The 10th International Symposium on Advanced Optical Manufacturing and Testing Technologies

14-17 June 2021

Century City International Convention Center

Chengdu, China

Sponsored by:

COS - The Chinese Optical Society

IOE - Institute of Optics and Electronics, Chinese Academy of Sciences

SPIE - The International Society for Optics and Photonics
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Sessions:

Session 1 Large Mirror and Telescopes

Session 2 Advanced Optical Manufacturing and Metrology Technologies

Session 3 Micro/Nano Optics

Session 4 Advanced and Extreme Micro-Nano Manufacturing Technology

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Organizations & Committees

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Supported by:

- Ministry of Science and Technology of China
- Chinese Academy of Sciences
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Symposium General Chairs:

Qihuang GONG, Academician of Chinese Academy of Sciences; President of COS; Peking University, China

Minghui HONG, Fellow of Academy of Engineering, Singapore; National University of Singapore, Singapore

John H. MARSH, Fellow of the Royal Academy of Engineering, UK; University of Glasgow, UK

Bingheng LU, Academician of Chinese Academy of Engineering; Xi'an Jiaotong University, China

Costas FOTAKIS, The Foundation for Research & Technology – Hellas (FORTH), Greece

Xiangang LUO, Academician of Chinese Academy of Engineering, Institute of Optics and Electronics, Chinese Academy of Sciences, China

Organizers:

- Committee of Optical Manufacturing Technology, Chinese Optical Society (COS)
- Editorial Office of *Opto-Electronic Advances* and *Opto-Electronic Engineering*
- State Key Laboratory of Optical Technologies on Nano-Fabrication and Micro-Engineering, Institute of Optics and Electronics, Chinese Academy of Sciences

Co-organizers:

- Sichuan Optical Society
- Sichuan Youth Association for Science and Technology

Supporting Organization:

TRIOPTICS CHINA

International Advisory Committee:

Wenhan JIANG, Academician of Chinese Academy of Engineering, Institute of Optics and Electronics, Chinese Academy of Sciences, China

Bingkun ZHOU, Academician of Chinese Academy of Sciences; Former President of COS, China

Costas FOTAKIS, The Foundation for Research & Technology – Hellas (FORTH), Greece

Qihuang GONG, Academician of Chinese Academy of Sciences; President of COS; Peking University, China

Minghui HONG, Fellow of Academy of Engineering, Singapore; National University of Singapore, Singapore

Yudong ZHANG, Institute of Optics and Electronics, Chinese Academy of Sciences, China

Organizing Committee:

Changhui RAO, Institute of Optics and Electronics, Chinese Academy of Sciences, China

Yadong JIANG, University of Electronic Science and Technology of China, China

Bin FAN, Institute of Optics and Electronics, Chinese Academy of Sciences, China

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Rui ZHOU, Xiamen University, China

Tao ZHU, Chongqing University, China

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Hu YANG, Institute of Optics and Electronics, Chinese Academy of Sciences, China

Tianrui ZHAI, Chinese Optical Society, China

Jinxue WANG, The International Society for Optics and Photonics, USA

Xiangping LI, Jinan University, China

Xiaoliang MA, Institute of Optics and Electronics, Chinese Academy of Sciences, China

Xiong LI, Institute of Optics and Electronics, Chinese Academy of Sciences, China

Symposium General Chair:

Qihuang GONG, Academician of Chinese Academy of Sciences; President of COS; Peking University

Biography: Qihuang GONG, Vice President of Peking University, concurrently a Member of the Standing Committee of the Ninth National Committee of the China Association for Science and Technology, Vice President of the International Commission for Optics (ICO), and Vice President of CPS. He is also a Fellow of OSA, IOP and COS. Prof. Gong has been in charge of a number of national research projects and teams such as the "Mesoscopic Optics and Femtosecond Physics Innovation Research Team" of the National Science Foundation Committee, the National major scientific instrumentation project "Optical Experimental System for Femtosecond-Nano scale temporal-spatial resolution", and the "Extreme Optics Innovation Research Team" of the Ministry of Science and Technology.

Prof. Gong has been working on nonlinear and quantum optics, micro/nanophotonics. He has published more than 500 papers in *Science*, *Nature Photonics*, *Nature Physics*, *Physics Reports* and *Physical Review Letters*, etc. His research team focuses on the areas of:

(1) Mesoscopic quantum optics and optical quantum chips;

(2) Optics and optoelectronics beyond the classic limit;

(3) Ultra-fast measurement of quantum states and light field control.

Symposium General Chair:

Minghui HONG, Fellow of Academy of Engineering, Singapore; National University of Singapore

Biography: Minghui HONG, specializes in laser microprocessing & nanofabrication. He has co-authored 15 book chapters, 40+ patents granted (3 commercialized), 500+ scientific papers, and given 100+ plenary/keynote/invited talks. He is invited to serve as an Editor of *Light: Science and Applications*, *Engineering*, *Science China G*, *Physics and Laser Micro/nanoengineering*, and Executive Editor-in-chief of *Opto-Electronic Advances*. Prof. Hong is Fellow of Academy of Engineering, Singapore (FSEng), Fellow of Optical Society of America (OSA), Fellow of International Society for Optics and Photonics (SPIE), Fellow of International Academy of Photonics and Laser Engineering (IAPLE) and Fellow of Institution of Engineers, Singapore (IES). He is currently a Full Professor, Director of Advanced Research and Technology Innovation Centre (ARTIC) and Director of Optical Science and Engineering Centre (OSEC), National University of Singapore. He spun off Phaos Technology Pte. Ltd. and Opto Science Pte. Ltd. from NUS in 2017 and 2021.

