeform optics opening up a bright future for imaging instrumentation (Plenary)**, Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]
- 10:20: **Tea/Coffee Break**
- 10:40: **Innovative large wide-field astronomical telescope: LAMOST (Plenary)**, Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]
- 11:20: **Quantum dot photonics: from science to practical implementation (Plenary)**, Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

SESSION 1

LOCATION: ROOM 5D WED 13:30 TO 15:20

Laser Applications

Session Chair: **Haiwen Cai**,
Shanghai Institute of Optics and Fine Mechanics (China)

- 13:30: **Progress on development of two-micron solid-state laser for space-based remote sensing of wind and carbon dioxide**, Upendra N. Singh, Mulugeta Petros, Tamer F. Refaat, Brian M. Walsh, Jirong Yu, Michael J. Kavaya, NASA Langley Research Ctr. (USA) [10016-1]
- 14:00: **High-power DUV lasers for material processing**, Toshio Mimura, kouji Kakizaki, Hiroaki Oizumi, Junichi Fujimoto, Takashi Matsunaga, Hakaru Mizoguchi, Gigaphoton Inc. (Japan) [10016-2]
- 14:20: **Research of high-power all-solid-state laser and its applications in laser cutting and laser processing**, Xue-Chun Lin, Institute of Semiconductors (China) [10016-3]
- 14:40: **Application of adaptive optics in laser weapon**, Dong Zhao, Xiaofang Zhang, Beijing Institute of Technology (China) [10016-4]
- 15:00: **Research of silicon solar cells' minority-carrier lifetime after irradiated by high-power laser**, Yu Zhang, Yunfei Li, Yanjie Li, Northwest Institute of Nuclear Technology (China); Guomin Zhao, Min Sun Chen, National Univ. of Defense Technology (China) [10016-5]
- Tea/Coffee Break Wed 15:20 to 15:50

SESSION 2

LOCATION: ROOM 5D WED 15:50 TO 18:00

Other Lasers and Applications

Session Chair: **Upendra N. Singh**,
NASA Langley Research Ctr. (USA)

- 15:50: **The research progress and application of single-frequency laser (Invited Paper)**, Haiwen Cai, Kang Ying, Dijun Chen, Fang Wei, Qing Ye, Zhengqing Pan, Fei Yang, Ronghui Qu, Shanghai Institute of Optics and Fine Mechanics (China) [10016-6]
- 16:20: **16.8W diode-pumped rubidium vapor laser by using Brewster angle structure**, Yannan Tan, Yimin Li, Chunyan Jia, Zhi Xu, Hu Shu, Jingwei Guo, Wan-fa Liu, Dalian Institute of Chemical Physics (China) [10016-7]
- 16:40: **Low-threshold and high-efficiency solar-pumped laser with Fresnel lens and a grooved Nd:YAG rod**, Zhe Guan, Changming Zhao, Suhui Yang, Yu Wang, Jieyao Ke, Fengbin Gao, Haiyang Zhang, Beijing Institute of Technology (China) [10016-8]
- 17:00: **Amplified spontaneous emission of a diode pumped cesium vapor laser with consideration of deleterious processes**, Guofei An, You Wang, He Cai, Shunyan Wang, Kepeng Rong, Hang Yu, Liangping Xue, Wei Zhang, Juhong Han, Hongyuan Wang, Jie Zhou, Southwest Institute of Technical Physics (China) [10016-9]
- 17:20: **Measurement of thermally-induced distortion inside an alkali vapor with a quasi-Hilbert-transform algorithm**, Wei Zhang, You Wang, He Cai, Juhong Han, Shunyan Wang, Kepeng Rong, Hang Yu, Liangping Xue, Guofei An, Hongyuan Wang, Jie Zhou, Southwest Institute of Technical Physics (China) [10016-10]
- 17:40: **Enhanced visible supercontinuum generation in seven-core photonic crystal fiber**, Xue Qi, Sheng-Ping Chen, Tong Liu, Jing Hou, National Univ. of Defense Technology (China) [10016-11]

THURSDAY 13 OCTOBER

SESSION 3

LOCATION: ROOM 5D THU 8:30 TO 10:00

High Power Lasers I

Session Chair: **Guoying Feng**, Sichuan Univ. (China)

- 8:30: **Progress on high-power slab lasers (Invited Paper)**, Qinjun Peng, Technical Institute of Physics and Chemistry (China) [10016-12]
- 9:00: **Pathway towards second harmonic generation of a 100J 10hz diode-pumped solid-state laser**, Jonathan Phillips, Saumyabrata Banerjee, Michael Fitton, Tristan Davenne, Paul D. Mason, Klaus G. Ertel, Thomas J. Butcher, Jodie M. Smith, Mariastefania De Vido, Oleg V. Chekhlov, STFC Rutherford Appleton Lab. (United Kingdom); Martin Divoky, HiLASE Ctr. (Czech Republic); Jan Pilar, Institute of Physics of the ASCR, v.v.i. (Czech Republic); Andrew Lintern, Chris J. Hooker, Cristina Hernandez-Gomez, STFC Rutherford Appleton Lab. (United Kingdom); Tomas Mocek, HiLASE Ctr. (Czech Republic); Chris Edwards, John L. Collier, STFC Rutherford Appleton Lab. (United Kingdom) [10016-14]
- 9:20: **An edge-pumped multislabs amplifier for Inertial Fusion Energy (IFE)**, Min Li, Xiaomin Zhang, Mingzhong Li, Xudong Cui, Zhenguo Wang, Xiongwei Yan, Xinying Jiang, Jiangang Zheng, China Academy of Engineering Physics (China) [10016-15]
- 9:40: **High-power far-infrared optical parametric oscillator with high beam quality (Invited Paper)**, Yingjie Shen, Chuanpeng Qian, Tongyu Dai, Xiaomin Duan, Baoquan Yao, Harbin Institute of Technology (China) [10016-17]
- Tea/Coffee Break Thu 10:00 to 10:30

SESSION 4

LOCATION: ROOM 5D THU 10:30 TO 12:00

High Power Lasers II

Session Chair: **Yan Feng**,
Shanghai Institute of Optics and Fine Mechanics (China)

- 10:30: **Title to be determined (Invited Paper)**, Guoying Feng, Sichuan Univ. (China) [10016-18]
- 11:00: **Large-aperture laser beam alignment system based on far-field sampling technique**, Jiachen Zhang, Shanghai Institute of Optics and Fine Mechanics (China) and Univ. of Chinese Academy of Sciences (China); Daizhong Liu, Xiaoping Ouyang, Jun Kang, Xinglong Xie, Shanghai Institute of Optics and Fine Mechanics (China); Lei Gong, Shanghai Institute of Optics and Fine Mechanics (China); Jian Zhou, Baoqiang Zhu, Shanghai Institute of Optics and Fine Mechanics (China) [10016-16]
- 11:20: **Correction of the phase distortion for high-power laser by freeform shape mirror**, Gang Wang, Science and Technology on Solid State Laser Lab. (China) [10016-20]
- 11:40: **Investigation on the formation of intense fringe near Kerr medium slab in nonlinear imaging**, Yonghua Hu, Yaoqiong Qiu, Xue Peng, Hunan Univ. of Science and Technology (China) [10016-21]
- Lunch/Exhibition Break Thu 12:00 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at
<http://spie.org/PAPosterGuidelines>.

- The influence of combined guiding effect on the beam quality in MOPA Nd:YVO₄ lasers**, Xingpeng Yan, Academy of Armored Force Engineering (China); Qiang Liu, Tsinghua Univ. (China); Xi Wang, Department of Information Engineering, Academy of Armored Forces Engineering (China) [10016-13]
- 63W output tandem-pumped thulium-doped silica fiber laser at 1980 nm**, Yingbin Xing, Wuhan National Lab. for Optoelectronics (China) [10016-24]
- Research on the effect of environment on the energy coupling coefficient of 45# steel under laser irradiation**, Xiangyu Zhang, Guomin Zhao, Minsun Chen, Tianyu Zhang, National Univ. of Defense Technology (China) [10016-36]
- The outgassing characteristic research of the silicone rubber in high-power laser system**, Qipeng Wu, Lanzhou Institute of Physics (China) [10016-46]
- Numerical modeling of three-level system in ytterbium-doped photonic crystal fiber laser**, Cheng Zhou, Univ. of Jinan (China) [10016-47]
- Structural-optical integrated analysis on the large aperture mirror with active supporting**, Zhiyuan Ren, jianqiang zhu, zhigang liu, Shanghai Institute of Optics and Fine Mechanics (China) [10016-48]
- Design and fabrication of transmission gratings with high diffraction efficiency for pulse compression**, Chaoming Li, Soochow Univ. (China) [10016-49]
- Analysis research on transmitting and attenuating characteristics of non-lethal laser weapon in the fog**, Ning Shan, The Chinese People's Armed Police Force (China) [10016-50]
- Coherent combining efficiency improvement based on a focused conformal projection fiber laser array**, Dong Zhi, Yanxing Ma, Xiaolin Wang, Pu Zhou, Lei Si, National Univ. of Defense Technology (China) [10016-51]
- Longitudinally-excited CO₂ laser with short-laser-pulse operating at high-repetition rate**, Jianhui Li, Kazuyuki Uno, Tetsuya Akitsu, Univ. of Yamanashi (Japan); Takahisa Jitsuno, Osaka Univ. (Japan) [10016-52]
- Vortex beam based more stable annular laser guide star**, Hongyan Wang, Ruiyao Luo, Wenda Cui, Lei Li, Quan Sun, Yulong He, Yu Ning, Xiaojun Xu, National Univ. of Defense Technology (China) [10016-53]
- Effect of nonlinearity saturation on hot-image formation in cascaded saturable nonlinear medium slabs**, Youwen Wang, Xiaohui Ling, Liezun Chen, Zhiping Dai, Shizhuan Lu, Hengyang Normal Univ. (China) [10016-54]
- Formation of hot image in an intense laser beam through a saturable nonlinear medium slab**, Youwen Wang, Xiaohui Ling, Shizhuan Lu, Zhiping Dai, Liezun Chen, Hengyang Normal Univ. (China) [10016-55]
- Design of high-efficiency broad-bandwidth unpolarized transmission grating for femtosecond laser**, Xinrong Chen, Chaoming Li, Soochow Univ. (China) [10016-56]
- Rippled area formed upon multi-pulse femtosecond laser ablation on silicon**, Zhiming Li, Jingsong Nie, Yuze Hu, Lei Wang, Electronic Engineering Institute (China) [10016-57]
- Experimental investigation of the thermally-induced core laser leakage in large-mode-area single-trench fiber**, Lingchao Kong, Liangjin Huang, National Univ. of Defense Technology (China); Shaoyi Gu, China Electronics Technology Group Corp. (China); Jinyong Leng, Shaofeng Guo, Pu Zhou, Zongfu Jiang, National Univ. of Defense Technology (China) [10016-58]
- Longitudinally-excited CO₂ laser with multiple laser tubes**, Kazuyuki Uno, Tetsuya Akitsu, Univ. of Yamanashi (Japan); Takahisa Jitsuno, Osaka Univ. (Japan) [10016-59]
- Spectral temporal characteristics of the radiation Ba I by femtosecond laser breakdown on the surface of aqueous solutions**, Yuliya S. Biryukova, Alexey A. Ilyin, Far Eastern Federal Univ. (Russian Federation); Sergey S. Golik, Far Eastern Federal Univ (Russian Federation); Michael Y. Babiy, Vladimir Lisitsa, Yuriy Kulchin, Far Eastern Federal Univ. (Russian Federation) . [10016-60]
- Thermal effects of the gradient doping gain fiber in all-fiber MOPA**, Zichao Zhou, Xiaolin Wang, National Univ. of Defense Technology (China) . . [10016-61]
- Theoretical study of transverse mode selection with volume Bragg grating in laser resonator**, Jing Hu, Soochow Univ. (China) [10016-62]
- Output characteristics of diode-pumped Yb:YAG mode-locked laser with a dual-core fiber**, Yan Yan, Li Wang, Beijing Univ. of Technology (China) [10016-63]
- Study on variations of transverse electromagnetic distribution after the linewidth narrowing of a LD**, Liangping Xue, You Wang, Wei Zhang, Hang Yu, Shunyan Wang, Kepeng Rong, Hongyuan Wang, He Cai, Juhong Han, Guofei An, Jie Zhou, Southwest Institute of Technical Physics (China) [10016-64]
- Research on polarization vector characteristics in a microfiber-based graphene fiber laser**, Mengmeng Han, Hebei Normal Univ. (China) . [10016-65]
- Formation of noise-like square-wave pulses in a microfiber-based topological insulator fiber laser**, Jingmin Liu, Hebei Normal Univ. (China) [10016-66]
- Experimental investigation of high-energy noise-like pulses from a long-cavity erbium-doped fiber laser**, Kexuan Li, Beijing Univ. of Technology (China) and Chinese People's Armed Police Force Academy (China); Heyang Guoyu, Jinrong Tian, Yanrong Song, Beijing Univ. of Technology (China) [10016-67]
- Dynamic measurement of reflectance/emissivity in mid-infrared band**, Tianyu Zhang, Min Sun Chen, Houman Jiang, Xiangyu Zhang, National Univ. of Defense Technology (China) [10016-68]
- Simulation of wavefront optimization by volume Bragg grating in photothermorefractive glass**, Xiaojie Sun, Fan Gao, Xiang Zhang, Xiao Yuan, Soochow Univ. (China) [10016-69]
- Detection of laser-induced damage on fused silica with photo-acoustic method**, Muyu Yi, Xiang Zhang, Xiao Yuan, Soochow Univ. (China) . . [10016-70]
- Optimization of key parameters of a laser ablation ion mobility spectrometer**, Kai Ni, Jianan Li, Binchao Tang, Yuan Shi, Quan Yu, Xiang Qian, Xiaohao Wang, Graduate School at Shenzhen, Tsinghua Univ. (China) [10016-71]
- Influence of soft bonding layer material viscoplasticity on thermal lens and aspherical aberration of high-power thin disk laser**, Mu Wang, Guangzhi Zhu, Xiao Zhu, Yufan Feng, Jiapeng Gao, School of Optical and Electronic Information, Huazhong University of Science and Technology (China) and National Engineering Research Center for Laser Processing (China) . [10016-73]
- The design of thin disk laser multi-pass amplifier**, Enmao Song, Guangzhi Zhu, Xiao Zhu, Jinbo Yu, Wenguang Zhao, Huazhong Univ. of Science and Technology (China) and National Engineering Research Ctr. for Laser Processing (China) [10016-74]
- New type of fiber mode stripper with quartz tubes**, Yongqian Chen, Yuli Qiu, Xiao Zhu, Huazhong Univ. of Science and Technology (China) and National Engineering Research Ctr. for Laser Processing (China); Hailin Wang, Huazhong Univ. of Science and Technology, (China) and National Engineering Research Ctr. for Laser Processing (China); Guangzhi Zhu, Changhong Zhu, Lijun Qi, Huazhong Univ. of Science and Technology (China) and National Engineering Research Ctr. for Laser Processing (China) [10016-75]

SESSION 5

LOCATION: ROOM 5D THU 14:30 TO 18:10

Fiber Lasers

Session Chair: **Qinjun Peng**,
Technical Institute of Physics and Chemistry (China)

- 14:30: **Recent advances in Raman fiber lasers (Invited Paper)**, Yan Feng, Shanghai Institute of Optics and Fine Mechanics (China) [10016-22]
- 15:00: **Recent development on high-power tandem-pumped fiber laser (Invited Paper)**, Pu Zhou, Hu Xiao, Jinyong Leng, Hanwei Zhang, Xueyan Du, Jiangmin Xu, Jian Wu, National Univ. of Defense Technology (China) . [10016-23]
- 15:30: **1-MW peak power 574-kHz repetition rate picosecond pulses at 515 nm from a frequency-doubled fiber amplifier**, Feng Zou, Zi Wei Wang, Zhao Kun Wang, Yang Bai, Qiu Rui Li, Jun Zhou, Shanghai Institute of Optics and Fine Mechanics (China) [10016-25]

CONFERENCE 10016

LOCATION: ROOM 5D

15:50: **Efficient 1.5- μ m Raman generation in ethane-filled hollow-core fiber**, Yubin Chen, Bo Gu, Zefeng Wang, QiSheng Lu, National Univ. of Defense Technology (China) [10016-26]

16:10: **A systematic analysis of nanosecond pulse amplification in ytterbium-doped double-clad fiber amplifiers by considering inelastic scatterings and different operation regimes**, Mohammad Abdollahi, Malek Bagheri Haroni, Univ. of Isfahan (Iran, Islamic Republic of); Mohammad J. Hekmat, Isfahan Univ. of Technology (Iran, Islamic Republic of); Meisam Fakhari, Univ. of Kashan (Iran, Islamic Republic of); Narges Shahriari, Mohammad Kanani, Hosein Normohamadi, Isfahan Univ. of Technology (Iran, Islamic Republic of) [10016-27]

16:30: **Theoretical and experimental analysis of double-pass ytterbium-doped fiber amplifier**, Pengfei Zhang, National Univ. of Defense Technology (China) [10016-28]

16:50: **Passive harmonic mode-locking in a monolayer graphene-based long-cavity fiber laser with high pulse energy**, Xiaoying He, Fudan Univ. (China); Dongning Wang, China Jiliang Univ. (China) [10016-29]

17:10: **All-fiberized single-frequency polarization-maintained fiber amplifier with record power**, Long Huang, Pengfei Ma, Rongtao Su, Xiaolin Wang, Hanwei Zhang, Pu Zhou, National Univ. of Defense Technology (China) [10016-30]

17:30: **Linear inner-cladding fiber amplifier suppressing mode instability**, Zebiao Li, South China Univ. of Technology (China); Zhijia Huang, Honghuan Lin, Jianjun Wang, Feng Jing, China Academy of Engineering Physics (China); Shanhui Xu, Zhongmin Yang, South China Univ. of Technology (China) [10016-31]

17:50: **Phase modulation signals optimization automatically for suppression of stimulated Brillouin scattering**, Min Jiang, National Univ. of Defense Technology (China) and Hunan Provincial Collaborative Innovation Ctr of High Power Fiber Laser (China); Yang Ran, Rongtao Su, Pu Zhou, National Univ. of Defense Technology (China) and Hunan Provincial Collaborative Innovation Ctr. of High Power Fiber Laser (China) [10016-32]

FRIDAY 14 OCTOBER

SESSION 6

LOCATION: ROOM 5D FRI 8:30 TO 10:00

High Field Laser Physics

Session Chair: **Zhigang Zhang**, Peking Univ. (China)

8:30: **Recent progress on high-field physics** (*Invited Paper*), Baifei Shen, Shanghai Institute of Optics and Fine Mechanics (China) [10016-33]

9:00: **Interaction of high-power laser beams with plasma in ICF hohlraum using the FDTD method**, Zhili Lin, Huaqiao Univ. (China) [10016-34]

9:20: **Nonadiabatic electron dynamics in orthogonal two-color laser fields with comparable intensities** (*Invited Paper*), JiWei Geng, Peking Univ. (China) [10016-35]

9:40: **Studies on high-quality electron beams and tunable X-ray sources produced by laser wakefield accelerators** (*Invited Paper*), Ming Zeng, Horia Hulubei National Institute of Physics and Nuclear Engineering (Romania) and Shanghai Jiao Tong Univ. (China); Ji Luo, Min Chen, Shanghai Jiao Tong Univ. (China); Zheng-Ming Sheng, Shanghai Jiao Tong Univ. (China) and Univ. of Strathclyde (United Kingdom) [10016-37]

Tea/Coffee Break Fri 10:00 to 10:30

SESSION 7

LOCATION: ROOM 5D FRI 10:30 TO 13:20

Ultrafast Lasers

Session Chair: **Baifei Shen**,
Shanghai Institute of Optics and Fine Mechanics (China)

10:30: **Self-starting and ultra-stable femtosecond fiber lasers for industrial applications** (*Invited Paper*), Zhigang Zhang, Peking Univ. (China) ... [10016-38]

11:00: **Measurement and compensation schemes for the pulse front distortion of ultra-intensity ultra-short laser pulses**, Fenxiang Wu, Yi Xu, Linpeng Yu, Xiaojun yang, Jun Lu, Wenkai Li, Yuxin Leng, Shanghai Institute of Optics and Fine Mechanics (China) [10016-39]

11:20: **Accurate single-shot measurement of the femtosecond pulse duration in the multi-petawatt laser facility**, Qingwei Yang, Xinglong Xie, Shuixu Shi, Jiangqiang Zhu, Jun Kang, Ailin Guo, Meizhi Sun, Haidong Zhu, Shanghai Institute of Optics and Fine Mechanics (China) [10016-40]

11:40: **58W LD side-pump Nd:YAG picosecond laser system at 1KHz with double length of regenerative cavity**, Mingliang Long, Gang Li, Meng Chen, Beijing Univ. of Technology (China) [10016-41]

12:00: **The filamentation of femtosecond laser pulse in air with various orders of super-Gaussian beam**, Yuze Hu, Jinsong Nie, Lei Wang, Xianan Dou, Zhiming Li, Electronic Engineering Institute (China) [10016-42]

12:20: **Mode-locked femtosecond all polarization-maintaining erbium-doped dispersion managed fiber laser based on a nonlinear amplifying loop mirror**, Wenjue Wu, Yue Zhou, Ji Sun, Yitang Dai, Feifei Yin, Jian Dai, Kun Xu, Beijing Univ. of Posts and Telecommunications (China) [10016-43]

12:40: **Stable linear SESAM femtosecond fiber laser by use of Faraday rotator mirrors**, Mohammad J. Hekmat, Asghar Gholami, Masood Ormomi, Mohammad Kanani, Mohammad Abdollahi, Narges Shahriari, Hossein Normohamadi, Isfahan Univ. of Technology (Iran, Islamic Republic of) [10016-44]

13:00: **Integration of a directly chirped laser source into a high-energy OPCPA system**, Ran Xin, Univ. of Rochester (USA) and Cymer LLC (USA) and ASML (USA); Jonathan D. Zuegel, Univ. of Rochester (USA) [10016-45]

CONFERENCE 10017

LOCATION: ROOM 203A

Wednesday–Friday 12–14 October 2016 • Proceedings of SPIE Vol. 10017

Semiconductor Lasers and Applications VII

Conference Chairs: **Ninghua Zhu**, Institute of Semiconductors (China); **Werner H. Hofmann**, Technische Univ. Berlin (Germany)

Program Committee: **Minghua Chen**, Tsinghua Univ. (China); **Xiangfei Chen**, Nanjing Univ. (China); **Nan Chi**, Fudan Univ. (China); **Brian Corbett**, Tyndall National Institute (Ireland); **Jian-Jun He**, Zhejiang Univ. (China); **Qianggao Hu**, Accelink Technologies Co., Ltd. (China); **Weisheng Hu**, Shanghai Jiao Tong Univ. (China); **Yongzhen Huang**, Beijing Univ. of Posts and Telecommunications (China); **Jimin Li**, Institute of Semiconductors (China); **Ming Li**, Institute of Semiconductors (China); **Wei Li**, Institute of Semiconductors (China); **Xianjie Li**, China Electronics Technology Group Corp. (China); **Jianguo Liu**, Institute of Semiconductors (China); **Ning Liu**, Huawei Technologies Co., Ltd. (China); **Wenhan Liu**, Univ. of Science and Technology of China (China); **Yong Liu**, Univ. of Electronic Science and Technology of China (China); **XiaoYu Ma**, Institute of Optics and Electronics (China); **Frank Hudson Peters**, Tyndall National Institute (Ireland); **Edwin Yue-Bun Pun**, City Univ. of Hong Kong (Hong Kong, China); **Hong-Bo Sun**, Jilin Univ. (China); **Lijun Wang**, Changchun Institute of Optics, Fine Mechanics and Physics (China); **Shawn Wang**, General Photonics Corp. (USA); **Yixin Wang**, Institute for Infocomm Research (Singapore); **Guang-Qiong Xia**, Southwest Univ. (China); **Kun Xu**, Beijing Univ. of Posts and Telecommunications (China); **Zhaowen Xu**, Institute for Infocomm Research (Singapore); **Lianshan Yan**, Southwest Jiaotong Univ. (China); **Jinlong Yu**, Tianjin Univ. (China); **Siyuan Yu**, Univ. of Bristol (United Kingdom); **Li Zeng**, Huawei Technologies Co., Ltd. (China); **Baoping Zhang**, Xiamen Univ. (China); **Guo-yi Zhang**, Peking Univ. (China); **Xinliang Zhang**, Huazhong Univ. of Science and Technology (China); **Zhiping Zhou**, Peking Univ. (China); **Hongliang Zhu**, Institute of Semiconductors (China); **Xihua Zou**, Southwest Jiaotong Univ. (China)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

- 9:00: **Opening Ceremony**
- 9:20: **SPIE Fellow Recognition Ceremony**
- 9:25: **Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony**
- 9:40: **Freeform optics opening up a bright future for imaging instrumentation (Plenary)**, Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]
- 10:20: **Tea/Coffee Break**
- 10:40: **Innovative large wide-field astronomical telescope: LAMOST (Plenary)**, Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]
- 11:20: **Quantum dot photonics: from science to practical implementation (Plenary)**, Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

SESSION 1

LOCATION: ROOM 203A WED 13:30 TO 15:25

VCSELS

Session Chair: **Werner H. Hofmann**, Technische Univ. Berlin (Germany)

- 13:30: **Recent progress in 1.3- and 1.5- μm waveband wafer-fused VCSELS (Invited Paper)**, Alexandru Mereuta, Andrei Caliman, Alexei Sirbu, Vladimir Iakovlev, Dalila Ellafi, Alok P. Rudra, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Philip Wolf, Technische Univ. Berlin (Germany); Dieter H. Bimberg, Technische Univ. Berlin (Germany) and King Abdulaziz Univ. (Saudi Arabia); Eli Kapon, Ecole Polytechnique Fédérale de Lausanne (Switzerland) .. [10017-1]
- 13:55: **Green VCSELS based on InGaN QDs (Invited Paper)**, Baoping Zhang, Yang Mei, Xiamen Univ. (China); Guoen Weng, East China Normal Univ. (China); Jianping Liu, Suzhou Institute of Nano-Tech and Nano-Bionics (China); Werner H. Hofmann, Technische Univ. Berlin (Germany); Leiying Ying, Xiamen Univ. (China) [10017-2]
- 14:20: **980-nm ultra-high-speed VCSELS exceeding 30-GHz Bandwidth (Invited Paper)**, Wissam Hamad, Werner H. Hofmann, Technische Univ. Berlin (Germany) [10017-3]
- 14:45: **Polarization and dynamical properties of VCSELS-based photonic neuron subject to optical pulse injection (Invited Paper)**, Shuiying Xiang, Aijun Wen, Hao Zhang, Jiafu Li, Xingxing Guo, Xidian Univ. (China) [10017-5]
- 15:10: **Narrow-linewidth photonic microwave generation based on an optically-injected 1550-nm VCSEL subject to optoelectronic feedback**, Qing Liang, Li Fan, Ji-Yun Yang, Southwest Univ. (China); Zhen-Zhen Wang, Southwest Univ. (China); Zheng-Mao Wu, Guang-Qiong Xia, Southwest Univ. (China) [10017-4]

Tea/Coffee Break Wed 15:25 to 16:00

SESSION 2

LOCATION: ROOM 203A WED 16:00 TO 17:35

Semiconductor Lasers I

Session Chair: **Alexandru Mereuta**, Ecole Polytechnique Fédérale de Lausanne (Switzerland)

- 16:00: **Directly-modulated laser-based 100G-PON demonstration (Invited Paper)**, Lilin Yi, Honglin Ji, Weisheng Hu, Shanghai Jiao Tong Univ. (China) [10017-27]
- 16:25: **Room-temperature continuous-wave operation of GaN-based green laser diodes (Invited Paper)**, Jianping Liu, Suzhou Institute of Nano-Tech and Nano-Bionics (China) [10017-7]
- 16:50: **Investigation of single lateral mode for 852nm diode lasers with ridge waveguide design**, Baolu Guan, Chu Liu, GuoXin Mi, Yi Ru Liao, Zhenyang Liu, Jianjun Li, Chen Xu, Beijing Univ. of Technology (China) [10017-8]
- 17:05: **To packaged 650nm red semiconductor laser with transparent window**, Zhen Zhu, Wei Xia, Shandong Huaguang Optoelectronics Co., Ltd. (China) [10017-9]
- 17:20: **830-nm InGaAs quantum-well lasers with very low beam divergence**, Bocang Qiu, Hai M. Hu, Weimin Wang, James Ho, Research Institute of Tsinghua Univ. in Shenzhen (China); Shujuan Wu, Shenzhen Raybow Optoelectronics Co., Ltd. (China) [10017-10]

THURSDAY 13 OCTOBER

SESSION 3

LOCATION: ROOM 203A THU 8:30 TO 10:10

Microwave Photonics I

Session Chair: **Shilong Pan**, Nanjing Univ. of Aeronautics and Astronautics (China)

- 8:30: **SBS-assisted microwave photonic signal processing (Invited Paper)**, Wei Li, Institute of Semiconductors (China) [10017-11]
- 8:55: **Sensing, measurement, and detection enabled by optoelectronic oscillators (Invited Paper)**, Xihua Zou, Southwest Jiaotong Univ. (China) [10017-12]
- 9:20: **A novel approach for high-speed super-resolution imaging (Invited Paper)**, Hongwei Chen, Yuxi Wang, Qiang Guo, Minghua Chen, Tsinghua Univ. (China) [10017-13]
- 9:45: **All-optical modulation conversion characteristics of an optically-injected semiconductor laser with external modulation of the master laser (Invited Paper)**, Yali Zhang, Jiacheng Li, Zhiyao Zhang, Shangjian Zhang, Yong Liu, Univ. of Electronic Science and Technology of China (China) [10017-14]
- Tea/Coffee Break Thu 10:10 to 10:40

CONFERENCE 10017

LOCATION: ROOM 203A

SESSION 4

LOCATION: ROOM 203A THU 10:40 TO 12:00

Microwave Photonics II

Session Chair: **Xihua Zou**, Southwest Jiaotong Univ. (China)

10:40: **Photonic microwave signal generation using an optically-injected semiconductor laser** (*Invited Paper*), Shilong Pan, Pei Zhou, Fangzheng Zhang, Nanjing Univ of Aeronautics and Astronautics (China) [10017-15]

11:05: **Self-calibrated spectrum analysis for extracting frequency response of high-speed phase modulators** (*Invited Paper*), Shangjian Zhang, Yali Zhang, Heng Wang, Xinhai Zou, Yong Liu, Univ. of Electronic Science and Technology of China (China) [10017-16]

11:30: **Stable RF signal distribution based on passive post phase correction with only one-stage frequency mixing**, Zhiyao Jia, Ling Wang, Weiyu Wang, Chengwu Yang, Wei Li, Ninghua Zhu, Institute of Semiconductors (China) [10017-17]

11:45: **Broadband x-band optically-steered PAA with large beam-steered angle**, LiHong Zhang, NuanNuan Shi, Ye Deng, Shuqian Sun, Jian Tang, Ming Li, Ninghua Zhu, Institute of Semiconductors (China) [10017-18]

Lunch/Exhibition Break Thu 12:00 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at <http://spie.org/PAPosterGuidelines>.

Double optical feedback self-mixing interferometry for measurement of Young's modulus, Ke Lin, Yuanlong Fan, Yanguang Yu, Jiangtao Xi, Qinghua Guo, Jun Tong, Univ. of Wollongong (Australia) [10017-32]

Numerical analysis of thermal effects in semiconductor disk laser with TEC cooler, Renjiang Zhu, Peng Zhang, Maohua Jiang, Chongqing Normal Univ. (China) [10017-36]

Short-term frequency stability measurement for narrow linewidth laser by time domain self-heterodyne method, Lidong Lu, Nanjing Univ. (China) [10017-37]

Spectrum analysis of rectangular pulse in the atmospheric turbulence propagation, Yi Liu, Xiaolong Ni, HuiLin Jiang, Junran Wang, Zhi Liu, Changchun Univ. of Science and Technology (China) [10017-38]

Molecular dynamics study on the thermal conductivity of multiple layers in semiconductor disk laser, Peng Zhang, Renjiang Zhu, Maohua Jiang, Chongqing Normal Univ. (China); Yanrong Song, Beijing Univ. of Technology (China); Dingke Zhang, Yuting Cui, Chongqing Normal Univ. (China) . [10017-39]

Analysis of laser energy characteristics of laser-guided weapons based on the hardware-in-the-loop simulation system, Yawen Zhu, Xiaohong Cui, Qianqian Wang, Qiujie Tong, Xutai Cui, Chenyu Li, Le Zhang, Zhong Peng, Beijing Institute of Technology (China) [10017-40]

Design and implementation of the hardware-in-the-loop simulation system based on LabWindows/CVI and RTX, Qiujie Tong, Qianqian Wang, Beijing Institute of Technology (China); Xiaoyang Li, Bin Shan, China Huayin Ordinance Test Ctr. (China); Xutai Cui, Chenyu Li, Zhong Peng, Beijing Institute of Technology (China) [10017-41]

All-optical sampling based on quantum-dot semiconductor optical amplifier, Chen Wu, Yongjun Wang, Lina Wang, Beijing Univ. of Posts and Telecommunications (China) [10017-42]

All-optical D and T flip-flops based on polarization switch of SOA, Lina Wang, Yongjun Wang, Chen Wu, Beijing Univ. of Posts and Telecommunications (China) [10017-43]

A smokescreen model of laser attenuation based on MATLAB, Heming Lee, Qianqian Wang, Yong Gong, Jing Zhao, Beijing Institute of Technology (China); Bin Shan, Xiaoyang Li, China Huayin Ordinance Test Ctr. (China); Zhong Peng, Beijing Institute of Technology (China) [10017-44]

Dual-wavelength external-cavity laser device for fluorescence suppression in Raman spectroscopy, Zhang Xuting, Zhijian Cai, Jianhong Wu, Soochow Univ. (China) [10017-45]

A 60GHz RoF (radio-over-fiber) transmission system based on PM modulator?, Xin Wang, Xi'an Institute of Optics and Precision Mechanics (China) and Institute of Semiconductors (China); Yi Liu, Hunan Univ. (China); Wen-Ting Wang, Jinhua Bai, Haiqing Yuan, Yu Liu, Institute of Semiconductors (China) [10017-46]

4W high-performance 1470-nm InGaAsAs lasers, Bocang Qiu, Hai M. Hu, Weimin Wang, James Ho, Research Institute of Tsinghua Univ. in Shenzhen (China); Wenbin Liu, Chunyu Miao, Shenzhen Raybow Optoelectronics Co., Ltd. (China) [10017-47]

SESSION 5

LOCATION: ROOM 203A THU 14:30 TO 15:25

Semiconductor Lasers II

Session Chair: **Xiangfei Chen**, Nanjing Univ. (China)

14:30: **Mode control and direct modulation for waveguide-coupled square microcavity lasers** (*Invited Paper*), Yue-De Yang, Zhi-Xiong Xiao, Hai-Zhong Weng, Jin-Long Xiao, Yong-Zhen Huang, Institute of Semiconductors (China) [10017-19]

14:55: **Fabrication and performance of $\text{In}_{0.66}\text{Ga}_{0.34}\text{As}_{0.73}\text{P}_{0.27}/\text{In}_{0.89}\text{Ga}_{0.11}\text{As}_{0.23}\text{P}_{0.77}$ multiple-quantum-well lasers**, Jia Chen, Qi Wang, Hao Liu, Zhiming Li, Xiankun Wang, Bingfei Liu, Beijing Univ. of Posts and Telecommunications (China) [10017-20]

15:10: **High-performance 808-nm GaAsP/InGaP quantum-well lasers**, Hai M. Hu, Bocang Qiu, Weimin Wang, James Ho, Research Institute of Tsinghua Univ. in Shenzhen (China); Wenbin Liu, Shujuan Wu, Shenzhen Raybow Optoelectronics Co., Ltd. (China) [10017-21]

SESSION 6

LOCATION: ROOM 203A THU 15:25 TO 17:30

Laser Applications I

Session Chair: **Yong Liu**,

Univ. of Electronic Science and Technology of China (China)

15:25: **Two-section REC-based DFB laser/laser array for RoF applications** (*Invited Paper*), Xiangfei Chen, Nanjing Univ. (China) [10017-22]

15:50: **Selective epitaxy of InP nanocrystals on Si nano-tips for hybrid graphene/InP/Si photodetectors** (*Invited Paper*), Gang Niu, Xi'an Jiaotong Univ. (China); Giovanni Capellini, IHP-Microelectronics (Germany) and Univ. degli Studi di Roma Tre (Italy); Fariba Hatami, Humboldt-Univ. zu Berlin (Germany); Antonio Di Bartolomeo, Univ. degli Studi di Salerno (Italy); Tore Niemann, Technische Univ. Berlin (Germany); Emad Hameed Hussein, Humboldt-Univ. zu Berlin (Germany); Markus A. Schubert, Hans-Michael Krause, Peter Zaumseil, Oliver Skibitzki, IHP-Microelectronics (Germany); William T. Masselink, Humboldt-Univ. zu Berlin (Germany); Michael Lehmann, Technische Univ. Berlin (Germany); Ya-Hong Xie, Univ. of California, Los Angeles (USA); Thomas Schroeder, IHP-Microelectronics (Germany) and Brandenburgische Technische Univ. Cottbus (Germany) [10017-23]

16:15: **Infrared pulsed fiber lasers employing 2D nanomaterials as saturable absorbers** (*Invited Paper*), Yong Liu, Heping Li, Jianfeng Li, Univ. of Electronic Science and Technology of China (China) [10017-24]

16:40: **A review on the development of DML-based underwater wireless optical communication systems** (*Invited Paper*), Jing Xu, Aobo Lin, Xiangyu Yu, Jun Han, Zhejiang Univ. (China) [10017-25]

17:05: **Nanophotonic metasurfaces-assisted structured light manipulation for lasing applications** (*Invited Paper*), Jian Wang, Huazhong Univ. of Science and Technology (China) [10017-26]

FRIDAY 14 OCTOBER

SESSION 7

LOCATION: ROOM 203A FRI 8:45 TO 10:15

Laser Applications II

Session Chair: **Kan Wu**, Shanghai Jiao Tong Univ. (China)

8:45: **High-performance mode-locked and Q-switched lasers based on 2D transition metal dichalcogenides** (*Invited Paper*), Kan Wu, Weiwon Zou, Jianping Chen, Shanghai Jiao Tong Univ. (China) [10017-6]

9:10: **Optical super-resolution data storage inspired by nanoscopy** (*Invited Paper*), Yaoyu Cao, Jinan Univ. (China) [10017-28]

9:35: **976-nm passively mode-locked ytterbium-doped fiber laser core-pumped by 915-nm semiconductor laser diode** (*Invited Paper*), Yue Zhou, Beijing Univ. of Posts and Telecommunications (China) . . . [10017-29]

10:00: **Bandwidth enhancement and time-delay signature suppression of chaotic signal from an optical feedback semiconductor laser by using cross phase modulation in a highly nonlinear fiber loop mirror**, Liang-Yan Wang, Zhu-Qiong Zhong, Zheng-Mao Wu, Dong Lu, Southwest Univ. (China); Xi Chen, Jun Chen, Southwest Univ (China); Guang-Qiong Xia, Southwest Univ. (China) [10017-30]

Tea/Coffee Break Fri 10:15 to 10:45

SESSION 8

LOCATION: ROOM 203A FRI 10:45 TO 11:45

Laser Applications III

Session Chair: **Kan Wu**, Shanghai Jiao Tong Univ. (China)

10:45: **Narrow-linewidth hybrid integrated external-cavity diode laser for precision applications**, Fang Wei, Guangwei Sun, Li Zhang, Gaoting Chen, Guofeng Xin, Dijun Chen, Haiwen Cai, Zujie Fang, Shanghai Institute of Optics and Fine Mechanics (China) [10017-31]

11:00: **Self-referenced electrical method for measuring frequency response of high-speed Mach-Zehnder modulators based on two-tone modulation**, Heng Wang, Shangjian Zhang, Xinhai Zou, Yali Zhang, Yong Liu, Univ. of Electronic Science and Technology of China (China) [10017-33]

11:15: **Automatic range-gated laser imaging**, Ruirong You, Univ. of Chinese Academy of Sciences (China) and Institute of Semiconductors (China); Xinwei Wang, Yan Zhou, Institute of Semiconductors (China) [10017-34]

11:30: **Light emitters on SOI platform for optical interconnects**, Yong Zhang, Shanghai Jiao Tong Univ. (China); Jinsong Xia, Huazhong Univ. of Science and Technology (China); Ciyuan Qiu, Yikai Su, Shanghai Jiao Tong Univ. (China) [10017-35]



Advanced Laser Processing and Manufacturing

Conference Chairs: **Minlin Zhong**, Tsinghua Univ. (China); **Jonathan Lawrence**, Univ. of Chester (United Kingdom); **Minghui Hong**, National Univ. of Singapore (Singapore); **Jian Liu**, PolarOnyx, Inc. (USA)

Program Committee: **Xue-Chun Lin**, Institute of Semiconductors (China); **Rongshi Xiao**, Beijing Univ. of Technology (China); **Jianhua Yao**, Zhejiang Univ. of Technology (China); **Xiaoyan Zeng**, Huazhong Univ. of Science and Technology (China)

THURSDAY 13 OCTOBER

SESSION 1

LOCATION: ROOM 202 THU 8:00 TO 10:10

Advanced Laser Processing and Manufacturing I

Session Chair: **Minlin Zhong**, Tsinghua Univ. (China)

8:00: **Femtosecond laser nanojoining: the process, interface, filler metal, and its application** (*Invited Paper*), Lei Liu, G. Zou, L. Lin, Yingchuan Zhang, Tsinghua Univ. (China); Y. Norman Zhou, Tsinghua Univ. (China) and Univ. of Waterloo (Canada). [10018-1]

8:30: **Photocatalytic activity of three-dimensional micro-/nanostructured TiO₂ fabricated by femtosecond laser-hybrid method** (*Invited Paper*), Jinlong Lu, Ting Huang, Rongshi Xiao, Beijing Univ. of Technology (China). [10018-2]

9:00: **Fabrication of 3D-embedded hollow structures inside polymer dielectric PMMA with femtosecond laser** (*Invited Paper*), Chong Zheng, Tao Chen, Beijing Univ. of Technology (China); Anming Hu, Beijing Univ. of Technology (China) and The Univ. of Tennessee Knoxville (USA); Shibing Liu, Beijing Univ. of Technology (China) [10018-3]

9:30: **W/Cu joining strengthened by femtosecond laser-induced micron-scale interface structure**, Jiang Dafa, Dingwei Gong, Jiangyou Long, Fan Peixun, Hongjun Zhang, Minlin Zhong, Tsinghua Univ. (China). [10018-4]

9:50: **Heterogeneous nanowires interconnection using femtosecond laser radiation for integrated nanoelectronics**, Luchan Lin, Lei Liu, Guisheng Zou, Tsinghua Univ. (China); Walter W. Duley, Univ. of Waterloo (Canada); Y. Norman Zhou, Tsinghua Univ. (China) and Univ. of Waterloo (Canada). [10018-5]

Tea/Coffee BreakThu 10:10 to 10:40

SESSION 2

LOCATION: ROOM 202 THU 10:40 TO 12:10

Advanced Laser Processing and Manufacturing II

Session Chair: **Ting Huang**, Beijing Univ. of Technology (China)

10:40: **Ultrafast laser enabling versatile micro-nano scale material processing** (*Invited Paper*), Minlin Zhong, Tsinghua Univ. (China). [10018-7]

11:10: **Contrastive study on micromachining technology of sapphire substrate by 355nm nanosecond laser and 1064nm picosecond laser**, Meng Chen, Ce Yang, Xiaowei Bian, Beijing Univ. of Technology (China) [10018-8]

11:30: **High-resolution laser lithography based on vortex laser and composite layer**, Shichao Zhan, Yiyong Liang, Xiongfen Li, Zhejiang Univ. (China) [10018-9]

11:50: **A blue-ray laser-diode-based dual-beam interference lithography for fabrication of diffraction gratings for surface encoders**, Xinghui Li, Xiangwen Zhu, Qian Zhou, Xiaohao Wang, Kai Ni, Graduate School at Shenzhen, Tsinghua Univ. (China) [10018-10]

Lunch/Exhibition BreakThu 12:10 to 13:30

SESSION 3

LOCATION: ROOM 202 THU 14:30 TO 17:50

Advanced Laser Processing and Manufacturing III

Session Chairs: **Yingchun Guan**, BeiHang Univ. (China); **Rui Zhou**, Xiamen Univ. (China)

14:30: **Recent research in laser surface processing and its applications in aerospace manufacturing** (*Invited Paper*), Yingchun Guan, BeiHang Univ. (China) [10018-11]

15:00: **Synthesis of plasmonic nanocomposites by pulsed laser ablation for enhanced optical limiting properties from Xiamen University and National University of Singapore** (*Invited Paper*), Rui Zhou, Tingting Huang, Shengdong Lin, Xiamen Univ. (China); Minghui Hong, National Univ. of Singapore (Singapore) [10018-12]

15:30: **Energy-based approach as an example for a process signature for laser microprocessing**, Tong Zhao, Salar Mehrafsun, Frank Vollertsen, Bremer Institut für angewandte Strahltechnik GmbH (Germany) [10018-6]

15:50: **Laser-induced deposition metal from solution and sensory properties of copper microstructures obtained by this method**, Ilya Tumkin, Vladimir A. Kochemirovsky, Maxim S. Panov, Sergey Ermakov, Saint Petersburg State Univ. (Russian Federation) [10018-13]

16:10: **Fabrication of micro holes in single-crystal SiC wafers using mid-UV solid-state laser**, Litao Qi, Fangzhou Li, Heilongjiang Institute of Science and Technology (China) [10018-14]

16:30: **Fabrication of three-dimensional photonic crystal template using micro-projection stereo lithography**, Jian-Wen Dong, Yigui Chen, En-Tao Liang, Wei-Xing Zhang, Sun Yat-Sen Univ. (China) [10018-15]

16:50: **Optical methods for correction of surface acoustic wave sensors topology**, Sergey Y. Shevchenko, Daniil V. Safronov, Alexander S. Kukaev, Dmitry P. Lukyanov, Saint Petersburg Electrotechnical Univ. "LETI" (Russian Federation) [10018-16]

17:10: **Switchable repetition-rate bound solitons passively mode-locked fiber laser**, Xu Qin Wang, Yong Yao, Harbin Institute of Technology Shenzhen Graduate School (China); Yanfu Yang, Harbin Institute of Technology Graduate School (China); Ying Long Gu, Harbin Institute of Technology (China) [10018-17]

17:30: **Research of the suppression of the phase noise in DFB fiber laser by self-injection locking**, Jianfeng Tang, Yinfa Zhang, Zhenglong Yu, Xi'an Communication Institute (China); Shuidong Xiong, Lina Ma, National Univ. of Defense Technology (China) [10018-18]

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1. . . . THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at <http://spie.org/PAPosterGuidelines>.

CONFERENCE 10019

LOCATION: ROOM 201B

Wednesday–Friday 12–14 October 2016 • Proceedings of SPIE Vol. 10019

Optoelectronic Devices and Integration VI

Conference Chairs: **Xuping Zhang**, Nanjing Univ. (China); **Baojun Li**, Sun Yat-Sen Univ. (China); **Changyuan Yu**, National Univ. of Singapore (Singapore)

Program Committee: **Dayan Ban**, Univ. of Waterloo (Canada); **Zhongping Chen**, Beckman Laser Institute and Medical Clinic (USA); **Ho-Pui A. Ho**, The Chinese Univ. of Hong Kong (Hong Kong, China); **Jan Ingenhoff**, Ionexphotonics Inc. (Canada); **Zhong-cheng Liang**, Nanjing Univ. of Posts and Telecommunications (China); **Xuejun Lu**, Univ. of Massachusetts Lowell (USA); **Hai Ming**, Univ. of Science and Technology of China (China); **Bikash Nakarmi**, Korea Advanced Institute of Science and Technology (Korea, Republic of); **Gang-Ding Peng**, The Univ. of New South Wales (Australia); **Yuan Shi**, Agilecom Photonic Solutions Inc. (USA); **Yuejiang Song**, Nanjing Univ. (China); **Anna K. Swan**, Boston Univ. (USA); **Frank Vollmer**, Max-Planck-Institut für die Physik des Lichts (Germany); **Guanghui Wang**, The Chinese Univ. of Hong Kong (Hong Kong, China); **Daniel M. Wasserman**, Univ. of Illinois at Urbana-Champaign (USA); **Lixin Xu**, Univ. of Science and Technology of China (China)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

- 9:00: **Opening Ceremony**
- 9:20: **SPIE Fellow Recognition Ceremony**
- 9:25: **Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony**
- 9:40: **Freeform optics opening up a bright future for imaging instrumentation (Plenary)**, Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]
- 10:20: **Tea/Coffee Break**
- 10:40: **Innovative large wide-field astronomical telescope: LAMOST (Plenary)**, Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]
- 11:20: **Quantum dot photonics: from science to practical implementation (Plenary)**, Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

SESSION 1

LOCATION: ROOM 201B WED 13:30 TO 15:10

Integrated Optics and Photonic Integrated Circuits

Session Chair: **Xuping Zhang**, Nanjing Univ. (China)

- 13:30: **Compact silicon photonic devices and high-density waveguide integration (Invited Paper)**, Wei Jiang, Nanjing Univ. (China) [10019-1]
- 14:00: **The application of double-layer gold gratings in biosensors and unidirectional couplers (Invited Paper)**, Chongjun Jin, Yang Shen, Sun Yat-Sen Univ. (China) [10019-2]
- 14:30: **Measurement of the roughness of smooth glass surfaces using optical waveguides**, Katerina Kaslova, OAO VimpelCom (Russian Federation); Anatoly N. Osovitsky, Peoples' Friendship Univ. of Russia (Russian Federation); Nikolai D. Espinosa Ortiz, Univ. de las Fuerzas Armadas (Ecuador); Jesus A. Vila M., Univ. del País Vasco (Spain) [10019-3]
- 14:50: **Silicon nitride grating waveguide based directional coupler**, Jijun Feng, Univ. of Shanghai for Science and Technology (China); Ryoichi Akimoto, National Institute of Advanced Industrial Science and Technology (Japan); Heping Zeng, East China Normal Univ. (China) [10019-5]
- Tea/Coffee Break Wed 15:10 to 15:40

SESSION 2

LOCATION: ROOM 201B WED 15:40 TO 17:50

Devices for Photonic Applications I

Session Chair: **Wei Jiang**, Rutgers, The State Univ. of New Jersey (USA)

- 15:40: **Recent developments of fiber Bragg gratings induced by femtosecond laser (Invited Paper)**, Yiping Wang, Changrui Liao, Jun He, Qiao Wang, Ying Wang, Congzhe Zhang, Shen Liu, Shenzhen Univ. (China) [10019-6]
- 16:10: **980nm tapered lasers with photonic crystal structure for low vertical divergence**, Xiaolong Ma, Yun Liu, Pengchao Zhao, Wanhua Zheng, Institute of Semiconductors (China) [10019-7]
- 16:30: **Tunable multi-channel dropping filters based on double-waveguide parallel-coupled microring resonators**, Chunyu Zhang, Harbin Institute of Technology (China); Xuenan Zhang, Northeastern Univ. (China); Yong Feng Wu, Chang Qiu Yu, Yundong Zhang, Harbin Institute of Technology (China) [10019-8]
- 16:50: **The realization of optical switching generated from the combination of Ag/a-Si/p-Si memristor and silicon waveguide**, Dongyang Li, Univ. of Electronic Science and Technology of China (China) and Southwest Univ. for Nationalities (China); Anran Guo, Qinqian Song, Guohui Guo, Wei Li, Univ. of Electronic Science and Technology of China (China) [10019-9]
- 17:10: **High efficiency single transverse mode photonic band crystal lasers with low vertical divergence**, Shaoyu Zhao, Hongwei Qu, Aiyi Qi, Yun Liu, Pengchao Zhao, Xiaolong Ma, Xuyan Zhou, Yuzhe Lin, Wanhua Zheng, Institute of Semiconductors (China) [10019-10]
- 17:30: **Preparation and evaluation of perovskite solar cells in the absolute atmospheric environment**, Xiaohui Wang, Univ. of Science and Technology of China (China) [10019-19]

THURSDAY 13 OCTOBER

SESSION 3

LOCATION: ROOM 201B THU 8:00 TO 10:00

Emerging Optoelectronic Applications

Session Chair: **Baojun Li**, Sun Yat-Sen Univ. (China)

- 8:00: **Investigation of advanced pre- and post-equalization schemes in high-order CAP modulation-based high-speed indoor VLC transmission system (Invited Paper)**, Yiguang Wang, Nan Chi, Fudan Univ. (China) [10019-12]
- 8:30: **Flexible metallic transparent conductive networks for optoelectronic applications (Invited Paper)**, Bing Han, Jinwei Gao, South China Normal Univ. (China) [10019-13]
- 9:00: **Optical implementation of neural learning algorithms based on cross-gain modulation in a semiconductor optical amplifier**, Qiang Li, Zhi Wang, Yansi Le, Chonghui Sun, Xiaojia Song, Chongqing Wu, Beijing Jiaotong Univ. (China) and Key Lab. of Luminescence and Optical Information (China) [10019-14]
- 9:20: **Detection of atmospheric boundary layer height in the plum rain season over Hangzhou area with three-dimensional scanning polarized lidar**, Peijun Tang, Dong Liu, Peituo Xu, Yudi Zhou, Jian Bai, Chong Liu, Kaiwei Wang, Jing Luo, Zhongtao Cheng, Yupeng Zhang, Yongying Yang, Yibing Shen, Zhejiang Univ. (China) [10019-15]
- 9:40: **Design of real-time wireless and high-precision photoelectric autocollimator**, Siyu Zhou, Jiayin Hou, Shanshan Wang, Quidong Zhu, Beijing Institute of Technology (China) [10019-16]
- Tea/Coffee Break Thu 10:00 to 10:30

CONFERENCE 10019

LOCATION: ROOM 201B

SESSION 4

LOCATION: ROOM 201B THU 10:30 TO 12:00

Devices for Photonic Applications II

Session Chair: **Yiping Wang**, Shenzhen Univ. (China)

10:30: **Development of next-generation nanolithography methods to break the optical diffraction limit** (*Invited Paper*), Liang Wang, Jin Qin, Li Ding, Univ. of Science and Technology of China (China) [10019-17]

11:00: **Modeling of current gain compression of a tin-incorporated group-IV alloy-based transistor laser**, Ravi Ranjan, Prakash Pareek, Mukul K. Das, Indian School of Mines (India) [10019-18]

11:20: **High-efficiency circular polarizer based on all-dielectric Huygens metasurface**, Huan Jiang, Yongyuan Jiang, Harbin Institute of Technology (China) [10019-11]

11:40: **Gain-switched thulium-doped fiber laser with ultra-wide tuning range**, Xi Cheng, Zhihong Li, Jing Hou, Zejin Liu, National Univ. of Defense Technology (China) [10019-20]

Lunch/Exhibition Break Thu 12:00 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

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Poster authors, view poster presentation guidelines at
<http://spie.org/PAPosterGuidelines>.

Optical characteristic analysis of optical fiber near-field and far-field, Zhenlin Zhan, Fujian Normal Univ. (China); Peihua Lin, Fujian Normal University (China); Lianhuang Li, Fujian Normal Univ. (China) [10019-38]

Investigation on optical and acoustic fields of stimulated Brillouin scattering in As₂S₃ suspended-core optical fibers, Qiang Xu, Weiqing Gao, Xue Li, Chenquan Ni, Xiangcai Chen, Li Chen, Wei Zhang, Jigang Hu Sr., Xiangdong Chen, Zijun Yuan, Hefei Univ. of Technology (China) [10019-39]

A short-range optical wireless transmission method based on LED, Meiyuan Miao, Anlin Chen, Mingxing Zhu, Ping Li, Dalian Polytechnic Univ. (China); Yingming Gao, Dalian Polytechnic Univ. (China); Nianyu Zou, Dalian Polytechnic Univ. (China) [10019-40]

High-efficient slanted grating coupler for perfectly-vertical coupling in optical integration, Yanan Guo, Yongqing Huang, Xiao-Min Ren, Beijing Univ. of Posts and Telecommunications (China) [10019-41]

Directional emission microcavity lasers with different device structures, Chang-ling Yan, Changchun Univ. of Science and Technology (China) [10019-42]

The research of multi-alkali vacuum photodiode on heating and illuminating, Rongguo Fu, Nanjing Univ. of Science and Technology (China); Liu Yang, National Univ. of Defense Technology (China); Guiyuan Wang, Yifang Wei, Nanjing Univ. of Science and Technology (China); Kun Wang, Nanjing Univ. of Science & Technology (China); Yun-sheng Qian, Nanjing Univ. of Science and Technology (China); Hongjin Chen, Nanjing Univ. of Science & Technology (China); Yafeng Qiu, Nanjing Univ. of Science and Technology (China) [10019-43]

Chromatic dispersion and polarization-mode dispersion insensitive optical signal-to-noise ratio monitoring based on electronic variable optical attenuators and optical bandpass filter, Junde Chang, Bo Liu, Lijia Zhang, Xiangjun Xin, Qi Zhang, Qinghua Tian, Feng Tian, XiaoLi Yin, Yongjun Wang, Lan Rao, Beijing Univ. of Posts and Telecommunications (China) [10019-44]

All-optical quantization by slicing supercontinuum in a Ge_{11.5}As₂₄Se_{64.5} rib waveguide, Yanlei Zhang, Chongxiu Yu, Kuiru Wang, Xinzhu Sang, Mei Chao, Beijing Univ. of Posts and Telecommunications (China) [10019-45]

High-performance transparent conductive film with an embedded Ni metal mesh based on selected metal electrodeposition process, Yanhua Liu, Su Shen, Soochow Univ. (China) and Collaborative Innovation Ctr. of Suzhou Nano Science and Technology (China) and Key Lab. of Advanced Optical Manufacturing Technologies (China); Linsen Chen, Yun Zhou, Yan Ye, Yanyan Wang, Wan Qiao, Wenbin Huang, Soochow Univ. (China) and Collaborative Innovation Ctr. of Suzhou Nano Science and Technology (China) [10019-46]

Multimode fiber-focusing lens-based plasmonics, Chunying Guan, Harbin Engineering Univ. (China) [10019-47]

High-precision long-term stable fiber-based optical synchronization system, Yurong Li, Shanghai Institute of Optics and Fine Mechanics (China) [10019-48]

A four-port vertical-coupling optical interface based on two-dimensional grating coupler, Zan Zhang, Chang'an Univ. (China); Zanyun Zhang, Beijing Huang, Institute of Semiconductors (China); Xiaochuan Hu, Lin Zhang, Chang'an Univ. (China); Hongda Chen, Institute of Semiconductors (China) [10019-49]

RF spectral analysis for characterisation of mode-locked regimes in fibre lasers, Sergey M. Kobtsev, Sergey V. Smirnov, Alexey V. Ivanenko, Novosibirsk State Univ. (Russian Federation) [10019-50]

Solar cells based on InP/GaP/Si structure, Orest Kvitsiani, Institute of Cybernetics (Georgia); David Laperashvili, Georgian Technical Univ. (Georgia); Tinatin Laperashvili, Vladimer Mikelashvili, Institute of Cybernetics (Georgia) [10019-51]

SESSION 5

LOCATION: ROOM 201B THU 14:30 TO 17:50

Optical Fibers

Session Chair: **Changyuan Yu**, National Univ. of Singapore (Singapore)

14:30: **Field trail of 1-tb/s real time single-channel optical transmission system over 1400km fiber link from Wuhan to Shanghai with on-line video service** (*Invited Paper*), Bo Liu, Xiangjun Xin, Lijia Zhang, Beijing Univ. of Posts and Telecommunications (China) [10019-21]

15:00: **Mode evolution in polarization maintain few-mode fiber and applications in mode-division-multiplexing systems** (*Invited Paper*), Yan Li, Xinglin Zeng, Jian Wu, Beijing Univ. of Posts and Telecommunications (China) [10019-22]

15:30: **Optical polarization detection using integrated metal gratings**, Muhammad Azhar A. Naeem, Kamran Abid, Univ. of the Punjab (Pakistan); Faiz Rahman, Univ. of Glasgow (United Kingdom) [10019-23]

15:50: **Experimental measurement of effective refractive index difference for few-mode polarization-maintaining fibers using S₂ method**, Wenting Guo, Yan Li, Xinglin Zeng, Beijing Univ. of Posts and Telecommunications (China); Qi Mo, FiberHome Telecommunication Technologies Co., Ltd. (China); Wei Li, Jian Wu, Beijing Univ. of Posts and Telecommunications (China) [10019-24]

16:10: **Uniform flat-top interleaver consisting of a two-stage cascaded Mach-Zehnder interferometer**, Huai Yin Su, Yundong Zhang, Yong Feng Wu, Chang Qiu Yu, Hui Li, Ping Yuan, Harbin Institute of Technology (China) [10019-25]

16:30: **A distributed optical fiber sensing system for dynamic strain measurement based on artificial reflection array and rapid phase discrimination**, Zhenhong Sun, Xuping Zhang, Yanting Li, Yuanyuan Shan, Yixin Zhang, Nanjing Univ. (China) [10019-26]

16:50: **Improved hybrid polymer/PbS quantum dot infrared phototransistors incorporating single-layer graphene**, Xiaoxian Song, Yating Zhang, Haiting Zhang, Yu Yu, Mingxuan Cao, Yongli Che, JianLong Wang, Xin Ding, Jianquan Yao, Tianjin Univ. (China) [10019-27]

17:10: **A calibration method for photon counters using a customized standard light source**, Shulang Lin, Huarong Gu, Qiao Feng Tan, Tsinghua Univ. (China) [10019-28]

17:30: **Coupling between fiber-optic microring and lithium niobate microwaveguide chip towards active photonic interlink devices**, Suxu Zhou, Yiting Wang, Yuan Wang, Zhuoqi Wu, Jianhui Yu, Zhe Chen, Huihui Lu, Jinan Univ. (China) [10019-29]

FRIDAY 14 OCTOBER

SESSION 6

LOCATION: ROOM 201B FRI 9:00 TO 10:00

Photonic Materials and Devices/Detectors I

Session Chair: **Changyuan Yu**, National Univ. of Singapore (Singapore)

9:00: **A simple and low cost method to fabricate well-controllable and organized silicon nanowire arrays**, Salah E. El-Zohary, The Univ. of Tokushima (Japan) and Tanta Univ. (Egypt); Yusuke Iguchi, Masanobu Haraguchi, The Univ. of Tokushima (Japan) [10019-30]

9:20: **Characterization of organic solar cells: challenges and applications**, Haifeng Meng, Limin Xiong, Junchao Zhang, National Institute of Metrology (China); Fengjun Ye, National Institute of Metrology (China) and Peking Univ. (China); Yingwei He, National Institute of Metrology (China); Bifeng Zhang, National Institute of Metrology (China) and Peking Univ. (China); Chuan Cai, National Institute of Metrology (China) [10019-31]

9:40: **Organic semiconductor materials and devices for visible light communications**, Shuyu Zhang, Fudan Univ. (China); Pavlos P. Manousiadis, Univ. of St. Andrews (United Kingdom); Dobroslav Tsonev, The Univ. of Edinburgh (United Kingdom); Yue Wang, Thomas F. Krauss, Univ. of York (United Kingdom); Harald Haas, The Univ. of Edinburgh (United Kingdom); Ifor D. W. Samuel, Graham A. Turnbull, Univ. of St. Andrews (United Kingdom). [10019-33]

Tea/Coffee Break Fri 10:00 to 10:30

SESSION 7

LOCATION: ROOM 201B FRI 10:30 TO 11:50

Photonic Materials and Devices/Detectors II

Session Chair: **Changyuan Yu**, National Univ. of Singapore (Singapore)

10:30: **Electro-optical circuit boards with polymer optical waveguides: A scalable technology for in-chassis connections**, Marika P. Immonen, TTM Technologies, Inc. (Finland); Jinhua Wu, Hui Juan Yan, Long X. Zhu, Ruizhi Shi, TTM Technologies, Inc. (China). [10019-34]

10:50: **Novel long-wavelength mushroom-type vertical-illumination PIN photodiode**, Junchu Wang, Xiaofeng Duan, Yongqing Huang, Kai Liu, Jiarui Fei, Qingtao Chen, Xiao-Min Ren, Beijing Univ. of Posts and Telecommunications (China) [10019-35]

11:10: **Simulation of InGaAs/InP heterojunction phototransistors**, Min Zhu, Jun Chen, Soochow Univ. (China). [10019-36]

11:30: **On-chip integration for in-plane video transmission using visible light**, Yongchao Yang, Xumin Gao, Jialei Yuan, Yuanhang Li, Yongjin Wang, Nanjing Univ. of Posts and Telecommunications (China) [10019-37]

CONFERENCE 10020

LOCATION: ROOM 203B

Wednesday–Thursday 12–13 October 2016 • Proceedings of SPIE Vol. 10020

Optoelectronic Imaging and Multimedia Technology IV

Conference Chairs: **Qionghai Dai**, Tsinghua Univ. (China); **Tsutomu Shimura**, The Univ. of Tokyo (Japan)

Program Committee: **Moshe Ben-Ezra**, MIT Media Lab. (USA); **Xudong Chen**, National Univ. of Singapore (Singapore); **Ya Cheng**, Shanghai Institute of Optics and Fine Mechanics (China); **Jinwei Gu**, Huawei Technologies Co., Ltd. (USA); **Yo-Sung Ho**, Gwangju Institute of Science and Technology (Korea, Republic of); **Bormin Huang**, Univ. of Wisconsin-Madison (USA); **Matthias B. Hullin**, Univ. Bonn (Germany); **Ivo Ihrke**, INRIA Bordeaux (France); **Yoshiaki Kanamori**, Tohoku Univ. (Japan); **Chun-Chieh Jay Kuo**, The Univ. of Southern California (USA); **Kyros Kutulakos**, Univ. of Toronto (Canada); **Wanqing Li**, Univ. of Wollongong (Australia); **Yuan Luo**, National Taiwan Univ. (Taiwan, China); **Imari Sato**, National Institute of Informatics (Japan), Tokyo Institute of Technology (Japan); **Yoichi Sato**, The Univ. of Tokyo (Japan); **Yoav Yosef Schechner**, Technion-Israel Institute of Technology (Israel); **John T. Sheridan**, Univ. College Dublin (Ireland); **Guangming Shi**, Xidian Univ. (China); **Lei Tian**, Univ. of California, Berkeley (USA); **Feng Wu**, Univ. of Science and Technology of China (China); **Bo Yang**, Univ. of Shanghai for Science and Technology (China); **Jingyi Yu**, Univ. of Delaware (USA); **Xiaolin Zhang**, Shanghai Institute of Microsystem and Information Technology (China); **Zhenrong Zheng**, Zhejiang Univ. (China)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

- 9:00: Opening Ceremony
- 9:20: SPIE Fellow Recognition Ceremony
- 9:25: Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony
- 9:40: Freeform optics opening up a bright future for imaging instrumentation (Plenary), Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]
- 10:20: Tea/Coffee Break
- 10:40: Innovative large wide-field astronomical telescope: LAMOST (Plenary), Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]
- 11:20: Quantum dot photonics: from science to practical implementation (Plenary), Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

SESSION 1

LOCATION: ROOM 203B WED 13:30 TO 15:20

Computational Imaging I

- 13:30: A high resolution imaging method used compressive sensing theory based on array detector applications (Invited Paper), Jinping He, Yuchen Liu, Haibo Zhao, Beijing Institute of Space Mechanics and Electricity (China) [10020-1]
- 14:00: Large field-of-view range-gated laser imaging based on image fusion, Pengdao Ren, Institute of Semiconductors (China) and Univ. of Chinese Academy of Sciences (China); Xinwei Wang, Liang Sun, RuiRong You, Yan Zhou, Institute of Semiconductors (China) [10020-2]
- 14:20: compressive full-waveform LIDAR with low-cost sensors, Weiyi Yang, Jun Ke, Beijing Institute of Technology (China) [10020-3]
- 14:40: Iterative deconvolution methods for ghost imaging, Wei Wang, Guohai Situ, Shanghai Institute of Optics and Fine Mechanics, CAS (China) ... [10020-4]
- 15:00: Development of 36M-pixel x-ray detector for large field of view and high-resolution micro-CT, Keiji Umetani, Japan Synchrotron Radiation Research Institute (JASRI) (Japan) [10020-5]
- Tea/Coffee Break Wed 15:20 to 15:50

SESSION 2

LOCATION: ROOM 203B WED 15:50 TO 17:40

3D Image/Video System

- 15:50: Underwater three-dimensional range-gated laser imaging based on triangular-range-intensity profile spatial-correlation method (Invited Paper), Xinwei Wang, Xiaoquan Liu, Pengdao Ren, Liang Sun, Songtao Fan, Pingshun Lei, Yan Zhou, Institute of Semiconductors (China) [10020-6]
- 16:20: Reflectivity and depth images based on TCSPC, Xuejie Duan, Xi'an Institute of Optics and Precision Mechanics, CAS (China); Lin Ma, Xidian Univ. (China); Yan Kang, Xi'an Institute of Optics and Precision Mechanics, CAS (China); Tongyi Zhang, Xi'an Institute of Optics and Precision Mechanics, CAS (China) [10020-7]
- 16:40: An Efficient Anti-occlusion Depth Estimation using Generalized EPI Representation in Light Field, Hao Zhu, Qing Wang, Northwestern Polytechnical Univ. (China) [10020-8]
- 17:00: Realization of three dimensional thermal infrared imaging by structured light and binocular vision, Debing Zeng, Saint Peter's Univ. (USA); Junhua Sun, BeiHang Univ. (China) [10020-9]
- 17:20: Integral imaging-based optical refocusing of 3D objects on their full-depth by using local δ -periodic functions and subdivided-elemental images, Lingyu Ai, Holodigilog Research Ctr. (Korea, Republic of); Eun-Soo Kim, Holodigilog Human Media Research Ctr. (Korea, Republic of) [10020-10]

THURSDAY 13 OCTOBER

SESSION 3

LOCATION: ROOM 203B THU 8:10 TO 10:20

Computational Imaging II

- 8:10: Single-pixel hyperspectral imaging (Invited Paper), Jinli Suo, Yuwang Wang, Liheng Bian, Ziwei Li, Tsinghua Univ. (China) [10020-11]
- 8:40: Spatial-spectral data redundancy requirement for Fourier ptychographic microscopy, Jiasong Sun, Yuzhen Zhang, Nanjing Univ. of Science and Technology (China); Qian Chen, Nanjing Univ of Science and Technology (China); Chao Zuo, Nanjing Univ. of Science and Technology (China) [10020-12]
- 9:00: Estimating spectral reflectance from digital camera through samples selection technique, Bin Cao, Ningfang Liao, Wen-Ming Yang, Liwei Shao, Dehuang Huang, Beijing Institute of Technology (China); Haobo Chen, Beijing Institute of Technology (China) and Shenzhen Research Institute (China) [10020-13]
- 9:20: light field camera self-calibration and registration, Zhe Ji, Chunping Zhang, Qing Wang, Northwestern Polytechnical Univ. (China) [10020-14]
- 9:40: An effective rectification method for lenselet-based plenoptic cameras, Jing Jin, Yiwei Cao, Weijia Cai, Wanlu Zheng, Ping Zhou, Southeast Univ. (China) [10020-15]
- 10:00: Design of optoelectronic imaging system with high resolution and large field-of-view based on dual CMOS, Hanglin Cheng, Qun Hao, Yao Hu, Jie Cao, Shaopu Wang, Lin Li, Beijing Institute of Technology (China) [10020-16]
- Tea/Coffee Break Thu 10:20 to 10:50

SESSION 4

LOCATION: ROOM 203B THU 10:50 TO 12:00

Image Analysis/Retrieval

10:50: **Behavior analysis of video object in complicated background** (*Invited Paper*), Wenting Zhao, Shigang Wang, Wei Wu, Yang Lu, Yunpeng Hu, Jilin Univ. (China) [10020-17]

11:20: **The efficient model to define a single light source position by use of high dynamic range image of 3D scene**, Xu-yang Wang, Changchun Univ. of Science and Technology (China); Dmitry D. Zhdanov, Igor S. Potemin, ITMO Univ. (Russian Federation); Ying Wang, Han Cheng, Changchun Univ. of Science and Technology (China) [10020-18]

11:40: **X-ray technique application in evaluating the quality of tomato seeds**, Xueguan Zhao, Xiu Wang, Beijing Academy of Agriculture and Forestry Sciences (China) and National Research Ctr. of Intelligent Equipment for Agriculture (China) and Key Lab. of Agri-informatics Ministry of Agriculture (China); Culling Li, Beijing Academy of Agriculture and Forestry Sciences (China) [10020-20]

Lunch/Exhibition Break Thu 12:00 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at <http://spie.org/PAPosterGuidelines>.

Research on key technology of yacht positioning based on binocular parallax, Wei Wang, Ping Wei, Beijing Institute of Technology (China) [10020-19]

Propagation characteristics of orbital angular momentum for remote imaging, Li Lu, Air Force Early Warning Academy (China) [10020-29]

Image preprocessing for vehicle panoramic system, Ting Wang, Ligu Chen, Soochow Univ. (China) and Collaborative Innovation Ctr. of Suzhou Nano Science and Technology (China) [10020-31]

Simultaneous localization and mapping of mobile robot using a pose graph and a stereo camera, Junqin Lin, Baoling Han, Ming Zhao, Xinliang Zhong, Jiahang Zhao, Beijing Institute of Technology (China) [10020-32]

Online multi-object tracking with behavior learning, Le Dan, Zinan Lin, Xiangyang Ji, Qionghai Dai, Tsinghua Univ. (China) [10020-34]

Studies on filtered back-projection imaging reconstruction based on a modified wavelet threshold function, Zhong Ren, Jiangxi Science and Technology Normal Univ. (China) and Nanchang Univ. (China); Guodong Liu, Jiangxi Science and Technology Normal Univ. (China) [10020-35]

Experimental study of polarization imaging characteristics on various materials, Sike Bai, Duan Jin, Changchun Univ. of Science and Technology (China); Yizhuo Lu, Jinlin Univ. (China); Xinxin Wang, Tianwei Chen, Changchun Univ. of Science and Technology (China) and Jinlin Univ. (China) [10020-36]

Generation of high-dynamic range image from digital photo, Ying Wang, Changchun Univ. of Science and Technology (China); Igor S. Potemin, Dmitry D. Zhdanov, ITMO Univ. (Russian Federation); Xu-yang Wang, Han Cheng, Changchun Univ. of Science and Technology (China) [10020-37]

A chest-shape target automatic detection method based on Deformable Part Models, Mo Zhang, Weiqi Jin, Li Li, Beijing Institute of Technology (China) [10020-38]

Detection algorithm of single-frame small target based on NSCT, Wei Zhang, Wei Chen, Beihua Univ. (China) [10020-39]

A cartoon-texture decomposition-based image deburring model by using framelet-based sparse representation, Huasong Chen, Xiangji Qu, Ying Jin, Zhenhua Li, Anzhi He, Nanjing Univ. of Science and Technology (China) [10020-40]

The design of red-blue 3D video fusion system based on DM642, Rongguo Fu, Hao Luo, Guiyuan Wang, YiFang Wei, Jin Lv, Hao Zhang, Shu Feng, YaFeng Qiu, Nanjing Univ. of Science and Technology (China) [10020-41]

High-resolution three-dimensional imaging with compress sensing, Jingyi Wang, Beijing Institute of Technology (China); Jun Ke, Beijing Institute of Technology (China) [10020-42]

Range-gated underwater laser imaging enhancement based on contrast-limited adaptive histogram equalization, Liang Sun, Xinwei Wang, Xiaoquan Liu, RuiRong You, Pengdao Ren, Pingshun Lei, Jun He, Yan Zhou, Yuliang Liu, Institute of Semiconductors (China) [10020-43]

A novel representation and compression method in layered depth video, Zefu Li, Ran Ma, Shanghai Univ. (China) [10020-44]

Pedestrian detection based on redundant wavelet transform, Lin Huang, Tie-Jun Yang, Li-ping Ji, Ping Hu, Guilin Univ. of Technology (China) [10020-45]

High-resolution image restoration algorithm of wavefront coding system based on Lucy Richardson algorithm and wavelet denoising, Qiang Li, Feng Xu, Soochow Univ. (China) [10020-46]

Cross-center extraction with sub-pixel accuracy, Guanghua Wu, Hefei Univ. of Technology (China) and Academy of Opto-Electronics, CAS (China); Zili Zhang, Weihou Zhou, Academy of Opto-Electronics, CAS (China) [10020-47]

Human body region enhancement method based on Kinect infrared imaging, Lei Yang, Zhongyuan Univ. of Technology (China); Yubo Fan, Xian Jiaotong Univ. (China); Xiaowei Song, Wenjing Cai, Zhongyuan Univ. of Technology (China) [10020-48]

Binocular stereo matching method based on structure tensor, Xiaowei song, Manyi yang, Zhongyuan Univ. of Technology (China); Yubo Fan, Xian Jiaotong Univ. (China); Lei Yang, Zhongyuan Univ. of Technology (China) [10020-49]

A vertical parallax reduction method for stereoscopic video based on adaptive interpolation, Qingyu Li, Yan Zhao, Jilin Univ. (China) [10020-50]

Single face image reconstruction for super resolution using support vector regression, Haijie Lin, Qiping Yuan, Tianjin Univ. of Technology (China); Zhihong Chen, Xiaoping Yang, Tianjin Univ. (China) [10020-51]

Pure-optical broadband photoacoustic detector based on total internal reflection, Xiaoyi Zhu, Wenzhao Li, Changhui Li, Peking Univ. (China) [10020-52]

Research on free-space optical communication based on time-division multiplexing, Dan Wang, Jinan Univ. (China); Wenchao Zhou, The Second Compulsory Drug Rehabilitation Ctr. of Guangdong Province (China); Zhen Li, Zhenqiang Chen, Hao Yin, Siqi Zhu, Anming Li, Jinan Univ. (China) [10020-53]

Sinogram-based adaptive iterative reconstruction for sparse view x-ray computed tomography, Dragos Trinca, Yang Zhong, Y. Z. Wang, Talgat Mamyrbayev, Tomsk Polytechnic Univ. (Russian Federation); E. Libin, Tomsk State Univ. (Russian Federation) [10020-54]

Research of nonlinear simulation on sweep voltage of streak tube imaging lidar, Qian Zhai, Shao-kun Han, Yu Zhai, Jie-yu Lei, Jian-feng Yao, Beijing Institute of Technology (China) [10020-55]

Automatic identification of various spectral features at the time-resolved excitation emission matrix of dissolved organic matters and phytoplankton cells in seawater, Pavel A. Salyuk, V.I. Il'ichev Pacific Oceanological Institute (Russian Federation) and Far Eastern State Univ. (Russian Federation); Vladimir Krikun, V.I. Il'ichev Pacific Oceanological Institute (Russian Federation) [10020-56]

The equipment for time-resolved measurements of excitation-emission matrix of seawater fluorescence in natural conditions, Ivan G. Nagorny, Far Eastern State Univ. (Russian Federation) and Institute for Automation and Control Processes (Russian Federation); Pavel A. Salyuk, Vladimir A. Krikun, V.I. Il'ichev Pacific Oceanological Institute (Russian Federation); Alexander Yu Mayor, Konstantin A. Shmirko, Institute for Automation and Control Processes (Russian Federation) [10020-57]

SESSION 5

LOCATION: ROOM 203B THU 14:30 TO 16:20

Optics

14:30: **Development of an atmospheric turbulence simulator for deformable mirror evaluation** (*Invited Paper*), Jun Ho Lee, Sunmi Shin, Kongju National Univ. (Korea, Republic of); Hyug-Gyo Rhee, Ho-Soon Yang, Korea Research Institute of Standards and Science (Korea, Republic of); Ho-Jae Lee, Korea Institute of Industrial Technology (Korea, Republic of) [10020-21]

15:00: **Solutions to improve space-time adaptive systems resolution**, Hua Liu, Science and Technology on Electro-Optic Control Lab. (China) [10020-22]

15:20: **Calculation of overlapping pixels for optical-butting focal plane**, Fuqiang Li, Junlei Chang, Bei Chu, Beijing Institute of Space Mechanics and Electricity (China) [10020-23]

15:40: **Enhancing the actual operational performance of coaxial three-mirror anastigmatic optical system by wavefront coding**, Zhang Binglong, Bin Hu, Jianguo Jin, Bo Li, Ningjuan Ruan, Yun Su, Beijing Institute of Space Mechanics and Electricity (China) [10020-24]

16:00: **Break diffraction limit using nearest-neighbour pixel-modified optical transfer function**, Yu Wang, GDS Optics (USA) [10020-26]

SESSION 6

LOCATION: ROOM 203B THU 16:20 TO 17:30

Image/Video Processing

16:20: **Colour image encryption using affine transform in fractional Hartley domain** (*Invited Paper*), Anil K. Yadav, Phool Singh, Kehar Singh, The Northcap Univ. (India) [10020-27]

16:50: **A multi-image super-resolution via hybrid registration with depth information**, Shi Lei, Tsinghua Univ. (China) [10020-28]

17:10: **Application of visible spectrum imaging technique to reveal automatically-disappearing handwriting**, Yi Su, Institute of Forensic Science (China) [10020-30]

CONFERENCE 10021

LOCATION: ROOM 201A

Wednesday–Thursday 12–13 October 2016 • Proceedings of SPIE Vol. 10021

Optical Design and Testing VII

Conference Chairs: **Yongtian Wang**, Beijing Institute of Technology (China); **Tina E. Kidger**, Kidger Optics Associates (United Kingdom); **Kimio Tatsuno**, Koga Research Institute, Ltd. (Japan)

Program Committee: **Yasuhiro Awatsuji**, Kyoto Institute of Technology (Japan); **Jian Bai**, Zhejiang Univ. (China); **Pablo Benítez**, Univ. Politécnic de Madrid (Spain); **Toshihide Dohi**, OptiWorks, Inc. (Japan); **Chunlei Du**, Chongqing Institute of Green and Intelligent Technology (China); **Fabian Duerr**, Vrije Univ. Brussel (Belgium); **Yi-Chin Fang**, National Kaohsiung First Univ. of Science and Technology (Taiwan, China); **Sen Han**, Univ. of Shanghai for Science and Technology (China); **Qun Hao**, Beijing Institute of Technology (China); **Hong Hua**, College of Optical Sciences, The Univ. of Arizona (USA); **Dong Hoon Hyun**, Korea Polytechnic Univ. (Korea, Republic of); **Byung Yun Joo**, Korea Univ. of Technology and Education (Korea, Republic of); **Michael Kim**, Modern High-Tech Co., Ltd. (Korea, Republic of); **Tsuyoshi Konishi**, Osaka Univ. (Japan); **Yanqiu Li**, Beijing Institute of Technology (China); **Irina L. Livshits**, National Research Univ. of Information Technologies, Mechanics and Optics (Russian Federation); **Osamu Matoba**, Kobe Univ. (Japan); **Xiang Peng**, Shenzhen Univ. (China); **Jannick P. Rolland**, Univ. of Rochester (USA); **Jaе Myung Ryu**, Kumoh National Institute of Technology (Korea, Republic of); **José Sasián**, College of Optical Sciences, The Univ. of Arizona (USA); **Qiaofeng Tan**, Tsinghua Univ. (China); **Sandy To**, The Hong Kong Polytechnic Univ. (Hong Kong, China); **Theo Tschudi**, Technische Univ. Darmstadt (Germany); **Wilhelm Ulrich**, Carl Zeiss AG (Germany); **H. Paul Urbach**, Technische Univ. Delft (Netherlands); **David M. Williamson**, Nikon Research Corp. of America (USA)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

- 9:00: Opening Ceremony
- 9:20: SPIE Fellow Recognition Ceremony
- 9:25: Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony
- 9:40: Freeform optics opening up a bright future for imaging instrumentation (Plenary), Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]
- 10:20: Tea/Coffee Break
- 10:40: Innovative large wide-field astronomical telescope: LAMOST (Plenary), Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]
- 11:20: Quantum dot photonics: from science to practical implementation (Plenary), Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

SESSION 1

LOCATION: ROOM 201A WED 13:30 TO 15:30

Novel Optical System Design

Session Chair: **Kimio Tatsuno**, Koga Research Institute, Ltd. (Japan)

- 13:30: Efficient stimulated Raman scattering in hybrid liquid-silica fibers for wavelength conversion (Invited Paper), Sylvie Lebrun, Lab. Charles Fabry, Institut d'Optique (France); Minh Châu Phan Huy, Philippe Delaye, Institut d'Optique Graduate School (France); Gilles Pauliat, Lab. Charles Fabry, Institut d'Optique (France) [10021-1]
- 13:55: Diffractive optical elements for multi-dimensional subdiffraction-limit spot generation: design, demonstration, and characterization (Invited Paper), Yusuke Ogura, Jun Tanida, Osaka Univ. (Japan) [10021-2]
- 14:20: The development of an adaptive optics system and its application to the biological microscope (Invited Paper), Masayuki Hattori, Yosuke Tamada, National Institute for Basic Biology (Japan) [10021-3]
- 14:45: Hybrid high-speed organic electro-optic modulator, Feng Qiu, Kyushu Univ. (Japan) [10021-4]
- 15:00: In-depth performance analysis of a novel R-ORMS (remote optical rainfall measurement sensor), Muhammad Hassan Bin Afzal, Primeasia Univ. (Bangladesh) [10021-5]
- 15:15: Chromostereopsis in "virtual reality" adapters with electrically-tunable liquid lens oculars, Maris Ozolinsh, Kristine Muizniece, Univ. of Latvia (Latvia); Janis Berzinsh, "Barona Optika" (Latvia) [10021-6]
- Tea/Coffee Break Wed 15:30 to 16:00

SESSION 2

LOCATION: ROOM 201A WED 16:00 TO 17:30

Imaging and Display Systems

Session Chair: **Irina L. Livshits**, ITMO Univ. (Russian Federation)

- 16:00: Aberration vignetting phenomena and its visualization in wide angular objectives (Invited Paper), Marina Letunovskaya, Irina L. Livshits, Igor S. Potemin, Dmitry D. Zhdanov, Sergey Okishev, ITMO Univ. (Russian Federation); Heidi Ottevaere, Vrije Univ. Brussel (Belgium) ... [10021-7]
- 16:25: Single-pixel imaging by Hadamard transform and ghost imaging and its application for hyperspectral imaging (Invited Paper), Yasuhiro Mizutani, Osaka Univ. (Japan); Kyuki Shibuya, The Univ. of Tokushima (Japan); Hiroki Taguchi, Osaka Univ. (Japan); Tetsuo Iwata, The Univ. of Tokushima (Japan); Yasuhiro Takaya, Osaka Univ. (Japan); Takeshi Yasui, The Univ. of Tokushima (Japan) [10021-8]
- 16:50: See-through head-mounted display with geometrical waveguide: a review (Invited Paper), Qichao Hou, Dewen Cheng, Yongtian Wang, Beijing Institute of Technology (China) [10021-9]
- 17:15: A novel type of high-resolution dual-channel Kirkpatrick-Baez microscope, Qing Xie, Baozhong Mu, Yaran Li, Tongji Univ. (China) [10021-10]

THURSDAY 13 OCTOBER

SESSION 3

LOCATION: ROOM 201A THU 8:00 TO 10:00

Design and Fabrication Methods

Session Chair: **Yongtian Wang**, Beijing Institute of Technology (China)

- 8:00: The angular divergence control of partially-coherent beams using a phase-only liquid spatial light modulator (Invited Paper), Xiaolong Ni, Changchun Univ. of Science and Technology (China) [10021-11]
- 8:25: Multi-tool design and analysis of an automotive HUD (Invited Paper), Bruce R. Irving, Steve Mulder, David M. Hasenauer, Synopsys, Inc. (USA) [10021-12]
- 8:50: Optical processing deep inside optical materials using counter-propagating pulse-shaped spatial solitons (Invited Paper), Masaki Hisaka, Osaka Electro-Communication Univ. (Japan) [10021-13]
- 9:15: An integrated solution for compression-molded glass lenses, Bo Tao, Ye Yuan, Xinlin Zhou, Hua Chen, Wuhan Univ. of Science and Technology (China) [10021-14]
- 9:30: Two-dimensional analytical modeling of a linear variable filter for spectral order sorting, Cheng-Hao Ko, Yueh-Hsun Wu, Symphony Chakraborty, Sheng-Yu Tsai, Chi-Tsung Hong, National Taiwan Univ. of Science and Technology (Taiwan, China); Bang-Ji Wang, Jih-Run Tsai, Chiu-Der Hsiao, National Space Organization (Taiwan, China) [10021-15]
- 9:45: Application of Q-type aspheric surface in the design of Wynne-Dyson projection lens, Cheng-Fang Ho, Wei-Jei Peng, Wei-Yao Hsu, Instrument Technology Research Ctr. (Taiwan, China) [10021-16]
- Tea/Coffee Break Thu 10:00 to 10:25

SESSION 4

LOCATION: ROOM 201A THU 10:25 TO 12:00

Freeform Optics and Optimization

Session Chair: **Tina E. Kidger**,
Kidger Optics Associates (United Kingdom)

10:25: **Direct design of laser-beam shapers, zoom-beam expanders, and combinations thereof** (*Invited Paper*), Fabian Duerr, Hugo Thienpont, Vrije Univ. Brussel (Belgium) [10021-17]

10:50: **Design of aspheric multifocal contact lens using spline curve** (*Invited Paper*), Lien T. Vu, National Taiwan Univ. of Science and Technology (Taiwan, China) [10021-18]

11:15: **Design and verification of a flat-field aberration-corrected concave blaze grating for hyperspectral imaging**, Cheng-Hao Ko, Sheng-Yu Tsai, Yueh-Hsun Wu, Chi-Tsung Hong, National Taiwan Univ. of Science and Technology (Taiwan, China); Jih-Run Tsai, Bang-Ji Wang, Chiu-Der Hsiao, National Space Organization (Taiwan, China) [10021-19]

11:30: **Aspheric and freeform surfaces test with non-null subaperture stitching interferometry**, Dong Liu, Lei Zhang, Yongying Yang, Tu Shi, Jian Bai, Yibing Shen, Zhejiang Univ. (China) [10021-20]

11:45: **Design of freeform unobscured reflective imaging systems using CI method**, Tong Yang, Tsinghua Univ. (China); Wei Hou, Tsinghua University (China); Xiaofei Wu, Guofan Jin, Jun Zhu, Tsinghua Univ. (China) [10021-21]

Lunch/Exhibition BreakThu 12:00 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at <http://spie.org/PAPosterGuidelines>.