Symposium General Chair:

John H. MARSH, Fellow of the Royal Academy of Engineering, UK; University of Glasgow

Biography: Professor John H. MARSH is full Professor of Optoelectronic Systems, University of Glasgow, as well as the Dean of Transnational Education responsible for the University of Glasgow UESTC partnership. His formal education took place at the Universities of Cambridge (BA), Liverpool (MEng) and Sheffield (PhD).

He moved to the University of Glasgow in 1986, where he established an internationally leading research group addressing linear and nonlinear integrated optoelectronic systems. After co-founding Intense Ltd in 2000, he was seconded to the Company until 2009 and served as a Board Director until 2011. During this time, Intense developed the world's most advanced integrated laser systems, bringing monolithic laser arrays together with electronic ASICs and optics for precise energy delivery in a range of applications from printing to material processing. He returned to the University of Glasgow full-time in 2009. He was Head of the School of Engineering from 2010-2016, leading the unification of the four departments of the former Faculty of Engineering into a single School.

Professor John H. MARSH has been active in professional societies, particularly the IEEE. After serving as a member of the Board of Governors of the IEEE Lasers and Electro-Optics Society (including two terms as a Vice-President), he was elected President in 2008 and 2009. During this period the Society changed its name to the IEEE Photonics Society. He has served on numerous other IEEE committees, including the Board of Governors of the IEEE Technology Management Council in 2012 and 2013.

Professor John H. MARSH is Fellow of the Royal Academy of Engineering (FREng), Royal Society of Edinburgh (FRSE), Optical Society of America (FOSA), Institute of Electrical and Electronics Engineers (FIEEE), Institution of Engineering and Technology (FIET), Institute of Physics (FInstP), and Royal Society of Arts (FRSA).
His work has included research into the fundamental electrical and optical properties of semiconductors, development of novel optoelectronic devices, processes for creating photonic integrated circuits, integrated mode-locked lasers for ultra-short pulse generation, and the development and manufacturing of high-power laser array products. He has published or presented around 500 papers (including more than 70 invited papers) in international journals and conferences. He holds 16 granted patents.

Symposium General Chair:

Bingheng LU, Academician of Chinese Academy of Engineering; Xi 'an Jiaotong University

Biography: As one of the pioneers conducting the research on Rapid Prototyping Technology in China， Prof. Lu initiated the RP machine based on UV light in the world and 6 other advanced RP equipment as well as special RP raw materials and put them into industrialized production. During the National 9th Five-year plan period, Prof. Lu led and participated in 9 state-level key research projects, including 863 high-tech program and NSFC projects etc.

Professor Lu is a member of Expert Committee of Advanced Manufacturing Technology and Automation of the State "863"High-tech Program, the director of RP&M Engineering Centre under MOE, vice chief-member of Teaching Supervision Subcommittee of Machine Design & Manufacturing, and consultant expert of NSFC.

Symposium General Chair:

Costas FOTAKIS, The Foundation for Research & Technology – Hellas (FORTH), Greece

Biography: Costas FOTAKIS is currently Emeritus Professor of Physics at the University of Crete and Distinguished Member of the Foundation Organization for Research and Technology (FORTH). He has served as Alternate Minister for Research and Innovation from January 2015 till July 2019. During this time, he designed and implemented Research and Innovation policies in Greece and participated in the EU Research Ministers Council.

Symposium General Chair:

Xiangang LUO, Academician of Chinese Academy of Engineering; Institute of Optics and Electronics, Chinese Academy of Sciences

Biography: Professor Xiangang Luo is currently the director of State Key Laboratory of Optical Technologies on Nano-Fabrication and Micro-Engineering (SKLOTNM), and the president of the Institute of Optics and Electronics (IOE), Chinese Academy of Sciences (CAS). He received Ph.D. from Chinese Academy of Sciences in 2001. He was a Research Scientist in The Institute of Physical and Chemical Research (RIKEN) of Japan. His research interests are micro/nano-optics, plasmonics, planar optics, subwavelength electromagnetics and catenary optics. He has published more than 400 scientific papers and 100 patents in optics and related fields. He is a Fellow of the International Society for Optical Engineering (SPIE), Optical Society of America (OSA), Chinese Optical Society (COS), and the International Academy of Photonics and Laser Engineering (IAPLE).

Daily Event Schedule

Date	Time	Contents	Place
Monday June 14, 2021	09:00-21:00	Registration for domestic authors	Holiday Inn Chengdu Century City-West Tower
	After 21:00	Late attendee contact Hotel reception counter for help	Holiday Inn Chengdu Century City-West Tower
Tuesday June 15, 2021	08:30-08:50	Opening Ceremony	Crystal Hall, floor 5, Century City International Convention Centre
	08:50-12:20	Plenary Presentation 1 ~ 3	
	14:00-17:30	Plenary Presentation 4 ~ 6	
	18:30	Welcome Dinner	Shunxing Tea House
Wednesday June 16, 2021	08:30-18:00	Session 1 Session 2 Session 3 Session 4 Session 5 Session 6 Forum 1	Chenghua Hall Wuhou Hall, Xindu Hall Jinniu Hall Qingyang Hall Longquan Hall Jinjiang Hall Shufeng Hall
Thursday June 17, 2021	08:30-12:00	Session 2 Session 3 Session 4 Session 6 Forum 2	Wuhou Hall Jinniu Hall Qingyang Hall, Longquan Hall Jinjiang Hall Chenghua Hall
	12:00-18:00	Session 2 Session 3 Session 4 Session 6 Forum 2	Wuhou Hall Jinniu Hall Qingyang Hall Jinjiang Hall Chenghua Hall
		Poster Presentations	Gaoxin Hall
Friday June 18, 2021	08:00	End	

Opening Ceremony

Date	Time	Name	Organization
June 15, 2021 **Crystal Hall**	08:30-08:35	Costas FOTAKIS	The Foundation for Research & Technology – Hellas (FORTH), Greece
	08:35-08:40	Tianrui ZHAI	Chinese Optical Society
	08:40-08:45	Andrew BROWN	The International Society for Optics and Photonics (SPIE)
	08:45-08:50	Changhui RAO	Institute of Optics and Electronics, Chinese Academy of Sciences(IOE, CAS)