Spatial distribution of current density and thermal resistance of high-power AlInGaN "vertical" and "face-up" light-emitting diodes, Andrei V. Aladov, Submicron Heterostructures for Microelectronics, Research and Engineering Ctr., RAS (Russian Federation); Vladimir D. Kuptsov, Saint-Petersburg State Polytechnical Univ. (Russian Federation); Anton E. Chernyakov, Aleksandr L. Zakgeim, Submicron Heterostructures for Microelectronics, Research and Engineering Ctr., RAS (Russian Federation); Vladimir P. Valyukhov, Saint-Petersburg State Polytechnical Univ. (Russian Federation) [10021-31]

Single camera stereo vision recognition method for Parts' pose on CMM, Fengshan Huang, Yamin Qin, Hebei Univ. of Science and Technology (China) [10021-32]

Study on the characteristics of a novel optical phased array based on waveguide, JiaYu Ye, Lijing Li, Wen Chen, BeiHang Univ. Institute of Optics and Electronics (China) [10021-33]

Stray light analysis on helicopter optical landing guidance system, Li Yangyang, YiFan Huang, Li Lin, Beijing Institute of Technology (China) [10021-34]

Improved algorithm of ray tracing in ICF cryogenic targets, Rui Zhang, Yongying Yang, Tong Ling, Zhejiang Univ. (China); Jiabin Jiang, Zhejiang Univ. (China) [10021-35]

An improved NAS-RIF algorithm for image restoration, Weizhe Gao, Xi Zhao, Jianhua Zou, Xi'an Jiaotong Univ. (China); Rong Xu, Xi'an Satellite Control Ctr. (China) [10021-36]

Optimization technique of wavefront coding system based on ZEMAX externally-compiled programs, Libo Han, Yuejin Zhao, Liquan Dong, Ming Liu, Xiaohua Liu, Beijing Institute of Technology (China) [10021-37]

Research on characteristic of radiometric imaging quality for spaceborne camera with super-wide field-of-view, Huan Yin, Aerospace DongFangHong Satellite Co., Ltd. (China) and Anhui Institute of Optics and Fine Mechanics (China) and Univ. of Science and Technology of China (China); Qingshan Xu, Xiaoping Wu, Anhui Institute of Optics and Fine Mechanics (China); Bai Zhaoguang, Zhu Jun, Lu Chunling, Di Guodong, Wu Bin, Aerospace DongFangHong Satellite Co., Ltd. (China) [10021-38]

Multifocal intraocular lens to correct presbyopia, Lai Jiang, Yongji Liu, Xiaolin Wang, Nankai Univ. (China) [10021-39]

Simulation of the BSDF measurement capabilities for various materials with GCMS-4 gonio-spectrophotometer, Dmitry D. Zhdanov, Igor S. Potemin, ITMO Univ. (Russian Federation); Vadim G. Sokolov, M. V. Keldysh Institute of Applied Mathematics (Russian Federation); Alexey A. Garbul, S.I. Vavilov State Optical Institute (Russian Federation); Alexey G. Voloboy, Vladimir A. Galaktionov, M. V. Keldysh Institute of Applied Mathematics (Russian Federation) [10021-41]

Image amplification-based super-resolution reconstruction procedure designed for wavefront-coded imaging system, Zhao Hui, Xi'an Institute of Optics and Precision Mechanics, CAS (China); Caihui Zong, Univ. of Chinese Academy of Sciences (China) and Xi'an Institute of Optics and Precision Mechanics, CAS (China); Jingxuan Wei, Xidian Univ. (China); Xiaopeng Xie, Xi'an Institute of Optics and Precision Mechanics, CAS (China) and Univ. of Chinese Academy of Sciences (China) [10021-42]

Development of miniature high-collimated solar simulator, Pengsong Zhang, Beijing Institute of Spacecraft Environment Engineering (China); Danyi Wang, Beijing Institute of Spacecraft Environment Engineering (China); Bolun Zhang, Linhua Yang, Beijing Institute of Spacecraft Environment Engineering (China) [10021-43]

Full-field calibration and compensation of lateral chromatic aberration based on unwrapped phase, Xiaohong Liu, Shujun Huang, Zonghua Zhang, Hebei Univ. of Technology (China) [10021-44]

A design of panoramic lens system to realize the projection from the local annular object field to rectangle image field by using freeform surfaces, Xuqi Bian, Tao Ma, Jun Zhang, Soochow Univ. (China) [10021-45]

Measurement of optical return loss based on optical time domain, Qiang Sun, Ji-song YAN, Zhi-hui Zhang, Qiang HAN, Dong-sheng Wang, The 41st Institute of China Electronics Technology Group Corp. (China) .. [10021-46]

Analytical calculation of light scattering from randomly rough Gaussian surfaces according to slope probability, Zhen Gang Yan, Xi'an Modern Control Technology Research Institute (China); Keding Yan, Xi'an Univ. of Technology (China); Liang Xue, Shanghai Univ. of Electric Power (China); Shouyu Wang, Jiangnan Univ. (China) [10021-47]

Three-dimensional illumination system for tomographic particle image velocimetry, Fen Zhang, Yang Song, Xiangju Qu, Yunjing Ji, Zhenhua Li, An-zhi He, Nanjing Univ. of Science and Technology (China) [10021-48]

Design of precise assembly equipment of large optical components, Pei Guoqing, Xu Xu, Xiong Zhao, Weifeng Du, Yan Han, Ye Lang, Zhou Hai, Xiaodong Yuan, China Academy of Engineering Physics (China) [10021-49]

On freeform configuration to improve system resolution, Hua Liu, Luoyang Institute of Electro-Optical Equipment (China) [10021-50]

Slope error tolerance analysis for candela distribution of total-internal-reflection collimating lens, Tao Luo, Gang Wang, Sun Yat-Sen Univ. (China) [10021-51]

calibration research of focal length measurement using Talbot interferometer, Hongying Fan, Hao Zhao, Hao Chen, Zhewei Jiang, Jing Jia, Southwest Institute of Technical Physics (China) [10021-52]

Simultaneous null test of primary mirror and three mirror in off-axis three mirror, Yajun Niu, Jun Chang, Weilin Chen, Benlan Shen, Beijing Institute of Technology (China) [10021-53]

Polarization properties of cat's eye retroreflector with three-dimensional Jones matrix method, Yuegang Fu, Yahong Li, Wenjun He, Jiayuan Liu, Changchun Univ. of Science and Technology (China) [10021-54]

Characterization on the effect of linear stress birefringence in a total reflection prism (TRP) ring resonator, Dong Li, Chao Bi, Yajun Jiang, Jianlin Zhao, Northwestern Polytechnical Univ. (China) [10021-55]

Measurement for diffraction efficiency of convex gratings, Peng Liu, Xinhua Chen, Jiankang Zhou, Zhicheng Zhao, Quan Liu, Chao Luo, Xiaofeng Wang, Weimin Shen, Minxue Tang, Soochow Univ. (China) [10021-56]

Research on detecting plankton based on darkfield microscopy, Buyu Guo, Jia Yu, Ocean Univ. of China (China) [10021-57]

Design, assembly, and metrology of an oil-immersion microscope objective with long working distance, Wei-Jei Peng, Wen-Lung Lin, Hui-Jean Kuo, Cheng-Fang Ho, Wei-Yao Hsu, Instrument Technology Research Ctr. (Taiwan, China) [10021-58]

Tilt displacement range testing for a piezoelectric deformable mirror, Dongdong Wang, Qun Hao, Yong Song, Beijing Institute of Technology (China); Xuemin Cheng, Graduate School at Shenzhen, Tsinghua Univ. (China); Fan Fan, Heng Li, Beijing Institute of Technology (China) [10021-59]

Optical design of Offner-Chrisp imaging spectrometer with freeform surfaces, Lidong Wei, Jinsong Zhou, Juanjuan Jing, Lei Feng, Yacan Li, Academy of Opto-Electronics, CAS (China) [10021-60]

Design of a holographic waveguide with L configuration, Guangxin Xiang, Wenqiang Li, Luoyang Institute of Electro-Optical Equipment (China) [10021-63]

Design of conical diffraction spectrometer using CCD linear image sensor with rectangular pixels, Qiao Pan, Qinghan Liu, Zhicheng Zhao, Weimin Shen, Soochow Univ. (China) [10021-65]

Design of refractive fore-optics with wide field-of-view and waveband for miniature imaging spectrometer, Jingchao Mao, Minyi Xu, Qinghan Liu, Weimin Shen, Soochow Univ. (China) [10021-66]

Afocal three-mirror anastigmat with zigzag optical axis for widened field-of-view and enlarged aperture, Qi Li, Han Lin, Yangming Jin, Weimin Shen, Soochow Univ. (China) [10021-67]

Assembly and alignment of high-resolution spaceborne optical system, Wang Kai Guo, Min Wang, Feng Lin, Fujian Normal Univ. (China) [10021-68]

CONFERENCE 10021

LOCATION: ROOM 201A

Optical design of a dual-channel two-focal-length system by utilizing azimuth property of PAL structure, Chen Xu, Dewen Cheng, Yongtian Wang, Beijing Institute of Technology (China) [10021-70]

Study of 700mm-diameter primary mirror based on topology optimization and sensitivity analysis, Xin Wang, Juanjuan Jing, Lei Feng, Jinsong Zhou, Academy of Opto-Electronics, CAS (China); Wei Wang, Xi'an Institute of Optics and Precision Mechanics, CAS (China); Yacan Li, Academy of Opto-Electronics, CAS (China) [10021-71]

Wavefront sensing for sparse aperture imaging system based on sub-aperture phase diversity, Junliu Fan, Quanying Wu, Jun Wang, Suzhou Univ. of Science and Technology (China); Baohua Chen, Soochow Univ. (China) [10021-72]

Depolarization of laser beam propagating through atmosphere based on multiple Rayleigh scattering model, Zhang Dai, Electronic Engineering Institute (China); Hao Shiqi, Lei Wang, Qi Zhao, Electronic Engineering Institute (China) and State Key Lab. of Pulsed Power Laser Technology (China) [10021-73]

Mean likelihood estimation of target micro-motion parameters in laser detection, Liren Guo, Yihua Hu, Yunpeng Wang, Institute of Electrical Engineering (China) [10021-74]

Research on focusing properties of multi-vortex phases vector beam loading with different topological charges, XianYi Zhang, Tianjin Univ. of Technology (China) [10021-75]

Design of photonic crystal Fizeau interferometer using self-collimation effect, Jun Wang, Suzhou Univ. of Science and Technology (China) and Soochow Univ. (China); Xiao Yuan, Soochow Univ. (China) [10021-76]

Light concentrator of the wide field-of-view Cherenkov telescope, Rui Yang, Xiyi Sheng, Bollin Liao, Yunnan Univ. (China) [10021-77]

Research on simulation and analysis of the parallax of visual optical system, Qiang Ji, You Long, Xiaoxia Li, Xiaohong Liu, Haijun Zhang, Liang Zhou, AVIC Luoyang Institute of Electro-Optical Equipment (China) [10021-78]

The water colority measurement based on HSV chromaticity, Jun Wang, Quanying Wu, Yang Pan, Fan Wang, Suzhou Univ. of Science and Technology (China) [10021-79]

Tomato seeds maturity detection system based on chlorophyll fluorescence, Cuiling Li, Zhijun Meng, Xiu Wang, Beijing Academy of Agriculture and Forestry Sciences (China) [10021-80]

Effect of mixed atmosphere on the properties of InGaZnO thin-films, Chenghan Li, Li Wang, Beijing Univ. of Technology (China) [10021-81]

Space-time adaptive system: architecture method and operation support, Hua Liu, Luoyang Institute of Electro-Optical Equipment (China) [10021-82]

Demonstration of DFTS-OFDM and equalization technology using in VLC communication via the headset port of android device, Fumin Wang, Meng Shi, Nan Chi, Fudan Univ. (China) [10021-83]

An interactive VR system based on full-body tracking and gesture recognition, Xia Zeng, Xinzhu Sang, Duo Chen, Peng Wang, Nan Guo, Binbin Yan, Beijing Univ. of Posts and Telecommunications (China) [10021-84]

SESSION 5

LOCATION: ROOM 201A THU 14:30 TO 15:55

Core Development and Illumination Optics

Session Chair: **Fabian Duerr**, Vrije Univ. Brussel (Belgium)

14:30: **The optical legacy of Imperial College London** (*Invited Paper*), Tina E. Kidger Webb-Moore, Kidger Optics Associates (United Kingdom) [10021-22]

14:55: **Illumination analysis of LAPAN's IR microbolometer**, Bustanul Arifin, Andi M. Tahir, Irwan Priyanto, Indonesia National Institute of Aeronautics and Space (Indonesia) [10021-23]

15:10: **Balancing deflection angles in the design of LED refractive optics with two freeform surfaces**, Sergey V. Kravchenko, Kseniya Andreeva, Mikhail A. Moiseev, Leonid L. Doskolovich, Image Processing Systems Institute (Russian Federation) [10021-24]

15:25: **Analytical design of reflective optical element generating a prescribed intensity distribution**, Egor V. Byzov, Samara State Aerospace Univ. (Russian Federation) and Image Processing Systems Institute (Russian Federation) and LED Optics Design LLC (Russian Federation); Evgeny S. Andreev, Mikhail A. Moiseev, Image Processing Systems Institute (Russian Federation) and Samara State Aerospace Univ. (Russian Federation) and LED Optics Design, LLC (Russian Federation); Leonid L. Doskolovich, Nikolay L. Kazanskiy, Image Processing Systems Institute (Russian Federation) and Samara State Aerospace Univ. (Russian Federation) [10021-25]

15:40: **Visual analysis of the computer simulation results for both imaging and non-imaging optical systems**, Boris K. Barladian, M. V. Keldysh Institute of Applied Mathematics (Russian Federation); Igor S. Potemin, Dmitry D. Zhdanov, ITMO Univ. (Russian Federation); Alexey G. Voloboy, Lev Z. Shapiro, Ildar V. Valiev, Elisey D. Birukov, M. V. Keldysh Institute of Applied Mathematics (Russian Federation) [10021-26]

SESSION 6

LOCATION: ROOM 201A THU 15:55 TO 16:50

Microscopy and Interferometry

Session Chair: **Gilles Pauliat**, Institut d'Optique Graduate School (France)

15:55: **Self-mixing interferometry and its applications** (*Invited Paper*), Yanguang Yu, Yuanlong Fan, Bin Liu, Univ. of Wollongong (Australia) [10021-27]

16:20: **Measurement of optical system aberrations based on randomly-encoded hybrid grating**, Jiabin Jiang, Tong Ling, Yongying Yang, Rui Zhang, Zhejiang Univ. (China) [10021-28]

16:35: **An eight-channel Kirkpatrick-Baez microscope for plasma diagnostic**, Yaran Li, Baozhong Mu, Qing Xie, Qiushi Huang, Zhanshan Wang, Tongji Univ. (China); Jianjun Dong, Zhurong Cao, Shenye Liu, Yongkun Ding, China Academy of Engineering Physics (China) [10021-30]

CONFERENCE 10022

LOCATION: ROOM 5C+5F

Wednesday–Friday 12–14 October 2016 • Proceedings of SPIE Vol. 10022

Holography, Diffractive Optics, and Applications VII

Conference Chairs: **Yunlong Sheng**, Univ. Laval (Canada); **Chongxiu Yu**, Beijing Univ. of Posts and Telecommunications (China); **Changhe Zhou**, Shanghai Institute of Optics and Fine Mechanics (China)

Program Committee: **Liangcai Cao**, Tsinghua Univ. (China); **Linsen Chen**, Soochow Univ. (China); **Chunlei Du**, Chongqing Institute of Green and Intelligent Technology (China); **Min Gu**, RMIT Univ. (Australia); **Byoung-ho Lee**, Seoul National Univ. (Korea, Republic of); **Junchang Li**, Kunming Univ. of Science and Technology (China); **Ai Qun Liu**, Nanyang Technological Univ. (Singapore); **Hai Ming**, Univ. of Science and Technology of China (China); **Xiang Peng**, Shenzhen Univ. (China); **Ting-Chung Poon**, Virginia Polytechnic Institute and State Univ. (USA); **Ching-Cheng Sun**, National Central Univ. (Taiwan, China); **Xiaodi Tan**, Beijing Institute of Technology (China); **Chinhua Wang**, Soochow Univ. (China); **Baoli Yao**, Xi'an Institute of Optics and Precision Mechanics (China); **Toyo-hiko Yatagai**, Utsunomiya Univ. (Japan); **Xiacong Yuan**, Nankai Univ. (China); **Jianlin Zhao**, Northwestern Polytechnical Univ. (China)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

- 9:00: Opening Ceremony
- 9:20: SPIE Fellow Recognition Ceremony
- 9:25: Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony
- 9:40: Freeform optics opening up a bright future for imaging instrumentation (Plenary), Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]
- 10:20: Tea/Coffee Break
- 10:40: Innovative large wide-field astronomical telescope: LAMOST (Plenary), Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]
- 11:20: Quantum dot photonics: from science to practical implementation (Plenary), Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

SESSION 1

LOCATION: ROOM 5C+5F WED 13:30 TO 15:20

Digital Holography I

Session Chair: **Changhe Zhou**, Shanghai Institute of Optics and Fine Mechanics (China)

- 13:30: Common-path digital holographic microscopy and its applications (Invited Paper), Jianlin Zhao, Jianglei Di, Northwestern Polytechnical Univ. (China) [10022-1]
- 13:55: Super-resolution imaging in optical scanning holography using structured illumination (Invited Paper), Zhenbo Ren, Edmund M. Y. Lam, The Univ. of Hong Kong (Hong Kong, China) [10022-2]
- 14:20: Imaging characteristics of self-interference digital holography with structured illumination, Ying Han, Yuhong Wan, Fan Wu, Tianlong Man, Beijing Univ. of Technology (China) [10022-3]
- 14:40: Digital in-line holography microscopic based on the grating illumination with improved resolution by interpolation, Shaodong Feng, Mingjun Wang, Jigang Wu, Shanghai Jiao Tong Univ. (China) [10022-4]
- 15:00: Processing of digital holograms: segmentation and inpainting, Shuming Jiao, Wenbin Zou, Shenzhen Univ. (China) [10022-10]
- Tea/Coffee Break Wed 15:20 to 15:50

SESSION 2

LOCATION: ROOM 5C+5F WED 15:50 TO 17:55

Digital Holography II

Session Chair: **Byoung-ho Lee**, Seoul National Univ. (Korea, Republic of)

- 15:50: Noise reduction performance of the compressive digital one-shot in-line holographic tomography (Invited Paper), Hua Zhang, Liangcai Cao, Hao Zhang, Guofan Jin, Tsinghua Univ. (China) [10022-6]
- 16:15: Three-dimensional edge extraction in optical scanning holography, Yonghong Zong, Changhe Zhou, Jianyong Ma, Wei Jia, Jin Wang, Shanghai Institute of Optics and Fine Mechanics (China) [10022-7]
- 16:35: Resampling masks for noise reduction in phase-shifting digital holography, Wenhui Zhang, Liangcai Cao, Hao Zhang, Song Zong, Guofan Jin, Tsinghua Univ. (China) [10022-8]
- 16:55: Pixel Super-resolution in digital in line holography, Mingjun Wang, Shanghai Jiao Tong Univ. (China); Shaodong Feng, Shanghai Jiaotong Univ. (China) [10022-9]
- 17:15: Digital holographic amplification of modified Jamin (Rozhdestvensky) interferograms, Dmitriy V. Venediktov, Sergey A. Pulkin, Saint Petersburg State Univ. (Russian Federation); Alexander A. Sevryugin, Ibragim M. Tursunov, Vladimir Y. Venediktov, Saint Petersburg Electrotechnical Univ. "LETI" (Russian Federation) [10022-5]
- 17:35: Measuring a thermal expansion of thermoelectric materials by using in-line digital holography, Thanarat Thong-on, Prathan Buranasiri, King Mongkut's Institute of Technology Ladkrabang (Thailand) [10022-11]

THURSDAY 13 OCTOBER

SESSION 3

LOCATION: ROOM 5C+5F THU 8:00 TO 10:15

3D Holographic Imaging and Displays I

Session Chair: **Chongxiu Yu**, Beijing Univ. of Posts and Telecommunications (China)

- 8:00: A head-mounted compressive three-dimensional display system with polarization-dependent focus switching (Invited Paper), Chang-Kun Lee, Seokil Moon, Byoung-ho Lee, Byoung-ho Lee, Seoul National Univ. (Korea, Republic of) [10022-12]
- 8:25: Volumetric display with holographic multi-photon excitations (Invited Paper), Yoshio Hayasaki, Kumagai Kota, Utsunomiya Univ. (Japan) [10022-13]
- 8:50: Focus-tunable multi-view holographic 3D display using a 4k LCD panel (Invited Paper), Qiaojuan Lin, Xinzhu Sang, Zhidong Chen, Peng Wang, Xunbo Yu, Jin Li, Beijing Univ. of Posts and Telecommunications (China) [10022-14]
- 9:15: Vertical viewing angle expansion using lenticular lens sheet., SooBin Kim, Hwi Kim, Korea Univ. (Korea, Republic of) [10022-15]
- 9:35: Optimization of lens shape for autostereoscopic display, Jianshe Ma, Ping Su, Shu An, Graduate School at Shenzhen, Tsinghua Univ. (China) [10022-16]
- 9:55: High-aperture diffractive lens for holographic printer, Alexander Y. Zherdev, Sergey B. Odinov, Dmitry S. Lushnikov, Bauman Moscow State Technical Univ. (Russian Federation); Chermen B. Kaytukov, FSUE "STC" Atlas (Russian Federation) [10022-17]

CONFERENCE 10022

LOCATION: ROOM 5C+5F

SESSION 4

LOCATION: ROOM 5C+5F THU 10:15 TO 12:15

3D Holographic Imaging and Displays II

Session Chair: **Haitao Liu**, Nankai Univ. (China)

10:15: **Development of scanning holographic display using MEMS SLM** (*Invited Paper*), Yasuhiro Takaki, Tokyo Univ. of Agriculture and Technology (Japan) [10022-18]

10:40: **Optical scanning holography for stereoscopic display** (*Invited Paper*), Jung-Ping Liu, Hsuan-Hsuan Wen, Feng Chia Univ. (Taiwan, China) [10022-19]

11:05: **Three dimensional Identification card and applications** (*Invited Paper*), Changhe Zhou, Shanghai Institute of Optics and Fine Mechanics (China) [10022-20]

11:30: **Digital holographic imaging and sensing for biology and sound wave measurement** (*Invited Paper*), Osamu Matoba, Xiangyu Juan, Kobe Univ. (Japan); Yasuhiro Awatsuji, Kyoto Institute of Technology (Japan) ... [10022-21]

11:55: **Temporal speckle method for measuring three-dimensional surface of large-sized rough glass**, Chao Li, Shanghai Institute of Optics and Fine Mechanics (China) and ShanghaiTech Univ. (China); Changhe Zhou, ShaoQing Wang, Xin Fan, Shanghai Institute of Optics and Fine Mechanics (China); Boquan Yang, Shanghai Univ. (China); Yancong Lu, Shanghai Institute of Optics and Fine Mechanics (China) [10022-22]

Lunch/Exhibition Break Thu 12:15 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at <http://spie.org/PAPosterGuidelines>.

Holographic data storage recording system based on computer synthesis of Fourier holograms, Sergey S. Donchenko, Sergey B. Odínokov, Vladimir I. Bobrinev, Alexandr U. Betin, Evgenie Y. Zlokazov, Bauman Moscow State Technical Univ. (Russian Federation) [10022-44]

The influence of diffraction gratings relief distortion on diffraction efficiency during authentication security holograms, Vasily V. Kolyuchkin, Sergey B. Odínokov, Bauman Moscow State Technical Univ. (Russian Federation); Ivan Tsyganov, Bauman Moscow State Technical University (Russian Federation) [10022-47]

Microsphere microscopic imaging with the coherent light, Sha Guo, Yunxin Wang, Dayong Wang, Beijing Univ. of Technology (China) [10022-57]

Generation of speckle vortices by Archimedes' spiral micro-holes, Haibin Sun, Shandong Normal Univ. (China) and Taishan Univ. (China); Tingting Liu, Taishan Univ. (China); Ping Sun, Shandong Normal Univ. (China) ... [10022-58]

Design and numerical simulation of a silicon-based linear polarizer with multilayer metallic nano-gratings, Yu Lin, Jingpei Hu, Chinhua Wang, Soochow Univ. (China) [10022-59]

Asymmetric propagation of electromagnetic waves through nanoscale spirals, Jingpei Hu, Yu Lin, Xiaonan Zhao, Aijiao Zhu, Chinhua Wang, Soochow Univ. (China) [10022-60]

High resolution digital holography based on the point source scanning, Minchao Wang, Dayong Wang, Lu Rong, Yunxin Wang, Fengpeng Wang, Qiaowen Lin, Beijing Univ. of Technology (China) [10022-61]

Experimental study of the method of recording color volume security holograms on different photosensitive materials on the base of the diffuser with a narrow indicatrix of laser radiation, Dmitry S. Lushnikov, Sergey B. Odínokov, Vladimir V. Markin, Alexander Y. Zherdev, Bauman Moscow State Technical Univ. (Russian Federation); Andrey V. Smirnov, Krypten (Russian Federation) [10022-62]

Realization of Fourier and Fresnel computer-generated holography based on MATLAB, Guoqiang Lin, Xuechang Ren, Xiamen Univ. (China) ... [10022-63]

Improve the diffraction efficiency of the multilayer dielectric gratings, Bilali Muhutijiang, Xinjiang Normal Univ. (China); Keqiang Qiu, Univ. of Science and Technology of China (China); Taximaiti Yusufu, Xinjiang Normal Univ. (China) [10022-64]

Broadband plasmonic metasurface-enabled quarter-wave waveplates, Aijiao Zhu, Jingpei Hu, Chinhua Wang, Soochow Univ. (China) [10022-65]

Virtual viewpoint generation for three-dimensional display based on the compressive light field, Qiao Meng, Xinzhu Sang, Duo Chen, Nan Guo, Binbin Yan, Chongxiu Yu, Beijing Univ. of Posts and Telecommunications (China); Wenhua Dou, Liquan Xiao, National Univ. of Defense Technology (China) [10022-67]

Software adaptation requirements identification based on space light modulate, Hua Liu, Science and Technology on Electro-optic Control Lab. (China) [10022-68]

Characteristics of the autostereoscopic three-dimensional LED display based on diffractive optical elements sheet, Ping Su, Graduate School at Shenzhen, Tsinghua Univ. (China); Pengli An, Jianshe Ma, Shu An, Liangcai Cao, Tsinghua Univ. (China) [10022-69]

Experiments of diffractive optical elements obtained by ion plasma etching for aiming and display devices, Sergey B. Odínokov, Hike Sagatayev, Artem Solomashenko, Yanina Grad, Polina Malinina, Bauman Moscow State Technical Univ. (Russian Federation) [10022-70]

Tunable nanostructure generation using a surface plasmon resonant cavity, Fuyang Xu, Zhejiang Normal Univ. (China); Chinhua Wang, Davis Lou, Soochow Univ. (China) [10022-71]

Decoupling refractive index and geometric thickness based on dual-wavelength digital holography, Weining Chi, Dayong Wang, Lu Rong, Yunxin Wang, Fengpeng Wang, Beijing Univ. of Technology (China) [10022-72]

The measurement of flow speed of on-chip micro-fluid by digital holography, Yutong Cui, Zhe Wang, Chan Sun, Zhuqing Jiang, Beijing Univ. of Technology (China) [10022-73]

Real-time measurement of liquid concentration changing by digital holography, Chan Sun, Zhe Wang, Yutong Cui, Zhuqing Jiang, Beijing Univ. of Technology (China) [10022-74]

A novel three-dimensional display system based on integral imaging using light-shaping diffusor, Xiaoyu Jiang, Zhiqiang Yan, Xingpeng Yan, Jian Su, Hui Gao, Academy of Armored Force Engineering (China) [10022-75]

Generation and representation of vector vortex beams based on metasurfaces, Xunong Yi, Hubei Engineering Univ. (China) [10022-76]

Analysis of performance of the direct search with random trajectory method applied to the task of minimization of kinoform synthesis error, Vitaly V. Krasnov, National Research Nuclear Univ. MEPhI (Russian Federation) [10022-77]

Numerical comparison of scalar and vector methods of digital hologram compression, Pavel A. Cheremkhin, Ekaterina A. Kurbatova, National Research Nuclear Univ. MEPhI (Russian Federation) [10022-78]

High linearly polarized white-light emission from LEDs with multilayer dielectric/metal wire-grid structure, Linghua Chen, Chinhua Wang, Soochow Univ. (China) [10022-79]

Optimization design and laser damage threshold analysis of pulse compression gratings, Shuwei Fan, Liang Bai, Nana Chen, Xi'an Jiaotong Univ. (China) [10022-80]

A three-dimensional content remapping method for the auto-stereoscopic display, Can Cui, Xinzhu Sang, Peng Wang, Duo Chen, Nan Guo, Binbin Yan, Kuiru Wang, Beijing Univ. of Posts and Telecommunications (China); Liquan Xiao, National Univ. of Defense Technology (China) [10022-81]

Phase extracting and unwrapping algorithm of electrical speckle shearing phase-shifting pattern interferometry, Chao Jing, Beijing Institute of Environmental Features (China) [10022-84]

Boundary perturbation solution of the circular hollow waveguide, Xue Qin, Yan Wang, Xiaoyan Wang, Xiaona Yan, Huifang Zhang, Lihua Bai, Shanghai Univ. (China) [10022-85]

Experimental study on degree of coherence for stochastic electromagnetic fields, Juan Zhao, Heriot-Watt Univ. (United Kingdom) and SuperD Co., Ltd. (China); Mitsuo Takeda, Utsunomiya Univ. (Japan); Wei Wang, Heriot-Watt Univ. (United Kingdom) [10022-86]

Bilayer metasurface for asymmetric polarization conversion for transmission and reflection, Joonsoo Kim, Hyeonsoo Park, Byounggho Lee, Seoul National Univ. (Korea, Republic of) [10022-88]

3D polarisation speckle as a demonstration of tensor version of the van Cittert-Zernike theorem for stochastic electromagnetic beams, Ning Ma, Juan Zhao, Heriot-Watt Univ. (United Kingdom); Steen Grüner Hanson, DTU Fotonik (Denmark); Mitsuo Takeda, Utsunomiya Univ. (Japan); Wei Wang, Heriot-Watt Univ. (United Kingdom) [10022-89]

Space telescope using laser beam holography for interferometric image construction using telescopic apparatus for celestial objects, space, and also for construction and spatial mapping, remote sensing in other planets in base plate and other materials, and monitoring devices, Mohammad M. Anwar, Forever Living Products (Bangladesh) [10022-90]

Autofocusing through cosine and modified cosine score in digital holography, Aga He, Wen Xiao, Feng Pan, Beihang University (China) [10022-91]

Temperature sensor based on Fano and Lorentzian resonance lineshapes of a photonic crystal cavity, Chenyang Zhao, Xuetao Gan, Qingchen Yuan, Jianlin Zhao, Northwestern Polytechnical University (China) [10022-92]

Application of the microlens array in the projection of the laser scanning, Lulu Wang, Xi'an Jiaotong Univ. (China); Min Li, Suzhou Institute of Nano-Tech and Nano-Bionics (China); Hai Tan, Changzhou Micro Innovation Technology Co., Ltd. (China); Peng Zhou, Yu Bai, Wenjiang Shen, Suzhou Institute of Nano-Tech and Nano-Bionics (China); Dongmin Wu, Univ. of California, Berkeley (USA) [10022-93]

Gravure printing for electrophoretic e-paper, Li Wang, Gui-Shi Liu, Yu-Wang Xu, Yu-Cheng Wang, Peng Chen, Bo-Ru Yang, Sun Yat-Sen Univ. (China) [10022-94]

Three-dimensional simulation and auto-stereoscopic 3D display of the battlefield environment based on the particle system algorithm, Jiwei Ning, Xinzhu Sang, Shujun Xing, Huilong Cui, Chongxiu Yu, Binbin Yan, Beijing Univ. of Posts and Telecommunications (China); Wenhua Dou, Liqun Xiao, National Univ. of Defense Technology (China) [10022-95]

Vertex shading of the three-dimensional model based on ray-tracing algorithm, Xiaoming Hu, Xinzhu Sang, Shujun Xing, Binbin Yan, Kuiru Wang, Beijing Univ. of Posts and Telecommunications (China); Wenhua Dou, Liqun Xiao, National Univ. of Defense Technology (China) [10022-96]

Real-time synchronized rendering of multi-view video for 8Kx2K three-dimensional display with spliced four liquid crystal panels, Huilong Cui, Xinzhu Sang, Shujun Xing, Jiwei Ning, Binbin Yan, Beijing Univ. of Posts and Telecommunications (China) [10022-97]

Three-dimensional scene capturing for the virtual reality display, Jingsheng Dong, Xinzhu Sang, Nan Guo, Duo Chen, Binbin Yan, Kuiru Wang, Beijing Univ. of Posts and Telecommunications (China); Wenhua Dou, National Univ. of Defense Technology (China); Liqun Xiao, Beijing Univ. of Posts and Telecommunications (China) [10022-98]

Research situation and development trend of the binocular stereo vision system, Tonghao Wang, Bingqi Liu, Ordnance Engineering College (China) [10022-99]

Interactive dynamic three-dimensional scene for the ground-based three-dimensional display, Peining Hou, Xinzhu Sang, Nan Guo, Duo Chen, Binbin Yan, Kuiru Wang, Dou Wenhua, Liqun Xiao, Beijing Univ. of Posts and Telecommunications (China) [10022-100]

A-star algorithm based path planning for the glasses-free three-dimensional display system, Bin Yang, Xinzhu Sang, Shujun Xing, Huilong Cui, Binbin Yan, Chongxiu Yu, Beijing Univ. of Posts and Telecommunications (China); Wenhua Dou, Liqun Xiao, National Univ. of Defense Technology (China) [10022-101]

Electric breakdown of dielectric coatings for high-voltage display applications, Gatis Mozolevskis, EuroLCDs, SIA (Latvia); Edgars Nitiss, Univ. of Latvia (Latvia); Arturs Medvids, Riga Technical Univ. (Latvia) [10022-102]

Visual discomfort caused by color asymmetry in 3D displays, Zaiqing Chen, Xiaoqiao Huang, Chao Zhang, Junsheng Shi, Lijun Yun, Yunnan Normal Univ. (China) [10022-103]

The implementation of laser speckle reduction based on MEMS two-dimensional scanning mirror, Tingting Wang, Xi'an Jiaotong Univ. (China); Wenjiang Shen, Peng Zhou, Suzhou Institute of Nano-Tech and Nano-Bionics (China); Jiahui He, Xi'an Jiaotong Univ. (China); Huijun Yu, Muyu Chen, Suzhou Institute of Nano-Tech and Nano-Bionics (China) [10022-105]

SESSION 5

LOCATION: ROOM 5C+5F THU 14:30 TO 16:30

Diffraction in Nanostructures

Session Chair: **Baoli Yao**,
State Key Lab. of Transient Optics and Photonics (China)

14:30: **Analytical description of quasi normal modes in resonant metallic nano-grooves**, Haitao Liu, Nankai Univ. (China); Fan Yang, Tsinghua Univ. (China); Hongwei Jia, Nankai Univ. (China); Ying Zhong, Tianjin Univ. (China) [10022-23]

14:50: **Hyperbranched-polymer dispersed nanocomposite volume gratings for holography and diffractive optics**, Yasuo Tomita, Shinsuke Takeuchi, Satoko Oyaizu, Hiroshi Urano, Taka-aki Fukamizu, The Univ. of Electro-Communications (Japan); Naoya Nishimura, Keisuke Odoi, Nissan Chemical Industries, Ltd. (Japan) [10022-24]

15:10: **A printable color filter based on the micro-cavity incorporating a nano-grating**, Yan Ye, Soochow Univ. (China) [10022-25]

15:30: **A small deployable infrared diffractive membrane imaging system**, Yue Zhang, Beijing Institute of Space Mechanics and Electricity (China) [10022-26]

15:50: **Design of soft x-ray varied-line-spacing grating based on electron-beam lithography near-field lithography**, Dakui Lin, Huoyao Chen, Univ. of Science and Technology of China (China); Stefanie Kroker, Technische Univ. Braunschweig (Germany) and Physikalisch-Technische Bundesanstalt (Germany); Thomas Käsebier, Friedrich-Schiller-Univ. Jena (Germany); Zhengkun Liu, Keqiang Qiu, Ying Liu, Univ. of Science and Technology of China (China); Ernst-Bernhard Kley, Friedrich-Schiller-Univ. Jena (Germany); Xiangdong Xu, Yilin Hong, Shaojun Fu, Univ. of Science and Technology of China (China) [10022-27]

16:10: **Antireflective subwavelength structures at a wavelength of 441.6 nm for phase masks of near-field lithography**, Jinyu Li, Huoyao Chen, Univ. of Science and Technology of China (China); Stefanie Kroker, Technische Univ. Braunschweig (Germany) and Physikalisch-Technische Bundesanstalt (Germany); Thomas Käsebier, Friedrich-Schiller-Univ. Jena (Germany); Zhengkun Liu, Keqiang Qiu, Ying Liu, Univ. of Science and Technology of China (China); Ernst-Bernhard Kley, Friedrich-Schiller-Univ. Jena (Germany); Xiangdong Xu, Yilin Hong, Shaojun Fu, Univ. of Science and Technology of China (China) [10022-28]

SESSION 6

LOCATION: ROOM 5C+5F THU 16:30 TO 18:10

Devices and Polarization Holograms

Session Chair: **Liangcai Cao**, Tsinghua Univ. (China)

16:30: **Fabrication of grating-Fresnel (G-Fresnel) lens by using PDMS based on soft lithography**, Kai Ni, Haifei Hu, Xinghui Li, Qian Zhou, Graduate School at Shenzhen, Tsinghua Univ. (China); Xiaohao Wang, Graduate School at Shenzhen, Tsinghua Univ. (China) and Research Institute of Tsinghua Univ. in Shenzhen (China); Jinchao Zhang, Graduate School at Shenzhen, Tsinghua Univ. (China) [10022-29]

16:50: **Electro-optically and all-optically addressed spatial light modulators based on organic-inorganic hybrid structures**, Vera Marinova, National Chiao Tung Univ. (Taiwan, China) and Institute of Optical Materials and Technologies (Bulgaria); Shiuan Huei Lin, Ken Yuh Hsu, National Chiao Tung Univ. (Taiwan, China) [10022-30]

17:10: **Polarization holography written by elliptically-polarized wave at a large cross**, Yiyang Zhang, Anan Wu, Jinliang Zang, Ying Liu, Xiaodi Tan, Yong Huang, Guoguo Kang, Beijing Institute of Technology (China); Tsutomu Shimura, The Univ. of Tokyo (Japan); Kazuo Kuroda, Utsunomiya Univ. Ctr. for Optical Research & Education (Japan) [10022-31]

17:30: **Realization of arbitrary full Poincaré beams on the hybrid Poincaré sphere**, Xiaohui Ling, Hengyang Normal Univ. (China); Xunong Yi, Hubei Engineering Univ. (China); Zhiping Dai, Hengyang Normal Univ. (China); Cheng-Wei Qiu, National Univ. of Singapore (Singapore) [10022-32]

17:50: **Analysis of complex modulation with layered spatial light modulators**, SungJae Park, Hwi Kim, Korea Univ. Sejong Campus (Korea, Republic of) [10022-33]

CONFERENCE 10022

LOCATION: ROOM 5C AND 5F

FRIDAY 14 OCTOBER

Sessions 7 and 8 run concurrently with sessions 9 and 10

SESSION 7

LOCATION: ROOM 5C FRI 8:00 TO 10:05

Optical Metrology

Session Chair: **Jianlin Zhao**, Northwestern Polytechnical Univ. (China)

8:00: **Interference pattern period measurement at picometer level** (*Invited Paper*), Xiansong Xiang, Shanghai Institute of Optics and Fine Mechanics (China) and Univ. of Chinese Academy of Sciences (China); Chunlong Wei, Changhe Zhou, Shanghai Institute of Optics and Fine Mechanics (China); Minkang Li, Yancong Lu, Shanghai Institute of Optics and Fine Mechanics (China) and Univ. of Chinese Academy of Sciences (China)..... [10022-34]

8:25: **Effect of optical surface flatness performance on spatial-light-modulator-based imaging system**, Hongqiang Zhou, Tianlong Man, Fan Wu, Yuhong Wan, Beijing Univ. of Technology (China) [10022-35]

8:45: **High-density grating pair for displacement measurement**, Changcheng Xiang, Changhe Zhou, Shubin Li, Zhumei Sun, Shanghai Institute of Optics and Fine Mechanics (China)..... [10022-36]

9:05: **Image grating metrology based on phase-stepping interferometry in scanning beam interference lithography**, Minkang Li, Shanghai Institute of Optics and Fine Mechanics (China) and Univ. of Chinese Academy of Sciences (China); Changhe Zhou, Chunlong Wei, Wei Jia, Yancong Lu, Changcheng Xiang, Xiansong Xiang, Shanghai Institute of Optics and Fine Mechanics (China)..... [10022-37]

9:25: **Research on a grating interferometer with high optical subdivision based on quasi-Littrow configuration**, Jili Deng, Changhe Zhou, Shanghai Institute of Optics and Fine Mechanics (China) and Shanghai Univ. (China); Xiaona Yan, Shanghai Univ. (China); Chunlong Wei, Yancong Lu, Shanghai Institute of Optics and Fine Mechanics (China)..... [10022-38]

9:45: **Study of a grating interferometer with high optical subdivision techniques**, Yancong Lu, Changhe Zhou, Shubin Li, Chunlong Wei, Minkang Li, Xiansong Xiang, Jili Deng, Changcheng Xiang, Wei Jia, Junjie Yu, Jin Wang, Chao Li, Shanghai Institute of Optics and Fine Mechanics (China) and Univ. of Chinese Academy of Sciences (China)..... [10022-39]

Tea/Coffee Break Fri 10:05 to 10:30

SESSION 8

LOCATION: ROOM 5C FRI 10:30 TO 12:30

Applications

Session Chair: **Xiaodi Tan**, Beijing Institute of Technology (China)

10:30: **design and analysis of highly efficient reflective 1*3 splitting grating with triangular structure**, Jin Wang, Changhe Zhou, Jianyong Ma, Yonghong Zong, Wei Jia, Yancong Lu, Shanghai Institute of Optics and Fine Mechanics (China)..... [10022-40]