Plenary Presentation

Date	Time	Name	Organization	Title
June 15, 2021 **Crystal Hall**	08:50-09:50	Christian VEILLET	Large Binocular Telescope Observatory (LBT), USA	The large binocular telescope observatory
	09:50-10:50	Fengchuan LIU	Thirty Meter Telescope (TMT) International Observatory, LLC, USA	Thirty Meter Telescope (TMT) project status
	10:50-11:20	**Break**		
	11:20-12:20	Bingheng LU	Xi'an JiaoTong University, China	An introduction to 3D printing+
	12:20-14:00	**Lunch**		
	14:00-15:00	Emmanuel STRATAKIS, Costas FOTAKIS	The Foundation for Research & Technology – Hellas (FORTH), Greece	Ultrashort pulsed laser structuring of biomimetic surfaces and related applications
	15:00-16:00	John H. MARSH	University of Glasgow, UK	Manufacturing large arrays of high-power semiconductor lasers – maximising performance, yield, and reliability
	16:00-16:30	**Break**		
	16:30-17:30	Minghui HONG	National University of Singapore	Hybrid laser precision engineering of functional structures on transparent hard substrates

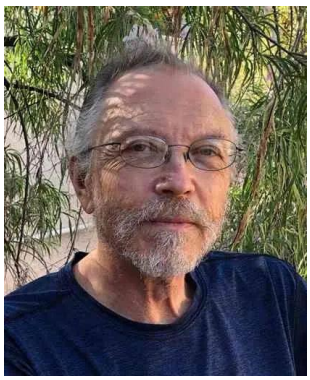
Plenary Presentation

08:50-09:50 June 15 Plenary Presentation 1
Crystal Hall, floor 5

Title: The large binocular telescope observatory

Speaker: Christian VEILLET

Abstract: The Large Binocular Telescope (LBT) occupies a unique place in the current suite of large ground-based optical telescopes. With two 8.4-m primary mirrors mounted side-by-side on a common altitude-azimuth mounting, it offers a combined collecting area of a single 11.8m telescope, more than any other telescope. The two primary mirrors are separated by 14.4m center-to-center and provide an interferometric baseline of 22.8m edge-to-edge, making LBT a forerunner of the next generation of telescopes. The binocular design, combined with integrated adaptive optics utilizing adaptive Gregorian secondary mirrors to compensate for atmospheric turbulence, provides a large effective aperture, high angular resolution, low thermal background, and exceptional sensitivity for the detection of faint objects. This presentation will explore the history of the LBT observatory, the role it plays in adaptive optics and astronomical instrumentation development, and in the design of the Extremely Large Telescopes still to come. Some of the exciting science programs enabled by LBT, from our Solar System and extrasolar planets to the far reaches of the universe, will remind the audience that technological prowess is a means rather than an end in itself.



Biography: Christian Veillet is the Director of the Large Binocular Telescope Observatory since early 2013. He was previously the Executive Director at the Canada-France-Hawaii Telescope, where he arrived as Resident Astronomer in 1996 and served as Project Manager/Project Scientist for the CFHT MegaPrime Project and chaired the Working and Steering Groups which laid out and ran the CFHT Legacy Survey. His current research areas include Kuiper Belt Objects and Near Earth asteroids. Back in the late 1970s/early 1980s, he made studies of the dynamics of Uranus and Neptune satellites prior to the Voyager fly-by. Before joining CFHT, he spent 16 years at Observatoire de la Côte d'Azur in charge of the French Lunar Laser Ranging program. There he studied space experiments using light pulses traveling in space for synchronizing atomic clocks and testing some aspects of general relativity.

Christian also wrote and installed the telescope control software for the Korean Mt Bohyun telescope, the THEMIS solar telescope and the Zimmerwald satellite laser ranging station.

Plenary Presentation

09:50-10:50 June 15 Plenary Presentation 2
Crystal Hall, floor 5

Title: Thirty Meter Telescope (TMT) project status

Speaker: Fengchuan LIU

Abstract: The Thirty Meter Telescope (TMT) is an extremely large optical-infrared telescope with diffraction-limited performance that will shape the landscape of astronomy for the next 50 years from its vantage point in the northern hemisphere. The TMT International Observatory is a public-private-international partnership that unites the scientific, instrumental and industrial communities of India, Canada, China, Japan and the USA for this endeavor with all partners contributing to the design, development, and scientific use of the observatory. This paper will describe progress made since the construction phase started in April, 2014: challenges and opportunities on the telescope site, communications and management of a truly global collaboration, design and development, education and public outreach.

Biography: Dr. Fengchuan Liu received his bachelor degree in Physics from Nankai University, Tianjin, and both his Master and PhD degrees in Physics from the University of Washington, Seattle. After a Postdoctoral research at the University of California, Santa Barbara, Dr. Liu spent 20 years at Caltech's Jet Propulsion Lab as a research scientist, a project scientist and a project manager. Dr Liu joined TMT as the Deputy Project Manager in 2015, and became the Project Manager (acting) in 2020.

Plenary Presentation

11:20-12:20 June 15 Plenary Presentation 3
Crystal Hall, floor 5

Title: An introduction to 3D printing+

Speaker: Bingheng LU

Abstract: The report first systematically expounds the global developments in 3D printing, including the development status of mainstream 3D printing technology and the development trends of frontier technologies. Further, the bottlenecks and future trends of large-scale and industrialized metal additive manufacturing are analyzed, and the key development directions of 3D printing technology are also proposed. In addition, the report puts forward the concept of "3D printing+", pointing out that "3D printing+" is being applied to various manufacturing fields and different aspects of social life. 3D printing+ has brought innovation in the products and equipments of various fields including lightweight and integrated printing of parts and components, efficient heat exchange, application of new materials, design of multi-material and functionally graded structures, etc. In the fields of aerospace, naval architecture and ocean engineering, new energy, robotics, remanufacturing, precision medicine, biomedical, automobile, mould, construction, electronics, cultural and creative industries, etc., 3D printing+ technology will continue to expand. The report discusses and predicts that not only in terms of manufacturing concept will additive manufacturing, subtractive manufacturing, and forming manufacturing form the three pillars in this field. But also in terms of the value they created will the field be divided into three equally competitive parts. Finally, some of achievements of National Innovation Institute of Additive Manufacturing in the past three years are shared.

Biography: As one of the pioneers conducting the research on Rapid Prototyping Technology in China， Prof. Lu initiated the RP machine based on UV light in the world and 6 other advanced RP equipment as well as special RP raw materials and put them into industrialized production. During the National 9th Five-year plan period, Prof. Lu led and participated in 9 state level key research projects including 863 high-tech program and NSFC projects etc. Professor Lu is the member of Expert Committee of Advanced Manufacturing Technology and Automation of the State "863" High-tech Program, the director of RP&M Engineering Centre under MOE, vice chief-member of Teaching Supervision Subcommittee of Machine Design & Manufacturing, and consultant expert of NSFC.

Plenary Presentation

14:00-15:00 June 15 Plenary Presentation 4
Crystal Hall, floor 5

Title: Ultrashort pulsed laser structuring of biomimetic surfaces and related applications

Speaker: Emmanuel STRATAKIS, Costas FOTAKIS

Abstract: The study and simulation of biological systems is popularly known as biomimetics - a combination of the Greek words 'bios', meaning life, and 'mimesis', meaning to imitate. Nature offers a wealth of diverse functional surfaces, whose properties are unmatched in today's artificial materials. In this context, a highly interdisciplinary field of research has emerged concerning the design, the synthesis and the fabrication of biomimetic structures, based on the ideas, concepts and underlying principles developed by nature. Biomimetic materials provide innovative solutions for the design of a new generation of functional materials and can lead to novel materials design principles. Bionics and biomimetics are disciplines with high potentials for technical innovation. In this context, several methodologies have been developed to facilitate the formation of bioinspired constructs, exhibiting hierarchical structuring at length scales ranging from hundreds of nanometers to several microns. Laser processing is a highly versatile approach allowing bottom-up and top-down structuring, while it excels over mechanical, chemical and electric discharge texturing, as it enables localized modifications with a large degree of control over the shape and size of the features that are formed and a broader range of sizes that can be fabricated.

This lecture will review the development of novel ultrafast pulsed laser processing schemes for the controlled fabrication and engineering of biomimetic surfaces to realize extraordinary optical, wetting, biological and tribological properties, for a variety applications, including special optics, microfluidics, flexible optoelectronics and tissue engineering. In parallel, the biological principles behind the functionalities exhibited by the natural surface archetypes will be analysed and discussed. In particular, by applying ultrafast laser pulses novel surface structures with sub - micron sized features are produced while the physical properties of semiconductor, dielectric and metallic surfaces are significantly modified. The biomimetic surfaces developed exhibit controlled dual-scale morphology, that mimics the hierarchical structuring of natural surfaces with exciting properties (i.e. the Lotus Leaf, the Shark Skin, Lizards' Integument and Cicada wings).

As a result, the biomimetic morphology attained gives rise to notable multifunctional properties including water repellence, self-cleaning, antibacterial, anti-friction, anti-fogging, anti-reflection and combination of those smart surfaces, i.e show the ability to change their functionality in response to different external stimuli. At the same time, the ability to tailor the morphology and chemistry is an important advantage for the use of the biomimetic structures as models to study the dependence of growth, division and differentiation of cells on the surface energy of the biomimetic cell culture substrates used for tissue regeneration.

Besides presenting the potential and significance of the laser based biomimetic surface structures, this talk will also delineate existing limitations and discuss emerging possibilities and future prospects.

Biography:

Emmanuel STRATAKIS

Dr. Emmanuel Stratakis is a Research Director at the Institute of Electronic Structure and Laser (IESL) of the Foundation for Research and Technology-Hellas (FORTH), where he is leading the "Ultrafast Laser Micro- and Nano-processing" laboratory. He received his Ph.D. in Physics in 2001 from the University of Crete. He has been a Visiting Scientist at the University of California Berkeley in the fall semesters of 2006 and 2008. He has over 220 SCI publications and more than 8000 citations, h-index=48 (Scopus), and he has coordinated many National and EU grants. He has delivered more than 40 invited and keynote lectures and has been organizer and chair in major international scientific conferences. He has been an Editor of the journals *Opto-electronic Advances*, *Materials Today (Bio)*, *Applied Sciences* and *International Journal of molecular Sciences*. Since 2015, he is the Director of the European Nanoscience Facility of FORTH, part of the NFFA-Europe EU Infrastructure, where he is a member of the General Assembly. He is a National expert in the High-Level Group of EU on Nanotechnologies, Advanced Materials, Biotechnology, Advanced Manufacturing and Processing. He is a member of the Scientific Committee of COST. Since January 2020 he is the founder and Chief Executive Officer of Biomimetic.

Costas FOTAKIS

Costas Fotakis is currently Emeritus Professor of Physics at the University of Crete and Distinguished Member of the Foundation Organization for Research and Technology (FORTH). He has served as Alternate Minister for Greek Research and Innovation from January 2015 till July 2019. During this time, he designed and implemented Research and Innovation policies in Greece and participated in the EU Research Ministers Council.