10:50: **Imaging performance tests of diffractive optical system**, Jianchao Jiao, Yun Su, Baohua Wang, Chao Wang, Yue Zhang, Jianguo Jin, Beijing Institute of Space Mechanics and Electricity (China)..... [10022-41]

11:10: **High beam quality spectral beam combined diode laser array**, Quan Zhou, Changhe Zhou, Chunlong Wei, Shanghai Institute of Optics and Fine Mechanics (China)..... [10022-42]

11:30: **Facial skin color measurement based on camera colorimetric characterization**, Yang Boquan, Shanghai Univ. (China); Changhe Zhou, Shaoqing Wang, Shanghai Institute of Optics and Fine Mechanics (China); Xin Fan, Chao Li, ShanghaiTech Univ. (China)..... [10022-43]

11:50: **Recent progress in holographic wavefront sensing**, Sergey B. Odinokov, Bauman Moscow State Technical Univ. (Russian Federation); Vladimir Y. Venediktov, Saint Petersburg Electrotechnical Univ. "LETI" (Russian Federation)..... [10022-45]

12:10: **Support subspaces construction applied to object recognition using SAR images**, Denis A. Zherdev, Samara Univ. (Russian Federation); Vladimir A. Fursov, Samara Univ. (Russian Federation) and Russian Academy of Sciences Image Processing Systems Institute (Russian Federation)..... [10022-46]

SESSION 9

LOCATION: ROOM 5F FRI 8:00 TO 10:15

Computational Holography I

Session Chair: **Yunlong Sheng**, Univ. Laval (Canada)

8:00: **Phase problems in optical imaging and laser display** (*Invited Paper*), Guohai Situ, Wei Wang, Shanghai Institute of Optics and Fine Mechanics (China)..... [10022-48]

8:25: **Review on holographic display and future research trade** (*Invited Paper*), Juan Liu, Beijing Institute of Technology (China).... [10022-106]

8:50: **Zoomable three-dimensional computer-generated holographic display based on shifted Fresnel diffraction**, Hao Zhang, Liangcai Cao, Guofan Jin, Tsinghua Univ. (China)..... [10022-49]

9:10: **Wave optic modeling of moire patterns on curved surfaces and line-defect removal in the fast-Fourier transform**, Jeon Youngjin, Hwi Kim, Korea Univ. (Korea, Republic of)..... [10022-50]

9:30: **Design of computer-generated hologram apertures with the Abbe transform**, Yunlong Sheng, Jing Wang, Univ. Laval (Canada)..... [10022-51]

9:50: **Recent progress on fully analytic mesh based computer-generated holography** (*Invited Paper*), Jae-Hyeung Park, Inha Univ (Korea, Republic of)..... [10022-52]

Tea/Coffee Break Fri 10:15 to 10:45

SESSION 10

LOCATION: ROOM 5F FRI 10:45 TO 12:10

Computational Holography II

Session Chair: **Yunlong Sheng**, Univ. Laval (Canada)

10:45: **Multi-modal computational microscopy with programmable illumination and coded aperture** (*Invited Paper*), Chao Zuo, Nanjing Univ. of Science and Technology (China)..... [10022-55]

11:10: **New explanation for the Talbot effect: simplified modal method**, Shubin Li, Changhe Zhou, Yancong Lu, Shanghai Institute of Optics and Fine Mechanics (China)..... [10022-53]

11:30: **Design and analysis of broadband diffractive optical element for chromatic aberration correction**, Shaoqing Wang, Changhe Zhou, Shanghai Institute of Optics and Fine Mechanics (China)..... [10022-54]

11:50: **Photorefractive and computational holography in the experimental generation of single arrays and superposition of nondiffracting beams**, Marcos R. R. Gesualdi, Rafael A. B. Suarez, Indira S. V. Yepes, Tarcio de Almeida Vieira, UFABC (Brazil); Michel Zamboni-Rached, Univ. Estadual de Campinas (Brazil)..... [10022-56]

CONFERENCE 10023

LOCATION: ROOM 201D

Wednesday–Friday 12–14 October 2016 • Proceedings of SPIE Vol. 10023

Optical Metrology and Inspection for Industrial Applications IV

Conference Chairs: **Sen Han**, Univ. of Shanghai for Science and Technology (China), Suzhou H&L Instruments LLC (China); **Toru Yoshizawa**, Tokyo Univ. of Agriculture and Technology (Japan), 3D Associates (Japan); **Song Zhang**, Purdue Univ. (USA)

Program Committee: **Masato Aketagawa**, Nagaoka Univ. of Technology (Japan); **Yasuhiko Arai**, Kansai Univ. (Japan); **Xunde Bao**, The Univ. of Arizona (USA); **James H. Burge**, College of Optical Sciences, The Univ. of Arizona (USA); **Yuanshen Cao**, National Institute of Measurement and Testing Technology (China); **Dong Chen**, Bruker Nano Inc. (USA); **Garrett D. Cole**, Crystalline Mirror Solutions GmbH (Austria); **Yuegang Fu**, Changchun Univ. of Science and Technology (China); **Qingying Jim Hu**, QUEST Integrated, Inc. (USA); **Ming Jiang**, Suzhou Univ. of Science and Technology (China); **Zhihua Jiang**, Shanghai Institute of Measurement and Testing Technology (China); **Kazuhide Kamiya**, Toyama Prefectural Univ. (Japan); **Katsuichi Kitagawa**, Independent Consultant (Japan); **Malgorzata Kujawska**, Warsaw Univ. of Technology (Poland); **Chao-Wen Liang**, National Central Univ. (Taiwan, China); **Yuxiang Lin**, ASML (USA); **Yasuhiro Mizutani**, Osaka Univ. (Japan); **Yukitoshi Otani**, Utsunomiya Univ. (Japan); **Giancarlo Pedrini**, Institut für Technische Optik (Germany); **Xiang Peng**, Shenzhen Univ. (China); **Kemao Qian**, Nanyang Technological Univ. (Singapore); **Guohai Situ**, Shanghai Institute of Optics and Fine Mechanics (China); **H. Philip Stahl**, NASA Marshall Space Flight Ctr. (USA); **John C. Stover**, The Scatter Works Inc. (USA); **Takamasa Suzuki**, Niigata Univ. (Japan); **Toshitaka Wakayama**, Saitama Medical Univ. (Japan); **Xiangzhao Wang**, Shanghai Institute of Optics and Fine Mechanics (China); **Jiangtao Xi**, Univ. of Wollongong (Australia); **Jing Xu**, Tsinghua Univ. (China); **Lianxiang Yang**, Oakland Univ. (USA); **Dawei Zhang**, Univ. of Shanghai for Science and Technology (China); **Hao Zhang**, Tianjin Univ. (China); **Heng Zhang**, National Institute of Metrology (China); **Qican Zhang**, Sichuan Univ. (China); **Zonghua Zhang**, Hebei Univ. of Technology (China); **Ping Zhong**, Donghua Univ. (China); **Ping Zhou**, The Univ. of Arizona (USA); **Weihu Zhou**, Academy of Opto-Electronics (China)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

- 9:00: **Opening Ceremony**
- 9:20: **SPIE Fellow Recognition Ceremony**
- 9:25: **Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony**
- 9:40: **Freeform optics opening up a bright future for imaging instrumentation (Plenary)**, Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]
- 10:20: **Tea/Coffee Break**
- 10:40: **Innovative large wide-field astronomical telescope: LAMOST (Plenary)**, Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]
- 11:20: **Quantum dot photonics: from science to practical implementation (Plenary)**, Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

SESSION 1

LOCATION: ROOM 201D WED 13:30 TO 15:15

Optical Metrology Methods I

Session Chairs: **Sen Han**,

Univ. of Shanghai for Science and Technology (China);

Hua Liu, Luoyang Institute of Electro-Optical Equipment (China)

- 13:30: **Precision measurement technology based on femtosecond frequency comb (Invited Paper)**, Weihu Zhou, Academy of Opto-Electronics, CAS (China) [10023-1]
- 14:00: **Software system design for the non-null digital Moiré interferometer**, Meng Chen, Qun Hao, Yao Hu, Shaopu Wang, Tengfei Li, Lin Li, Beijing Institute of Technology (China) [10023-3]
- 14:15: **FPGA-based real-time phase measuring profilometry algorithm design and implementation**, Guomin Zhan, Hongwei Tang, Zhongwei Li, Kai Zhong, Huazhong Univ. of Science and Technology (China) [10023-4]
- 14:30: **Elongation measurement using one-dimensional image correlation method**, Phachara Phongwisit, Prathan Buranasiri, King Mongkut's Institute of Technology Ladkrabang (Thailand) [10023-5]

14:45: **A vision weight method of billet based on linear structure laser**, Fengshan Huang, Yusong Ren, Li Chen, Hebei Univ. of Science and Technology (China) [10023-6]

15:00: **Spindle error motion measurement using concentric circle grating and sinusoidal frequency-modulated semiconductor lasers**, Masato Higuchi, Masato Aketagawa, Thanh Vu, Nagaoka Univ. of Technology (Japan) [10023-7]

Tea/Coffee Break Wed 15:15 to 15:45

SESSION 2

LOCATION: ROOM 201D WED 15:45 TO 17:45

Optical Metrology Methods II

Session Chairs: **Toru Yoshizawa**, Tokyo Univ. of Agriculture and Technology (Japan), 3D Associates (Japan); **Yasuhiro Mizutani**, Osaka Univ. (Japan)

15:45: **Phase-shifting interferometry and its applications (Invited Paper)**, Shouhong Tang, Suzhou H&L Instruments LLC (China) [10023-8]

16:15: **Concentricity calibration of photogrammetry retro-reflector target**, Hengzheng Wei, Wei Nong Wang, Limei Pei, Guoying Ren, National Institute of Metrology (China) [10023-11]

16:30: **Three-dimensional endoscopic measurement by uni-axis grating projection**, Geliztle A. Parra Escamilla, Fumio Kobayashi, Yukitoshi Otani, Utsunomiya Univ. (Japan) [10023-12]

16:45: **A field calibration method to eliminate the error caused by relative tilt on roll angle measurement**, Jingya Qi, Xian Jiaotong Univ. (China); Zhao Wang, Junhui Huang, Xi'an Jiaotong Univ. (China); Bao Yu, Xi'an Jiaotong Univ. (China); Jianmin Gao, State Key Lab. for Manufacturing Systems Engineering (China) [10023-13]

17:00: **The study of fast measurement hexahedron verticality error by wavefront interferometer**, Peng Shijun, Songtao Gao, Wu Dongcheng, Erlong Miao, Changchun Institute of Optics, Fine Mechanics and Physics (China) [10023-14]

17:15: **Performance analysis of three-dimensional surface profilometry using a MEMS mirror**, Yuxin Cheng, Sining Li, Guohang Shan, Harbin Institute of Technology (China) [10023-80]

17:30: **Quadrant-division technique for differential sensitivity optical beam measurement**, King Ung Hii, Swinburne Univ. of Technology, Sarawak (Malaysia) [10023-81]

CONFERENCE 10023

LOCATION: ROOM 201D

THURSDAY 13 OCTOBER

SESSION 3

LOCATION: ROOM 201D THU 8:00 TO 10:00

Optical Metrology Methods III

Session Chairs: **Weihu Zhou**, Academy of Opto-Electronics, CAS (China); **Kai Ni**, Graduate School at Shenzhen, Tsinghua Univ. (China)

8:00: **Requirements of precision and innovative manufacturing for ultrahigh precision laser interferometry of gravitational-wave astronomy** (*Invited Paper*), Wei-Tou Ni, Sen Han, Tao Jin, Univ. of Shanghai for Science and Technology (China) [10023-15]

8:30: **Illumination fluctuation elimination in phase-shifting technique by use of a gray-level transformation based on fringe histograms**, Ruihua Zhang, Hongwei Guo, Shanghai Univ. (China) [10023-16]

8:45: **Development of an optical technique for measurement of centering error of glass molds for production of ophthalmic lenses**, Boonsong Sutapun, Saharat Kaew-aram, Suranaree Univ. of Technology (Thailand); Armote Somboonkaew, Ratthasart Amarit, National Electronics and Computer Technology Ctr. (Thailand) [10023-17]

9:00: **An automatic large-scale 3D coordinate measurement system based on vision guidance**, Zili Zhang, Academy of Opto-Electronics, CAS (China); Guanghua Wu, Hefei Univ. of Technology (China); Qiyue Wang, BeiHang Univ. (China); Yan Zhang, Beijing Information Science & Technology Univ. (China); Weihu Zhou, Academy of Opto-Electronics, CAS (China) [10023-18]

9:15: **Spatial intensity correlation properties of scattered optical vortices**, Salla G. Reddy, The Univ. of Electro-Communications (Japan); Ravindra Pratap Singh, Physical Research Lab. (India) [10023-19]

9:30: **Fast in-situ tool inspection based on inverse fringe projection and compact sensor heads**, Steffen Matthias, Markus Kästner, Yinan Li, Eduard Reithmeier, Leibniz Univ. Hannover (Germany) [10023-20]

9:45: **Numerical simulation research and applications on scatter imaging of surface defects on optical components**, Huiting Chai, Yongying Yang, Zhejiang Univ. (China); Pin Cao, Hangzhou Zernike Optical Technology Co., Ltd. (China); Chen Li, Fan Wu, Yihui Zhang, Haoliang Xiong, Zhou Lin, Kai Yan, Wenlin Xu, Dong Liu, Jian Bai, Yibing Shen, Zhejiang Univ. (China) ... [10023-21]

Tea/Coffee BreakThu 10:00 to 10:30

SESSION 4

LOCATION: ROOM 201D THU 10:30 TO 12:00

Optical Metrology Methods IV

Session Chairs: **Shouhong Tang**, Suzhou H&L Instruments LLC (China); **Yuri V. Filatov**, Saint Petersburg Electrotechnical Univ. "LETI" (Russian Federation)

10:30: **Plane stitching optical testing in manufacturing workshop** (*Invited Paper*), Yingjie Yu, Shanghai Univ. (China); Xin Wu, Shanghai Univ (China) [10023-22]

11:00: **Spin Hall effect of light applied in optical linear scale**, Yasuhiro Mizutani, Kazunori Ueda, Yasuhiro Takaya, Osaka Univ. (Japan) [10023-23]

11:15: **Accurate reconstruction in measurement of microstructures using digital holographic microscopy**, Xiaolei Zhang, Xiangchao Zhang, Min Xu, Fudan Univ. (China) [10023-24]

11:30: **Tip/tilt-compensated through-focus scanning optical microscopy**, Jun Ho Lee, Jun Hyung Park, Kongju National Univ. (Korea, Republic of) [10023-25]

11:45: **The total spectral radiant flux calibration using a spherical spectrometer at National Institute of Metrology China**, Weiqliang Zhao, Hui Liu, Jian Liu, National Institute of Metrology (China) [10023-26]

Lunch/Exhibition BreakThu 12:00 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at <http://spie.org/PAPosterGuidelines>.

Error analysis of a self-mixing interferometry operated in the unstable region, Yuanlong Fan, Yanguang Yu, Jiangtao Xi, Qinghua Guo, Roger A. Lewis, Univ. of Wollongong (Australia) [10023-9]

FBG-based fiber self-mixing sensor for acoustic emission measurement, Bin Liu, Ginu Rajan, Yanguang Yu, Jiangtao Xi, Qinghua Guo, Jun Tong, Univ. of Wollongong (Australia) [10023-10]

Remote sensing multiple hazardous and toxic gases by passive open-path FTIR, Zhan Lu, Univ. of Chinese Academy of Sciences (China); Xiao Zuo Dai, Univ. of Chinese Academy of Science (China); Bei Ma, Univ. of Chinese Academy of Sciences (China) [10023-52]

Dimensional measurement of micro parts with high aspect ratio in HIT-UOI, Hong Dang, Jiwen Cui, Kunpeng Feng, Junying Li, ShiYuan Zhao, Haoran Zhang, JiuBin Tan, Harbin Institute of Technology (China) ... [10023-53]

Simulation of out-of-plane displacement measurement using vortex beam: on the base of liquid crystal spatial light modulator, Haibin Sun, Shandong Normal Univ. (China) and Taishan Univ. (China); Ping Sun, Shandong Normal Univ. (China) [10023-54]

Super-resolution confocal microscopy based on radially-polarized beams and pupil filtering, Zehai Zhou, Beijing Information Science and Technology Univ. (China); Jiaxing Liu, Lianqing Zhu, Beijing Information Science & Technology Univ. (China) [10023-55]

Experimental investigation of correlation between surface amplitude parameters of frosted glass diffuser and size of polishing grit, Dong Wei, Masato Aketagawa, Tomoya Katagiri, Nagaoka Univ. of Technology (Japan) [10023-56]

A colorful codification method for structured light measurement based on the hue of single image, Wei Yin, Haihua Cui, Nanjing Univ. of Aeronautics and Astronautics (China); Chenbo Zhang, Nanjing University of Aeronautics and Astronautics (China); Xiaosheng Cheng, Dawei Li, Nanjing Univ. of Aeronautics and Astronautics (China) [10023-57]

Corner detection and sorting method based on improved Harris algorithm in camera calibration, Ying Xiao, Yonghong Wang, Xizuo Dan, Anqi Huang, Yue Hu, Hefei Univ. of Technology (China); Lianxiang Yang, Hefei Univ of Technology (China) and Oakland Univ. (USA) [10023-58]

An onsite non-contact dynamic angle metrology system based on stereo vision, Jiping Guo, Shenzhen Univ. (China) and Shenzhen Academy of Metrology and Quality Inspection (China); Jiping Yu, Shenzhen Academy of Metrology and Quality Inspection (China); Xiang Peng, Shenzhen Univ. (China); Ameng Li, Shenzhen Academy of Metrology and Quality Inspection (China); Xiaoli Liu, Shenzhen Univ. (China) [10023-59]

3D measurement and camera attitude estimation method based on trifocal tensor, Shengyi Chen, Haibo Liu, Linshen Yao, Qifeng Yu, National Univ. of Defense Technology (China) [10023-60]

Influence of irradiance non-uniformity on IV performance test of photovoltaic modules, Junchao Zhang, Limin Xiong, Haifeng Meng, Yingwei He, Bifeng Zhang, National Institute of Metrology (China); Chuan Cai, Kejia Zhang, Beijing Institute of Technology (China) [10023-61]

Virtual-stereo fringe reflection technique for specular freeform surface testing, Suodong Ma, Soochow Univ. (China); Bo Li, Nanjing Institute of Astronomical Optics & Technology (China) [10023-62]

Digitization and visualization of virtual cultural heritage, Ameng Li, Jiping Guo, Jiping Yu, Shenzhen Academy of Metrology and Quality Inspection (China); Yong Yao, Harbin Institute of Technology Shenzhen Graduate School (China) [10023-63]

A simple phase-shift ESPI for 3D deformation measurement, Ping Sun, Xinghai Wang, Shandong Normal Univ. (China); Haibin Sun, Shandong Normal Univ. (China) and Taishan Univ. (China) [10023-64]

Evaluation of 3D displacement components by combining DSCM with ESPI, Ping Sun, Kai Shi, Shandong Normal Univ. (China); Mingyong Sun, Shandong Xiehe Univ. (China); Haibin Sun, Shandong Normal Univ. (China) and Taishan Univ. (China) [10023-65]

The calibration of specular gloss meters and gloss plates, Tiecheng Li, Lei Lai, Leibing Shi, Dejin Yin, Fangsheng Lin, Ming Xia, Biyoung Huang, Shanghai Institute of Measurement and Testing Technology (China) [10023-66]

Numerical calibration of laser line scanning system with multiple sensors for inspecting cross-section profiles, Jingbo Zhou, Yuehua Li, Fengshan Huang, Lijian Liu, Hebei Univ. of Science and Technology (China) ... [10023-67]

Uncertainty evaluation of ellipsometer: from instrumentation to material and application in Avogadro's project, Wende Liu, Chi Chen, Qiming Fan, Chu Chu, National Institute of Metrology (China) [10023-68]

Dynamic 3D shape measurement based on digital speckle projection and temporal sequence correlation, Ren Chao Xu, Sichuan Univ (China); Fangyan Zhou, Qican Zhang, Sichuan Univ. (China) [10023-69]

A flexible new method for 3D measurement based on multi-view image sequences, Haihua Cui, Nanjing Univ. of Aeronautics and Astronautics (China) [10023-70]

A robust real-time laser measurement method based on noncoding parallel multi-line, Chenbo Zhang, Nanjing Univ. of Aeronautics and Astronautics (China); Haihua Cui, Wei Yin, Liu Yang, Nanjing Univ. of Aeronautics and Astronautics (China) [10023-71]

Experiments and error analysis of laser ranging based on frequency-sweep polarization modulation, Shuyuan Gao, Hefei Univ. of Technology (China); Rongyi Ji, Weihou Zhou, Academy of Opto-Electronics, CAS (China) .. [10023-72]

High-speed image acquisition technology in quality detection of workpiece surface, Kaihua Wu, Wenjie Wang, Xuechao Sun, Hangzhou Dianzi Univ. (China) [10023-73]

Research of dimension and density measurement system for minor artifacts, Yu Gao, Chao Gao, Chongqing Univ. (China) [10023-74]

The research of weld defect detection based on high precision displacement sensor, Kelin Hu, Chao Gao, Chongqing Univ. (China) [10023-75]

Research of non-contact measurement method for outline dimensions of some special workpiece, Qiaoling Feng, Chongqing Univ. (China) .. [10023-76]

GPU-accelerated phase extraction algorithm for interferograms: a real-time application, Xiaoqiang Zhu, Yongqian Wu, Institute of Optics and Electronics (China) [10023-77]

Study of angle measuring error mechanism caused by rotor run-outs, Dabao Lao, Weihou Zhou, Wenying Zhang, Academy of Opto-Electronics, CAS (China) [10023-78]

Truncated pyramid artifact for performance evaluation experiments on laser line scanner, Sen Zhou, Chongqing Academy of Metrology and Quality Inspection (China) and Chongqing Univ. (China); Jian Xu, Tao Lei, Chongqing Academy of Metrology and Quality Inspection (China) [10023-79]

SESSION 5

LOCATION: ROOM 201D THU 14:30 TO 16:15

Optical Metrology Methods V

Session Chairs: **Wei-Tou Ni**, Univ. of Shanghai for Science and Technology (China); **Zonghua Zhang**, Hebei Univ. of Technology (China)

14:30: **Development of a high-sensitive optical probe for inner profile measurement of pipes and holes** (*Invited Paper*), Toru Yoshizawa, Non-Profit Organization 3D Associates (Japan); Toshitaka Wakayama, Saitama Medical Univ. (Japan) [10023-27]

15:00: **Binocular stereo vision system based on phase matching**, Huixian Liu, Nan Gao, Zonghua Zhang, Hebei Univ. of Technology (China) [10023-28]

15:15: **Algorithms and applications of distortion correction and American standard-based digital evaluation in surface defects evaluating system**, Fan Wu, Zhejiang Univ. (China); Pin Cao, Hangzhou Zernike Optical Technology Co., Ltd. (China); Yongying Yang, Chen Li, Huiting Chai, Yihui Zhang, Haoliang Xiong, Wenlin Xu, Kai Yan, Lin Zhou, Dong Liu, Jian Bai, Yibing Shen, Zhejiang Univ. (China) [10023-29]

15:30: **Global optimization to improve system resolution**, Hua Liu, Luoyang Institute of Electro-Optical Equipment (China) [10023-30]

15:45: **Signal processing in white-light scanning interferometry by Fourier transform and its application to surface profile measurements**, Songjie Luo, Huaqiao Univ. (China); Osami Sasaki, Huaqiao Univ. (China) and Niigata Univ. (Japan) [10023-31]

16:00: **Calibration of angle-measurement system for direction measurements**, Yuri V. Filatov, Eugeni D. Bokhman, Pavel A. Ivanov, Roman A. Larichev, Petr A. Pavlov, Saint Petersburg Electrotechnical Univ. "LETI" (Russian Federation) [10023-32]

SESSION 6

LOCATION: ROOM 201D THU 16:15 TO 18:00

Optical Metrology Methods VI

Session Chairs: **Yingjie Yu**, Shanghai Univ. (China); **Chao Zuo**, Nanjing Univ. of Science and Technology (China)

16:15: **Full-field 3D shape measurement of specular surfaces by direct phase to depth relationship** (*Invited Paper*), Zonghua Zhang, Yue Liu, Shujun Huang, Zhenqi Niu, Jiao Guo, Nan Gao, Hebei Univ. of Technology (China) [10023-33]

16:45: **Three-dimensional surface inspection for semiconductor components with fringe projection profilometry**, Fuqin Deng, Harbin Institute of Technology (China); Yi Ding, Wuhan Univ. (China); Jiangtao Xi, Univ. of Wollongong (Australia); Yongkai Yin, Shandong Univ. (China) [10023-34]

17:00: **Measurement uncertainty evaluation of the six-degree of freedom surface encoder**, Xinghui Li, Huanhuan Wang, Ni Kai, Graduate School at Shenzhen, Tsinghua Univ. (China); Xiaohao Wang, Graduate School at Shenzhen, Tsinghua Univ. (China) and Research Institute of Tsinghua Univ. in Shenzhen (China); Qian Zhou, Xiang Xiao, Graduate School at Shenzhen, Tsinghua Univ. (China) [10023-35]

17:15: **Optimum camera setting on fringe edge detection**, Rima Zuriah Amdani, Eka Pratiwi, Ardi Rahman, Purwo Wibowo, Ctr. for Metrology LIPI (Indonesia) [10023-36]

17:30: **Monitoring the VOCs in chemical plants with SOF-FTIR**, Xin Han, Anhui Institute of Optics and Fine Mechanics (China) [10023-37]

17:45: **An accurate approach for calibrating rotational angle of camera**, Zhenqi Niu, Kuo Liu, Zonghua Zhang, Hebei Univ. of Technology (China) [10023-38]

FRIDAY 14 OCTOBER

SESSION 7

LOCATION: ROOM 201D FRI 8:00 TO 10:00

Optical Metrology Applications I

Session Chairs: **Jiangtao Xi**, Univ. of Wollongong (Australia); **Jun Ho Lee**, Kongju National Univ. (Korea, Republic of)

8:00: **Temporal phase unwrapping algorithms for fringe projection profilometry: a comparative assessment based on a stochastic noise model** (*Invited Paper*), Chao Zuo, Nanjing Univ. of Science and Technology (China) [10023-39]

8:30: **Embedded 3D shape measurement system based on a novel spatio-temporal encoding**, Li Dong, Haoming Guo, Guiwen Lin, Yong Tian, Jindong Tian, Shenzhen Univ. (China) [10023-40]

8:45: **Imaging ellipsometer with large field-of-view**, Liyuan Gu, Aijun Zeng, Qiao Yuan, Weilin Cheng, Shiyu Hu, Guohang Hu, Huijie Huang, Shanghai Institute of Optics and Fine Mechanics (China) [10023-41]

9:00: **Hybrid probing technique for coordinate measurement using an optically-trapped microsphere**, Yuki Yamaguchi, Osaka Univ. (Japan); Masaki Michihata, The Univ. of Tokyo (Japan); Yasuhiro Mizutani, Yasuhiro Takaya, Osaka Univ. (Japan) [10023-42]

9:15: **Research on application of photoelectric rotary encoder in space optical remote sensor**, Jun Zheng, Yuanyuan Wang, Haoyang Li, Shao-fan Qi, Zhan-dong Zhang, Beijing Institute of Space Mechanics and Electricity (China) [10023-43]

9:30: **Application of grey relational analysis on lens distortion correction**, Qiye Wang, BeiHang Univ. (China); Zili Zhang, Academy of Opto-Electronics, CAS (China); Zhongyu Wang, BeiHang Univ. (China); Weihou Zhou, Academy of Opto-Electronics, CAS (China) [10023-44]

9:45: **Detection algorithm of circular-coded point in vision measurement**, Ran Chen, Kai Zhong, Zhongwei Li, Huazhong Univ. of Science and Technology (China) [10023-45]

Tea/Coffee Break Fri 10:00 to 10:30

SESSION 8

LOCATION: ROOM 201D FRI 10:30 TO 12:00

Optical Metrology Applications II

Session Chairs: **Shouhong Tang**, Suzhou H&L Instruments LLC (China); **Wei-Tou Ni**, Univ. of Shanghai for Science and Technology (China)

10:30: **An underwater ranging system by using photoacoustic effect on solid surface**, Kai Ni, Kai Hu, Qian Zhou, Graduate School at Shenzhen, Tsinghua Univ. (China); Lidai Wang, City Univ. of Hong Kong (China); Xinghui Li, Xiaohao Wang, Graduate School at Shenzhen, Tsinghua Univ. (China) [10023-46]

10:45: **Rail profile control using laser triangulation scanners**, Yuri V. Filatov, Alexandr M. Boronahin, Daniil Y. Larionov, Liudmila N. Podgornaya, Roman V. Shalymov, Eugeni D. Bokhman, Saint Petersburg Electrotechnical Univ. "LETI" (Russian Federation) [10023-47]

11:00: **Non-uniform sampling knife-edge method for camera modulation transfer function measurement**, Yaxuan Duan, Xi'an Institute of Optics and Precision Mechanics, CAS (China) [10023-48]

11:15: **A precise reference position detection method for linear encoders by using a coherence function algorithm**, Kai Ni, Xinghui Li, Xiang Xiao, Qian Zhou, Huanhuan Wang, Graduate School at Shenzhen, Tsinghua Univ. (China); Xiaohao Wang, Graduate School at Shenzhen, Tsinghua Univ. (China) and Research Institute of Tsinghua Univ. in Shenzhen (China) [10023-49]

11:30: **Development of an edge sensor based on polyview optics and laser triangulation principle**, Yinan Li, Hagen Bossmeyer, Markus Kästner, Eduard Reithmeier, Leibniz Univ. Hannover (Germany) [10023-50]

11:45: **Arbitrary optical frequency synthesis traced to an optical frequency comb**, Zihang Cai, Honglei Yang, Yan Li, Haoyun Wei, Tsinghua Univ. (China) [10023-51]

CONFERENCE 10024

LOCATION: ROOM 5B + 5G

Wednesday–Friday 12–14 October 2016 • Proceedings of SPIE Vol. 10024

Optics in Health Care and Biomedical Optics VII

Conference Chairs: **Qingming Luo**, Huazhong Univ. of Science and Technology (China); **Xingde Li**, Johns Hopkins Univ. (USA); **Ying Gu**, Chinese PLA General Hospital (China); **Yuguo Tang**, Suzhou Institute of Biomedical Engineering and Technology (China)

Conference Co-Chair: **Dan Zhu**, Huazhong Univ. of Science and Technology (China)

Program Committee: **Jing Bai**, Tsinghua Univ. (China); **Stephen A. Boppart M.D.**, Univ. of Illinois at Urbana-Champaign (USA); **Wei R. Chen**, Univ. of Central Oklahoma (USA); **Yu Chen**, Univ. of Maryland, College Park (USA); **Linhong Deng**, Chongqing Univ. (China); **Zhihua Ding**, Zhejiang Univ. (China); **Qiyong Gong**, West China Hospital (China); **Hui Li**, Fujian Normal Univ. (China); **Hong Liu**, The Univ. of Oklahoma (USA); **Hui Ma**, Tsinghua Univ. (China); **Atsushi Maki**, Hitachi, Ltd. (Japan); **Yingtian Pan**, Stony Brook Univ. (USA); **Paras N. Prasad**, Univ. at Buffalo (USA); **Yuwen Qin**, National Natural Science Foundation (China); **Junle Qu**, Shenzhen Univ. (China); **Qiushi Ren**, Shanghai Jiao Tong Univ. (China); **Jie Tian**, Institute of Automation (China); **Valery V. Tuchin**, N.G. Chernyshevsky Saratov State Univ. (Russian Federation); **Lihong V. Wang**, Washington Univ. in St. Louis (USA); **Ruikang K. Wang**, Univ. of Washington (USA); **Xunbin Wei**, Shanghai Jiao Tong Univ. (China); **Xujie Xia**, Shanghai Jiao Tong Univ. (China); **Da Xing**, South China Normal Univ. (China); **Kexin Xu**, Tianjin Univ. (China); **Yudong Zhang**, Institute of Optics and Electronics (China); **Zhenxi Zhang**, Xi'an Jiaotong Univ. (China)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

9:00: **Opening Ceremony**

9:20: **SPIE Fellow Recognition Ceremony**

9:25: **Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony**

9:40: **Freeform optics opening up a bright future for imaging instrumentation** (*Plenary*), Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]

10:20: **Tea/Coffee Break**

10:40: **Innovative large wide-field astronomical telescope: LAMOST** (*Plenary*), Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]

11:20: **Quantum dot photonics: from science to practical implementation** (*Plenary*), Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

Sessions 1 and 2 runs concurrently with sessions 3 and 4

SESSION 1

LOCATION: ROOM 5B WED 13:30 TO 15:15

Advanced Optical Techniques for Clinical Medicine I

Session Chairs: **Qingming Luo**, Britton Chance Ctr. for Biomedical Photonics (China); **Xingde Li**, Johns Hopkins Univ. (USA)

- 13:30: **Self-assembled photonic crystals for bioassay** (*Invited Paper*), Zhongze Gu, Southeast Univ. (China) [10024-1]
- 14:00: **Angular compounded optical coherence tomography angiography for flow contrast enhancement**, Pei Li, Liping Zhou, Zhejiang Univ. (China); Yuxuan Cheng, Zhejiang Univ (China); Zhihua Ding, Peng Li, Zhejiang Univ. (China) [10024-2]
- 14:15: **Optical Image-guided cancer surgery**, Xiao Feng Yang, First Hospital of Shanxi Medical Univ. (China) [10024-3]
- 14:30: **The development of intravascular photoacoustic/ultrasonic/OCT tri-modality imaging technology for vulnerable plaque identification**, Xiaojing Gong, Ji Leng, Riqiang Lin, Liang Song, Shenzhen Institute of Advanced Technology (China) [10024-4]
- 14:45: **Malignant melanoma and basal cell carcinoma control with Raman and autofluorescence spectroscopy**, Ivan A. Bratchenko, Dmitry N. Artemyev, Yulia A. Khristoforova, Oleg O. Myakinin, Samara State Aerospace Univ. (Russian Federation); Alexanrer A. Moryatov, Sergey V. Kozlov, Samara State Medical Univ. (Russian Federation); Valery P. Zakharov, Samara State Aerospace Univ. (Russian Federation). [10024-5]
- 15:00: **Quantitative detection of tissue fluorescence**, Jian Zou, Wei Gong, Weijun W. J. Li, Fujian Normal Univ. (China); Qing Ye, Provincial Clinical Medical College of Fuzhou Medical Univ. (China); Zheng Huang, Fujian Normal Univ. (China) and Univ. of Colorado Denver (USA). [10024-6]
- Tea/Coffee Break Wed 15:15 to 15:45

SESSION 2

LOCATION: ROOM 5B WED 15:45 TO 17:15

Advanced Optical Techniques for Clinical Medicine II

Session Chairs: **Qingming Luo**, Britton Chance Ctr. for Biomedical Photonics (China); **Xingde Li**, Johns Hopkins Univ. (USA)

- 15:45: **Nanoprobes for optical bioimaging and light-enacted therapy** (*Invited Paper*), Tymish Y. Ohulchansky, Shenzhen Univ. (China) and Univ. at Buffalo (USA); Junle Qu, Shenzhen Univ. (China) [10024-7]
- 16:15: **A novel handheld linear-array photoacoustic probe towards clinical translation for sentinel lymph node mapping**, Chengbo Liu, Mucong Li, Liang Song, Shenzhen Institute of Advanced Technology (China) [10024-8]
- 16:30: **Boronate affinity structural colored contact lens for tear glucose monitor**, Panmiao Liu, Zhuoying Xie, Zhongze Gu, Southeast Univ. (China) [10024-9]
- 16:45: **Detection and classification of ebola on microfluidic chips**, Xue Lin, Tsinghua Univ. (China); Qin Huang, Yue Kou, National Engineering Research Ctr. for Beijing Biochip Technology (China) [10024-11]
- 17:00: **A noninvasive optical technique for stenosis surveillance of a hemodialysis vascular graft**, Boonsong Sutapun, Lawan Sampanporn, Suranaree Univ. of Technology (Thailand); Armote Somboonkaew, National Electronics and Computer Technology Ctr. (Thailand) [10024-12]

SESSION 3

LOCATION: ROOM 5G WED 13:30 TO 15:15

NOTE ROOM CHANGE

Multimodal Biomedical Imaging

Session Chairs: **Xunbing Wei**, Shanghai Jiao Tong Univ. (China); **Qin Li**, Beijing Institute of Technology (China)

- 13:30: **Cell counting for in vivo flow cytometry with unstable background signals** (*Invited Paper*), Xunbin Wei, Shanghai Jiao Tong Univ. (China) [10024-13]
- 14:00: **Microwave-induced thermoacoustic imaging system based on flexible transducer**, Zhong Ji, Sihua Yang, Da Xing, South China Normal Univ. (China) [10024-14]
- 14:15: **Evaluation of the resolution of a commercial swept source OCT using point spread function phantom**, Wei Gong, Weijun W. J. Li, Kui Dong, Shusen Xie, Zheng Huang, Fujian Normal Univ. (China) [10024-15]
- 14:30: **Second-generation photoacoustic and optical coherence tomography probe for in vivo human vasculature visualization**, Mengyang Liu, Christoph Sinz, Zhe Chen, Behrooz Zabihian, Harald Kittler, Wolfgang Drexler, Medizinische Univ. Wien (Austria) [10024-16]
- 14:45: **All-optically integrated multimodality imaging system: combined photoacoustic microscopy, optical coherence tomography, and fluorescence imaging**, Zhongjiang Chen, Sihua Yang, Da Xing, South China Normal Univ. (China) [10024-17]
- 15:00: **Extinction measurement of dense media by an optical coherence tomography technique**, Toshiaki Iwai, Tomoki Ago, Ryoko Yokota, Tokyo Univ. of Agriculture and Technology (Japan) [10024-18]
- Tea/Coffee Break Wed 15:15 to 15:45

SESSION 4

LOCATION: ROOM5G WED 15:45 TO 18:15

NOTE ROOM CHANGE

Tissue Optics

Session Chairs: **Xunbing Wei**, Shanghai Jiao Tong Univ. (China); **Qin Li**, Beijing Institute of Technology (China)

- 15:45: **A microflow cytometer with integrated on-chip optical components for blood cell analysis** (*Invited Paper*), Yingying Zhao, Qin Li, Xiaoming Hu, Beijing Institute of Technology (China) [10024-19]
- 16:15: **A weighted optimization method for irradiance distribution planning of port wine stains with photodynamic therapy**, Linhuan He, Xiaoming Hu, Ya Zhou, Beijing Institute of Technology (China) [10024-20]
- 16:30: **Macroscopic singlet oxygen modeling for in vivo Photofrin-mediated photodynamic therapy dosimetry study**, Haixia Qiu, Chinese PLA General Hospital (China) and Univ. of Pennsylvania (USA); Michele M. Kim, Univ. of Pennsylvania (USA); Rozhin Penjweini, Timothy C. Zhu, The Univ. of Pennsylvania Health System (USA). [10024-21]
- 16:45: **Stage scoring of liver fibrosis using Mueller matrix microscope**, Jialing Zhou, Tsinghua Univ. (China); Honghui He, Ye Wang, Hui Ma, Graduate School at Shenzhen, Tsinghua Univ. (China) [10024-22]
- 17:00: **3D printing of tissue-simulating phantoms for calibration of biomedical optical devices**, Zu Hua Zhao, Ximing Zhou, Shu W. Shen, Guang Li Liu, Li Yuan, Yu Q. Meng, Xiang Lv, Peng Fei Shao, Erbao Dong, Univ. of Science and Technology of China (China); Ronald X. Xu, The Ohio State Univ. (USA) [10024-23]
- 17:15: **Effect of surface topographic features on the optical properties of skin: a phantom study**, Guang Li Liu, Jian Feng Chen, Yilin Han, Zu H. Zhao, Gang Zhao, Erbao Dong, Univ. of Science and Technology of China (China); Ronald X. Xu, The Ohio State Univ. (USA) [10024-24]
- 17:30: **Structured light imaging system for characterization of tissue-simulating phantoms**, Songde Liu, Yilin Han, Shu Wei Shen, Zu Hua Zhao, Peng Liu, Kai Qin Chu, Zachary J. Smith, Univ. of Science and Technology of China (China); Ronald X. Xu, The Ohio State Univ. (USA). [10024-25]
- 17:45: **1040nm femtosecond fiber laser system for the regain accommodation of the crystalline lens**, Lifeng Wang, Jiaying Zhang M.D., Chinese PLA General Hospital (China); Zhiguo Lv, Institute of Physics (China); Zhiyi Wei, Institute of Physics (China) and Chinese PLA General Hospital (China); Ying Gu, Chinese PLA General Hospital (China) and Institute of Physics (China) [10024-26]
- 18:00: **Simulation study of haze weather based on particle system**, Jiwei Ning, Beijing Univ. of Posts and Telecommunications (China) .. [10024-27]

CONFERENCE 10024

LOCATION: ROOMS 5B + 5G

THURSDAY 13 OCTOBER

SESSION 5

LOCATION: ROOM 5B + 5G THU 8:00 TO 10:00

Microscopy and Imaging I

Session Chairs: **Junle Qu**, Shenzhen Univ. (China);

Dan Zhu, Huazhong Univ. of Science and Technology (China)

8:00: **Challenges of large-scale data processing for visible brain-wide networks** (*Invited Paper*), Qingming Luo, Huazhong Univ. of Science and Technology (China) [10024-28]

8:30: **Recent advances in fluorescence lifetime imaging: superresolution, single particle tracking, and some novel applications** (*Invited Paper*), Wei Yan, Qianqian Wu, Jing Qi, Shuyi Yuan, Teng Luo, Shaozhuang Yang, Xiao Peng, Danying Lin, Junle Qu, Shenzhen Univ. (China) [10024-29]

9:00: **Spectral Domain Optical Coherence Tomography with Extended Depth-of-focus by Aperture Synthesis**, En Bo, Linbo Liu, Nanyang Technological Univ. (Singapore) [10024-30]

9:15: **Optimization of wide-field large-volume tomography to accelerate whole-brain imaging**, Qiuyuan Zhong, Xiaoyu Zhang, Zhangheng Ding, Sile An, Jing Yuan, Hui Gong, Qingming Luo, Britton Chance Ctr. for Biomedical Photonics (China) [10024-31]

9:30: **Lensless quantitative phase imaging based on ptychographic iterative engine with partially-coherent illumination**, Wei Yu, Xiaolin Tian, Xiaoliang He, Shouyu Wang, Cheng Liu, Jiangnan Univ. (China) [10024-32]

9:45: **Determination of the real focal plane with transport intensity equation and wavefront propagation method**, Xin Meng, Xiaolin Tian, Wei Yu, Jiangnan Univ. (China); Liang Xue, Shanghai Univ. of Electric Power (China); Cheng Liu, Shouyu Wang, Jiangnan Univ. (China) [10024-33]

Tea/Coffee BreakThu 10:00 to 10:30

SESSION 6

LOCATION: ROOM 5B + 5G THU 10:30 TO 12:00

Microscopy and Imaging II

Session Chairs: **Junle Qu**, Shenzhen Univ. (China);

Dan Zhu, Huazhong Univ. of Science and Technology (China)

10:30: **Tissue optical clearing for enhancement of in vivo blood flow imaging** (*Invited Paper*), Dan Zhu, Huazhong Univ. of Science and Technology (China) [10024-34]

11:00: **High-speed phase-based auto-focusing method with transport of intensity equation and numerical wavefront propagation**, Xiaolin Tian, Xin Meng, Wei Yu, Jiangnan Univ. (China); Liang Xue, Shanghai Univ. of Electric Power (China); Cheng Liu, Shouyu Wang, Jiangnan Univ. (China) [10024-35]

11:15: **Contrast improvement for swept source optical coherence tomography image of sub-surface tissue**, Xinyu Li, Shanshan Liang, Jun Zhang, Sun Yat-Sen Univ. (China) [10024-36]

11:30: **Large virtual histology using confocal microscopy**, JueHyung Kang, Hanyang Univ. (Korea, Republic of); HongRae Kim, National Cancer Ctr. (Korea, Republic of); Incheon Song, NanoScope Systems, Inc. (Korea, Republic of); Hyeong Soo Nam, Hanyang Univ. (Korea, Republic of); Hyunjin Kim, S. H. Lee, National Cancer Ctr. (Korea, Republic of); Young Jae Won, Osong Medical Innovation Foundation (Korea, Republic of); Yongdo Choi, Hee Jin Chang, Kwang-Gi Kim, Dae Kyung Sohn, National Cancer Ctr. (Korea, Republic of); Hongki Yoo, Hanyang Univ. (Korea, Republic of) [10024-37]

11:45: **A frequency domain 4-frame SIM reconstruction algorithm**, Amit Lal, Xiaoshuai Huang, Peng Xi, Peking Univ. (China) [10024-38]

Lunch/Exhibition BreakThu 12:00 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at <http://spie.org/PAPosterGuidelines>.

Hemoglobin concentration determination based on near-infrared spatially-resolved transmission spectra, Linna Zhang, Ling Lin, Gang Li, Tianjin Univ. (China) [10024-60]

Research of transmissive near-infrared spectroscopy for non-invasive blood glucose measurement, Wen-Ming Yang, Ningfang Liao, Yasheng Li, Liwei Shao, Dehuang Huang, Beijing Institute of Technology (China) [10024-61]

Amplitude enhancement by a gold dimer, Xin Hong, Jingxin Wang, Zheng Jin, Dalian Univ. of Technology (China) [10024-62]

Wavelength selection based on two-dimensional correlation spectroscopy: application to noninvasive hemoglobin measurement by dynamic spectrum, Shengzhao Zhang, Zhe Li, Gang Li, Ling Lin, Tianjin Univ. (China) ... [10024-63]

Adaptive photoacoustic imaging quality optimization with EMD and reconstruction, Chen Zhu, Jianbo Guo, Jie Yuan, Chao Tao, Xiaojun Liu, Nanjing Univ. (China); Guan Xu, Univ. of Michigan Medical School (USA); Xueding Wang, Univ. of Michigan (USA) [10024-64]

In situ hyperspectral microscopy with acousto-optic tunable filter, Lv Yanlu, Jing Bai, Jianwen Luo, Tsinghua Univ. School of Medicine (China) ... [10024-65]

Spatially-variant regularization algorithm based on cluster analysis for reconstruction of fluorescence molecular tomography, Jiulou Zhang, Yanlu Lv, Jianwen Luo, Tsinghua Univ. School of Medicine (China) [10024-66]

Influence of incident light offset on diffuse reflectance measurement for curved object: a Monte Carlo-based study, Chizhu Ding, Huazhong Agricultural Univ. (China) [10024-67]

Repetition doubling in a soliton self-frequency shift system for multiphoton microscopy, Ke Wang, Jiexing He, Shenzhen Univ. (China) [10024-68]

Pigmented skin lesion detection using random forest and wavelet-based texture, Ping Hu, Tie-Jun Yang, Guilin Univ. of Technology (China) ... [10024-69]

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Identification of calcifications in intracranial neoplasms using two-photon excitation fluorescence microscopy, Peihua Lin, Fujian Normal Univ. (China); Xingfu Wang, Zanyi Wu, Fujian Medical Univ. (China); Na Fang, Lianhuang Li, Fujian Normal Univ. (China); Dezhi Kang, Fujian Medical Univ. (China); Jianxin Chen, Fujian Normal Univ. (China) [10024-72]

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- Monitoring the elasticity changes of hela cells during mitosis by atomic force microscopy**, Ningcheng Jiang, Yuhua Wang, Fujian Normal Univ. (China); Jinshu Zeng, Fujian Medical Univ. (China); Shusen Xie, Hongqin Yang, Fujian Normal Univ. (China) [10024-80]
- Determination of acceptor-to-donor cross section ratio for two-photon excitation in living cells**, Zexian Hou, Yuhua Wang, Liqin Zheng, Fujian Normal Univ. (China); Tongsheng Chen, South China Normal Univ. (China); Hongqin Yang, Shusen Xie, Fujian Normal Univ. (China) [10024-81]
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- Polymer dots with broadband optical absorption (500 nm - 700 nm) and high-efficiency photoacoustic conversion for in vivo multispectral photoacoustic imaging**, Jian Zhang, Univ. of Macau (Macao, China) [10024-83]
- Effect of 17 β -estradiol on the elasticity of MCF-7 cells by atomic force microscopy**, Yuhua Wang, Liqin Zheng, Hongqin Yang, Shusen Xie, Fujian Normal Univ. (China) [10024-84]
- Numerical simulation and analysis of accurate blood oxygenation measurement by using optical resolution photoacoustic microscopy**, Tianhao Yu, Qian Li, Lin Li, Xinyu Chai, Chuanqing Zhou, Shanghai Jiao Tong Univ. (China) [10024-85]
- In vivo noninvasive measurement of preprandial and postprandial blood glucose using optical coherence tomography**, Ying Zhang, Xiyang Zhang, Zhifang Li, Hui Li, Fujian Normal Univ. (China) [10024-86]
- Measuring blood oxygenation of pulsatile arteries using photoacoustic microscopy**, Qian Li, Tianhao Yu, Lin Li, Xinyu Chai, Chuanqing Zhou, Shanghai Jiao Tong Univ. (China) [10024-87]
- Self-assembled dye-doped polymer microspheres as whispering gallery mode lasers**, Xiaogang Chen, Fujian Normal Univ. (China); Hongyi Sun, Fudan Univ. (China); Hongqin Yang, Fujian Normal Univ. (China); Xiang Wu, Fudan Univ. (China); Shusen Xie, Fujian Normal Univ. (China) [10024-88]
- A method to improve the measurement stability of scattering coefficients in lip and tongue with optical coherence tomography**, Xiyang Zhang, Ying Zhang, Zhifang Li, Hui Li, Fujian Normal Univ. (China) [10024-89]
- The optimum measurement precision evaluation for blood components using near-infrared spectra on 1000-2500 nm**, Ziyang Zhang, Di Sun, Tongshuai Han, Chao Guo, Jin Liu, Tianjin Univ. (China) [10024-90]
- Quantitative optical biomarkers of lung cancer based intrinsic two-photon excited fluorescence signal**, Jingwen Li, Zhenlin Zhan, Hongxin Lin, Xiaoqin Zhu, Jianxin Chen, Shuangmu Zhuo, Fujian Normal Univ. (China) [10024-91]
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- Measuring the biomechanical properties of actin in single breast cancer cell**, Minghai You, Yuhua Wang, Ningcheng Jiang, Shusen Xie, Hongqin Yang, Fujian Normal Univ. (China) [10024-110]
- Childhood lymphoblastic leukemia adverse drug reactions: study of risk factors and therapy prognosis by optical methods**, Andrey Zyubin, Anastasiya Lavrova, Svetlana Babak, Vladimir Malaschenko, Anastasiya Borisova, Nikita Opryshko, Immanuel Kant Baltic Federal Univ. (Russian Federation) [10024-111]
- Parameter estimation and analysis model selections in fluorescence correlation spectroscopy**, Shiqing Dong, Jie Zhou, Yuhua Wang, Shusen Xie, Hongqin Yang, Fujian Normal Univ. (China) [10024-112]
- Estimation of mouse optical structures in vivo with the aid of image registration**, Wenbo Wan, Feng Gao, Tianjin Univ. (China) [10024-113]
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- Interstitial optical parameter quantification of turbid medium based on CW radiance measurements**, Lingling Liu, Limin Zhang, Feng Gao, Huijuan Zhao, Tianjin Univ. (China) [10024-115]
- The phase characteristics and sub-structure shape analysis of a neuron based on electrical-optical modeling**, Ying Ji, Tingting Hua, Wenbo Tang, Yuanyuan Xu, Yawei Wang, Jiangsu Univ. (China) [10024-116]
- Dorsal hand vein recognition based on Gabor multi-orientation fusion and multi-scale HOG features**, Tuo Han, Zhiyong Wang, Xiaoping Yang, Tianjin Univ. of Technology (China) [10024-117]
- Discrimination of liver cancer in cellular level based on backscatter micro-spectrum with PCA algorithm and BP neural network**, Jing Yang, Univ. of Shanghai for Science and Technology (China) [10024-118]
- Analysis of human hairs by femtosecond laser-induced breakdown spectroscopy**, Yuliya S. Biryukova, Sergey S. Golik, Alexey A. Ilyin, Tamara M. Agapova, Michael Y. Babiy, Far Eastern Federal Univ. (Russian Federation); Alexander Y. Mayor, Institute for Automation and Control Processes (Russian Federation); Nataliya Golik, Institute of Automation and Control Processes (Russian Federation); Elizabeth Pripatinskaya, Far Eastern Federal Univ. (Russian Federation) [10024-119]
- Compact hybrid real-time hyperspectral imaging system with high effective spatial, spectral, and temporal resolution**, Filip Roth, Masaryk Univ. (Czech Republic) and IBSmm Engineering, spol. s r. o. (Czech Republic); Ahmad Abbadi, Masaryk Univ. (Czech Republic) [10024-120]
- Interferometer immunosensor based on porous silicon for determining alpha-fetoprotein**, Xiao-yi Lv, Xinjiang Univ. (China) [10024-121]
- Label-free and high-sensitive detection for genetic point mutation based on hyperspectral interferometry**, Rongxin Fu, Qi Li, Junqi Zhang, Ruliang Wang, Xue Lin, Ning Xue, Ya Su, Kai Jiang, Tsinghua Univ. (China); Guoliang Huang, Tsinghua Univ. School of Medicine (China) [10024-122]
- Application of CRDS laser breath acetone analyzer in fat burning**, Xiaomeng Zhao, Meixiu Sun, Zhannan Wang, Hao Yang, Yingxin Li, Chinese Academy of Medical Sciences (China); Chuji Wang, Chinese Academy of Medical Sciences (China) and Mississippi State Univ. (USA) [10024-123]
- Application study of transport intensity equation in quantitative phase reconstruction**, Xiaojun Song, Shanghai Univ. of Electric Power (China); Wei Cheng, Chunjuan Wei, Shanghai Univ. of Electric Power (China); Baodan Bai, Shanghai Univ. of Medicine & Health Sciences (China); Liang Xue, Fenghong Chu, Shanghai Univ. of Electric Power (China); Weijing Liu, Shanghai University of Electric Power (China) [10024-124]

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- Photophysical property of the pyridyl and pyrimidinyloxy silicon (IV) phthalocyanines and their morphology of polymeric nanoparticles.** Yiru Peng, Sujuan Pan, Ting Lin, Shijun Wu, Yufeng Jiang, Di Zeng, Hongqin Yang, Yide Huang, Fujian Normal Univ. (China) [10024-125]
- Dual-modal in-vivo imaging system for small animal using individual novel detector OptX.** Ruliang Wang, Tsinghua Univ. (China); Junqi Zhang, Qi Li, Rongxin Fu, Ning Xue, Tsinghua Univ. School of Medicine (China); Xue Lin, Ya Su, Tsinghua Univ. (China); Kai Jiang, Tsinghua Univ. School of Medicine (China) [10024-126]
- 2D light scattering label-free cytometry using light-sheet illumination.** Meilai Lin, Xuanta Su, Shandong Univ. (China) [10024-127]
- The effect of metal ions on the photophysical and photochemical properties of bromo dendrimer metal phthalocyanines.** Yiru Peng, Sujuan Pan, Dongdong Ma, Tiantian Zhang, Kuizhi Chen, Shusen Xie, Hongqin Yang, Fujian Normal Univ. (China) [10024-128]
- Monitoring the changes of mitochondrial morphology and its metabolism of breast cancer cells with the treatment of HSP70 inhibitor after heat shock by fluorescence imaging.** Biying Yu, Hongqin Yang, Hui Li, Fujian Normal Univ. (China) [10024-129]
- Vigilance task-related functional connectivity revealed by wavelet-based coherence analysis of near-infrared spectroscopy signals.** Wei Wang, Lingqiu Bu, Liwei Xu, Shandong Univ. (China); Zengyong Li, National Research Ctr. for Rehabilitation Technical Aids (China) [10024-130]
- Age-related changes in brain functional connectivity in response to posture change as assessed by wavelet phase coherence of NIRS signals.** Bitian Wang, Shandong Univ. (China); Zengyong Li, Shandong Univ. (China) and National Research Ctr. for Rehabilitation Technical Aids (China) [10024-131]
- Development of wide-angle 2D light scattering static cytometry.** Linyan Xie, Qiaoxi Liu, Changshun Shao, Xuanta Su, Shandong Univ. (China) [10024-132]
- Diffuse reflectance spectroscopy study of in vitro tissue for nasopharyngeal carcinoma diagnosis.** Zhihong Xu, Xiaosong Ge, Xueliang Lin, Duo Lin, Wei Huang, Fujian Normal Univ. (China) [10024-133]
- Photophysical properties of catechol axially-substituted tetra- α -(pentyloxy) titanium (IV) phthalocyanine.** Yiru Peng, Xinxin Yu, Huafei Lv, Sujuan Pan, Shijun Wu, Di Zeng, Yufeng Jiang, Hongqin Yang, Shusen Xie, Fujian Normal Univ. (China) [10024-134]
- Functional connectivity analysis using fNIRS in healthy subjects during prolonged simulated driving.** Liwei Xu, Bitian Wang, Wei Wang, Zhian Liu, Shandong Univ. (China); Zengyong Li, National Research Ctr. for Rehabilitation Technical Aids (China) [10024-135]
- Absolute flow velocity measurement by depth-encoded dual-beam phase-resolved Doppler optical coherence tomography.** Jie Qian, Wei Cheng, Zhaoyuan Cao, Xinjian Chen, Jianhua Mo, Soochow Univ. (China) [10024-136]
- Integrated acoustic-resolution and optical-resolution photoacoustic microscopy using a single multifunctional acoustic lens.** Heng Guo, Lei Xi, Univ. of Electronic Science and Technology of China (China) [10024-137]
- En-face sectional imaging using single-shot full-field optical coherence tomography (SS-FF-OCT) based on white-light-emitting diode (WLED).** Tulsı Anna, National Yang-Ming Univ. (Taiwan, China); Ting-Wie Chang, Industrial Technology Research Institute (Taiwan, China); Chih-Ming Lai, Ming Chuan Univ. (Taiwan, China); Wen-Chuan Kuo, National Yang-Ming Univ. (Taiwan, China) [10024-138]
- Whole-body and multispectral photoacoustic imaging of adult zebrafish.** Na Huang, Lei Xi, Univ. of Electronic Science and Technology of China (China) [10024-139]
- Revealing the cellular metabolism and microstructural changes in vivo in senescing Acer saccharum leaves using two-photon FLIM and full-field OCM.** Sandeep Chakraborty, Tulsı Anna, Wen-Chuan Kuo, Arthur E. Chiou, National Yang-Ming Univ. (Taiwan, China) [10024-140]
- Development of an automatic 3D foot scanner for customer shoe.** Ameng Li, Jiping Guo, Jiping Yu, Shenzhen Academy of Metrology and Quality Inspection (China); Yong Yao, Harbin Institute of Technology Shenzhen Graduate School (China) [10024-141]
- Temporal evolution of liquid-assisted hard bio-tissue ablation with infrared pulsed lasers under a liquid environment.** Faner Chen, Xianzeng Zhang, Fujian Normal Univ. (China) [10024-142]
- A comparative study of metabolic state of stem cells during osteogenic and adipogenic differentiations via fluorescence lifetime imaging microscopy.** Sandeep Chakraborty, Meng-Hsin Ou, Jean-Cheng Kuo, Arthur E. Chiou, National Yang-Ming Univ. (Taiwan, China) [10024-143]
- Effect of femtosecond laser ablation on Ca²⁺ release in the dorsal root ganglion neurons.** Liqin Zheng, Fujian Normal Univ. (China) [10024-144]
- Saliva surface-enhanced Raman spectroscopy for noninvasive optical detection of nasopharyngeal cancer.** Xueliang Lin, Duo Lin, Zhihong Xu, Xiaosong Ge, Wei Huang, Fujian Normal Univ. (China) [10024-145]
- The effect of axial ligands on the quantum yield of silicon oxygen of new silicon phthalocyanine.** Zhe Chen, Minjiang Teachers College (China); Zhenzhen Chen, Dongdong Ma, Sujuan Pan, Yiru Peng, Fujian Normal Univ. (China) [10024-146]
- Motion compensation of full-field swept-source optical coherence tomography integrated with surgical microscope.** Chang-Soo Kim, Hyeong Soo Nam, Hanyang Univ. (Korea, Republic of); Hyunki Lee, Hong Ki Kim, Koh Young Technology, Inc. (Korea, Republic of); Hongki Yoo, Hanyang Univ. (Korea, Republic of) [10024-147]
- High-resolution three-dimensional integral imaging using Fourier ptychography.** Leilei zhang, Juan Zhang, Muyang Zhang, Xing Zhao, Yanmei Liang, Nankai Univ. (China) [10024-148]
- Photo-induced electron transfer between benzyloxy dendrimer phthalocyanine and benzoquinone.** Yiru Peng, Tiantian Zhang, Dongdong Ma, Sujuan Pan, Shijun Wu, Yufeng Jiang, Di Zeng, Hongqing Yang, Fujian Normal Univ. (China) [10024-150]
- Design and fabrication of common path OCT probe with extended depth-of-focus.** Jingchao Xing, JunYoung Kim, Hongki Yoo, Hanyang Univ. (Korea, Republic of) [10024-151]
- Study on nasopharyngeal cancer tissue using surface-enhanced Raman spectroscopy.** Xiaosong Ge, Zhihong Xu, Xueliang Lin, Wei Huang, Duo Lin, Fujian Normal Univ. (China) [10024-152]
- Analysis of human biofluids with different concentrations by Raman spectroscopy method.** Dmitry N. Artemyev, Ivan A. Bratchenko, Yulia A. Khristoforova, Anastasia A. Lykina, Oleg O. Myakinin, Samara State Aerospace Univ. (Russian Federation); Tatyana P. Kuzmina, Igor L. Davydkin, Samara State Medical Univ. (Russian Federation); Valery P. Zakharov, Samara State Aerospace Univ. (Russian Federation) [10024-154]
- Quantitative analysis on texture of skin damaged by excessive ultraviolet radiation.** Shulian Wu, Liangjun Hu, Hui Li, Fujian Normal Univ. (China) [10024-155]
- Monitoring oxygen saturation and blood perfusion changes in port wine stains during vascular targeted photodynamic therapy.** Defu Chen, Beijing Institute of Technology (China); Ying Wang, Ying Gu, Chinese PLA General Hospital (China) [10024-156]
- In vitro photodynamic antimicrobial activity of cationic benzylidene cyclopentanone Photosensitizer (P2) against Helicobacter pylori.** Ying Wang, Ying Gu M.D., Leili Wang, Zulin Ye, Chinese PLA General Hospital (China) [10024-158]
- Solutions to improve multiple configuration system resolution in imaging sensors.** Hua Liu, Luoyang Institute of Electro-Optical Equipment (China) [10024-159]
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- Automatic density artefact removal method for structured illumination microscopy data.** Jie Peng, Anan Li, Huazhong Univ. of Science and Technology (China); Qingming Luo, Britton Chance Ctr. for Biomedical Photonics (China); Hui Gong, Huazhong Univ. of Science and Technology (China) [10024-162]
- Tuning the red emission of NaYF₄:Yb/Er through core-shell nanostructure.** Yihua Zhao, Xiao Peng, Shuyi Yuan, Shaozhuang Yang, Wei Yan, Ming Zhu, Jun Song, Junle Qu, Shenzhen Univ. (China) [10024-163]
- Immunomodulatory effects of NaYbF₄:Er-based core-shell-shell upconversion nanoparticles on RAW264.7 cells.** Xiao Peng, Yihua Zhao, Shuyi Yuan, Shaozhuang Yang, Wei Yan, Ming Zhu, Jun Song, Junle Qu, Shenzhen Univ. (China) [10024-164]
- Hyperspectral imaging in the visible range for in vivo skin cancer differentiation.** Larisa A. Zherdeva, Ivan A. Bratchenko, Oleg O. Myakinin, Samara State Aerospace Univ. (Russian Federation); Alexander A. Moryatov, Sergey V. Kozlov, Samara State Medical Univ. (Russian Federation); Valery P. Zakharov, Samara State Aerospace Univ. (Russian Federation) [10024-165]
- Classification for skin cancer using the intensity-based texture-based and fractal-based features with optical coherence tomography.** Wei Gao, Ningbo Univ. of Technology (China); Oleg O. Myakinin, Ivan A. Bratchenko, Dmitry V. Kornilin, Valery P. Zakharov, Samara State Aerospace Univ. (Russian Federation) [10024-166]
- Skin cancer texture analysis of OCT images based on Haralick, fractal dimension, Markov random field features, and the complex directional field features.** Dmitry S. Raupov, Oleg O. Myakinin, Ivan A. Bratchenko, Valery P. Zakharov, Samara State Aerospace Univ. (Russian Federation); Alexander G. Khramov, Samara Aerospace Univ. (Russian Federation) [10024-167]
- Facile synthesis of Gd-Cu-In-S/ZnS bimodal quantum dots with optimized properties for tumor targeted fluorescence/MR in vivo imaging.** Bingbo Zhang, Weitao Yang, Tongji Univ. (China) [10024-168]
- Hyperspectral imaging for skin cancer diagnosis.** Lixin Liu, Xidian Univ. (China); Zhigang Zhao, Junle Qu, Shenzhen Univ. (China) [10024-169]
- Principal component prediction in cartilages by infrared imaging and support vector machine.** Jian-Hua Yin, Nanjing Univ. of Aeronautics and Astronautics (China) [10024-170]

Implementation by laser micromachining of a grid-based visual aid for enhanced diagnostic microscopy in PAP test cytological screening, Christos Riziotis, National Hellenic Research Foundation (Greece); Evangelos Tsiambas, 401 General Military Hospital (Greece) and National and Capodistrian Univ. of Athens (Greece) and mycolab Diagnostic Labs. (Greece). [10024-171]

Blood vessel damage correlated with irradiance for in vivo vascular targeted photodynamic therapy, Jinde Zhang, Tan Zou, Fujian Normal Univ. (China); Xiangyu Niu, Fujian Normal Univ. (China); Lisheng Lin, Buhong Li, Fujian Normal Univ. (China). [10024-172]

Improving the signal-to-noise ratio in ultrasound-modulated optical tomography by a lock-in amplifier, Lili Zhu, Jingping Wu, Guimin Lin, Hui Li, Fujian Normal Univ. (China). [10024-173]

Synthesis and bioimaging of the water-soluble ZnInAgS quantum dots, Rong Zhang, China Pharmaceutical Univ. (China). [10024-174]

Depth-section imaging of swine kidney by spectrally-encoded microscopy, Jiuling Liao, Wanrong Gao, Nanjing Univ. of Science and Technology (China). [10024-175]

In vivo multimodal microscope integrating photoacoustics, two-photon, and second-harmonic generation, Wei Song, Shenzhen Institute of Advanced Technology (China). [10024-176]

Non-invasive optical detection of HBV based on serum surface-enhanced Raman spectroscopy, Zuci Zheng, Qiwen Wang, Cuncheng Weng, Shangyuan Feng, Fujian Normal Univ. (China). [10024-177]

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RGD peptide conjugated-RhB probe for detecting the expression of integrin receptor integrin $\alpha v \beta 3$, Menglu Zhao, Yueqing Gu, China Pharmaceutical Univ. (China). [10024-179]

Cypate-mediated thermosensitive nanoliposomes for NIR imaging and photo-thermo triggered drug release, Liwei Lv, Zhihao Han, Yueqing Gu, China Pharmaceutical Univ. (China). [10024-180]

Retinal image quality and visual stimuli processing by simulation of partial eye cataract, Maris Ozolinsh, Olga Danilenko, Univ. of Latvia (Latvia). [10024-181]

Dual modality In vivo imaging of rodent fundus, Zhiyu Huang, Peking Univ. (China); Richard Johnson, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); Xiaoyun Jiang, Qiushi Ren, Changhui Li, Peking Univ. (China). [10024-182]

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Microencapsulation of indocyanine green in perfluorohexane-shelled microbubbles for application of cancer treatment, Shuya Han, Zhiqiang Zhu, Univ. of Science and Technology of China (China); Rong Ma, Second Affiliated Hospital of Chongqing Medical Univ. (China); Fengjing Zhong, Ting Si, Univ. of Science and Technology of China (China); Ronald X. Xu, The Ohio State Univ. (USA). [10024-184]

Visualization of pathological tissues using autofluorescence imaging, Larisa A. Zherdeva, Ivan A. Bratchenko, Oleg O. Myakinin, Samara Univ. (Russian Federation); Alexander A. Moryatov, Sergey V. Kozlov, Samara State Medical Univ. (Russian Federation); Valery P. Zakharov, Samara Univ. (Russian Federation). [10024-185]

SESSION 7

LOCATION: ROOM 5B + 5G THU 14:30 TO 18:00

Nano/Biophotonics

Session Chairs: **Zhongze Gu**, Southeast Univ. (China); **Yueqing Gu**, China Pharmaceutical Univ. (China)

14:30: **Plasmon-enhanced UV lasing in ZnO whispering-gallery microcavities** (*Invited Paper*), Chunxiang Xu, Qiuxiang Zhu, Junfeng Lu, Yueyue Wang, Zengliang Shi, Southeast Univ. (China). [10024-39]

15:00: **Ultrasound-assisted gold nanoparticle beacon for the detection of sensibility of tumor cells to chemotherapy** (*Invited Paper*), Qiumei Zhou, Yi Ma, Yueqing Gu, China Pharmaceutical Univ. (China). [10024-40]

15:30: **Optofluidic microresonators in biosensing and imaging** (*Invited Paper*), Xiang Wu, Fudan Univ. (China); Shusen Xie, Fujian Normal Univ. (China). [10024-41]

16:00: **Multiple gold-dimer detection from large scattering background**, Xin Hong, Zheng Jin, Dalian Univ. of Technology (China). [10024-42]

16:15: **Near-infrared fluorescent polymer dots with durable brightness and long-term stability for in vivo tumor tracking**, Liqin Xiong, Fengwen Cao, Yixiao Guo, Shanghai Jiao Tong Univ. (China). [10024-43]

16:30: **Anti-hepatocarcinoma effects of berberine-nanostructured lipid carriers against human HepG2, Huh7, and EC9706 cancer cell lines** (*Invited Paper*), Xiang-ping Meng, Henan Univ. of Science and Technology (China); Hua Fan, Guangdong hinabiotech Co., Ltd. (China); Yifei Wang, Jinan Univ. (China); Zhi-ping Wang, Guangdong Pharmaceutical Univ. (China); Tongsheng Chen, South China Normal Univ. (China). [10024-44]

17:00: **Optical manipulation of nanoparticles based on whispering gallery mode optical resonators**, Haotian Wang, Xiang Wu, Deyuan Shen, Fudan Univ. (China). [10024-45]

17:15: **SERS signals in the transducing process of biosensors**, Xiangwei Zhao, Zhongde Mu, Bing Liu, Delong Wang, Zhongze Gu, Southeast Univ. (China). [10024-46]

17:30: **Detection limit improvement for a mobile lateral flow assay reader**, Boonsong Sutapun, Lalita Saisin, Suranaree Univ. of Technology (Thailand); Ratthasart Amarit, Armote Somboonkaew, National Electronics and Computer Technology Ctr. (Thailand); Oraprapai Gajanandana, Orawan Himananto, National Ctr. for Genetic Engineering and Biotechnology (Thailand) . . [10024-47]

17:45: **Evaluation of free-radical scavenging and anti-oxidative capacity of polydatin-nanostructured lipid carriers**, Xiang-Peng Meng, Henan Univ. of Science and Technology (China); Fan Shi, Guangdong Pharmaceutical Univ (China); Yifei Wang, Jinan Univ. (China); Zhi-ping Wang, Guangdong Pharmaceutical Univ. (China); Tongsheng Chen, South China Normal Univ. (China). [10024-48]

FRIDAY 14 OCTOBER

SESSION 8

LOCATION: ROOM 5B + 5G FRI 8:00 TO 10:15

Photon Therapeutics

Session Chairs: **Ying Gu**, Chinese PLA General Hospital (China); **Buhong Li**, Fujian Normal Univ. (China)

8:00: **Quantification of reactive oxygen species for photodynamic therapy** (*Invited Paper*), Buhong Li, Fujian Normal Univ. (China). [10024-49]

8:30: **Pdot probes for stem cell labeling and phototherapy** (*Invited Paper*), Changfeng Wu, Jilin Univ. (China). [10024-50]

9:00: **Quantitative photobiomodulation** (*Invited Paper*), Timon Cheng-Yi Liu M.D., Ling Zhu, South China Normal Univ. (China); Quan-Guang Zhang, South China Normal Univ. (China) and Augusta Univ. (USA). [10024-51]

9:30: **The florescence detection in the treatment of CIN with photodynamic therapy**, Lifeng Wang, Defu Chen, Naiyan Huang, Ying Gu, Chinese PLA General Hospital (China). [10024-52]

9:45: **In vitro photodynamic inactivation effects of cationic benzylidene cyclopentanone photosensitizers on clinical fluconazole-resistant candida albicans planktonic cells and biofilms**, Shaona Zhou, Ying Wang, Zulin Ye, Ying Gu, Chinese PLA General Hospital (China). [10024-53]

10:00: **Antimicrobial blue-light inactivation of methicillin-resistant staphylococcus aureus: in vitro and in vivo study**, Yucheng Wang, Chinese PLA General Hospital (China) and Nankai Univ. (China); Tianhong Dai, Massachusetts General Hospital (USA); Ying Gu, Chinese PLA General Hospital (China). [10024-54]

Tea/Coffee Break FRI 10:15 to 10:45

SESSION 9

LOCATION: ROOM 5B + 5G FRI 10:45 TO 12:15

Biomedical Spectroscopy

Session Chairs: **Ying Gu**, Chinese PLA General Hospital (China); **Buhong Li**, Fujian Normal Univ. (China)

10:45: **Wavelet phase coherence analysis of cerebral tissue oxyhemoglobin concentrations and arterial blood pressure signals in subjects with sleep deprivation**, Lingguo Bu, Jianfeng Li, Fangyi Li, Heshan Liu, Shandong Univ. (China); Zengyong Li, Shandong Univ. (China) and National Research Ctr. for Rehabilitation Technical Aids (China). [10024-55]

11:00: **Quantitatively differentiating microstructural variations of skeletal muscle tissues by multispectral Mueller matrix imaging**, Yang Dong, Honghui He, Chao He, Tsinghua Univ. (China); Hui Ma, Graduate School at Shenzhen, Tsinghua Univ. (China). [10024-56]

11:15: **Accurate assessment of liver steatosis in animal models using a high-throughput Raman fiber-optic probe**, Kevin C. Hewitt, Ian P. Alwayn, Dalhousie Univ. (Canada); Haishan Zeng, Hanna C. McGregor, Michael A. Short, BC Cancer Research Ctr. (Canada); Samia B. Fashir, Heidi Sapp, Javad G. Rad, Dalhousie Univ. (Canada). [10024-57]

11:30: **Polarized light imaging for non-destructive quantitative assessment of vulvar lichen sclerosis**, YingJie Qu, Ximing Zhou, Yu Q. Meng, Li Yuan, Yao Qiu, Peng Liu, Wenqi Ren, Ming Z. Sun, Univ. of Science and Technology of China (China); Shufang Chang, Chongqing Medical Univ. (China); Ronald X. Xu, The Ohio State Univ. (USA). [10024-58]

11:45: **Hyperspectral-stimulated Raman scattering imaging of cholesteryl ester accumulation: new avenue to diagnosis of human prostate cancer**, Jun Du, Beihang Univ. (China); Ping Wang, Huazhong Univ. of Science and Technology (China); Shuhua Yue, BeiHang Univ. (China). [10024-59]

12:00: **Implantable multifunctional optoelectronic neural probe**, Xing Sheng, Tsinghua Univ. (China). [10024-10]

CONFERENCE 10025

LOCATION: ROOM 201C

Wednesday–Friday 12–14 October 2016 • Proceedings of SPIE Vol. 10025

Advanced Sensor Systems and Applications VII

Conference Chairs: **Tiegen Liu**, Tianjin Univ. (China); **Shibin Jiang**, AdValue Photonics, Inc. (USA); **Rene Landgraf**, Fraunhofer-Institut für Photonische Mikrosysteme (Germany)

Program Committee: **Xiaoyi Bao**, Univ. of Ottawa (Canada); **Rongshen Chen**, The Univ. of Birmingham (United Kingdom); **Kin-Seng Chiang**, City Univ. of Hong Kong (Hong Kong, China); **Brian Culshaw**, Univ. of Strathclyde (United Kingdom); **Xudong Fan**, Univ. of Michigan (USA); **Claire Gu**, Univ. of California, Santa Cruz (USA); **Baiou Guan**, Jinan Univ. (China); **Zuyuan He**, Shanghai Jiao Tong Univ. (China); **Wei Jin**, The Hong Kong Polytechnic Univ. Shenzhen Research Institute (China); **Deming Liu**, Huazhong Univ. of Science and Technology (China); **Niels Neumann**, Technische Univ. Dresden (Germany); **Li Pei**, Beijing Jiaotong Univ. (China); **Gang-Ding Peng**, The Univ. of New South Wales (Australia); **Xueguang Qiao**, Northwest Univ. (China); **Yunjiang Rao**, Univ. of Electronic Science and Technology of China (China); **Tobias Schuster**, Technische Univ. Dresden (Germany); **Anbo Wang**, Virginia Polytechnic Institute and State Univ. (USA); **Tingyun Wang**, Shanghai Univ. (China); **Hai Xiao**, Clemson Univ. (USA); **Steve Yao**, General Photonics Corp. (USA); **Paul Kit-Lai Yu**, Univ. of California, San Diego (USA); **Li-Bo Yuan**, Harbin Engineering Univ. (China)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

- 9:00: **Opening Ceremony**
- 9:20: **SPIE Fellow Recognition Ceremony**
- 9:25: **Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony**
- 9:40: **Freeform optics opening up a bright future for imaging instrumentation (Plenary)**, Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]
- 10:20: **Tea/Coffee Break**
- 10:40: **Innovative large wide-field astronomical telescope: LAMOST (Plenary)**, Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]
- 11:20: **Quantum dot photonics: from science to practical implementation (Plenary)**, Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

SESSION 1

LOCATION: ROOM 201C WED 13:30 TO 15:20

Fiber Grating Sensors

Session Chair: **Vladimir Y. Venediktov**, Saint Petersburg Electrotechnical Univ. "LETI" (Russian Federation)

- 13:30: **Fiber Bragg grating-based temperature sensor for neutral gas in capacitively-coupled plasmas (Invited Paper)**, Zigeng Liu, Daoman Han, Xinpu Zhang, Yongxin Liu, Wei Peng, Younian Wang, Dalian Univ. of Technology (China) [10025-1]
- 14:00: **Simultaneous measurement of temperature and strain based on composite long-period fiber grating**, Chengguo Tong, Zhanjing Bao, Cuiting Sun, Xudong Chen, Jiang He, Tao Geng, Harbin Engineering Univ. (China) [10025-2]
- 14:20: **Temperature insensitive measurements of displacement using fiber Bragg grating sensors**, Shuang Yang, Anhui Institute of Optics and Fine Mechanics (China) and Univ. of Science and Technology of China (China); Jun Li, Anhui Institute of Optics and Fine Mechanics (China); Shengming Xu, Miao Sun, Anhui Institute of Optics and Fine Mechanics (China) and Univ. of Science and Technology of China (China); Yuquan Tang, Anhui Institute of Optics and Fine Mechanics (China); Gao Gang, Fengzhong Dong, Anhui Institute of Optics and Fine Mechanics (China) and Univ. of Science and Technology of China (China) [10025-3]
- 14:40: **Sensing behavior of smart CFRP embedded with FBG and its application in stay cables**, Feng Li, Xu Sun, Weigang Zhao, Shijiazhuang Tiedao Univ. (China); Feng Shen, Nanjing Fenghui Composite Co., Ltd. (China) [10025-4]
- 15:00: **Optical fiber refractometer based on tapered tilted-fiber Bragg grating**, Tao Wang, Tiegen Liu, Kun Liu, Junfeng Jiang, Zhe Yu, Meng Xue, Tianjin Univ. (China) [10025-5]

Tea/Coffee Break Wed 15:20 to 15:50

SESSION 2

LOCATION: ROOM 201C WED 15:50 TO 17:20

Optical Sensors Based on Mode Interference and Resonators

Session Chair: **Wei Peng**, Dalian Univ. of Technology (China)

- 15:50: **Interrelation of the effects caused by the rotation of the whispering gallery modes resonator (Invited Paper)**, Anna D. Dmitrieva, Yurii V. Filatov, Egor V. Shalymov, Vladimir Y Venediktov, Saint Petersburg Electrotechnical Univ. "LETI" (Russian Federation) [10025-6]
- 16:20: **Temperature effect on refractive index sensing performance of a U-shape tapered plastic optical fiber**, Chuanxin Teng, Jilin Univ. (China); Ning Jing, North University of China (China); Fangda Yu, Jilin Univ (China); Jie Zheng, Jilin Univ. (China) [10025-7]
- 16:40: **Thermal sensing performance of the nested fiber ring resonator**, Changqiu Yu, Yundong Zhang, Yong Feng Wu, Hui Li, Yuan Ping, Harbin Institute of Technology (China) [10025-8]
- 17:00: **The dispersion and spectrum output characteristics in series-coupled double-ring resonator**, Dongyang Gao, Yundong Zhang, Chang Qiu Yu, Yong Feng Wu, Hui Li, Ping Yuan, Harbin Institute of Technology (China) [10025-10]

THURSDAY 13 OCTOBER

SESSION 3

LOCATION: ROOM 201C THU 8:00 TO 10:10

Distributed and Remote Sensors

Session Chair: **Tiegen Liu**, Tianjin Univ. (China)

- 8:00: **A gain compensation method for the long-range distributed fiber disturbance sensor (Invited Paper)**, Chunyu Ma, Tiegen Liu, Kun Liu, Junfeng Jiang, Liang Pan, Miao Tian, Zhichen Li, Tianjin Univ. (China) [10025-11]
- 8:30: **Seismic Wave Detection System Based on Fully Distributed Acoustic Sensing**, Yue Jiang, Tuan Wei Xu, Shengwen Feng, Huang Jianfen, Institute of Semiconductors (China); Yang yang, Institute of Semiconductors, CAS (China); Guo Gaoran, Institute of Semiconductors, CAS (China) and School of Traffic and Transportation, Shijiazhuang Tiedao University (China); Li Fang, Institute of Semiconductors (China) and Chinese Academy of Sciences (China) . . [10025-12]
- 8:50: **A study on frequency-shifted pulse light stability control for DP-MZM in coherent-OTDR**, Wenjie Chen, Junfeng Jiang, Tiegen Liu, Kun Liu, Xuezhi Zhang, Zhe Ma, Zhe Yu, Tianjin Univ. (China) [10025-13]
- 9:10: **Spatial resolution enhanced distributed disturbance fiber sensing system employing modified TDE algorithm**, Liang Pan, Tiegen Liu, Kun Liu, Junfeng Jiang, Chunyu Ma, Tianjin Univ. (China) [10025-14]
- 9:30: **Study on error budget of large deployable optical remote sensor**, Yan Li, Xiaoli Chen, Beijing Institute of Space Mechanics and Electricity (China) [10025-15]
- 9:50: **Doppler laser radar for measuring range and speed of road targets**, Yanfang Lin, Xuesong Mao, Jianchao Fang, Tao Zhang, Wuhan Univ. of Science and Technology (China) [10025-16]

Tea/Coffee Break Thu 10:10 to 10:40

SESSION 4

LOCATION: ROOM 201C THU 10:40 TO 12:00

Methods for Sensor Interrogation and Data Processing

Session Chair: **Kun Liu**, Tianjin Univ. (China)

- 10:40: **Optical sensors interrogated by means of spectral interferometry: noise sources and approaches for resolution improvement**, Nikolai A. Ushakov, Alexandr A. Markvart, Leonid B. Liokumovich, Saint-Petersburg State Polytechnical Univ. (Russian Federation) [10025-17]
- 11:00: **Fundamental theory and algorithm based on spatial light modulator**, Hua Liu, Science and Technology on Electro-Optic Control Lab. (China) [10025-18]
- 11:20: **Multi-sensor data fusion and estimation with poor information based on bootstrap-fuzzy model**, Yanqing Wang, Weihu Zhou, Academy of Opto-Electronics, CAS (China); Zhongyu Wang, BeiHang Univ. (China) [10025-19]
- 11:40: **Tomographic reconstruction using 4 views and tunable diode laser**, Osborn Oliver M., Muruganandam T.M., Indian Institute of Technology Madras (India) [10025-20]
- Lunch/Exhibition Break Thu 12:00 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at <http://spie.org/PAPosterGuidelines>.