Plenary Presentation

15:00-16:00 June 15 Plenary Presentation 5
Crystal Hall, floor 5

Title: Manufacturing large arrays of high-power semiconductor lasers – maximising performance, yield, and reliabilit

Speaker: John H. MARSH

Abstract: Parallel arrays of semiconductor lasers have many important applications, including printing, material processing, imaging, and optical range finding. For some applications, every element in the array is required to deliver a high-quality beam (operate in a single transverse mode) and be addressable individually, while in others the elements can be driven in parallel and the beam quality may not be critical.

The integration of passive waveguides in the laser facet regions leads to a step improvement in performance and manufacturability of all these devices. Passive waveguides eliminate optical absorption at the facet, meaning lasers can be operated reliably at higher powers. By removing heat and carrier infection close to the facets, the beam pointing stability is improved which is essential in applications requiring outstanding beam control. The yield at chip level is improved because the tolerances of the cavity length are relaxed – precision cleaving is not required. Finally, because heat dissipated in the passive waveguide sections in negligible, the devices can overhang the metal carrier, simplifying packaging and improving yield in back-end processing.

The structure of the semiconductor laser also impacts performance. Designing for high power means using longer devices, as this simplifies heat removal. It is also desirable to use layer designs in which the spot size is increased and the optical overlap with the gain region is reduced.

Results for GaAs/AlGaAs lasers and laser arrays will be presented which combine high-power layer design with integrated passive waveguides. These include wide arrays of single mode lasers delivering 200 mW per element with FIT rates as low as 100 in 109 hours, broad area lasers delivering roll-over powers of 29 W, and bars and stacks delivering pulses of up to 3 kW.

Biography: Professor John H. Marsh is full Professor of Optoelectronic Systems, University of Glasgow, as well as the Dean of Transnational Education responsible for the University of Glasgow UESTC partnership. His formal education took place at the Universities of Cambridge (BA), Liverpool (MEng) and Sheffield (PhD).

He moved to the University of Glasgow in 1986, where he established an internationally leading research group addressing linear and nonlinear integrated optoelectronic systems. After co-founding Intense Ltd in 2000, he was seconded to the Company until 2009 and served as a Board Director until 2011. During this time, Intense developed the world's most advanced integrated laser systems, bringing monolithic laser arrays together with electronic ASICs and optics for precise energy delivery in a range of applications from printing to material processing. He returned to the University of Glasgow full-time in

2009. He was Head of the School of Engineering from 2010-2016, leading the unification of the four departments of the former Faculty of Engineering into a single School.

Professor John H. Marsh has been active in professional societies, particularly the IEEE. After serving as a member of the Board of Governors of the IEEE Lasers and Electro-Optics Society (including two terms as a Vice-President), he was elected President in 2008 and 2009. During this period the Society changed its name to the IEEE Photonics Society. He has served on numerous other IEEE committees, including the Board of Governors of the IEEE Technology Management Council in 2012 and 2013.

Professor John H. Marsh is Fellow of the Royal Academy of Engineering (FREng), Royal Society of Edinburgh (FRSE), Optical Society of America (FOSA), Institute of Electrical and Electronics Engineers (FIEEE), Institution of Engineering and Technology (FIET), Institute of Physics (FInstP), and Royal Society of Arts (FRSA).
His work has included research into the fundamental electrical and optical properties of semiconductors, development of novel optoelectronic devices, processes for creating photonic integrated circuits, integrated mode-locked lasers for ultra-short pulse generation, and the development and manufacturing of high-power laser array products. He has published or presented around 500 papers (including more than 70 invited papers) in international journals and conferences. He holds 16 granted patents.

Plenary Presentation

16:30-17:30 June 15 Plenary Presentation 6
Crystal Hall, floor 5

Title: Hybrid laser precision engineering of functional structures on transparent hard substrates

Speaker: Minghui HONG

Abstract: Laser precision engineering has unique advantages as a non-contact process for advanced manufacturing of high-quality microstructures. In the past decades, we have witnessed its extensive applications from fundamental research to various industrial applications. In this talk, dynamic laser materials interaction will be reviewed. How to minimize the laser processing induced micro-damages is a key challenge for high-quality laser precision engineering, especially in the processing of transparent hard substrates as the direct absorption of laser energy by these substrates is very low. Attributed to nonlinear optical absorption, femtosecond laser direct ablation can achieve the cold processing of these hard transparent substrates. While nanosecond pulse laser's pocketing scanning is an effective way to make high-quality edges on glass substrates though it takes a long time. Laser-induced backside wet etching (LIBWE) can make high-quality microstructures based on laser enhanced chemical etching to remove the transparent substrate materials. Laser-induced plasma assisted ablation (LIPAA) is another feasible means to increase the laser energy absorption for high-quality processing at a high speed. I will also report our recent research results on: 1) CW laser assisted LIPAA to enhance transparent substrate processing speed; 2) Hybrid femtosecond laser LIPAA for high aspect ratio (>10:1) microstructures fabrication and 3) Dual-beam LIPAA fabrication of smooth surface (roughness <30 nm) on sapphire surfaces, which can be used to make functional micro-optics.

Biography: Prof. Minghui HONG specializes in laser microprocessing & nanofabrication. He has co-authored 15 book chapters, 40+ patents granted (4 commercialized), 500+ scientific papers, and given 100+ plenary/keynote/invited talks. He is invited to serve as an Editor of *Light:Science and Applications, Engineering, Science China G, Physics* and *Laser Micro/nanoengineering*, and Executive Editor-in-chief of *Opto-Electronic Advances*. Prof. Hong is Fellow of Academy of Engineering, Singapore (FSEng), Fellow of Optical Society of America (OSA), Fellow of International Society for Optics and Photonics (SPIE), Fellow of International Academy of Photonics and Laser Engineering (IAPLE) and Fellow of Institution of Engineers, Singapore (IES). He is currently a Full Professor, Director of Advanced Research and Technology Innovation Centre (ARTIC) and Director of Optical Science and Engineering Centre (OSEC), National University of Singapore. He spun off Phaos Technology Pte. Ltd. and Opto Science Pte. Ltd. from NUS in 2017 and 2021.

Sessions and Chairs

Session 1: Large Mirror and Telescopes

The conference will focus mainly on design, manufacturing and testing technologies of the large optical telescope and its main components. If you have some ideas on large optical telescopes, such as novel solutions, new designs, new kinds of materials, latest progress or key breakthroughs, you can submit an abstract and the corresponding conference paper to exchange your mind with the other conferees. The 1st session includes 9 topics listed in follows:

- System Technology on Optical Telescope
- Light-weighted Technology of Mirror Blank for Large Optical Telescopes
- Advanced Technology on Design, Manufacturing and Testing for Large Reflective Mirrors
- Design, Manufacturing, Confocal and Cophasing Technology for Large Foldable Mirrors
- Active Optics Technology
- Structure Design and Optics Supporting Technology for Large Optical Telescope
- New Designs, New Materials, and New Solutions which can be applied in Large Optical Telescope System
- Assembling and Adjusting Technology for Large Optical Telescopes
- New Kinds of Optical Telescopes

Chairman/Co-Chairman:

Wenhan JIANG, Academician of Chinese Academy of Engineering, Institute of Optics and Electronics, Chinese Academy of Sciences
Manuel COLLADOS, European Solar Telescope (EST)
Changhui RAO, Institute of Optics and Electronics, Chinese Academy of Sciences
Bin FAN, Institute of Optics and Electronics, Chinese Academy of Sciences
Kai WEI, Institute of Optics and Electronics, Chinese Academy of Sciences

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Cheng hua Hall**	08:30-08:55	Donglin MA	Huazhong University of Science and Technology	Optical design considerations for China 6.5m SSST as well as its scientific instruments	Invited	Zhong LIU
	08:55-09:20	Xiaojun JIANG	National Astronomical Observatories, Chinese Academy of Sciences	Development status and prospects of large aperture optical astronomical telescopes	Invited	
	09:20-09:45	Qi HAO	Nanjing University	2.5m wide-field and high-resolution solar telescope	Invited	
	09:45-10:10	Bin FAN	Institute of Optics and Electronics, Chinese Academy of Science	Manufacturing technologies for Large optics in IOE	Invited	
	10:10-10:30	**Break**				
	10:30-10:50	Baoxu WANG	Institute of Systems Engineering, China Academy of Engineering Physics	Influences of transport mirror pose errors on beam characteristics of the high-power laser facility	Oral	Xiao jun JIANG
	10:50-11:10	Xiaoyu FENG	Beijing Institute of Space Mechanics & Electricity	Optical axis elicitation method of off-axis aspheric mirror	Oral	
	11:10-11:30	Xiya WEI	Institute of Optics and Electronics, Chinese Academy of Science	Comparison on correlation algorithms for solar granulation images	Oral	
	11:30-11:55	Jinlong TANG	Institute of Optics and Electronics, Chinese Academy of Science	Active optics primary mirror support system for the 4 meter telescope	Invited	
	12:00-13:30	**Break**				
	13:30-13:50	Yuliang SHEN	National Astronomical Observatories, Chinese Academy of Sciences	The alignment technology of the 1m off-axis Gregorian system of AIMS Solar Telescope	Oral	Bin FAN

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Cheng hua Hall**	13:50-14:15	Yao MAO	Institute of Optics and Electronics, Chinese Academy of Science	Fractional order method in photoelectric telescope systems	Invited	
	14:15-14:40	Naiting GU	Institute of Optics and Electronics, Chinese Academy of Science	The updated progress on 1.8-m solar telescope CLST-first light and start of commission	Invited	
	14:40-15:05	Yong YAN	Sun Yat-sen University	Technical requirements and key technologies of gravitational wave detection telescope	Invited	
	15:05-15:25	**Break**				
	15:25-15:50	Sheng qian WANG	Institute of Optics and Electronics, Chinese Academy of Science	The cophasing detection technology of telescope with large aperture	Invited	Dong lin MA
	15:50-16:10	Jing LUO	Changchun Institute of Optics, Fine Mechanics and Physics, CAS	Effects of polarization aberrations in an unobscured off-axis space telescope on its PSF ellipticity	Oral	
	16:10-16:35	Xuyang LI	Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences	Spaceborne telescope design and stray light analysis and testing	Invited	
	16:35-16:55	Jiawen LI	Sichuan University	Piston error detection technology for optical sparse aperture system via transfer learning	Oral	
	16:55-17:20	Yu LIU	Yunnan Observatories, CAS	Ground experiment of a 50 mm balloon-borne coronagraph for near space project	Invited	
	17:20-17:45	Zhong LIU	Yunnan Observatories, CAS	Chinese giant solar telescope	Invited	

Session 2: Advanced Optical Manufacturing and Metrology Technologies

Advanced optical manufacturing is a technology utilizing computer and precise machine with the help of optical CAD, digital optical measurement, etc., to manufacture optical components and systems with high efficiency, low cost and high accuracy. Optical metrology is to gain physical quantities (profile, figure and roughness, etc) of the tested object by analyzing and processing optical signals (intensity, phase and polarization, etc). Optical metrology and instrumentation, which are the foundation of modern optical engineering and industry, promote the advancement of optical manufacturing technology. This session focuses on the latest development, breakthrough and the future trend in manufacturing and metrology technologies. This chapter mainly includes the 6 following parts:

- Advanced Optical Manufacturing Technologies
- Design, Manufacturing and Testing of Freeform Surfaces
- Optical Coating and Testing
- Additive Manufacturing
- Ultra-Precision Testing for Full-band Surfaces
- Novel Measuring Technologies and Instruments

Chairman/Co-Chairman:

Qiao XU, China Academy of Engineering Physics
Yifan DAI, National University of Defense Technology
Min XU, Fudan University
Donglin XUE, Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences
Hongchang WANG, British Diamond light source
Ming LI, Institute of High Energy Physics, Chinese Academy of Sciences
Qiuping WANG, University of Science and Technology of China
Jie WANG, Shanghai Advanced Research Institute, Chinese Academy of Sciences
Weiqing ZHANG, Dalian Institute of Chemical Physics, Chinese Academy of Sciences

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Wuhou Hall**	08:30-08:55	Shuai XUE	National University of Defense Technology	Adaptive interferometry for complex optical surfaces	Invited	Ailing TIAN
	08:55-09:20	Xiaohui MENG	Beijing Institute of Space Mechanics & Electricity	Advanced manufacturing technology of aerospace optics under the new situation and task	Invited	
	09:20-09:45	Longxiang LI	Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences	Advanced optical manufacturing technology for large aspheric surface	Invited	
	09:45-10:10	Dong LIU	Zhejiang University	Automatic detection of defects and damage for large aperture optics	Invited	
	10:10-10:30	**Break**				
	10:30-10:55	Ailing TIAN	Xi'an Technological University	Progress in subsurface defect detection for optical components	Invited	Dong LIU
	10:55-11:15	Minheng YE	Institute of Machinery Manufacturing Technology, China Academy of Engineering Physics (CAEP)	A novel nanodiamond/ceria-shell abrasive for enhanced material removal rate in magnetorheological finishing of fused silica	Oral	
	11:15-11:35	Fuzhong BAI	Inner Mongolia University of Technology	Circular fringe center location based on local gradient direction estimation	Oral	
	11:35-11:55	Yuqin WANG	Sichuan University	Analysis on the precision of three-step phase-shifting algorithm for white-Light Interferometry	Oral	
	12:00-13:30	**Lunch**				
	13:30-13:55	Jinlong ZHANG	Tongji University	Research and application of ultra-low loss optical coatings	Invited	Yun ZHANG
	13:55-14:20	Guogan LIU	Shanghai Modern Advanced Ultra Precision Manufacturing Center.ltd	Research on laser polishing technology of silicon materials	Invited	

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Wuhou Hall**	14:20-14:40	Hengxi TIAN	Sichuan University	A method for predicting rapidly the removal function of plasma etching by the jet diagnostic indexes	Oral	
	14:40-15:00	Jingsheng HUANG	Chongqing University	Ultrafast 3D time-stretch microscopy with centimeter-level field-of-view	Oral	
	15:00-15:20	**Break**				
	15:20-15:40	Xiangmin JIANG	Tianjin University	Experimental study on a novel systematic machining process chain for large-aperture ultra-smooth optical surface	Oral	Guogan LIU
	15:40-16:00	Jiwei LANG	Inner Mongolia University of Technology	Measurement to local phase modulation of LCSLM using multi-region synchronous processing of carrier interference fringe	Oral	
	16:00-16:20	Rong GAO	Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences	The structure design and verification of an all-aluminium and all-freeform visible-light imaging	Oral	
	16:20-16:40	Ai LIU	Chongqing University	High speed surface defect detection of mirrors based on ultrafast microscopic imaging	Oral	
	16:40-17:00	Shaoxing MA	Institute of Machinery Manufacturing Technology, China Academy of Engineering Physics (CAEP)	Single point diamond turning of large off-axis parabolic mirror with long focal distance	Oral	
	17:00-17:20	Shenghao YUAN	Institute of Machinery Manufacturing Technology, China Academy of Engineering Physics (CAEP)	Study on the evolution law of comet-shaped defects in magnetorheological polishing	Oral	

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Xindu Hall**	08:30-08:55	Yongqian WU	Institute of Optics and Electronics, Chinese Academy of Science	IOE progress in making x-ray optics	Invited	Fugui YANG
	08:55-09:20	Shanzhi TANG	Institute of High Energy Physics, Chinese Academy of Sciences	A grating heterodyne interferometric measurement method for small roll angle with high-resolution	Invited	
	09:20-09:45	Qiushi HUANG	Tongji University	High-precision X-ray reflective optics for advanced light sources	Invited	
	09:45-10:10	Chuan YANG	Institute of Advanced Science Facilities, Shenzhen	Generation of attosecond pulses at free electron lasers based on X-ray compressor	Invited	
	10:10-10:30	**Break**				
	10:30-10:55	Weijie DENG	Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences	The research of gas cluster ion beam smoothing technology for X-ray reflectors	Invited	Qiushi HUANG
	10:55-11:20	Fugui YANG	Institute of High Energy Physics, Chinese Academy of Sciences	Development of high precision surface profiler with sub-millimeter spatial resolution	Invited	
	11:20-11:40	Yanjun GUO	Kunming University of Science and Technology	Machining approach of freeform optics via Fast tool servo assisted diamond turning	Oral	
	11:40-12:00	Qiaoyu WU	Tongji University	Development of KB focusing mirrors based on stitching interferometry and profile coating	Oral	
	12:00-13:30	**Lunch**				
	13:30-13:55	Xianglong MAO	Xi'an Institute of Optics and Precision Mechanics,Chinese Academy of Sciences	The optical design and fabrication of two all-aluminium freeform imaging telescopes	Invited	
	13:55-14:20	Jinlong ZHANG	Tongji University	Research and application of ultra-low loss optical coatings	Invited	