- Changes of shape of the whispering gallery modes resonators due to their movement in inertial space**, Yurii V. Filatov, Alexander S. Kukaev, Egor V. Shalymov, Vladimir Y. Venediktov, Saint Petersburg Electrotechnical Univ. "LETI" (Russian Federation) [10025-9]
- A new vibration monitoring system based on fiber-optic micro-cantilever**, Shengming Xu, Anhui Institute of Optics and Fine Mechanics (China) and Univ. of Science and Technology of China (China); Jun Li, Anhui Institute of Optics and Fine Mechanics (China); Shuang Yang, Miao Sun, Anhui Institute of Optics and Fine Mechanics (China) and Univ. of Science and Technology of China (China); Yuquan Tang, Anhui Institute of Optics and Fine Mechanics (China); Fengzhong Dong, Anhui Institute of Optical and Fine Mechanics (China) and Univ. of Science and Technology of China (China) [10025-38]
- The research of autonomous obstacle avoidance of mobile robot based on multi-sensor integration**, Ming Zhao, Junqin Lin, Baoling Han, Beijing Institute of Technology (China) [10025-39]
- Thin-core fiber modal interferometer with polyelectrolyte membrane for dissolved ammonia sensing**, Xinyue Huang, Xueming Li, Yu Li, Huifei Chen, Jianchun Yang, Chongqing Univ. (China) [10025-40]
- Design of a micro-uncooled infrared imaging system based on VOx IRFPA**, Dingchao Xie, Beijing Institute of Technology (China); Youchun Song, Kedun Science and Technology Co. Ltd. (China); Beiyang Liang, North GuangWei Technology Inc. (China); Qiang Wu, Kedun Science and Technology Co. Ltd. (China); Yue Yang, North GuangWei Technology Inc. (China); Yufei Zhao, Yong Song, Beijing Institute of Technology (China) [10025-41]
- Medical respiratory monitoring sensor based on optical fiber microbend loss**, Yong Zhao, Northeastern Univ. (China) [10025-42]
- Development of fiber optical temperature sensor based on fluorescence lifetime**, Yong Zhao, Northeastern Univ. (China) [10025-43]
- Research on high-temperature sensing characteristics based on modular interference of single-mode multimode single-mode fiber**, Zhaozhuang Peng, Li Wang, Beijing Univ. of Technology (China) [10025-44]
- Optical fiber sensing parameter measurement using wavelength division multiplexer and FBG**, Huanhuan Yan, Beijing Univ. of Technology (China) [10025-45]
- Hybrid MEFPI/FBG sensor for simultaneous measurement of ultrasound and magnetic field**, Yong Zhao, Northeastern Univ. (China) [10025-46]
- Simulation of a long-period fiber-optic grating-assisted surface plasmon resonance refractive index sensor**, Wenhua Wang, Weina Wu, Jiang Huang, Xiuyun Tian, Xianxiang Fei, Guangdong Ocean Univ. (China) [10025-47]
- Porous silicon-based two-dimensional photonic crystal for biochemical sensing applications**, Jiaqing Mo, Xinjiang Univ. (China) and College of Information Science and Engineering (China); Xiao-yi Lv, Xi'an Jiaotong Univ. (China) [10025-48]
- Temperature robustness of reflecting multichannel all-fiber current sensor based on time-division multiplexing**, Junzhen Jiang, Fujian Normal Univ. (China) [10025-49]

Demonstration of distributed fiber-optic temperature sensing with PM fiber using polarization crosstalk analysis technique, Hongxin Su, Ziwei Zhao, Ting Feng, Dongliang Ding, Zhihong Li, X. Steve Yao, Hebei Univ. (China) . [10025-50]

Surface plasmon resonance sensor based on grapefruit-type photonic crystal fiber with silver nano-film, Yibo Zheng, Hebei GEO Univ. (China) and Tianjin Univ. (China); Lei Zhang, Hebei GEO Univ. (China) [10025-51]

Photonic crystal fiber sensor based on surface-enhanced Raman scattering for explosives detection, Chuanyi Tao, Rong Chen, Chongqing Univ. of Technology (China); Jingke Li, Chongqing Medical and Pharmaceutical College (China) [10025-52]

Torque transducer based on fiber Bragg grating, Tao Li, Shu Jiang, Jiejun Lin, Hongli Qi, China Shipbuilding Industry Corp. (China) [10025-53]

A spherical-structure-based fiber sensor for measuring simultaneous measurement of both ammonia gas concentration and temperature, Wei Han, Dejun Liu, Fangfang Wei, Dublin Institute of Technology (Ireland); Qiang Wu, Northumbria Univ. (United Kingdom); Gerald Farrell, Yuliya Semenova, Xiaokang Lian, Dublin Institute of Technology (Ireland); Lei Sun, Beijing Univ. of Posts and Telecommunications (China) [10025-54]

A refractive index sensor based on taper Michelson interferometer in multimode fiber, Xinghu Fu, Guangwei Fu, Wa Jin, Weihong Bi, Yanshan Univ. (China) [10025-55]

Research into multispectral TDI-CCD imaging and fusion technology, Da He, Yong Jian Zhou, Lin Chang Liu, China Electronics Technology Group Corp. (China) [10025-56]

Detection of nitrogen dioxide by CW cavity-enhanced spectroscopy, Guo Jie, Yu ZhiWei, Hangzhou Zetian Technology Co., Ltd. (China) . [10025-57]

Remote canopy hemispherical image collection system, Xuefen Wan, North China Institute of Science and Technology (China); Bingyu Liu, Northeastern University (China); Yi Yang, Donghua Univ (China); Fang Han, Donghua University (China); Jian Cui, Beijing University of Aeronautics and Astronautics (China) [10025-58]

Concepts for compact mid-IR spectroscopy in photochemistry, Phuong-Ha Cu-Nguyen, Hans Zappe, Univ. of Freiburg (Germany) . . [10025-59]

SESSION 5

LOCATION: ROOM 201C THU 14:30 TO 17:10

Chemical and Biological Sensors

Session Chair: **Rene Landgraf**, Fraunhofer-Institut für Photonische Mikrosysteme (Germany)

- 14:30: **Experimental and modeling study of off-beam quartz-enhanced photoacoustic detection of nitrogen monoxide (NO) using a quantum cascade laser**, Chao Shi, Zhili Li, The Chinese Univ. of Hong Kong (Hong Kong, China); Wei Ren, The Chinese Univ. of Hong Kong (Hong Kong, China) [10025-21]
- 14:50: **Amphiphilic block copolymer-based photonic platform towards efficient protein detection**, Afroditi Petropoulou, National Hellenic Research Foundation (Greece) and Univ. of Peloponnese (Greece); Thomas J. Gibson, Efrosyni Themistou, Queen's Univ. Belfast (United Kingdom); Stergios Pispas, Christos Riziotis, National Hellenic Research Foundation (Greece) . . [10025-22]
- 15:10: **Photo-acoustic spectroscopy gas detection method based on multiple reflection of optical path**, Luo Han, Fengzhong Dong, Hua Xia, Hefei Institutes of Physical Science (China) [10025-23]
- 15:30: **Slotted-core photonic crystal fiber in gas-sensing application**, Sayed Asaduzzaman, Kawsar Ahmed, Bikash Kumar Paul, Mawlana Bhashani Science and Technology Univ. (Bangladesh) [10025-24]
- 15:50: **Small-molecule microarray-compatible optical-biosensor-based high-throughput screening**, Chenggang Zhu, Yiyang Fei, Fudan Univ. (China) [10025-25]
- 16:10: **Person identification by using 3D palmprint data**, Xuefei Bai, Zonghua Zhang, Hebei Univ. of Technology (China) [10025-26]
- 16:30: **Micro-capillary-based self-referencing surface plasmon resonance fiber-optic biosensor**, Shimeng Chen, Yun Liu, Lixia Li, Zigeng Liu, Wei Peng, Dalian Univ. of Technology (China) [10025-27]
- 16:50: **Application of LaserBreath-001 for breath acetone measurement in subjects with diabetes mellitus**, Zhennan Wang, Chinese Academy of Medical Sciences (China); Meixiu Sun, Chinese Academy of Medical Sciences (China); Zhuying Chen, Xiaomeng Zhao, Yingxin Li, Chuji Wang, Chinese Academy of Medical Sciences (China) [10025-28]

CONFERENCE 10025

LOCATION: ROOM 201C

FRIDAY 14 OCTOBER

SESSION 6

LOCATION: ROOM 201C FRI 8:00 TO 10:00

New Materials, Principles, Methods, and Modeling Related to Optical Sensing I

Session Chair: **Ping Lu**,
Huazhong Univ. of Science and Technology (China)

8:00: **Optical properties of silicon microtube doped with upconversion nanocrystals**, Yundong Zhang, Hui Li, Harbin Institute of Technology (China); Hanyang Li, Harbin Engineering Univ. (China); Chang Qiu Yu, Yong Feng Wu, Zinwaung Htwe, Harbin Institute of Technology (China) [10025-29]

8:20: **Light propagation in strip and slot waveguide arrays for sensing**, Qingyan Ma, Fan Qi, Yufei Wang, Wanhua Zheng, Institute of Semiconductors (China) [10025-30]

8:40: **Multimode interference structures as sensing elements integrated into Mach-Zehnder interferometers in polymer foils**, Yanfen Xiao, Alexa Langenecker, Meike Hofmann, Stanislav Sherman, Hans Zappe, Univ. of Freiburg (Germany); Claas Mueller, Uwe Gleissner, University of Freiburg (Germany) [10025-31]

9:00: **Optimizing the loss of one-dimensional photonic crystal towards high-sensitivity Bloch-surface-wave sensors under intensity interrogation scheme**, Weijing Kong, Tianjin Univ. of Technology and Education (China); Yuhang Wan, Kun Du, Beihang Univ. (China); Wenhui Zhao, Tianjin Univ. of Technology and Education (China); Shuang Wang, Tianjin University of Technology and Education (China); Zheng Zheng, BeiHang Univ. (China) [10025-32]

9:20: **Rapid wasted-free microfluidic fabrication based on ink-jet approach for microfluidic sensing applications**, Ungkarn Jarujareet, Ratthasart Amarit, Sarun Sumriddetchkajorn, National Electronics and Computer Technology Ctr. (Thailand) [10025-33]

9:40: **Magneto-optic sensor based on electrogyration compensation and single-quartz crystal**, Changsheng Li, He Cui, BeiHang Univ. (China); Xuan Zhang, Bright Crystal Technology, Inc. (China) [10025-34]

Tea/Coffee Break Fri 10:00 to 10:30

SESSION 7

LOCATION: ROOM 201C FRI 10:30 TO 11:40

New Materials, Principles, Methods, and Modeling Related to Optical Sensing II

Session Chair: **Ping Lu**,
Huazhong Univ. of Science and Technology (China)

10:30: **High-sensitivity fiber optic acoustic sensor technology** (*Invited Paper*), Ping Lu, Huazhong Univ. of Science and Technology (China) [10025-35]

11:00: **Temperature sensor based on one-dimensional photonic crystal with defect**, Kulandisamy Wilson, Arul Anandar College (India); Nambi Ramanujam, K.L.N. College of Engineering (India) [10025-36]

11:20: **A novel quarter wave plate and its applications to the reflective fiber-optic current sensor**, Ruibin Zhang, Beijing Univ. of Technology (China) [10025-37]

CONFERENCE 10026

LOCATION: ROOM 203C

Wednesday–Thursday 12–13 October 2016 • Proceedings of SPIE Vol. 10026

Real-time Photonic Measurements, Data Management, and Processing II

Conference Chairs: **Ming Li**, Institute of Semiconductors (China); **Bahram Jalali**, Univ. of California, Los Angeles (USA); **Keisuke Goda**, The Univ. of Tokyo (Japan); **Kevin K. Tsia**, The Univ. of Hong Kong (Hong Kong, China)

Program Committee: **Mohammad Hossein Asghari**, Univ. of California, Los Angeles (USA); **Hongwei Chen**, Tsinghua Univ. (China); **Xiangfei Chen**, Nanjing Univ. (China); **Hao Chi**, Zhejiang Univ. (China); **Yitang Dai**, Tsinghua Univ. (China); **Christophe Dorrer**, Univ. of Rochester (USA); **Chanju Kim**, Advanced Photonics Research Institute (Korea, Republic of); **Yasushi Kondo**, Shimadzu Corp. (Japan); **Cheng Lei**, The Univ. of Tokyo (Japan); **Hongpu Li**, Shizuoka Univ. (Japan); **Yong Liu**, Univ. of Electronic Science and Technology of China (China); **Asad M. Madni**, Univ. of California, Los Angeles (USA); **Kayvan R. Niazi**, NantWorks, LLC (USA); **Tatsutoshi Shioda**, Saitama Univ. (Japan); **Daniel R. Solli**, Univ. Göttingen (Germany); **Yikai Su**, Shanghai Jiao Tong Univ. (China); **Sergei K. Turitsyn**, Aston Univ. (United Kingdom); **Chao Wang**, Univ. of Kent (United Kingdom); **Jian Wang**, Huazhong Univ. of Science and Technology (China); **Ming Wang**, Nanjing Normal Univ. (China); **Xu Wang**, Heriot-Watt Univ. (United Kingdom); **Kun Xu**, Beijing Univ. of Posts and Telecommunications (China); **Lianshan Yan**, Southwest Jiaotong Univ. (China); **Akio Yazaki**, Hitachi, Ltd. (Japan); **Changyuan Yu**, National Univ. of Singapore (Singapore); **Xinliang Zhang**, Huazhong Univ. of Science and Technology (China); **Xiaoping Zheng**, Tsinghua Univ. (China); **Xihua Zou**, Southwest Jiaotong Univ. (China)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

- 9:00: Opening Ceremony
- 9:20: SPIE Fellow Recognition Ceremony
- 9:25: Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony
- 9:40: Freeform optics opening up a bright future for imaging instrumentation (Plenary), Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]
- 10:20: Tea/Coffee Break
- 10:40: Innovative large wide-field astronomical telescope: LAMOST (Plenary), Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]
- 11:20: Quantum dot photonics: from science to practical implementation (Plenary), Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

SESSION 1

LOCATION: ROOM 203C WED 13:30 TO 15:30

Microwave Photonics Signal Processing I

Session Chair: **Ming Li**, Institute of Semiconductors (China)

- 13:30: Honeycomb lattice meshes for reconfigurable universal microwave photonics processors (Invited Paper), Jose Capmany, Ivana Gasulla, Daniel Perez, Univ. Politécnic de Valencia (Spain) [10026-1]
- 13:55: Distributed radiofrequency signal processing using multicore fibers (Invited Paper), Ivana Gasulla, Sergi Garcia, Univ. Politécnic de Valencia (Spain) [10026-2]
- 14:20: Photonics-based radar for coherent multi-band differential phase estimation for enhanced displacement measurements (Invited Paper), Antonella Bogoni, Consorzio Nazionale Interuniversitario per le Telecomunicazioni (Italy) [10026-3]
- 14:45: Microwave photonic signal processing based on distributed feedback semiconductor optical amplifier (Invited Paper), Ye Deng, Ming Li, NuanNuan Shi, Jian Tang, Shuqian Sun, Lihong Zhang, Ninghua Zhu, Institute of Semiconductors (China) [10026-4]
- 15:10: A broadband optically-steered phased radar for target detection, NuanNuan Shi, Ye Deng, Lihong Zhang, Shuqian Sun, Jian Tang, Ming Li, Wei Li, Ninghua Zhu, Institute of Semiconductors (China) [10026-5]
- Tea/Coffee Break Wed 15:30 to 16:00

SESSION 2

LOCATION: ROOM 203C WED 16:00 TO 18:20

Microwave Photonics Signal Processing II

Session Chair: **Jose Capmany**, Univ. Politécnic de Valencia (Spain)

- 16:00: Recent progress in on-chip linear and nonlinear microwave photonic signal processing (Invited Paper), Jian Wang, Huazhong Univ. of Science and Technology (China) [10026-6]
- 16:25: High-accurate optical vector analysis based on optical single-sideband modulation (Invited Paper), Min Xue, Shilong Pan, Nanjing University of Aeronautics and Astronautics (China) [10026-7]
- 16:50: All-optical pulse compression for broadband microwave signal based on Brillouin scattering in optical fiber (Invited Paper), Weiweng Zou, Xin Long, Jianping Chen, Shanghai Jiao Tong Univ. (China) [10026-8]
- 17:15: Ultrafast optical signal processing enabled by plasmonics (Invited Paper), Maurizio Burla, Romain Bonjour, Felix Abrecht, W. Heni, Claudia B. Hoessbacher, C. Haffner, Yannick Salamin, Yuriy M. Fedoryshyn, Juerg Leuthold, ETH Zürich (Switzerland) [10026-9]
- 17:40: On-chip pulse shaper for optical and microwave arbitrary waveform generation, Shasha Liao, Xu Wang, Jianji Dong, Huazhong Univ. of Science and Technology (China) [10026-10]
- 18:00: Optical true time delay based on contradirectional couplers with single sidewall-modulated Bragg gratings, Xu Wang, Jianji Dong, Shasha Liao, Huazhong Univ. of Science and Technology (China) [10026-11]

THURSDAY 13 OCTOBER

SESSION 3

LOCATION: ROOM 203C THU 8:30 TO 10:10

Optical Frequency Combs

Session Chair: **Jianji Dong**, Huazhong Univ. of Science and Technology (China)

- 8:30: Tunable optical frequency combs generation in a CMOS-compatible high-Q micro-ring resonator (Invited Paper), Wenfu Zhang, Weiqiang Wang, Leiran Wang, Guoxi Wang, Wei Zhao, Xi'an Institute of Optics and Precision Mechanics (China) [10026-12]
- 9:00: Photonic-assisted compressive sampling systems (Invited Paper), Qiang Guo, Hongwei Chen, Minghua Chen, Sigang Yang, Shizhong Xie, Tsinghua Univ. (China) [10026-13]
- 9:30: Microwave frequency measurement based on photonic sampling analog-to-digital conversion, Yangxue Ma, Zhiyao Zhang, Di Peng, Jinfang Zou, Yong Liu, Univ. of Electronic Science and Technology of China (China) [10026-14]
- 9:50: Dual-frequency comb metrology with one fiber laser, Xin Zhao, BeiHang Univ. (China); Yasui Takeshi, The Univ. of Tokushima (Japan) and JST (Japan); Zheng Zheng, BeiHang Univ. (China) and Collaborative Innovation Ctr. of Geospatial Technology (China) [10026-15]
- Tea/Coffee Break Thu 10:10 to 10:40

CONFERENCE 10026

LOCATION: ROOM 203C

SESSION 4

LOCATION: ROOM 203C THU 10:40 TO 12:10

Ultrafast Phenomenon

Session Chair: **Zheng Zheng**, BeiHang Univ. (China)

10:40: **Secure key distribution applications of chaotic lasers** (*Invited Paper*), Ning Jiang, Chengpeng Xue, Kun Qiu, Univ. of Electronic Science and Technology of China (China) [10026-16]

11:10: **Spatial mode analyzer based on rotational Doppler effect** (*Invited Paper*), Jianji Dong, Huazhong Univ. of Science and Technology (China) [10026-17]

11:40: **Coherence loss: The emergence of optical polarization rogue waves** (*Invited Paper*), Lei Gao, Tao Zhu, Chongqing Univ. (China); Stefan Wabnitz, Univ. degli Studi di Brescia (Italy); Yu Jia Li, Cong Gao, Min Liu, Wei Huang, Chongqing Univ. (China) [10026-18]

Lunch/Exhibition Break Thu 12:00 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at <http://spie.org/PAPosterGuidelines>.

An instrument for on-line chemical oxygen demand and nitrate in-water monitoring, Weiwei Feng, Dan Li, Zongqi Cai, Yongchun Zhang, Xiao Xu, Yantai Institute of Coastal Zone Research (China) [10026-37]

An improved calculation model of weight coefficient for three-dimensional flame chemiluminescence tomography based on lens imaging theory, Ying Jin, Yang Song, Wenchao Wang, Xiangju Qu, Zhenhua Li, Yunjing Ji, Anzhi He, Nanjing Univ. of Science and Technology (China) [10026-38]

Study on glucose photoacoustic signals denoising based on a modified wavelet shift-invariance thresholding method, Zhong Ren, Jiangxi Science and Technology Normal Univ. (China) and Nanchang Univ. (China); Guodong Liu, Jiangxi Science and Technology Normal Univ. (China) [10026-39]

A real-time implementation method of second-order DP algorithm based on FPGA, Chenggang Sun, Shuo Wang, Yiqun Zhang, China Aerospace Science & Industry Corp. (China) [10026-40]

Spatial sparse scanned imaging based on compressed sensing, Qiaoyue Zhang, Yuntao He, BeiHang Univ. (China); Yuedong Zhang, Beijing Institute of Space Mechanics and Electricity (China) [10026-41]

Design of non-contact optic measurement system for lunar sample sealing device, Chunyong Wang, Lanzhou Institute of Physics (China) [10026-42]

Short pulse acquisition by low sampling rate with phase-coded sequence in lidar system, Long Wu, Qingheng Zhang, Wentao Lv, Xiaocheng Yang, Jiajia Xu, Jindi Yan, Zhejiang Sci-Tech Univ. (China); Yong Zhang, Harbin Institute of Technology (China) [10026-43]

Measuring the relaxation time of the xenon atoms and the rubidium atoms, Peng Jiang, Zhiguo Wang, Yingying Li, Qiyan Jiang, Hui Luo, National Univ. of Defense Technology (China) [10026-44]

Data acquisition and processing platform in the real-time distance measurement system with dual-comb lasers, Kai Ni, Lanlan Wang, Qian Zhou, Xinghui Li, Hao Dong, Xiaohao Wang, Graduate School at Shenzhen, Tsinghua Univ. (China) [10026-45]

Tunable microfiber nonlinear effects, Shihan Tang, Zhenxing Wu, Fei Xu, Nanjing Univ. (China) [10026-46]

Comparison of correlation algorithms with correlating Shack-Hartmann wave-front images, Hangcheng Zhou, Lanqiang Zhang, Lei Zhu, Hua Bao, Youming Guo, Xuejun Rao, Libo Zhong, Changhui Rao, Institute of Optics and Electronics (China) [10026-47]

Impacts of PM concentrations on visibility impairment, Guo Jie, Hangzhou Zetian Technology Co. Ltd. (China); Yu Zhiwei, Hangzhou Zetian Technology Co., Ltd. (China) [10026-48]

A novel scattered pilot-aided channel compensation for CO-OFDM systems, Haoran Sun, Yong Yao, Harbin Institute of Technology (Chile) [10026-49]

Video coding for 3D-HEVC based on saliency information, Fang Yu, Ping An, Shanghai Univ. (China) [10026-50]

Research on the laser tracking system for measuring moving target based on APD, Liu Hua, Liu Ke, Yinxiao Miao, Beijing Aerospace Institute for Metrology & Measurement Technology (China) [10026-51]

SESSION 5

LOCATION: ROOM 203C THU 14:30 TO 18:10

Optical Imaging and Microscopy

Session Chair: **Cheng Lei**, The Univ. of Tokyo (Japan)

14:30: **Time-stretch imaging system with OTDM detection scheme** (*Invited Paper*), Xu Wang, Heriot-Watt Univ. (United Kingdom); Bo Dai, Univ. of Shanghai for Science and Technology (China) [10026-19]

15:00: **High-throughput optofluidic profiling of euglena gracilis with morphological and chemical specificity** (*Invited Paper*), Baoshan Guo, Cheng Lei, Takuro Ito, Yiyue Jiang, Yasuyuki Ozeki, Keisuke Goda, The Univ. of Tokyo (Japan) [10026-20]

15:30: **High-throughput optofluidic microalgal cell analyzer with single-cell resolution for biofuel production** (*Invited Paper*), Cheng Lei, The Univ. of Tokyo (Japan); Takuro Ito, Keio Univ. (Japan); Dino Di Carlo, Univ. of California, Los Angeles (USA); Yasuyuki Ozeki, Keisuke Goda, The Univ. of Tokyo (Japan) [10026-21]

16:00: **Four-dimensional visualization of a small-scale flame based on deflection tomography** (*Invited Paper*), Bin Zhang, Zhigang Liu, Minmin Zhao, Qingdao Univ. of Science and Technology (China) [10026-22]

16:30: **Morphology-based cancer detection with optofluidic time-stretch microscopy**, Hirofumi Kobayashi, Cheng Lei, Ailin Mao, Yiyue Jiang, Baoshan Guo, Keisuke Goda, The Univ. of Tokyo (Japan) [10026-23]

16:50: **High-throughput time-stretch imaging cellular assay based on a DVD spinning platform**, Anson H. L. Tang, Antony C. S. Chan, Kelvin C. M. Lee, Edmund M. Y. Lam, Kenneth K. Y. Wong, Kevin K. Tsia, The Univ. of Hong Kong (Hong Kong, China) [10026-24]

17:10: **Survey of the baseline correction algorithms for real-time spectroscopy processing**, Yuanjie Liu, Yude Yu, Institute of Semiconductors (China) [10026-25]

17:30: **Automated classification of phytoplanktons based on time-stretch imaging**, Queenie Tsz Kwan K. Lai, Andy K. S. Lau, Kelvin C. M. Lee, Anson H. L. Tang, Kenneth K. Y. Wong, Kevin K. Tsia, The Univ. of Hong Kong (Hong Kong, China) [10026-26]

17:50: **Research of aerial imaging spectrometer data acquisition technology based on USB 3.0**, Junze Huang, Shanghai Institute of Technical Physics of the Chinese Academy of Sciences (China) and Shanghai Univ. (China); Yueming Wang, Shanghai Institute of Technical Physics of the Chinese Academy of Sciences (China) [10026-27]

FRIDAY 14 OCTOBER

SESSION 6

LOCATION: ROOM 203C FRI 8:20 TO 10:10

Photonic Devices

Session Chair: **Xiuyou Han**, Dalian Univ. of Technology (China)

8:20: **GeSn/SiGeSn photonic devices for mid-infrared applications: experiments and calculations** (*Invited Paper*), Genquan Han, Yue Hao, Xidian Univ. (China) [10026-28]

8:50: **New method of writing long-period fiber gratings using high-frequency CO₂ laser**, Gaoran Guo, Institute of Semiconductors (China); Ying Song, Shijiazhuang Tiedao Univ. (China); Wentao Zhang, Li Fang, Institute of Semiconductors (China) [10026-29]

9:10: **Two-step phase-shifting SPIDER**, Shuiqin Zheng, Shixiang Xu, Shenzhen Univ. (China) [10026-30]

9:30: **The study of in-line DFB-tunable laser based on REC technique**, Renjia Guo, Hao Wang, Jun Lu, Yuechun Shi, Xiangfei Chen, Nanjing Univ. (China) [10026-31]

9:50: **Characterization of phase-shifted Brillouin dynamic gratings in a polarization maintaining fiber**, Dengwang Zhou, Yongkang Dong, Pengbai Xu, Lei Teng, Harbin Institute of Technology (China); Hongying Zhang, Harbin Univ. of Science and Technology (China); Zhiwei Lu, Harbin Institute of Technology (China) [10026-32]

Tea/Coffee Break Fri 10:10 to 10:40

SESSION 7

LOCATION: ROOM 203C FRI 11:10 TO 12:10

Microwave Photonics for Measurement

Session Chair: **Genquan Han**, Xidian Univ. (China)

11:10: **Detection of low-power RF signals using a tunable optoelectronic oscillator**, Yuchen Shao, Dalian Univ. of Technology (China); Ming Li, Institute of Semiconductors (China); Xiuyou Han, Mingshan Zhao, Dalian Univ. of Technology (China) [10026-33]

11:30: **Pump sweeping time evaluation of stimulated Brillouin scattering-based rectangular optical filter**, Mengyue Shi, Lilin Yi, Wei Wei, Weisheng Hu, Shanghai Jiao Tong Univ. (China) [10026-36]

11:50: **Fiber-optic sensing system for simultaneous measurement of temperature and transversal loading based on a microwave photonic filter**, Shiwei Zhang, Rui Wu, Hao Chen, Hongyan Fu, Xiamen Univ. (China) [10026-35]

CONFERENCE 10027

LOCATION: ROOM 203D

Wednesday–Friday 12–14 October 2016 • Proceedings of SPIE Vol. 10027

Nanophotonics and Micro/Nano Optics III

Conference Chairs: **Zhiping Zhou**, Peking Univ. (China); **Kazumi Wada**, The Univ. of Tokyo (Japan)

Program Committee: **Eric Cassan**, Institut d'Électronique Fondamentale (France), Univ. Paris-Sud (France); **Tao Chu**, Institute of Semiconductors (China); **David S. Citrin**, Georgia Institute of Technology (USA); **Min Gu**, RMIT Univ. (Australia); **Ei-Hang Lee**, Inha Univ. (Korea, Republic of); **Ching-Fuh Lin**, National Taiwan Univ. (Taiwan, China); **Gong-Ru Lin**, National Taiwan Univ. (Taiwan, China); **Yan-Qing Lu**, Nanjing Univ. (China); **Jurgen Michel**, Massachusetts Institute of Technology (USA); **Andrew W. Poon**, Hong Kong Univ. of Science and Technology (Hong Kong, China); **Haisheng Rong**, Intel Corp. (USA); **Yikai Su**, Shanghai Jiao Tong Univ. (China); **Hon Ki Tsang**, The Chinese Univ. of Hong Kong (Hong Kong, China); **Dan-Xia Xu**, National Research Council Canada (Canada); **Changhe Zhou**, Shanghai Institute of Optics and Fine Mechanics (China); **Weidong Zhou**, The Univ. of Texas at Arlington (USA)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

- 9:00: **Opening Ceremony**
- 9:20: **SPIE Fellow Recognition Ceremony**
- 9:25: **Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony**
- 9:40: **Freeform optics opening up a bright future for imaging instrumentation (Plenary)**, Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]
- 10:20: **Tea/Coffee Break**
- 10:40: **Innovative large wide-field astronomical telescope: LAMOST (Plenary)**, Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]
- 11:20: **Quantum dot photonics: from science to practical implementation (Plenary)**, Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

SESSION 1

LOCATION: ROOM 203D WED 13:30 TO 15:40

Silicon Photonics

Session Chair: **Zhiping Zhou**, Peking Univ. (China)

- 13:30: **Recent advances in chip-scale grooming optical data processing on silicon platform (Invited Paper)**, Jian Wang, Huazhong Univ. of Science and Technology (China) [10027-1]
- 14:00: **Group IV compounds for micrometre scale device and systems (Invited Paper)**, Frederic Y. Gardes, Univ. of Southampton (United Kingdom) [10027-2]
- 14:30: **Large-scale silicon optical switches for optical interconnection (Invited Paper)**, Lei Qiao, Tao Chu, Chinese Academy of Sciences (China) [10027-3]
- 15:00: **Silicon photonics process development based on a 200-mm CMOS platform**, Zhihua Li, Jiang Yan, Bo Tang, Guilei Wang, Lingkuan Meng, Institute of Microelectronics (China) [10027-4]
- 15:20: **Double Doppler effect in two-dimensional photonic crystal with negative effective index**, Qiang Jiang, Jiabi Chen, Binming Liang, Songlin Zhuang, Univ. of Shanghai for Science and Technology (China) [10027-5]
- Tea/Coffee Break Wed 15:40 to 16:10

SESSION 2

LOCATION: ROOM 203D WED 16:10 TO 18:00

Lasers and Amplifiers

Session Chair: **Jian Wang**,

Huazhong Univ. of Science and Technology (China)

- 16:10: **III-V quantum dot lasers monolithically grown on Si platform (Invited Paper)**, Hulyun Liu, Jiang Wu, Univ. College London (United Kingdom) [10027-6]
- 16:40: **Optical deposition of topological insulator bismuth telluride for Q-switched ytterbium fiber laser**, Muhammad Aizi Mat Salim, Univ. of Malaya (Malaysia) and Univ. Teknologi Malaysia (Malaysia); Harith B. Ahmad, Saaidal Razali Azzuhri, Mohd Zulhakimi Ab Razak, Sulaiman Wadi Harun, Univ. of Malaya (Malaysia) [10027-7]
- 17:00: **Studies on the amplified spontaneous emission of a polymer fiber**, Songtao Li, North China Electric Power Univ. (China); Li Wang, Tianrui Thai, Xiaofeng Wu, Fei Tong, Xinpeng Zhang, Beijing Univ. of Technology (China) [10027-8]
- 17:20: **Erbium integration in silicon-slotted photonic devices for light amplification**, Weiwei Zhang, Univ. Paris-Sud 11 (France); John Rönn, Aalto Univ. (Finland); Lasse Karvonen, Aalto Univ. School of Electrical Engineering (Finland); Meiling Zhang, Jilin Univ. (China); Samuel Serna, Xavier Le Roux, Univ. Paris-Sud 11 (France); Dingshan Gao, Wuhan National Lab. for Optoelectronics (China); Daming Zhang, Jilin Univ. (China); Antti Säynätjoki, Aalto Univ. (Finland); Laurent Vivien, Eric Cassan, Univ. Paris-Sud 11 (France) [10027-9]
- 17:40: **n-type reverse-rib germanium laser structures doped by phosphorus diffusion process**, Chan-Hyuck Park, Kookmin Univ. (Korea, Republic of); Motoki Yako, Yasuhiko Ishikawa, The Univ. of Tokyo (Japan); Kazumi Wada, Massachusetts Institute of Technology (USA); Donghwan Ahn, Kookmin Univ. (Korea, Republic of) [10027-10]

THURSDAY 13 OCTOBER

SESSION 3

LOCATION: ROOM 203D THU 8:30 TO 10:00

Integrated Optics and Surface Plasmons

Session Chair: **Yun-Feng Xiao**, Peking Univ. (China)

- 8:30: **Optical waveguide materials, structure, and dispersion modulation (Invited Paper)**, Zhisong Xiao, BeiHang Univ. (China) [10027-11]
- 9:00: **Inherent error in interferometric surface plasmon microscopy**, Bei Zhang, BeiHang Univ. (China) and Univ. of Nottingham (United Kingdom); Peng Yan, Feng Gao, BeiHang Univ. (China); Le Wang, Renmin Univ. of China (China) [10027-12]
- 9:20: **Hybrid WGM-SPP modes in metal-coated microcylinder**, Yadong Miao, Zhuo Zhang, Mi Li, Yu Xiang, Yunchong Peng, Qiang Chen, Yuejiang Song, Nanjing Univ. (China) [10027-13]
- 9:40: **Manipulating the effective index of the hybrid plasmonic waveguide based on subwavelength grating**, Rui Zhang, Bowen Bai, Zhiping Zhou, Peking Univ. (China) [10027-14]
- Tea/Coffee Break Thu 10:00 to 10:30

CONFERENCE 10027

LOCATION: ROOM 203D

SESSION 4

LOCATION: ROOM 203D THU 10:30 TO 12:00

Resonator and Nonlinear Photonics

Session Chair: **Zhisong Xiao**, BeiHang Univ. (China)

10:30: **Ultrahigh-Q asymmetric microcavity photonics** (Invited Paper), Yun-Feng Xiao, Peking Univ. (China) [10027-15]

11:00: **Enhanced CNT photoluminescence in integrated silicon photonic resonators**, Weiwei Zhang, Elena Durán-Valdeiglesias, Samuel Serna, Thi-Hong-Cam Hoang, Carlos Alonso-Ramos, Xavier Le Roux, Univ. Paris-Sud 11 (France); Arianna Filoramo, Commissariat à l'Énergie Atomique (France); Francesco Sarti, Ughetta Torrini, Univ. degli Studi di Firenze (Italy); Hongliu Yang, Gianarelio Cuniberti, TU Dresden (Germany); Massimo Gurioli, Univ. degli Studi di Firenze (Italy); Viktor Bezugly, TU Dresden (Germany); Eric Cassan, Laurent Vivien, Univ. Paris-Sud 11 (France) [10027-16]

11:20: **Stability and non-linear optical properties of nanocarbon dispersions**, Anastasia V. Venediktova, Andrey Y. Vlasov, Saint Petersburg State Univ. (Russian Federation); Ivan M. Kislyakov, ITMO Univ. (Russian Federation); Vladimir Y. Venediktov, Saint Petersburg Electrotechnical Univ. "LETI" (Russian Federation) and Saint Petersburg State Univ. (Russian Federation) [10027-17]

11:40: **High-performance one-way transmission using pyramid-shaped silicon grating-coupled hyperbolic metamaterial**, Jigang Hu Sr., Yeming Qing, Zhenqiang Wen, Xiaohang Wu, Weiqing Gao, Feng Gao, Hefei Univ. of Technology (China) [10027-18]

Lunch/Exhibition Break Thu 12:00 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at <http://spie.org/PAPosterGuidelines>.

Wavelength conversion enhancement by using electric dipole and magnetic dipole resonance of nanocylinder, Kihwan Moon, Young Jin Lee, Seokhyeon Hong, Soon-Hong Kwon, Chung-Ang Univ. (Korea, Republic of) [10027-37]

Silver nanoparticles plasmonic effect on eosin and rhodamine 6G luminescence in various media, Iliia Samusev, Immanuel Kant Baltic Federal Univ. (Russian Federation); Anna Tsubulnikova, Immanuel Kant Baltic Federal Univ. (Russian Federation) and Kaliningrad State Technical Univ. (Russian Federation); Nadezhda Tikhomirova, Immanuel Kant Baltic Federal Univ. (Russian Federation) and Kaliningrad State Technical Univ. (Russian Federation); Vasily Slezhkin, Immanuel Kant Baltic Federal Univ. (Russian Federation) and Kaliningrad State Technical Univ. (Russian Federation); Valery Bryukhanov, Immanuel Kant Baltic Federal Univ. (Russian Federation); Boris F. Minaev, The Bohdan Khmelnytsky National Univ. of Cherkasy (Ukraine); Andrey Zyubin, Immanuel Kant Baltic Federal Univ. (Russian Federation) [10027-38]

Luminescence quantum yields of gold nanoparticles varying with excitation wavelengths, Yuqing Cheng, Guowei Lu, Peking Univ. (China) [10027-39]

Optical resolution improvement by nanoparticle's amplitude and phase pattern, Xin Hong, Xiaoyaun Sun, Dalian Univ. of Technology (China) [10027-40]

Tunable optical properties of the core-shell nanoparticles, Xin Hong, Chencheng Wang, Dalian Univ. of Technology (China) [10027-41]

Angular sensitivity for a Fabry-Perot structure incorporating different dielectric materials, Shangliang Wu, Yan Ye, Yun Zhou, Wenbin Huang, Yanhua Liu, Wen Qiao, Yanyan Wang, Minghui Luo, Linsen Chen, Soochow Univ. (China) [10027-42]

Improvement of metal-semiconductor contact on silicon microstructured surface by electroless nickel technique, Fei Long, Chongqing Acoustic-Optic-Electronic Co., Ltd. (China); Anran Guo, Univ. of Electronic Science and Technology of China (China); Lieyun Huang, Chongqing Acoustic-Optic-Electronic Co., Ltd. (China); Feng Yu, Wei Li, Univ. of Electronic Science and Technology of China (China) [10027-43]

Near-infrared absorbance enhancement and device application of nanostructured black silicon fabricated by metal-assist chemical etching, Lieyun Huang, No. 44 Research Institute of China Electronics Technology Group Corp. (China) and Chongqing Acoustic-Optic-Electronic Co., Ltd. (China); Hao Zhong, Univ. of Electronic Science and Technology of China (China); Fei Long, No. 44 Research Institute of China Electronics Technology Group Corp. (China) and Chongqing Acoustic-Optic-Electronic Co., Ltd. (China); Guohui Guo, Wei Li, Univ. of Electronic Science and Technology of China (China) [10027-44]

Model of blocking dislocations for III-V semiconductor grown on nano-trench patterned Si substrates, Haoyuan Ma, Jun Wang, Zhuo Cheng, Yibing Fan, Ran Zhang, Beijing Univ. of Posts and Telecommunications (China); Yuanyuan Liu, Institute of Semiconductors (China); Yongqing Huang, Xiao-Min Ren, Beijing Univ. of Posts and Telecommunications (China) [10027-45]

CdS quantum-dot sensitized solar-cell-based ZnO nanorods grown on a Ti substrate, Chunyan Zhou, Qian Chen, Xiaoshan Zhang, Fangfang Gao, Jiehua Xu, Liya Zhou, Guangxi Univ. (China) [10027-46]

Photoelectrochemical performance research of CdTe:Eu³⁺ quantum-dot-sensitized TiO₂ nanotube array solar cells, Qian Chen, Chunyan Zhou, Fangfang Gao, Xiaoshan Zhang, Liya Zhou, Guangxi Univ. (China) [10027-47]

Purcell enhancement of emitting from the quantum-dot-in-nanowire structure surrounded by Au, Fengling Tang, Xin Yan, Xia Zhang, Xiao-Min Ren, Beijing Univ. of Posts and Telecommunications (China) [10027-48]

Optical switching of scattering direction in silicon-gold dimer, Bona Ku, Young Jin Lee, Seokhyeon Hong, Kihwan Moon, Soon-Hong Kwon, Chung-Ang Univ. (Korea, Republic of) [10027-50]

Optimized design of metal-coated optical fiber tips with embedded plasmonic slot nano-resonators for maximum field enhancement, Afroditi Petropoulou, National Hellenic Research Foundation (Greece) and Univ. of Peloponnese (Greece); Michalis N. Zervas, Optoelectronics Research Ctr. (United Kingdom); Christos Riziotis, National Hellenic Research Foundation (Greece) [10027-51]

Study of waveguide directly writing in LiNbO₃ crystal by high-repetition-rate femtosecond laser, Chuan Wu, Feng Jie, Southwest Univ. of Science and Technology (China); Yongjia Yang, Southwest University of Science and Technology (China); Jianguai Mao, Anlin Luo, Southwest Univ. of Science and Technology (China); Zigang Zhou, Southwest University of Science and Technology (China) [10027-52]

Optical reflection efficiency modulation based on graphene film, Junbo Yang, Jie Huang, Wenjun Wu, Dingbo Chen, Jingjing Zhang, National Univ. of Defense Technology (China) [10027-53]

Enhanced absorption in graphene monolayer with guided mode resonance, Jun Wu, Hongchao Cao, Shanghai Institute of Optics and Fine Mechanics (China) [10027-54]

SESSION 5

LOCATION: ROOM 203D THU 14:30 TO 17:50

Nanophotonics

Session Chairs: **Frederic Y. Gardes**, Univ. of Southampton (United Kingdom); **Xingjun Wang**, Peking Univ. (China)

14:30: **Defect-free fabrication of nano-disk and nano-wire by fusion of bio-template and neutral beam etching** (Invited Paper), Seiji Samukawa, Shuichi Noda, Tohoku Univ. (Japan); Manabu Yasuda, Kazumi Wada, The Univ. of Tokyo (Japan) [10027-19]

15:00: **1x5 optical splitter for TE modes in air-hole photonic crystal based on self-collimation effect**, Weijuan Chen, Yuanyuan Lin, Fujian Normal Univ. (China); Guimin Lin, Ping Fu, Minjiang Univ. (China); Chengkun Liu, Junzhen Jiang, Yishen Qiu, Hui Li, Fujian Normal Univ. (China); Xiyao Chen, Minjiang Univ. (China) [10027-20]

15:20: **Preparation and sensing application of GNS-based optical fiber LSPR probe**, Lixia Li, Shimeng Chen, Zigeng Liu, Jianye Guang, Wei Peng, Dalian Univ. of Technology (China) [10027-21]

15:40: **Steady- and excited-state dynamics of mixed halide Perovskite films**, Mopelola A. Idowu, Federal Univ. of Agriculture (Nigeria); Theodore Goodson III, Univ. of Michigan (USA) [10027-22]

16:00: **Gold nanoparticle-induced diameter reduction and enhanced Raman shift in self-rolled-up InGaAs/GaAs microtubes**, Xiankun Wang, Qi Wang, Zhaoer Chai, Guoming Mao, Hao Liu, Jia Chen, Bingfei Liu, Xiao-Min Ren, Beijing Univ. of Posts and Telecommunications (China) [10027-23]

16:20: **Title to be determined** (Invited Paper), Bumki Min, KAIST (Korea, Republic of) [10027-24]

16:50: **Fabrication of tunable two-dimensional nanostructures by improved nanosphere lithography**, Haibin Ni, Nanjing Univ. of Information Science & Technology (China) and Southeast Univ. (China); Xiangwei Zhao, Southeast Univ. (China); Wang Ming, Nanjing Normal Univ. (China) [10027-25]

17:10: **The far-field intensity distribution modulation of the beam cross-section using specially designed and fabricated nanostructure**, Jiannong Chen, Ludong Univ. (China) [10027-26]

17:30: **InGaAsP/InP-air-aperture microcavities for single-photon sources at 1.55- μ m telecommunication band**, Sijie Guo, Yanzhen Zheng, Zhuo Weng, Haicheng Yao, Yuhao Ju, Lei Zhang, Zhilei Ren, Ruoyao Gao, Zhiming M. Wang, Univ. of Electronic Science and Technology of China (China); Hai-Zhi Song, Univ. of Electronic Science and Technology of China (China) and Southwest Institute of Technical Physics (China) [10027-27]

FRIDAY 14 OCTOBER

SESSION 6

LOCATION: ROOM 203D FRI 8:00 TO 10:00

Waveguides and Passive Devices

Session Chair: **Kazumi Wada**, The Univ. of Tokyo (Japan)

8:00: **Versatile asymmetric directional couplers on silicon**
(Invited Paper), Daoxin Dai, Zhejiang Univ. (China) [10027-28]

8:30: **Wavefront shaping through emulated curved space in waveguide settings** (Invited Paper), Chong Sheng, Nanjing Univ. (China); Rivka Bekenstein, Technion-Israel Institute of Technology (Israel); Hui Liu, Shining Zhu, Nanjing Univ. (China); Mordechai Segev, Technion-Israel Institute of Technology (Israel) [10027-29]

9:00: **Experimental investigation of light propagation in engineered slotted photonic crystal waveguides**, Samuel Serna, Institut d'Électronique Fondamentale (France) and Lab. Charles Fabry (France); Weiwei Zhang, Institut d'Électronique Fondamentale (France); Xavier Le Roux, Laurent Vivien, Eric Cassan, Institut d'Électronique Fondamentale (France) [10027-30]

9:20: **Lossless coupled modes in symmetric waveguide array with non-uniform gain and loss**, Zhenzhen Liu, Jun Jun Xiao, Harbin Institute of Technology Shenzhen Graduate School (China) [10027-31]

9:40: **Highly reflective polarization-independent subtractive tri-color filters exploiting a silicon nanodisk array overlaid with aluminum**, Wenjing Yue, Sang-Shin Lee, Eun-Soo Kim, Kwangwoon Univ. (Korea, Republic of); Duk-Yong Choi, The Australian National Univ. (Australia) [10027-32]

Tea/Coffee Break Fri 10:00 to 10:30

SESSION 7

LOCATION: ROOM 203D FRI 10:30 TO 12:00

Quantum Optics

Session Chair: **Daoxin Dai**, Zhejiang Univ. (China)

10:30: **Silicon and silicon carbide nonlinear and quantum photonics**
(Invited Paper), Qiang Lin, Univ. of Rochester (USA) [10027-33]

11:00: **Investigation of Ge_{1-x}Sn_x/Ge quantum-well structures as optical gain media**, Li-Chou Sun, National Chung Cheng Univ. (Taiwan, China); Hui Li, H. H. Cheng, National Taiwan Univ. (Taiwan, China); Guo-En Chang, National Chung Cheng Univ. (Taiwan, China) [10027-34]

11:20: **Wavelength-controlled manipulation of colloidal quasi-resonant quantum dots under pulsed laser irradiation**, Aleksey S. Tsipotan, Vitaliy V. Slabko, Siberian Federal Univ. (Russian Federation); Aleksandr S. Aleksandrovsky, Kirensky Institute of Physics (Russian Federation); Marina Gerasimova, Siberian Federal Univ. (Russian Federation) [10027-35]

11:40: **Study of electro-absorption in tin-incorporated group-IV alloy-based strain-balanced quantum well**, Prakash Pareek, Ravi Ranjan, Mukul K. Das, Indian School Of Mines (India) [10027-36]

CONFERENCE 10028

LOCATION: ROOM 203E

Wednesday–Friday 12–14 October 2016 • Proceedings of SPIE Vol. 10028

Plasmonics II

Conference Chairs: **Hongxing Xu**, Wuhan Univ. (China); **Satoshi Kawata**, Osaka Univ. (Japan); **David J. Bergman**, Tel Aviv Univ. (Israel); **King Zhu**, Peking Univ. (China)

Program Committee: **Che Ting Chan**, Hong Kong Univ. of Science and Technology (Hong Kong, China); **Zheyu Fang**, Peking Univ. (China), Rice Univ. (United States); **Francisco Javier García de Abajo**, ICFO - Institut de Ciències Fotòniques (Spain); **Min Gu**, Swinburne Univ. of Technology (Australia); **Minghui Hong**, National Univ. of Singapore (Singapore); **Zhi-Yuan Li**, Institute of Physics (China); **Ai Qun Liu**, Nanyang Technological Univ. (Singapore); **Peter Nordlander**, Rice Univ. (USA); **Ruwen Peng**, Nanjing Univ. (China); **Min Qiu**, Zhejiang Univ. (China); **Din Ping Tsai**, National Taiwan Univ. (Taiwan, China); **Jianfang Wang**, The Chinese Univ. of Hong Kong (Hong Kong, China); **Hong Wei**, Institute of Physics (China); **Jianbin Xu**, The Chinese Univ. of Hong Kong (Hong Kong, China); **Lei Zhou**, Fudan Univ. (China); **Shining Zhu**, Nanjing Univ. (China)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

9:00: Opening Ceremony

9:20: SPIE Fellow Recognition Ceremony

9:25: Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony

9:40: Freeform optics opening up a bright future for imaging instrumentation (Plenary), Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]

10:20: Tea/Coffee Break

10:40: Innovative large wide-field astronomical telescope: LAMOST (Plenary), Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]

11:20: Quantum dot photonics: from science to practical implementation (Plenary), Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

SESSION 1

LOCATION: ROOM 203E WED 13:30 TO 15:20

Plasmonic Metamaterials

Session Chair: **Hongxing Xu**, Wuhan Univ. (China)

13:30: Tailoring Light with Reflective Metasurfaces (Invited Paper), Pin Chieh Wu, National Taiwan Univ. (Taiwan, China) and Research Ctr. for Applied Sciences - Academia Sinica (Taiwan, China); Wei Ting Chen, Yao-Wei Huang, Wei-Yi Tsai, Pei Ru Wu, Ting-Yu Chen, National Taiwan Univ. (Taiwan, China); Ching-Fu Chen, National Taiwan Univ. (Taiwan, China) and Research Ctr. for Applied Sciences - Academia Sinica (Taiwan, China); Hui Jun Wu, Chun Yen Liao, National Taiwan Univ. (Taiwan, China); Din Ping Tsai, Research Ctr. for Applied Sciences - Academia Sinica (Taiwan, China) and National Taiwan Univ. (Taiwan, China) [10028-1]

14:00: Modelling and ultrafast imaging of dynamic near-field hybridization in strongly coupled plasmonic nanosystem, Alemayehu Nana Koya, Zuoqiang Hao, Jingquan Lin, Changchun Univ. of Science and Technology (China) [10028-2]

14:20: Metasurfaces for high-efficiency surface plasmon coupler and active dispersion compensation (Invited Paper), Lei Zhou, Fudan Univ. (China) [10028-3]

14:50: Passive and active metasurface based on metal-insulator-metal structure (Invited Paper), Junichi Takahara, Tianji Liu, Hideaki Hatada, Yusuke Nagasaki, Osaka Univ. (Japan) [10028-4]

Tea/Coffee Break Wed 15:20 to 15:50

SESSION 2

LOCATION: ROOM 203E WED 15:50 TO 17:50

Applications of Plasmonics I

Session Chair: **Jwa-Min Nam**, Seoul National Univ. (Korea, Republic of)

15:50: Nanoscale imaging of local few-femtosecond near-field dynamics within individual nanostructures (Invited Paper), Anders Mikkelsen, Lund Univ. (Sweden) [10028-5]

16:20: Graphene oxide coated Au nanoparticles composite structure for improved SERS sensing, Bingfei Liu, Qi Wang, Tian Tian, Guoming Mao, Hao Liu, Jia Chen, Xiankun Wang, Xiao-Min Ren, Beijing Univ. of Posts and Telecommunications (China) [10028-6]

16:40: Photoluminescence of Ag/Sn core/shell nanoparticles, Bin Li, Lin Zhu, Ying Hu, Ying-Wei Lu, Hefei Univ. of Technology (China) [10028-7]

17:00: Optical interactions of a single AuNP on a gold film, Xin Hong, Jingxin Wang, Dalian Univ. of Technology (China) [10028-8]

17:20: Polarization state of light scattered from quantum plasmonic dimer antennas (Invited Paper), Zhipeng Li, Capital Normal Univ. (China) ... [10028-9]

THURSDAY 13 OCTOBER

SESSION 3

LOCATION: ROOM 203E THU 8:00 TO 10:10

Theories of Plasmonics

Session Chair: **Mingli Chang**, Hong Kong Univ. of Science and Technology (Hong Kong, China)

8:00: Theory for the eigenstates of the full Maxwell equations in some simple composite structures (Invited Paper), David J. Bergman, Asaf Farhi, Tel Aviv Univ. (Israel) [10028-10]

8:30: Active multiple plasmon-induced transparencies with detuned asymmetric multi-rectangle resonators, Dongdong Liu, Xuzhou Institute of Technology (China); Jicheng Wang, Jiangnan Univ (China); Jian Lu, Nanjing Univ. of Science and Technology (China) [10028-11]

8:50: Mechanism of resonant perfect optical absorber, design rules, and applications (Invited Paper), Zhiqiang Guan, Hongxing Xu, Wenqiang Wang, Wuhan Univ. (China) [10028-12]

9:20: Plasmonic 3D conductive coupling in a 3D metamaterial (Invited Paper), Jiafang Li, Zhi-Yuan Li, Institute of Physics (China) ... [10028-13]

9:50: Superlens imaging with surface plasmon polariton cavity in object space, Haiyang Chen, Chinhua Wang, Soochow Univ. (China) [10028-14]

Tea/Coffee Break Thu 10:10 to 10:40

SESSION 4

LOCATION: ROOM 203E THU 10:40 TO 12:20

Theory and Experiments

Session Chair: **David J. Bergman**, Tel Aviv Univ. (Israel)

10:40: Weyl points in plasmonic photonic crystals (Invited Paper), Mingli Chang, Meng Xiao, Wenjie Chen, Che Ting Chan, Hong Kong Univ. of Science and Technology (Hong Kong, China) [10028-15]

11:10: Control and mapping ultrafast plasmons with PEEM, Boyu Ji, Jiang Qin, Peng Lang, Alemayehu Nana Koya, Zuoqiang Hao, Toshihisa Tomie, Jingquan Lin, Changchun Univ. of Science and Technology (China) .. [10028-16]

11:30: Plasmonic nanostructure fabrication and near-field optical characterization (Invited Paper), Zheyu Fang, Peking Univ. (China) .. [10028-17]

12:00: Photocurrent enhancement by utilizing unidirectional excitation of surface plasmons, Mehdi Afshari Bavil, Zhi Liu, Wuwen Zhou, Chuanbo Li, Buwen Cheng, Institute of Semiconductors (China) [10028-18]

Lunch/Exhibition Break Thu 12:20 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at <http://spie.org/PAPosterGuidelines>.

- A Fabry-Perot plasmonic modulation with graphene-based silicon grating in mid-infrared region**, Xiaosai Wang, Jicheng Wang, Jiangnan Univ. (China) [10028-37]
- Polarization to the filed enhancement by a gold dimer**, Xin Hong, Zheng Jin, Dalian Univ. of Technology (China) [10028-38]
- Surface plasmon resonance scattered by a dielectric sphere**, Xin Hong, Xuejie Yin, Dalian Univ. of Technology (China) [10028-39]
- Analysis of asymmetric hybrid rib-slot-rib surface plasmon waveguide with high-confinement mode**, Kai Zheng, Zuxun Song, Northwestern Polytechnical Univ. (China) [10028-40]
- Multi-wavelength band-pass plasmonic splitter with nanodisk cavity**, Maojin Yun, Kai Li, Qingdao Univ. (China) [10028-41]
- Cavity-enhanced ultra-thin aluminum plasmonic resonator for surface-enhanced infrared absorption spectroscopy**, Wei Wei, Jinpeng Nong, Chongqing Univ. (China); Linlong Tang, Chongqing Institute of Green and Intelligent Technology (China); Xiao Jiang, Na Chen, Peng Luo, Chongqing Univ. (China) [10028-42]
- simulation of two-dimensional gratings for SERS-active substrate**, Wenlong Zou, Jianhong Wu, Soochow Univ. (China) [10028-43]
- Hydrogen-regulated chiral nanoplasmonics**, Xiaoyang Duan, Simon Kamin, Max-Planck-Institut für Intelligente Systeme (Germany); Florian Sterl, Harald Giessen, University of Stuttgart (Germany); Na Liu, Max-Planck-Institut für Intelligente Systeme (Germany) and University of Heidelberg (Germany) [10028-44]
- Spin-controlled directional launching of surface plasmons at the subwavelength scale**, Huang Tao, Jiajian Wang, Wei Liu, Ziwei Li, Zheyu Fang, Feng Lin, Xing Zhu, Peking Univ. (China) [10028-45]
- Controllable unidirectional emission of electric dipole coupled to plasmonic bowtie antenna**, Jun-Jun Xiao, Harbin Institute of Technology Shenzhen Graduate School (China); Xiao Ming Zhang, Harbin Institute of Technology (China) [10028-46]

SESSION 5

LOCATION: ROOM 203E THU 14:30 TO 18:15

Applications of Plasmonics II

Session Chair: **Satoshi Kawata**, Osaka Univ. (Japan)

- 14:30: **Metal nanogap structure-based plasmonics and biomedical applications** (*Invited Paper*), Jwa-Min Nam, Seoul National Univ. (Korea, Republic of) [10028-19]
- 15:00: **Changing surface plasmon modes by optical spin-orbit interaction**, Feng Lin, Jiajian Wang, Wei Liu, Xing Zhu, Peking Univ. (China) [10028-20]
- 15:20: **Controlling the polarization state of light with plasmonic metastructures** (*Invited Paper*), Ruwen Peng, Renhao Fan, Xiang Xiong, Mu Wang, Nanjing Univ. (China) [10028-21]
- 15:50: **Tailored and reconfigurable optical properties using plasmonics** (*Invited Paper*), Maiken H. Mikkelsen, Duke Univ. (USA) [10028-22]
- 16:20: **Robust plasmonic tips fabricated by the tapering of composite hybrid silicate microfibers with metallic core** (*Invited Paper*), Afrodit Petropoulou, National Hellenic Research Foundation (Greece) and Univ. of Peloponnese (Greece); Grigoris Antonopoulos, National Hellenic Research Foundation (Greece); Paul Bastock, Christopher Craig, Univ. of Southampton (United Kingdom); Georgios Kakarantzas, National Hellenic Research Foundation (Greece); Daniel W. Hewak, Michalis N. Zervas, Univ. of Southampton (United Kingdom); Christos Riziotis, National Hellenic Research Foundation (Greece) [10028-23]
- 16:50: **The electric field enhancement and spatial resolution of a metal-coated tapered fiber tip using internal radially polarized vector beam**, Fanfan Lu, Ting Mei, Northwestern Polytechnical Univ. (China) [10028-24]
- 17:10: **Steering the scattering direction of plasmonic nanoantenna by spin-orbit coupling effect**, Qiang Zhang, Jun-Jun Xiao, Harbin Institute of Technology Shenzhen Graduate School (China) [10028-25]
- 17:30: **Strong coupling between plasmonic resonances and molecular excitons** (*Invited Paper*), Min Qiu, Xingxing Chen, Zhejiang Univ. (China); Yu-Hui Chen, Univ. of Otago (New Zealand); Jian Qin, Ding Zhao, Zhejiang Univ. (China); Boyang Ding, Richard J. Blaikie, Univ. of Otago (New Zealand) [10028-26]
- 18:00: **Electrically-driven plasmonic nanorod metamaterials**, Pan Wang, Alexey V. Krasavin, Mazhar E. Nasir, Wayne Dickson, Anatoly V. Zayats, King's College London (United Kingdom) [10028-47]

FRIDAY 14 OCTOBER

SESSION 6

LOCATION: ROOM 203E FRI 8:00 TO 10:30

Quantum Plasmonics

Session Chair: **Din Ping Tsai**, Research Ctr. for Applied Sciences - Academia Sinica (Taiwan, China)

- 8:00: **Quantum optics with graphene plasmons** (*Invited Paper*), Javier García de Abajo, ICFO - Institut de Ciències Fotòniques (Spain) [10028-27]
- 8:30: **Plasmonic detour phase meta-hologram**, Changjun Min, Ting Lei, Zhenwei Xie, Xiaocong Yuan, Shenzhen Univ. (China) [10028-28]
- 8:50: **Coherent control of plasmonic spin-hall effect**, Shiyi Xiao, The Univ. of Birmingham (United Kingdom); Fan Zhong, Hui Liu, Shining Zhu, Nanjing Univ. (China); Jensen Li, The Univ. of Birmingham (United Kingdom) [10028-29]
- 9:10: **Ultrafast on-chip all-optical switch in integrated photonic circuits**, Zhen Chai, Xiaoyong Hu, Yu Zhu, Xiaoyu Yang, Feifan Wang, Zibo Gong, Hong Yang, Qihuang Gong, Peking Univ. (China) [10028-30]
- 9:30: **Coupling of single quantum dot and a plasmonic nanowire** (*Invited Paper*), Hong Wei, Institute of Physics (China) [10028-31]
- 10:00: **Plasmonic interference for classical and quantum logical gates** (*Invited Paper*), Tao Li, Shuming Wang, Yulin Wang, Shining Zhu, Nanjing Univ. (China) [10028-32]
- Tea/Coffee Break Fri 10:30 to 11:00

SESSION 7

LOCATION: ROOM 203E FRI 11:00 TO 12:50

Nanoscale Plasmonics

Session Chair: **Javier García de Abajo**, ICFO - Institut de Ciències Fotòniques (Spain)

- 11:00: **Deep UV plasmonics and Raman microscopy** (*Invited Paper*), Satoshi Kawata, Osaka Univ. (Japan) [10028-33]
- 11:30: **Unidirectional antenna by spoof-localized surface plasmon resonators**, Feifei Qin, Jun-Jun Xiao, Harbin Institute of Technology Shenzhen Graduate School (China) [10028-34]
- 11:50: **Circular dichroism and plasmonic properties of noble metal assemblies** (*Invited Paper*), Chuanlai Xu, Liguang Xu, Xiaoling Wu, Hua Kuang, Jiangnan Univ. (China) [10028-35]
- 12:20: **A high-Q plasmonic-photonic hybrid mode** (*Invited Paper*), Yun-Feng Xiao, Peking Univ. (China) [10028-36]

CONFERENCE 10029

LOCATION: ROOM 5E

Wednesday–Friday 12–14 October 2016 • Proceedings of SPIE Vol. 10029

Quantum and Nonlinear Optics IV

Conference Chairs: **Qihuang Gong**, Peking Univ. (China); **Guang-Can Guo**, Univ. of Science and Technology of China (China); **Byoung Seung Ham**, Gwangju Institute of Science and Technology (Korea, Republic of)

Program Committee: **Yiping Cui**, Southeast Univ. (China); **Luming Duan**, California Institute of Technology (USA); **Qiongyi He**, Peking Univ. (China); **Osamu Hirota**, Tamagawa Univ. (Japan); **Hyunseok Jeong**, Seoul National Univ. (Korea, Republic of); **François Kajzar**, Univ. Politehnica of Bucharest (Romania); **Jianwei Pan**, Univ. of Science and Technology of China (China); **Kunchi Peng**, Shanxi Univ. (China); **Kebin Shi**, Peking Univ. (China); **Mankei Tsang**, National Univ. of Singapore (Singapore); **Jingjun Xu**, Nankai Univ. (China); **Zuyan Xu**, Technical Institute of Physics and Chemistry (China); **Toyohiko Yatagai**, Utsunomiya Univ. (Japan); **Victor N. Zadkov**, Lomonosov Moscow State Univ. (Russian Federation); **Weiping Zhang**, East China Normal Univ. (China)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

- 9:00: **Opening Ceremony**
- 9:20: **SPIE Fellow Recognition Ceremony**
- 9:25: **Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony**
- 9:40: **Freeform optics opening up a bright future for imaging instrumentation (Plenary)**, Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]
- 10:20: **Tea/Coffee Break**
- 10:40: **Innovative large wide-field astronomical telescope: LAMOST (Plenary)**, Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]
- 11:20: **Quantum dot photonics: from science to practical implementation (Plenary)**, Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

SESSION 1

LOCATION: ROOM 5E WED 13:30 TO 15:00

Quantum Optics I

Session Chair: **Wei-Min Zhang**,
National Cheng Kung Univ. (Taiwan, China)

- 13:30: **Temporal purity and Hong-Ou-Mandel quantum interference of single photons from two independent cold atomic ensembles (Invited Paper)**, Jiefei Chen, East China Normal Univ. (China); Weiping Zhang, Shanghai Jiao Tong Univ. (China) [10029-1]
- 14:00: **Farfield superlocalization of two close incoherent sources via linear optics (Invited Paper)**, Ranjith Nair, Xiao-Ming Lu, Shan Zheng Ang, Mankei Tsang, National Univ. of Singapore (Singapore) [10029-2]
- 14:30: **Multiplexed entangled photon sources for all fiber quantum networks**, Zhiyuan Zhou, Bao-Sen Shi, Univ. of Science and Technology of China (China) [10029-3]
- 14:45: **Quadrature squeezed state preparation for quantum remote sensing at 1064nm**, Zhiqiang Wu, Xuling Lin, Song Yang, Xuan Zhang, Beijing Institute of Space Mechanics and Electricity (China); Yaohui Zheng, Shanxi Univ. (China) [10029-4]
- Tea/Coffee Break Wed 15:00 to 15:30

SESSION 2

LOCATION: ROOM 5E WED 15:30 TO 18:15

Quantum Optics II

Session Chair: **Qiongyi He**, Peking Univ. (China)

- 15:30: **A doubly folded quantum security scheme for a nearly perfect direct quantum communication protocol (Invited Paper)**, Jihong Min, Byoung S. Ham, Gwangju Institute of Science and Technology (Korea, Republic of) [10029-59]
- 16:00: **Non-equilibrium quantum phase transition via entanglement decoherence dynamics in photonic systems (Invited Paper)**, Wei-Min Zhang, Yu-Chen Lin, Pei-Yun Yang, National Cheng Kung Univ. (Taiwan, China) [10029-6]
- 16:30: **From Einstein-Podolsky-Rosen paradox to quantum nonlocality (Invited Paper)**, Jin-Shi Xu, Chuan-Feng Li, Guang-Can Guo, Univ. of Science and Technology of China (China) [10029-7]
- 17:00: **On-chip quantum optics with quantum dots and superconducting resonators (Invited Paper)**, Guang-Wei Deng, Univ. of Science and Technology of China (China) [10029-8]
- 17:30: **Quantum-enhanced long-baseline optical interferometers with noiseless linear amplification and displacement operation**, Song Yang, Yun Su, Ningjuan Ruan, Zhiqiang Wu, Xuling Lin, Beijing Institute of Space Mechanics and Electricity (China) [10029-9]
- 17:45: **Demonstration of a triggered single-photon source based on a trapped single cesium atom**, Jun He, Bei Liu, Gang Jin, Junmin Wang, Shanxi Univ. (China) [10029-10]
- 18:00: **Traceable quantum sensing and metrology relied up a quantum electrical triangle principle**, Yan Fang M.D., Fudan Univ. (China) ... [10029-11]

THURSDAY 13 OCTOBER

SESSION 3

LOCATION: ROOM 5E THU 8:00 TO 10:00

Quantum Optics III

Session Chair: **Jin-Shi Xu**,
Univ. of Science and Technology of China (China)

- 8:00: **Detecting high-dimensional multipartite entanglement via some classes of measurements (Invited Paper)**, Ting Gao, Hebei Normal Univ. (China) [10029-12]
- 8:30: **How discord underlies the noise resilience of quantum illumination (Invited Paper)**, Mile Gu, Ctr. for Quantum Technologies (Singapore) [10029-13]
- 9:00: **Quantum information tapping using a fiber optical parametric amplifier with noise figure improved by correlated inputs (Invited Paper)**, Xiaoying Li, Tianjin Univ. (China) [10029-14]
- 9:30: **Towards multi-photon experiments with quantum dots (Invited Paper)**, Chao-Yang Lu, Univ. of Science and Technology of China (China); Sven Höfling, Julius-Maximilians-Univ. Würzburg (Germany); Jian-Wei Pan, Univ. of Science and Technology of China (China) ... [10029-15]
- Tea/Coffee Break Thu 10:00 to 10:30

SESSION 4

LOCATION: ROOM 5E THU 10:30 TO 12:00

Quantum Optics IV

Session Chair: **Chao-Yang Lu**,
Univ. of Science and Technology of China (China)

10:30: **Experimental quantum secure direct communication with single photons** (*Invited Paper*), Gui Lu Long, Tsinghua Univ. (China) [10029-16]

11:00: **Quantum memory with rare-earth ion doped crystal** (*Invited Paper*), Chuan-Feng Li, Univ. of Science and Technology of China (China) [10029-17]

11:30: **Entanglement in multimode bosonic systems** (*Invited Paper*), Tim Byrnes, New York Univ. Shanghai (China) [10029-18]

Lunch/Exhibition Break Thu 12:00 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at
<http://spie.org/PAPosterGuidelines>.

Dirac monopoles with polar-core vortex induced by spin-orbit coupling in spinor Bose-Einstein condensates, Wu-Ming Liu, Ji Li, Institute of Physics (China) [10029-35]

Evolution of temporal soliton solution to the generalized nonlinear Schrödinger equation with variable coefficients and PT-symmetric potential, Yangbao Deng, Hunan City Univ. (China) [10029-36]

Generation of polarization squeezing resonant to the rubidium D1 line at 795 nm, Xin Wen, Yashuai Han, Jun He, Junmin Wang, Shanxi Univ. (China) [10029-37]

Realization of 318.6-nm high-power ultraviolet laser for single-photon Rydberg excitation of cesium atoms, Jieying Wang, Jiandong Bai, Jun He, Junmin Wang, Shanxi Univ. (China) [10029-38]

Two-step quantum secure direct communication with frequency coding, Xueliang Zhao, Dong Ruan, Tsinghua Univ. (China) [10029-39]

Efficient simulation of open quantum system in duality quantum computing, ShiJie Wei, Gui Lu Long, Tsinghua Univ. (China) [10029-40]

Tunable and flat optical delay line based on double rings resonators, Kaiyue Qi, Yundong Zhang, Yongfeng Wu, Chang Qiu Yu, Hui Li, Ping Yuan, Harbin Institute of Technology (China) [10029-41]

Observation of EIT-like spectrum in the eye-like ring resonator, Kai Ma, Yundong Zhang, Yongfeng Wu, Chang Qiu Yu, Hui Li, Ping Yuan, Harbin Institute of Technology (China) [10029-42]

Highly-coherent supercontinuum generation in strip/slot hybrid As₂S₃ waveguide with low and ultra-flat dispersion, Shuangxiang Yan, Chao Mei, Jinhui Yuan, Kuiru Wang, Xinzhu Sang, Binbin Yan, Chongxiu Yu, Beijing Univ. of Posts and Telecommunications (China) [10029-43]

Characteristics of 1.9- μ m laser emission from hydrogen-filled hollow-core fiber by stimulated Raman scattering, Bo Gu, Yubin Chen, Zefeng Wang, National Univ. of Defense Technology (China) [10029-44]

Nonlinear generation of higher-order modes by intermodal four-wave mixing in multimode fibers, Tong Liu, Sheng-Ping Chen, Jing Hou, National Univ. of Defense Technology (China) [10029-45]

Study of the nonlinear optical absorption and refraction of indium-doped zinc-oxide thin-films (IZO) using Z-scan technique, Maung Htwe Zin, Yundong Zhang, Harbin Institute of Technology (China); Chengbao Yao, Harbin Normal Univ. (China); Hui Li, Ping Yuan, Harbin Institute of Technology (China) [10029-46]

Silicon photonic chips for improved-glued-binary-tree problem, Fan Qi, Qingyan Ma, Yufei Wang, Wanhua zheng, Institute of Semiconductors (China) [10029-47]

Tunable Q-switched random fiber laser, Jiangming Xu, Jun Ye, Hu Xiao, Jinyong Leng, Hanwei Zhang, Pu Zhou, National Univ. of Defense Technology (China) [10029-48]

Duration-controllable square-wave pulse from an L band dissipative soliton fiber laser based on the dispersive Fourier transformation technique, Dan Yan, Hebei Normal Univ. (China) [10029-49]

Simulation and measurement of threshold pump power for the stimulated Brillouin scattering (SBS) and stimulated Raman scattering (SRS) in ytterbium-doped double-clad CW fiber amplifiers, Mohammad Abdollahi, Malek Bagheri Haroni, Univ. of Isfahan (Iran, Islamic Republic of); Meisam Fakhari, Univ. of Kashan (Iran, Islamic Republic of); Mohammad J. Hekmat, Mohammad Kanani, Hosein Normohamadi, Narges Shahriari, Isfahan Univ. of Technology (Iran, Islamic Republic of) [10029-50]

Highly-coherent octave-spanning supercontinuum generation in CS₂-filled photonic crystal fiber with strong slow nonlinearity, Liyun Wang, Beijing Univ. of Posts and Telecommunications (China); Jinhui Yuan, Hong Kong Polytechnic Univ. (China); Chongxiu Yu, Kuiru Wang, Xinzhu Sang, Binbin Yan, Beijing Univ. of Posts and Telecommunications (China) [10029-51]

Two-photon absorption-induced optical power limiting behavior of strong femtosecond hyper-Gaussian pulses, Ji-Cai Liu, Xing-Zhe Li, Ying Zhang, North China Electric Power Univ. (China) [10029-52]

Influence of Doppler effect on the phenomenon of electromagnetically-induced transparency, Qiyong Tao, Guiyin Zhang, Haiming Zheng, North China Electric Power Univ. (China) [10029-54]

Fibre amplifying loop mirror with nonlinearity independent of the intensity of intra-cavity radiation, Sergey M. Kobtsev, Sergey V. Smirnov, Alexey V. Ivanenko, Novosibirsk State Univ. (Russian Federation) [10029-55]

Feedback spectroscopy of dynamically-excited coherent population trapping resonance in Rb vapour, Sergey M. Kobtsev, Daba A. Radnatarov, Sergey A. Khripunov, Novosibirsk State Univ. (Russian Federation); Alexey V. Taichenachev, Valeriy I. Yudin, Novosibirsk State Univ. (Russian Federation) and Institute of Laser Physics SB RAS (Russian Federation); Maxim Y. Basalaev, Novosibirsk State Technical Univ. (Russian Federation); Tatiana Steschenko, Ivan Popkov, Valerii Andryushkov, Novosibirsk State Univ. (Russian Federation) [10029-56]

Performance analysis of passive optical network systems based on the IM/DD OFDM modulation format, Sofien Mhatli, Besma Wchir, Abderrazek Ben Abdallah, Ecole Polytechnique de Tunisie (Tunisia); Mutsam Jarajreh, Tabuk Univ. (Saudi Arabia); Rabah Attia, Ecole Polytechnique de Tunisie (Tunisia) [10029-57]

Analytical model of an IMDD optical OFDM modem, Sofien Mhatli, Besma Wchir, Abderrazek Ben Abdallah, Mutsam Jarajreh, Rabah Attia, Ecole Polytechnique de Tunisie (Tunisia) [10029-58]

SESSION 5

LOCATION: ROOM 5E THU 14:30 TO 17:30

Nonlinear Optics I

Session Chair: **Kebin Shi**, Peking Univ. (China)

14:30: **Novel optical properties of graphene oxide films** (*Invited Paper*), Baohua Jia, Swinburne Univ. of Technology (Australia) [10029-19]

15:00: **Biomedical imaging with stimulated Raman scattering (SRS) microscopy** (*Invited Paper*), Minbiao Ji, Fudan Univ. (China) [10029-20]

15:30: **Parametric wavelength conversion in photonic crystal fibers** (*Invited Paper*), Sigang Yang, Zhaohui Wu, Yi Yang, Minghua Chen, Shizhong Xie, Tsinghua Univ. (China) [10029-21]

16:00: **Giant optical nonlinearity of a single plasmonic nanostructure** (*Invited Paper*), Pavel N. Melentiev, Institute of Spectroscopy (Russian Federation) [10029-22]

16:30: **Fiber-based polarization-entangled photon pair sources for quantum coding**, Feng Zhu, Wei Zhang, Yidong Huang, Tsinghua Univ. (China) [10029-23]

16:45: **Nonlinear polarization evolution of hybrid polarized beams by isotropic Kerr nonlinearity**, Bing Gu, Bo Wen, Guanghao Rui, Yiping Cui, Southeast Univ. (China) [10029-24]

17:00: **Design and demonstration of a novel broadband frequency conversion system**, Meizhi Sun, Xiaoqi Zhang, Xiao Liang, Jun Kang, Ailin Guo, Qingwei Yang, Zijian Cui, Yanli Zhang, Junyong Zhang, Xinglong Xie, Jianqiang Zhu, Zunqi Lin, Shanghai Institute of Optics and Fine Mechanics (China) [10029-25]

17:15: **A novel method for fabrication of fiber pump combiners**, Mohammad J. Hekmat, Hosein Normohamadi, Mohammad Kanani, A. Mazangi, Isfahan Univ. of Technology (Iran, Islamic Republic of); Mohammad Abdollahi, Univ. of Isfahan (Iran, Islamic Republic of) [10029-26]

CONFERENCE 10029

LOCATION: ROOM 5E

FRIDAY 14 OCTOBER

SESSION 6

LOCATION: ROOM 5E FRI 8:00 TO 10:00

Nonlinear Optics II

Session Chair: **Minbiao Ji**, Fudan Univ. (China)

8:00: **Experimental realization of optically-induced transparency in a micro-cavity** (*Invited Paper*), Yuanlin Zheng, Jianfan Yang, Zhenhua Shen, Jianjun Cao, Xianfeng Chen, Shanghai Jiao Tong Univ. (China); Xiaogan Liang, Univ. of Michigan (USA); Wenjie Wan, Shanghai Jiao Tong Univ. (China) [10029-27]

8:30: **Experimental realization of stimulated Raman shortcut-to-adiabatic passage with cold atoms** (*Invited Paper*), Shi-Liang Zhu, Nanjing Univ. (China) [10029-28]

9:00: **pre-chirp managed nonlinear amplification for >100-W ultrafast sources** (*Invited Paper*), Wei Liu, Yizhou Liu, Damian N. Schimpf, Deutsches Elektronen-Synchrotron (Germany); Tino Eidam, Jens Limpert, Andres Tuennermann, Friedrich-Schiller-Univ. Jena (Germany); Franz X. Kärtner, Guoqing Chang, Deutsches Elektronen-Synchrotron (Germany) [10029-29]

9:30: **Controlled cavity quantum optomechanics with Bose-Einstein condensate**, Kashif Ammar Yasir, Wu-Ming Liu, Institute of Physics (China) [10029-30]

9:45: **Power dependence on the nonlinear interaction enhancement in a coherently-excited microcavity**, Samuel Serna, Institut d'Électronique Fondamentale (France) and Lab. Charles Fabry (France) and Univ. Paris-Saclay (France); Marc Hanna, Lab. Charles Fabry (France) and Institut d'Optique Graduate School (France) and Univ. Paris-Saclay (France); Xavier Le Roux, Institut d'Électronique Fondamentale (France) and Univ. Paris-Saclay (France); Philippe Delage, Institut d'Optique Graduate School (France) and Lab. Charles Fabry (France) and Univ. Paris-Saclay (France); Eric Cassan, Institut d'Électronique Fondamentale (France) and Univ. Paris-Saclay (France); Nicolas Dubreuil, Institut d'Optique Graduate School (France) and Lab. Charles Fabry (France) and Univ. Paris-Saclay (France) [10029-31]

Tea/Coffee Break Fri 10:00 to 10:30

SESSION 7

LOCATION: ROOM 5E FRI 10:30 TO 11:45

Nonlinear Optics III

Session Chair: **Kebin Shi**, Peking Univ. (China)

10:30: **Strong-field double ionization of hydrocarbon molecules** (*Invited Paper*), Jian Wu, Xiaochun Gong, Qingying Song, Qinying Ji, Kang Lin, Webin Zhang, Junyang Ma, Peifen Lu, Heping Zeng, East China Normal Univ. (China) [10029-32]

11:00: **Nonlinear photo-association spectroscopy near a narrow d-wave Feshbach resonance** (*Invited Paper*), Yuqing Li, Jie Ma, Shanxi Univ. (China) [10029-33]

11:30: **Second harmonic generation in nano-structured thin-film lithium niobate waveguides**, Xiao Xiong, Univ. of Science and Technology of China (China) and Harvard Univ. (USA); Cheng Wang, Harvard Univ. (USA); Nicolas Andrade, Virginia Commonwealth Univ. (USA) and Harvard Univ. (USA); Vivek Venkataraman, Harvard School of Engineering and Applied Sciences (USA); Xifeng Ren, Guang-Can Guo, Univ. of Science and Technology of China (China); Marko Loncar, Harvard School of Engineering and Applied Sciences (USA) [10029-34]

CONFERENCE 10030

LOCATION: ROOMS 5A + 5H

Wednesday–Friday 12–14 October 2016 • Proceedings of SPIE Vol. 10030

Infrared, Millimeter-Wave, and Terahertz Technologies IV

Conference Chairs: **Cunlin Zhang**, Capital Normal Univ. (China); **Xi-Cheng Zhang**, Univ. of Rochester (USA); **Masahiko Tani**, Univ. of Fukui (Japan)

Program Committee: **Peter A. R. Ade**, Cardiff Univ. (United Kingdom); **Yi Cai**, Kunming Institute of Physics (China); **Jun-Cheng Cao**, Shanghai Institute of Microsystem and Information Technology (China); **Hou-Tong Chen**, The Ctr. for Integrated Nanotechnologies (USA); **Jian Chen**, Nanjing Univ. (China); **Yuping Cui**, Tianjin Jinhang Institute of Technology Physics (China); **Jianming Dai**, Univ. of Rochester (USA); **Haewook Han**, Pohang Univ. of Science and Technology (Korea, Republic of); **Jianguang Han**, Tianjin Univ. (China); **Zhi Hong**, China Jiliang Univ. (China); **Biaobing Jin**, Nanjing Univ. (China); **Weiqi Jin**, Beijing Institute of Technology (China); **Sergei Ark Kozlov**, National Research Univ. of Information Technologies, Mechanics and Optics (Russian Federation); **He Li**, Shanghai Institute of Technical Physics (China); **Jinsong Liu**, Huazhong Univ. of Science and Technology (China); **Makoto Nakajima**, Osaka Univ. (Japan); **Chiko Otani**, RIKEN (Japan); **Ci-Ling Pan**, National Tsing Hua Univ. (Taiwan, China); **Jiancheng Shi**, Institute of Remote Sensing and Digital Earth (China); **Sheng-Cai Shi**, Purple Mountain Observatory (China); **Alexander Pavlovich Shkurinov**, Lomonosov Moscow State Univ. (Russian Federation); **Fei-jun Song**, China Daheng Group, Inc. (China); **Jianmin Yuan**, National Univ. of Defense Technology (China); **Chao Zhang**, Univ. of Wollongong (Australia); **Weili Zhang**, Oklahoma State Univ. (USA); **Yan Zhang**, Capital Normal Univ. (China); **Zhuoyong Zhang**, Capital Normal Univ. (China); **Kun Zhao**, China Univ. of Petroleum (China); **YiMing Zhu**, Univ. of Shanghai for Science and Technology (China)

WEDNESDAY 12 OCTOBER

Opening Ceremony and Plenary Session

LOCATION: CONV. HALL NO. 2, LEVEL 2 9:00 TO 12:00

- 9:00: Opening Ceremony
- 9:20: SPIE Fellow Recognition Ceremony
- 9:25: Wang Daheng Award Ceremony and COS Fellow Recognition Ceremony
- 9:40: Freeform optics opening up a bright future for imaging instrumentation (Plenary), Jannick P. Rolland, R.E. Hopkins Ctr. for Optical Design and Engineering (USA) and NSF/IUCRC Ctr. for Freeform Optics (USA) and The Institute of Optics, Univ. of Rochester (USA) [10021-201]
- 10:20: Tea/Coffee Break
- 10:40: Innovative large wide-field astronomical telescope: LAMOST (Plenary), Xiangqun Cui, Nanjing Institute of Astronomical Optics & Technology (China) and National Astronomical Observatory (China) [10021-202]
- 11:20: Quantum dot photonics: from science to practical implementation (Plenary), Yasuhiko Arakawa, Institute of Industrial Science, The Univ. of Tokyo (Japan) and Institute for Nano Quantum Information Electronics, The Univ. of Tokyo (Japan) [10027-203]

Lunch/Exhibition Break Wed 12:00 to 13:30

SESSION 1

LOCATION: ROOMS 5A + 5H WED 13:30 TO 15:35

THz Generation and Detectors I

Session Chair: **Masahiko Tani**, Univ. of Fukui (Japan)

- 13:30: Terahertz radiation from nonlinear surface plasmon polaritons in graphene (Invited Paper), Chao Zhang, Univ. of Wollongong (Australia) [10030-1]
- 13:55: THz air photonics at micrometer scale (Invited Paper), Xi-Cheng Zhang, Fabrizio Buccheri, Kang Liu, Univ. of Rochester (USA) [10030-2]
- 14:20: Strong terahertz fields on the nanoscale: Near-field streaking, electron control, and terahertz field emission (Invited Paper), Georg Herink, Georg-August-Univ. Göttingen (Germany) [10030-3]
- 14:45: Terahertz pulse generation from metal nanoparticle ink (Invited Paper), Kosaku Kato, Keisuke Takano, Yuzuru Tadokoro, Khoa T. N. Phan, Makoto Nakajima, Osaka Univ. (Japan) [10030-4]
- 15:10: Homogeneous broadband terahertz quantum cascade lasers (Invited Paper), Hua Li, Jun-Cheng Cao, Shanghai Institute of Microsystem and Information Technology (China) [10030-5]
- Tea/Coffee Break Wed 15:35 to 15:55

SESSION 2

LOCATION: ROOMS 5A + 5H WED 15:55 TO 18:20

THz Generation and Detectors II

Session Chair: **Xi-Cheng Zhang**, Univ. of Rochester (USA)

- 15:55: Electro-optic sampling detection of THz pulses based on Cherenkov phase-matching (Invited Paper), Masahiko Tani, Takeshi Furuya, Hideaki Kitahara, Univ. of Fukui (Japan); Elmer S. Estacio, Univ. of Philippines Diliman (Philippines); Kazuyoshi Kurihara, Kohji Yamamoto, Daiki Gotoh, Takuro Yasumoto, Univ. of Fukui (Japan); Takashi Notake, Hiroaki Minamide, RIKEN (Japan); Michael I. Bakunov, N.I. Lobachevsky State Univ. of Nizhni Novgorod (Russian Federation) [10030-6]
- 16:20: Broadband high-power terahertz radiation from laser-produced plasmas (Invited Paper), Zheng-Ming Sheng, Shanghai Jiao Tong Univ. (China) and Univ. of Strathclyde (United Kingdom); G. Q. Liao, W. M. Wang, Institute of Physics (China); W. J. Ding, A*STAR Institute of High Performance Computing (Singapore); Z. L. Zhang, Yanping Chen, Min Chen, Shanghai Jiao Tong Univ. (China); Y. T. Li, Institute of Physics (China); Jie Zhang, Shanghai Jiao Tong Univ. (China) [10030-7]
- 16:45: High-sensitive THz superconducting hot electron bolometer mixers and transition edge sensors (Invited Paper), Wen Zhang, Purple Mountain Observatory (China); Wei Miao, Kangmin Zhou, Jiaqiang Zhong, ShengCai Shi, Purple Mountain Observatory (China) and Key Lab. of Radio Astronomy (China) [10030-8]
- 17:10: THz and x-ray emission as a tool for study of ionization dynamics in gas clusters (Invited Paper), Alexei V. Balakin, M. S. Dzhidzhoev, V. M. Gorgienko, M.V. Lomonosov Moscow SU (Russian Federation); Mikhail N. Esaulkov, Institute on Laser and Information Technologies (Russian Federation); Irina A. Zhvania, M.V. Lomonosov Moscow SU (Russian Federation); I. A. Kotelnikov, Budker Institute of Nuclear Physics SB RAS (Russian Federation) and Novosibirsk State Univ. (Russian Federation); N. A. Kuzechkin, Institute on Laser and Information Technologies (Russian Federation); Ilya A. Ozheredov, Andrey B. Savel'ev, Artem Sidorov, Petr M. Solyankin, M.V. Lomonosov Moscow SU (Russian Federation); M. B. Smirnov, Russian Research Ctr. Kurchatov Institute (Russian Federation); Alexander Pavlovich Shkurinov, M.V. Lomonosov Moscow SU (Russian Federation) and Institute on Laser and Information Technologies (Russian Federation); Vladislav Ya. Panchenko, Institute on Laser and Information Technologies (Russian Federation) [10030-9]
- 17:35: High-repetition-rate widely-tunable terahertz generation in GaSe pumped by a dual-wavelength KTP-OPO, Dexian Yan, Degang Xu, Yuye Wang, Wei Shi, Kai Zhong, Pengxiang Liu, Chao Yan, Quan Sheng, Jialin Mei, Jia Shi, Jianquan Yao, Tianjin Univ. (China) [10030-10]
- 17:50: THz-wave parametric oscillator with a surface-emitted ring-cavity configuration, Zhen Yang, Yuye Wang, Degang Xu, Longhuang Tang, Chao Yan, Pan Duan, Wentao Xu, Tianjin Univ. (China) [10030-11]
- 18:05: Performance of a mm-wave adaptive beam-formed phased array system for indoor communication, Kinnan Amjad, Huaping Xu, Beihang Univ. (China) [10030-12]

CONFERENCE 10030

LOCATION: ROOMS 5A + 5H

THURSDAY 13 OCTOBER

SESSION 3

LOCATION: ROOMS 5A + 5H THU 8:00 TO 10:10

THz Spectroscopy I

Session Chair: **Zheng-Ming Sheng**, Shanghai Jiao Tong Univ. (China)

8:00: **Terahertz free-electron laser spectroscopy of excitons in III-V semiconductor quantum wells and single quantum dots** (*Invited Paper*), Harald Schneider, Helmholtz-Zentrum Dresden-Rossendorf e. V. (Germany); Daniel R. Stephan, Sabine Zybell, Helmholtz-Zentrum Dresden-Rossendorf e. V. (Germany) and TU Dresden (Germany); Stephan F. Winnerl, Jayeeta Bhattacharyya, Helmholtz-Zentrum Dresden-Rossendorf e. V. (Germany); Faina Esser, Manfred Helm, Helmholtz-Zentrum Dresden-Rossendorf e. V. (Germany) and TU Dresden (Germany) [10030-13]

8:25: **Trace amount liquids sensing by means of near-field THz emission spectroscopy** (*Invited Paper*), Masayoshi Tonouchi, Osaka Univ. (Japan) [10030-14]

8:50: **High-conductivity mechanism of conducting polymer PEDOT:PSS studied by terahertz and infrared spectroscopy** (*Invited Paper*), Masatsugu Yamashita, Yusuke Yamada, Chiko Otani, RIKEN (Japan) [10030-15]

9:15: **Application of terahertz waves for polymer science** (*Invited Paper*), Hiromichi Hoshina, RIKEN (Japan) [10030-16]

9:40: **A study of vibrational spectra of leucine and isoleucine in terahertz domain**, Lijuan Huang, Xin Zhang, Guo Wang, Zhuoyong Zhang, Capital Normal Univ. (China) [10030-17]

9:55: **Feasibility study of determination of high-fructose-syrup content of acacia honey by terahertz technique**, Wen Liu, Yuying Zhang, Donghai Han, China Agricultural Univ. (China) [10030-18]

Tea/Coffee BreakThu 10:10 to 10:40

SESSION 4

LOCATION: ROOMS 5A + 5H THU 10:40 TO 12:10

THz Spectroscopy II

Session Chair: **Chao Zhang**, Univ. of Wollongong (Australia)

10:40: **Terahertz nonlinear interactions, spectroscopy, and coupled modes** (*Invited Paper*), Keith A. Nelson, Massachusetts Institute of Technology (USA) [10030-19]

11:05: **Manipulating magnetic and optical properties of condensed matter with intense terahertz pulses** (*Invited Paper*), Christoph P. Hauri, Paul Scherrer Institut (Switzerland) [10030-20]

11:30: **Efficient structure resonant energy transfer from EM waves to viruses for virus inactivation** (*Invited Paper*), Chi-Kuang Sun, National Taiwan Univ. (Taiwan, China) [10030-21]

11:55: **Removal of instrumental etalon oscillations in broadband terahertz spectra for accurate material characterization**, Jindoo Choi, Jinwoo Lee, Kyung-Soo Kim, Soohyun Kim, KAIST (Korea, Republic of) [10030-22]

Lunch/Exhibition BreakThu 12:10 to 13:30

POSTER SESSION

LOCATION: CONV. HALL NO. 4, LEVEL 1 THU 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Thursday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors, view poster presentation guidelines at <http://spie.org/PAPosterGuidelines>.

A high-speed and low-noise intelligent test system for infrared detectors, Tianshi Jia, Yulong Xue, Fansheng Kong, Shanghai Institute of Technical Physics of the Chinese Academy of Sciences (China) [10030-48]

Investigation on terahertz generation from zinc-blend crystal waveguide at polariton resonance, Zhongyang Li, Silei Wang, Mengtao Wang, North China Univ. of Water Resources and Electric Power (China) [10030-49]

Oil spill detection using infrared hyperspectral infrared camera, Hui Yu, Huazhong Institute of Electro-Optics (China) and Wuhan National Lab. for Optoelectronics (China); Zhen Zhang, State Oceanic Administration (China); Zhijie Zhang, Huazhong Institute of Electro-Optics (China); Song Yue, Hubei Jiuzhiyang Infrared System Co., Ltd. (China); Chensheng Wang, Wuhan National Lab. for Optoelectronics (China) and Huazhong Institute of Electro-Optics (China) [10030-51]

Analyzing terahertz time-domain transmission spectra with multi-beam interference principle, Maorong Wang, Kai Zhong, Degang Xu, Yuye Wang, Wei Shi, Jianquan Yao, Tianjin Univ. (China) [10030-52]

A novel wavefront-based algorithm for numerical simulation of quasi-optical system, Xiaoling Zhang, Purple Mountain Observatory (China) and Key Lab. of Radio Astronomy (China) and Shanghai Normal Univ. (China); Zheng Lou, Purple Mountain Observatory (China) and Key Lab. of Radio Astronomy (China); Jie Hu, Purple Mountain Observatory (China) and Key Lab. of Radio Astronomy (China) and Chinese Academy of Sciences (China) . [10030-53]

Cost-effective bidirectional digitized radio-over-fiber systems employing sigma delta modulation, Kyung Woon Lee, Korea Univ. (Korea, Republic of); HyunDo Jung, Electronics and Telecommunications Research Institute (Korea, Republic of); Jung Ho Park, Korea Univ. (Korea, Republic of) . [10030-54]

Infrared image segmentation method based on interest point detection and superparamagnetic clustering, Songtao Liu, Ning Jiang, Zhenxing Liu, Dalian Naval Academy (China) [10030-55]

FPGA design large-area array infrared detector video processing circuit of infrared camera, Tao Liu, China Academy of Space Technology (China) [10030-56]

Active terahertz wave imaging system for detecting hidden objects, Yuner Gan, Beijing Institute of Technology (China) [10030-57]

Terahertz liquid sensor, Jing Liu, Beijing Institute of Technology (China); Jian Zuo, CunLin Zhang, Capital Normal Univ. (China) [10030-58]

Widely-tunable terahertz parametric oscillator based on MgO-doped near-stoichiometric LiNbO₃ crystal, Longhuang Tang, Yuye Wang, Degang Xu, Zhen Yang, Chao Yan, Wentao Xu, Pan Duan, Yixin He, Jia Shi, Meitong Nie, Jianquan Yao, Tianjin Univ. (China) [10030-59]

Identification of four kinds of rheum which was gained by means of different processing methods, Lei Xu, Capital Normal Univ. (China) [10030-60]

Compact high-repetition-rate terahertz source based on difference frequency generation from an efficient 2- μ m dual-wavelength KTP OPO, Jialin Mei, Kai Zhong, Maorong Wang, Pengxiang Liu, Degang Xu, Yuye Wang, Wei Shi, Jianquan Yao, Tianjin Univ. (China); Robert A. Norwood, Nasser N. Peyghambarian, The Univ. of Arizona (USA) [10030-61]

The properties of electromagnetic responses and optical modulation in terahertz metamaterials, Wei Chen, Beijing Institute of Technology (China) and National Space Science Ctr., CAS (China); Yulei Shi, Wei Wang, Qingli Zhou, Cunlin Zhang, Capital Normal Univ. (China) [10030-62]

Wavelength scaling of terahertz radiation in plasma gas targets, Zhao Hang, Suxia Huang, Cunlin Zhang, Liang-liang Zhang, Capital Normal Univ. (China) [10030-63]

Wavelength scaling of terahertz generation via two-color photoionization in pre-formed plasma, Suxia Huang, Hang Zhao, Cunlin Zhang, Liang-liang Zhang, Capital Normal Univ. (China) [10030-64]

Chirped distributed Bragg reflector for broadband group velocity dispersion compensation in terahertz quantum cascade lasers, Chao Xu, Dayan Ban, Univ. of Waterloo (Canada) [10030-65]

A fast detection method for small weak infrared target in complex background, Bo Lei, Wuhan National Lab for Optoelectronics (China) and Huazhong Institute of Electro-Optics (China); Pu Hong, Huazhong Institute of Electro-Optics (China) and Wuhan National Lab. for Optoelectronics (China); Song Yue, Hubei Jiuzhiyang Infrared System Co., Ltd. (China) [10030-66]

A new hyperspectral image classification approach based improved similarity measurement, Hui Yu, Pu Hong, Huazhong Institute of Electro-Optics (China) and Wuhan National Lab. for Optoelectronics (China); Song Yue, Hubei Jiuzhiyang Infrared System Co., Ltd. (China); Chensheng Wang, Huazhong Institute of Electro-Optics (China) [10030-67]

Hyperspectral image compressing using adaptive band selection method, Zhijie Zhang, Wuhan National Lab. for Optoelectronics (China) and Huazhong Institute of Electro-Optics (China); Hui Yu, Huazhong Institute of Electro-Optics (China) and Wuhan National Lab. for Optoelectronics (China); Zhen Zhang, State Oceanic Administration (China); Song Yue, Hubei Jiuzhiyang Infrared System Co., Ltd. (China); Chensheng Wang, Huazhong Institute of Electro-Optics (China) [10030-68]

Spectral radiance characteristic measure method based on passive imaging FTIR spectrometer, Song Yue, Chensheng Wang, Wuhan National Lab. for Optoelectronics (China); Pu Hong, Huazhong Institute of Electro-Optics (China) and Wuhan National Lab. for Optoelectronics (China); Bo Lei, Jiuzhiyang Infrared System Co., Ltd. (China); Hui Yu, Huazhong Institute of Electro-Optics (China) and Wuhan National Lab. for Optoelectronics (China) [10030-69]

A fast pyramid matching algorithm for infrared object detection based on region covariance descriptor, Yin Lihua, Wang Xiao, Shanghai Institute of Technical Physics of the Chinese Academy of Sciences (China) [10030-71]

Non-uniformity correction method of IRFPA based on lookup table, Kun Cui, Xiaofeng Su, Shanghai Institute of Technical Physics of the Chinese Academy of Sciences (China) [10030-72]

A novel visible and infrared image fusion algorithm based on detail enhancement, Bo Wang, Huazhong Institute of Electro-Optics (China) [10030-73]

Terahertz characteristics of graphene deposits on different substrates, Chen Gong, Jian Zuo, Cunlin Zhang, Capital Normal Univ. (China) . . . [10030-74]

Reducing the uncertainty in terahertz time-domain reflection spectroscopy, Xie Yijun, Ping Sun, Beijing Normal Univ. (China); Wenai Wang, Capital Normal Univ. (China) [10030-75]

Standoff gas identification and application with FTIR imaging spectrometer, Shengsheng Wang, Huazhong Institute of Electro-Optics (China); Song Yue, Jiuzhiyang Infrared System Co., Ltd. (China); Zhijie Zhang, Hui Yu, Pu Hong, Huazhong Institute of Electro-Optics (China); Wei Sun, Jiuzhiyang Infrared System Co., Ltd. (China) [10030-76]

Spectrum modulation of terahertz radiation from air plasma via femtosecond laser pulses control, Ying Zhang, Wenfeng Sun, Yan Zhang, Capital Normal Univ. (China) [10030-77]

Vibrational spectral investigation of anhydrous glucose in the terahertz range, Wenai Wang, Capital Normal Univ. (China); Ping Sun, Beijing Normal Univ. (China); Wei Liu, Capital Normal Univ. (China); Yijun Xie, Beijing Normal Univ. (China) [10030-78]

The design of circuit for THz time domain spectroscopy system based on asynchronous optical sampling, Hailin Cui, Mile Zhang, Yihan Li, Jingsuo He, Capital Normal Univ. (China) [10030-79]

Research on trace gas measurement by ICOS with WMS, Zhenglong Ni, Jie Shao, Haibo Zhou, Kunyang Wang, Zhejiang Normal Univ. (China) [10030-80]

Investigation on optical properties of BSA protein on single-layer graphene using terahertz spectroscopy technology, Yiwen Sun, Shengxin Yang, Shenzhen Univ. (China) [10030-81]

Terahertz wavelength encoding compressive imaging, Qiong Zhang, Xinke Wang, Yan Zhang, Capital Normal Univ. (China) [10030-82]

Terahertz microfluidic chips for detection of amino acids in aqueous solutions, Bo Su, Cong Zhang, Ning Fan, Cunlin Zhang, Capital Normal Univ. (China) [10030-83]

Simulation study of microstrip line on THz on-chip system, Cong Zhang, Bo Su, Ning Fan, Cunlin Zhang, Capital Normal Univ. (China) [10030-84]

The optical constants of two liquid crystals in terahertz band, Huijuan Sun, Beijing Union Univ. (China); Qingli Zhou, Capital Normal Univ. (China) [10030-85]

Nitrocellulose membrane sample holder for terahertz time domain spectroscopy, Xiaojing Zhao, Cuicui Wang, Jian Zuo, Cunlin Zhang, Capital Normal Univ. (China) [10030-86]

Design and research for biosensing THz microfluidic chips, Ning Fan, Bo Su, Cong Zhang, Cunlin Zhang, Capital Normal Univ. (China) [10030-87]

Investigation of transient temperature's influence on damage of high-speed sliding electrical contact rail surface, Yuyan Zhang, Shasha Sun, Yanshan Univ. (China) [10030-88]

Space-time adaptive: ratio, resolution, and multiple configuration, Hua Liu, Science and Technology on Electro-Optic Control Lab. (China) [10030-89]

Detection of NaCl solutions using terahertz time-domain spectroscopy, Cuicui Wang, Xiaojing Zhao, Jian Zuo, Cunlin Zhang, Capital Normal Univ. (China) [10030-90]

Detection of text information hidden in an envelope using terahertz imaging, Zhenwei Zhang, Cunlin Zhang, Capital Normal Univ. (China) [10030-91]

Design and simulation of a tunable metamaterial absorber, Yanan Fu, Guozhong Zhao, Capital Normal Univ. (China) [10030-92]

Electrically controlled terahertz wave switch based on prism/liquid crystal, Meng Yao He, Jian-rong Hu, Jiu-sheng Li, China Jiliang Univ. (China) [10030-93]

Tunable terahertz power divider based on graphene plasmonic waveguide, Yang Li, Jian-rong Hu, Jiu-sheng Li, China Jiliang Univ. (China) [10030-94]

Pepper seed variety identification based on visible/near-infrared spectral technology, Cuiling Li, Xiu Wang, Zhijun Meng, Pengfei Fan, Jichen Cai, Beijing Academy of Agriculture and Forestry Sciences (China) [10030-95]

Research of biological liquid albumin based on the terahertz time-domain spectroscopy, Shuai Yang, Capital Normal Univ. (China) [10030-96]

Processing and fusion for human body terahertz dual-band passive image, Li Tian, Beijing Institute of Technology (China); Yanchun Shen, Capital Normal Univ. (China); Weiqi Jin, Beijing Institute of Technology (China); Guozhong Zhao, Capital Normal Univ. (China); Yi Cai, Beijing Institute of Technology (China) [10030-97]

Detailed signal model of coherent wind measurement lidar, Yuechao Ma, Sining Li, Wei Lu, Harbin Institute of Technology (China) [10030-98]

Primary study on scattering property for irregular suspended particles in water with T-matrix theory, Yanan Liu, Chongqing Technology and Business Univ. (China); Peng Feng, Chongqing Univ. (China) [10030-99]

Performance of passive terahertz imaging system, Jia Wang, Guozhong Zhao, Capital Normal Univ. (China) [10030-100]

Research on THz stepped-frequency ISAR imaging, Meiyun Liang, Shanxi Univ. (China) [10030-101]

FPGA-based hardware optimized implementation of signal processing system for LFM-pulsed radar, Noor Ul Azim, Wang Jun, Beijing Univ. of Aeronautics and Astronautics (China) [10030-102]

SESSION 5

LOCATION: ROOMS 5A + 5H THU 14:30 TO 16:10

THz Imaging

Session Chair: **Cunlin Zhang**, Daheng New Epoch Technology, Inc. (China)

14:30: **2D and 3D THz imaging: necessity of automated data processing tools** (*Invited Paper*), Patrick Mounaix, Hugo Ballacey, Jean-Paul Guillet, Frederic Darracq, Frederic Fauquet, Jean Baptiste Perraud, Joyce Bou Sleiman, Univ. Bordeaux 1 (France); Benoit Recur, NOCTYLIO (France) [10030-23]

14:55: **Terahertz super-focusing and super-resolution** (*Invited Paper*), Yiming Zhu, Univ. of Shanghai for Science and Technology (China) [10030-24]

15:20: **New progress of active and passive terahertz imaging** (*Invited Paper*), Guozhong Zhao, Capital Normal Univ. (China) [10030-25]

15:45: **Application advances of terahertz digital holography** (*Invited Paper*), Xinke Wang, Yan Zhang, Capital Normal Univ. (China) [10030-26]

SESSION 6

LOCATION: ROOMS 5A + 5H THU 16:10 TO 18:05

THz Devices and Propagation I

Session Chair: **Yan Zhang**, Capital Normal Univ. (China)

16:10: **Tunable and reconfigurable THz devices** (*Invited Paper*), Jinghua Teng, Institute of Materials Research and Engineering (IMRE) (Singapore) . . [10030-27]

16:35: **Integrated terahertz optoelectronics** (*Invited Paper*), Qi Jie Wang, Nanyang Technological Univ. (Singapore) [10030-28]

17:00: **Active terahertz device based on optically-controlled organometal halide perovskite** (*Invited Paper*), Bo Zhang, Capital Normal Univ. (China) [10030-29]

17:25: **Development of high-performance terahertz metasurface flat lens** (*Invited Paper*), C.-C. Chang, The Ctr. for Integrated Nanotechnologies (USA); D. Headland, Withawat Withayachumnankul, Derek Abbott, The Univ. of Adelaide (Australia); Hou-Tong Chen, The Ctr. for Integrated Nanotechnologies (USA) [10030-30]

17:50: **Electromagnetically-induced transparency-enabled asymmetric surface plasmon excitation** (*Invited Paper*), Xueqian Zhang, Quan Xu, Quan Li, Yuehong Xu, Jianqiang Gu, Zhen Tian, Chunmei Ouyang, Jiaguang Han, Ctr. for Terahertz Waves of Tianjin Univ. (China); Weili Zhang, Ctr. for Terahertz Waves of Tianjin Univ. (China) and Oklahoma State Univ. (USA) [10030-31]

FRIDAY 14 OCTOBER

SESSION 7

LOCATION: ROOMS 5A + 5H FRI 8:00 TO 10:35

Infrared

Session Chair: **Yiming Zhu**, Univ. of Shanghai for Science and Technology (China)

8:00: **Infrared spectroscopy with visible light** (*Invited Paper*), Leonid Krivitsky, Dmitry Kalashnikov, Anna Paterova, Data Storage Institute (Singapore); Sergei Kulik, Department of Physics, M.V. Lomonosov Moscow State University (Russian Federation) [10030-32]

8:25: **Analysis on blue and green pigments from the Thangka of Dhritarashtira** (*Invited Paper*), Rui Zhang, Xiaojie Fang, Ningchang Shi, Qian Zhou, Jironge Song, The Palace Museum (China) [10030-33]

8:50: **Measurement of high-temperature spectral emissivity using integral blackbody approach**, Yijie Pan, Wei Dong, Hong Lin, Zundong Yuan, Pieter Bloembergen, National Institute of Metrology (China) [10030-34]

9:05: **Analytic technology of infrared absorption spectrum based on time-frequency analysis**, Xiyang Liu, Nan Gao, Hebei Univ. of Technology (China); Zhenhui Du, Tianjin Univ. (China); Chao Chen, Zonghua Zhang, Hebei Univ. of Technology (China) [10030-35]

9:20: **Using hyperspectral imaging technology to identify diseased tomato leaves**, Cuiling Li, Xiu Wang, Xueguan Zhao, Zhijun Meng, Wei Zou, Beijing Academy of Agriculture and Forestry Sciences (China) [10030-36]

9:35: **TDDA technology for high spatial resolution SWIR InGaAs imaging**, Yueming Wang, Shanghai Institute of Technical Physics of the Chinese Academy of Sciences (China) [10030-37]

9:50: **Tunable mid-infrared emission from acetylene-filled hollow-core fiber**, Zefeng Wang, Zhiyue Zhou, Zhixian Li, Naiqian Zhang, Yubin Chen, National Univ. of Defense Technology (China) [10030-38]

CONFERENCE 10030

LOCATION: ROOMS 5A + 5H

10:05: **The initial design of LAPAN'S IR microbolometer using mission analysis process**, Bustanul Arifin, Irwan Priyanto, Andi Mukhtar Tahir, Firman Bakti, Indonesia National Institute of Aeronautics and Space (Indonesia) [10030-39]

10:20: **A design on low noise imaging circuit for SWIR detector**, Ben Fan, Zhixue Han, Fei Ma, Beijing Institute of Space Mechanics and Electricity (China) [10030-50]

Tea/Coffee Break Fri 10:35 to 10:50

SESSION 8

LOCATION: ROOMS 5A + 5H FRI 10:50 TO 12:00

THz Devices and Propagation II

Session Chair: **Guozhong Zhao**, Capital Normal Univ. (China)

10:50: **Optical feedback effects on terahertz quantum cascade lasers: modelling and applications** (*Invited Paper*), Aleksandar D. Rakić, Yah Leng Lim, Thomas Taimre, Gary Agnew, Xiaoqiong Qi, Karl Bertling, She Han, The Univ. of Queensland (Australia); Stephen J. Wilson, The Univ of Queensland (Australia); Andrew Grier, Zoran Ikonik, Alexander Valavanis, Paul Dean, Aleksandar Demic, James Keeley, Lianhe H. Li, Edmund H. Linfield, A. Giles Davies, Univ. of Leeds (United Kingdom); Paul Harrison, Sheffield Hallam Univ. (United Kingdom); Tarl W. Prow, The Univ. of Queensland School of Medicine (Australia); Dragan Indjin, Univ. of Leeds (United Kingdom); H. Peter Soyer, The Univ. of Queensland School of Medicine (Australia) [10030-40]

11:15: **Localized spoof surface plasmon resonances at terahertz range**, Lin Chen, Li Chen, XiaoFei Zang, Yan Peng, Yiming Zhu, Univ. of Shanghai for Science and Technology (China) [10030-41]

11:30: **Completely evolution of Gouy phase shift in terahertz wave**, Yan Peng, Tao Geng, Yiming Zhu, Univ. of Shanghai for Science and Technology (China) [10030-42]

11:45: **Terahertz beam shaping with metasurface**, Jingwen He, Harbin Institute of Technology (China) and Capital Normal Univ. (China); Sen Wang, Harbin Institute of Technology (China); Yan Zhang, Capital Normal Univ. (China) [10030-43]

SESSION 9

LOCATION: ROOMS 5A + 5H FRI 12:00 TO 13:15

Others

Session Chair: **Guozhong Zhao**, Capital Normal Univ. (China)

12:00: **Terahertz magnetic and electric Mie resonances of an all-dielectric one-dimensional grating and their sensing capability** (*Invited Paper*), Yuping Yang, Minzu Univ. of China (China) [10030-44]

12:25: **Multicasting of signal-carrying Gaussian mode to multiple orbital angular momentum (OAM) modes** (*Invited Paper*), Shuhui Li, Jian Wang, Huazhong Univ. of Science and Technology (China) [10030-70]

12:45: **Gas trace detection with cavity-enhanced absorption spectroscopy: a review of CEAS' process**, Liu Siqi, Zhongqi Tan, National Univ. of Defense Technology (China) [10030-46]

13:00: **Ripple FPN reduced algorithm based on temporal high-pass filter and hardware implementation**, Yiyang Li, Weiqi Jin, Shuo Li, Beijing Institute of Technology (China); Zhipeng Zhang, Tianjin Jinhang Institute of Technical Physics (China) [10030-47]

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Zhu, Shi-Liang [10029-28] S6
Zhu, Shining [10027-29] S6, 10028 Program Committee, [10028-29] S6, [10028-32] S6
- Zhu, Siqi [10020-53] SPost
Zhu, Tao [10026-18] S4
Zhu, Timothy C. [10024-21] S4
Zhu, Xiangwen [10018-10] S2
Zhu, Xiao [10016-73] SPost, [10016-74] SPost, [10016-75] SPost
Zhu, Xiaoqiang [10023-77] SPost
Zhu, Xiaoqin [10024-71] SPost, [10024-74] SPost, [10024-77] SPost, [10024-78] SPost, [10024-91] SPost
Zhu, Xiaoyi [10020-52] SPost
Zhu, Xing 10028 Conference Chair, [10028-20] S5, [10028-45] SPost
Zhu, Yawen [10017-40] SPost
Zhu, Yiming 10030 Program Committee, 10030 S7 Session Chair, [10030-24] S5, [10030-41] S8, [10030-42] S8
Zhu, Yu [10028-30] S6
Zhu, Zhen [10017-9] S2
- Zhu, Zheng [10019-47] SPost
Zhu, Zhiqiang [10024-184] SPost
Zhuang, Songlin [10027-5] S1
Zhao, Shuangmu [10024-71] SPost, [10024-74] SPost, [10024-77] SPost
Zhao, Shuangmu [10024-91] SPost
Zhvania, Irina A. [10030-9] S2
Zin, Maung Htwe [10029-46] SPost
Zlokazov, Evgenie Y. [10022-44] SPost
Zong, Caihui [10021-42] SPost
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Zong, Yonghong [10022-40] S8, [10022-7] S2
Zou, Feng [10016-25] S5
Zou, Guisheng [10018-1] S1, [10018-5] S1
Zou, Jian [10024-6] S1
Zou, Jianhua [10021-36] SPost
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- Zou, Nianyu [10019-40] SPost
Zou, Tan [10024-172] SPost
Zou, Wei [10030-36] S7
Zou, Weiwen [10017-6] S7, [10026-8] S2
Zou, Wenbin [10022-10] S1
Zou, Wenlong [10028-43] SPost
Zou, Xihua 10017 Program Committee, 10017 S4 Session Chair, [10017-12] S3, 10026 Program Committee
Zou, Xinhai [10017-16] S4, [10017-33] S8
Zuegel, Jonathan D. [10016-45] S7
Zuo, Chao [10020-12] S3, [10022-55] S10, 10023 S6 Session Chair, [10023-39] S7
Zuo, Jian [10030-58] SPost, [10030-74] SPost, [10030-86] SPost, [10030-90] SPost
Zuo, Yingxi [10030-53] SPost
Zybell, Sabine [10030-13] S3
Zyubin, Andrey [10024-111] SPost, [10027-38] SPost

EXHIBITION

2016 Exhibition Dates and Hours:

Exhibitor Registration and Move-in

Tuesday, 11 October, 15:00 pm to 22:00 pm

Exhibition Time

Wednesday to Thursday, 12-13 October, 9:00 am to 18:00 pm

Friday, 14 October, 9:00 am to 13:30 pm

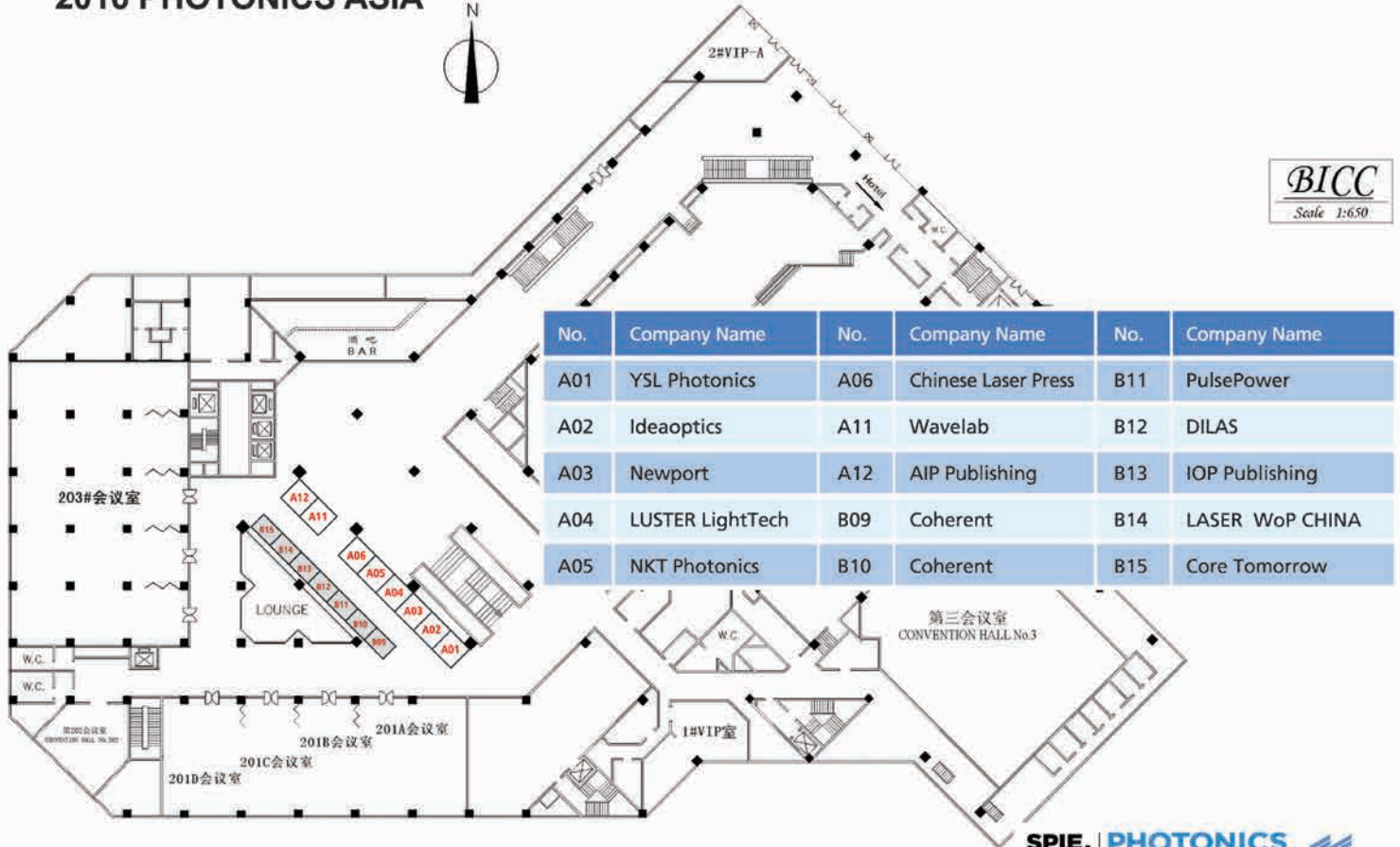
Exhibitor Technical Seminar

Wednesday to Friday, 12-14 October, 13:00 pm to 13:30 pm

Floor Plan:

2016 亚洲光电子会议

2016 PHOTONICS ASIA



No.	Company Name	No.	Company Name	No.	Company Name
A01	YSL Photonics	A06	Chinese Laser Press	B11	PulsePower
A02	Ideaoptics	A11	Wavelab	B12	DILAS
A03	Newport	A12	AIP Publishing	B13	IOP Publishing
A04	LUSTER LightTech	B09	Coherent	B14	LASER WoP CHINA
A05	NKT Photonics	B10	Coherent	B15	Core Tomorrow

BICC 二层平面图
HALL PLAN OF BICC LEVEL 2



YSL Photonics

A01

Tel: +86-27-87204039
 Email: sales@yslphotonics.com
 website: www.ylphotonics.com
 Add: 80# Fith Hi-tech Avenue, East Lake Hi-tech Development Zone, Wuhan

YSL Photonics explores, develops and manufactures next-generation of supercontinuum source and picosecond pulsed laser that bring new capabilities, higher reliability and lower ownership to a diverse range of industrial and R&D applications. The core team has combined of more than 100 years of track record of award-winning products and successful business in Photonics.

Shanghai Ideaoptics Corp., Ltd.

A02

Tel: +86-400 001 5685
 Email: Sales@ideaoptics.cn
 Website: www.ideaoptics.com
 Add: Room 412, Building 4, East Guoding Road 200#. Shanghai

Shanghai Ideaoptics Corp., Ltd. established in 2009, Our company based on the concept of "spectrum changes life", hopefully we can change measurement and enhance life quality through technology. Ideaoptics is the largest spectrometer manufacturer in domestic. We delicate in improving measure methods by making use of technology and products. The micro spectrometer and spectroscopy detection technology of our company are creatively applied to the scientific research and innovation fields, such as materials science, physics, chemistry and micro-nano photonics.

Newport**A03**

Tel: +86-510-8113 5000
 Email: china@newport.com
 Website: www.newport.com
 Add: Lot J3-8, Wuxi Export Processing Zone, New District, Jiangsu, China, 214028

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LUSTER LightTech Group**A04&A05**

Tel: +86-10-52348500/8600
 Email: sales-wave@lusterinc.com
 Website: www.lusterinc.com
 Add: Building No.7, Yard No.13, Cuihu Nanhuan Road, Haidian District, Beijing 100094, China.

LUSTER LightTech Group has been playing a leading role in the fields of Fiber Optics, Vision and Imaging since the establishment on June 6, 1996. With the goal of serving each of its customer in Mainland China and Hong Kong with leading solutions, products and services, LUSTER organized products and solutions from more than 50 worldwide famous photonic and optoelectronic companies with leading products of fiber optics, imaging and machine vision. Since 2000, LUSTER has started the development of its own customer dream product in the high-end vision and imaging, optical communication fields for emerging requirement of customers with more than 200 innovative patents. Through 20 years efforts, LUSTER has been growing to 1100 people with contract revenue of 1 billion in 2015.

NKT Photonics**A04&A05**

Tel: +86-45-4348 3900
 Email: wsh@nktphotonics.com
 Website: http://www.nktphotonics.com
 Add: Blokken 84, DK-3460 Birkerod, Denmark.

NKT Photonics is the leading supplier of high performance fiber lasers and photonic crystal fibers. Our main markets are within imaging, sensing and material processing. Our products include pulsed lasers, such as supercontinuum sources, low noise fiber lasers, distributed temperature sensing systems and a wide range

of specialty fibers. NKT Photonics has its headquarters in Denmark with sales and service worldwide. NKT Photonics is wholly owned by NKT Holding A/S.

Chinese Laser Press**A06**

Tel: +86-21-69918198
 Email: col@siom.ac.cn
 Website: http://www.opticsjournal.net/Columns/CLP.html
 Add: No. 390 Qinghe Rd, Jiading, Shanghai

CLP was established by Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, and Chinese Optical Society in 2009, with the key business of publishing journals in both traditional and digital models. The CLP journals and partnered ones are collected in the Optics Datapool, which provides information services for users in China and other parts of the world. CLP is on the way of building a modern publishing group combining traditional business and digital publishing.

Nanjing Wavelab Software System Co.,Ltd**A11**

Tel: +86-25-84305560 +86-15051868393
 Email: nicky@wavelab-sci.com.cn
 Website: www.wavelab-sci.com.cn
 Add: Boguang Road 18, Hushu Industry Area, Jiangning District, Nanjing, Jiangsu, China

Nanjing Wavelab Software System Co.,Ltd is the authority suppliers&service providers of the software and hardware in the Asian-Pacific region. Products include design software: optical, optical waveguide, photonic crystals, optical communication, solid laser, film, light source, grating, power system. Hardware : Uncooled MWIR (1-5 microns) detector, imaging quality detector , APD, PLD, temperature controller, laser diode driver. We offer the quality products but also provide customers with professional technical support services. And undertake various design project, we organize software training courses regularly. Our company has a wide range of customer groups, including scientific research institutions, universities and industrial organizations.

AIP Publishing**A12**

Tel: +86-1326 0124 519
 Email: hzhang@aip.org
 Website: Publishing.aip.org
 Add: Room 510, Science thaw information center, block C, South Academy of Science road, Haidian District, Beijing, 100190.

EXHIBITION

AIP Publishing provides the global physical science community with a comprehensive collection of highly cited peer reviewed scientific information. Accessed by researchers at nearly 4,000 institutions worldwide, AIP Publishing's portfolio includes prestigious titles such as Applied Physics Letters, Journal of Applied Physics and The Journal of Chemical Physics, and the AIP Conference Proceedings series. AIP Publishing also publishes on behalf of several of AIP's Member Societies and other publishing partners.

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Website: www.coherent.com.cn
Add: Room 1006-1009, Science thaw information center, block B, 2 South Academy of Science road, Haidian District, Beijing, 100190.

PulsePower Technology Limited **B11**

Tel: +86-10-8441 3925
Email: info@pulsepower.cn
Website: www.pulsepower.cn
Add: Rm9C, Hengxing Building, Zhongguancundong Rd., Haidian District, Beijing, China

PulsePower Technology Co., Ltd. is a professional distributor of consulting and sales of top optoelectronic products, and provides professional service with Chinese scientific and industrial research. Our products are consisted of Femtolasers ultra-short pulse laser, Amplitude Systemes femtosecond laser, InnoLas industrial solid laser, AdlopticaBeam shaper, Teem Photonics 3D micro-nano machining system, DUMA laser beam quality analyzer. PulsePower provides consulting and technical support service through our new online service.

DILAS Diodenlaser GmbH **B12**

Tel: +86-21-6855 2216-296
Email: sales@dilas-china.com.cn
Website: www.DILAS.com.cn
Add: Room 206, Lingyang Tower, 1077 Zuchongzhi Road, Zhangjiang Hi Tech, Pudong New Area, Shanghai

DILAS, the diode laser company, is focused on delivering the most innovative technologies and advanced product solutions in the industry. Founded in 1994 in Mainz, Germany, with operations in North America and Asia, DILAS designs, develops and manufactures quality high-power, high-brightness semiconductor

laser components, modules and systems, including fiber-coupled products for worldwide distribution. For more information about DILAS, including product updates, visit the company's website at www.DILAS.com.

IOP Publishing **B13**

Tel: +86-10-8264 9679
Email: mingfang.lu@iop.org
Website: <http://iopscience.iop.org>
Add: Room A512, 8 Zhong-Guan-Cun Nan-San-Jie Street, Haidian District, Beijing 100190

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LASER World of PHOTONICS CHINA **B14**

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Email: laser@mm-sh.com
Website: www.world-of-photonics-china.com
Add: 11th floor, PING AN FORTUNE Tower, 1088 Yuanshen Road, Pudong New Area, Shanghai, China, 200122

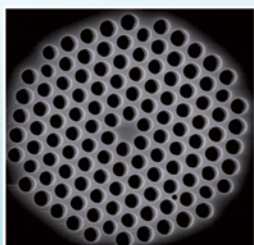
Harbin Core Tomorrow Science & Technology Co.,Ltd. **B15**

Tel: +86-451-8626 8790
Email: info@xmtkj.com
Website: www.xmtkj.com
Add: 6F No.41 Hanguang Street Nangang District Harbin

Harbin Core Tomorrow Science & Technology Co.,Ltd.is specialized in piezoelectric product like piezo element, piezo stack, piezo actuator, piezoelectric nanopositioning / scanning stage, Z / Tip / Tilt scanning stage, piezo micrometer drive, piezo objective scanner, piezo steering mirror, piezo Tip / Tilt platform and Z positioner, piezo motor, piezo deformable mirror, piezo amplifier / driver / controller, non-contact capacitance / laser displacement measurement system, LVDT etc.

掌握“纤，芯”科技

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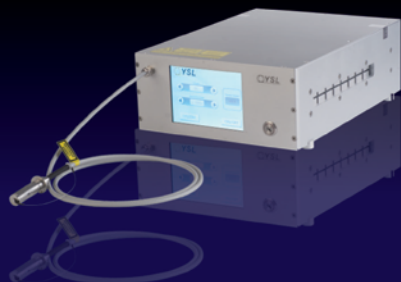
- 空心光子晶体光纤
- 保偏光子晶体光纤
- 高非线性光子晶体光纤
- 单模光子晶体光纤
- 全固态带隙光子晶体光纤
- 光纤传感、光纤光栅
- 陀螺仪、干涉仪
- 产生超连续谱
- 高功率传输
- 光纤激光器及光纤放大

超连续谱光源SC-5



- 光谱范围450nm->2400nm
- 光谱稳定性 (800-1700nm) <0.1dB
- 功率谱密度 (800nm-1700nm) >10dB/nm
- 无线蓝牙控制
- 光纤传感
- 代替铝灯、ASE、单点激光器等
- OCT
- 宽带光谱学

超连续谱光源SC-Pro



- 波长范围400-2400nm
- 脉冲能量高达2uJ
- 重复频率0.1-25MHz连续可调
- 总功率最高可达15W
- NIM触发，外部TTL 1Hz-1kHz触发
- 纳米光子学
- 材料光电流检测
- 荧光成像与光谱
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LASER World of **PHOTONICS CHINA** 

GENERAL INFORMATION

Registration

Onsite Registration and Badge Pick-up Hours
Beijing International Convention Center
Beijing, China

Tuesday 11 October 2016 13:00 to 17:00
Wednesday 12 October 2016 7:30 to 17:00
Thursday 13 October 2016 7:30 to 17:00
Friday 14 October 2016 8:00 to 10:00

CONFERENCE REGISTRATION

Includes admission to all conference sessions, plenaries, keynotes, panels, and poster sessions, daily lunches, admission to the Exhibition, Welcome Reception, tea/coffee breaks, and a choice of proceedings.

SPIE MEMBER, SPIE STUDENT MEMBER, AND STUDENT PRICING

- SPIE Members receive conference and course registration discounts. Discounts are applied at the time of registration.
- SPIE Student Members receive a 50% discount on all courses.
- Student registration rates are available only to undergraduate and graduate students who are enrolled full time and have not yet received their Ph.D. Post-docs may not register as students. A student ID number or proof of student status is required with your registration.

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For credentialed press and media representatives only. Please email contact information, title, and organization to media@spie.org.

SPIE CASHIER

Registration Area
Open during registration hours
Registration Payments

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Author / Presenter Information

SPEAKER CHECK-IN AND PREVIEW

All conference rooms have a computer workstation, projector, screen, lapel microphone, and laser pointer. All presenters are requested to test their presentations in the conference room where they will be presenting before, after, or during breaks in the conference schedule.

POSTER SETUP INSTRUCTIONS

Poster authors can set up presentations between 10:00 and 12:00 on the day of the Poster Session. Posters that are not set up by 12:00 on the day of the Poster Session will be considered a No-Show and will not be published in the Conference Proceedings. Poster presentation guidelines can be viewed at www.spie.org/PAPosterGuidelines

Onsite Services

INTERNET ACCESS

Complimentary wireless access will be available at the BICC; instructions will be posted onsite.

SPIE CONFERENCE APP

Search and browse the technical program and more. Free Conference Apps available for iPhone and Android phones. See the Photonics Asia 2016 website for download information.

Food and Beverage Services

TEA AND COFFEE BREAKS

Location: Beijing International Convention Center

Complimentary tea and coffee will be served twice daily during the breaks. Check individual conference listings for exact times and locations.

Hotels

SPIE/COS Photonics Asia 2016 will be located at the:

Beijing International Convention Center (BICC)

No.8 Beichen Dong Road, Chaoyang District, Beijing, China 100101
See further details on the BICC <http://www.bicc.com.cn/english/qyjs.html>

CONFERENCE HOTELS: both are conveniently located next to the BICC

This information is provided as a service to attendees. SPIE has no contractual relationship with these hotels. Please contact them directly to secure a reservation.

V-Continent Beijing Parkview Wuzhou

8 North Si Huan Zhong Road, Chaoyang District, Beijing, China, 100101
Room Reservation
Phone (within US): 877 497 6976
Phone (outside US): +1 312 913 0400
Online Reservation at <http://www.v-continent.com>

Beijing North Star Continental Grand Hotel

No.8 Beichen Dong Road, Chaoyang District, Beijing, China, 100101
Room Reservations
Phone: (8610) 84980105 or (8610)84985588
www.continentalgrandhotelbeijing.com

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To verify registered participants and provide a measure of security, SPIE will ask attendees to present a government-issued Photo ID at registration to collect registration materials.

Individuals are not allowed to pick up badges for attendees other than themselves. Further, attendees may not have some other person participate in their place at any conference-related activity. Such other individuals will be required to register on their own behalf to participate.

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Registrants for paid elements of the event, who do not provide a method of payment, will not be able to complete their registration. Individuals with incomplete registrations will not be able to attend the conference until payment has been made. SPIE accepts VISA, MasterCard, American Express, Discover, Diner's Club, checks and wire transfers. Onsite registrations can also pay with Cash.

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By submitting an abstract, you agree to the following conditions:

- An author or coauthor (including keynote, invited, and solicited speakers) will register at the author registration rate, attend the meeting, and make the presentation as scheduled.
- A manuscript (minimum 6 pages, maximum 20 pages) for any accepted oral, invited, keynote, or poster presentation will be submitted for publication in the *Proceedings of SPIE* in the SPIE Digital Library. Some SPIE events have other requirements that the author is made aware of at the time of submission.
- Only papers presented at the conference and received according to publication guidelines and timelines will be published in the *Proceedings of SPIE* in the SPIE Digital Library (or via the requirements of that event).

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Persons under the age of 18 including babies, carried or in strollers, and toddlers are not allowed in technical or networking events. Anyone 18 or older must register as an attendee. All technical and networking events require a valid conference badge for admission.

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For safety and insurance reasons:

- No persons under the age of 18 will be allowed in the exhibition area during move-in and move-out.
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- All children younger than 14, including babies in strollers and toddlers, are not allowed in the exhibition area at any time.

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Unauthorized solicitation in the Exhibition Hall is prohibited. Any non-exhibiting manufacturer or supplier observed to be distributing information or soliciting business in the aisles, or in another company's booth, will be asked to leave immediately.

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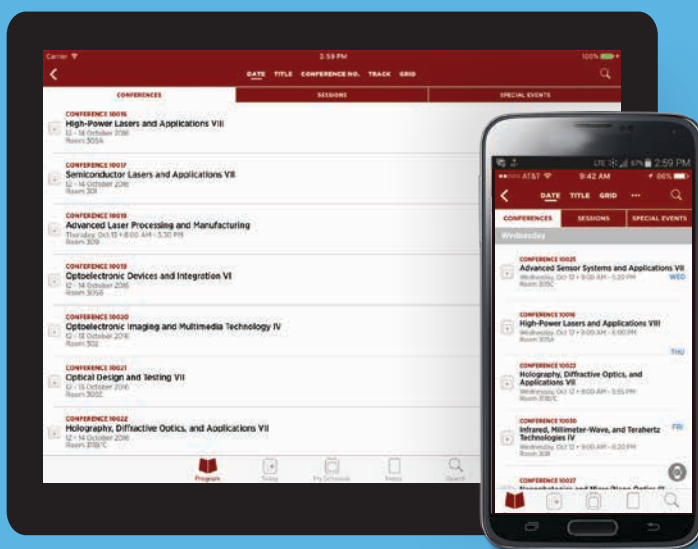


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