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Xindu Hall**	14:20-14:45	Qingliang ZHAO	Harbin Institute of Technology	Ultra-precision grinding and accuracy measurement of the hard-brittle thin-walled tubular optics	Invited	Qiang CHEN
	14:45-15:10	Haifeng LIANG	Xi'an Technological University	Filter array and its application in imaging spectrometer	Invited	
	15:10-15:30	**Break**				
	15:30-15:50	Xiaohui HUANG	North University of China	Synchronous microdeformation and first derivative dynamic measurement based on laser shearing speckle interferometry	Oral	Jia WANG
	15:50-16:10	Xiaohong WEI	Research center of laser fusion, China Academy of Engineering Physics	Mid-spatial-frequency wavefront measurement and analysis of lens with long focal-length	Oral	
	16:10-16:30	Aibo WANG	Harbin Institute of Technology	Optimization of pick-feed for slow/fast tool servo	Oral	
	16:30-16:50	Lu ZHANG	University of Shanghai for Science and Technology	Research on the optimization design of the edge reducing for the negative blended lenticulars with high myopia astigmatism	Oral	
	16:50-17:10	Yongcheng PAN	Institute of Machinery Manufacturing Technology, China Academy of Engineering Physics (CAEP)	Simulation and experiment investigation of the grinding marks on ground Fresnel micro-structured mold	Oral	
	08:30-08:55	Shanyong CHEN	National University of Defense Technology	CGHs for optical testing with endless possibilities	Invited	Zhishan GAO

Date	Time	Name	Organization	Title	Remark	Host
June 17, 2021 **Wuhou Hall**	08:55-09:20	Yaowei WEI	China Academy of Engineering Physics	Coating technology for meter-scale transmission mirrors with high comprehensive performance	Invited	
	09:20-09:45	Yiwei HE	Institute of Optics and Electronics, Chinese Academy of Science	Design and fabrication of high-precision computer-generated hologram	Invited	
	09:45-10:10	Yongsheng YAO	Xi'an Institute of Optics and Precision Mechanics,Chinese Academy of Sciences	Investigation of wheel polishing technology based on industrial robot	Invited	
	10:10-10:30	**Break**				
	10:30-10:55	Yunfeng PENG	Xiamen University	Precessions polishing technology with flexible sub-size tool for precision optical components	Invited	Qing liang ZHAO
	10:55-11:15	Jianpeng CUI	Chengdu Fine Optical Engineering Research Center	Mid-spatial frequency error measurement of large aperture long-focal-length lens using computer-generated hologram	Oral	
	11:15-11:35	Jiawei LI	Institute of Machinery Manufacturing Technology, China Academy of Engineering Physics (CAEP)	Hyperbolic ion trap rod fabricated using precision turning method	Oral	
	11:35-11:55	Yu ZHANG	Northeast Electric Power University	Two-step phase retrieval approach based on advanced principal component analysis and Lissajous ellipse fitting	Oral	
	12:00-13:30	**Lunch**				
	13:30-13:55	Jing JIANG	University of Electronic Science and Technology of China	Optical non-contact temperature measurement of turbine blades of aero-engine	Invited	Shan yong CHEN

Date	Time	Name	Organization	Title	Remark	Host
June 17, 2021 **Wuhou Hall**	13:55-14:20	Ruisheng WANG	Shenyang Academy of Instrumentation Science co., Ltd, HB Optical	The development of six channel Quantitative Real-time PCR filter sets for nucleic acid detection	Invited	
	14:20-14:45	Deping YU	Sichuan University	Application of atmospheric plasma etching technology in optical processing	Invited	
	14:45-15:05	Yibin CAI	Nanjing University of Aeronautics and Astronautics	Surface characteristics formed in the nanosecond pulsed laser machining of RB-SiC	Oral	
	15:05-15:30	**Break**				
	15:30-15:50	Yifan WANG	Tongji University	Machining process of lightweight AlSi10Mg optical mirror based on additive manufacturing substrate	Oral	Yunfeng PENG
	15:50-16:10	Xiaoyuan LI	Institute of Machinery Manufacturing Technology, China Academy of Engineering Physics (CAEP)	Enhancing the anti-oxidation capability of the magnetorheological finishing fluid by using organic surfactancts	Oral	
	16:10-16:30	Yi ZHOU	Chongqing University	Over-sampling nano-sensitive optical coherence tomography to detect corneal structural changes in cross-linking treatment	Oral	
	16:30-16:50	Ming zhuang ZHANG	Chengdu Fine Optical Engineering Research Center, Laser fusion research center	Investigation on surface figure control technology of medium-aperture optical component based on double-sided polishing	Oral	

Session 3: Micro/Nano Optics

This session refers to the study of various novel behaviors and features of light and electromagnetic waves at subwavelength scale, including the generation, propagation, modulation, conversion and detection of light. The main research objective of this conference is to manipulate and control photons at micro/nano-meter scale, and develop optical devices with all-optical integration, small footprint, high integration, fast speed and low-energy consumption, which could provide physical platform and technical support for the next-generation optics. The goal of this session is to exchange recent development and breakthrough in the micro/nano-optics and integrated optoelectronics, including the fundamental physics, the device design and fabrication, and the novel applications. This session mainly includes seven parts:

- Super-resolution Imaging and High Sensitivity Sensing
- Plasmonics
- Meta-surfaces and Flat Optics
- Nonlinear Optics, Quantum and Topological Photonics
- Sub-wavelength Electromagnetics
- Digital Optics and Fabrication of Optical Field Manipulation Devices
- Integrated Optics

Chairman/Co-Chairman:

Songlin ZHUANG, Academician of Chinese Academy of Engineering, University of Shanghai for Science and Technology
Xiaodi TAN, Fujian Normal University
Ting XU, Nanjing University
Zheyu FANG, Peking University
Ya CHENG, East China Normal University
Shuangchun WEN, Hunan University

Date	Time	Name	Organization	Title	Remark	Host
	08:30-08:55	Yan ZHANG	Capital Normal University	Terahertz metasurface devices for multi-parameters modulation	Invited	Xiaodi TAN

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Jinniu Hall**	08:55-09:20	Guoxing ZHENG	Wuhan University	Research on resonant metasurfaces and related novel optical meta-devices	Invited	
	09:20-09:45	Cheng ZHANG	Huazhong University of Science and Technology	High-performance nanophotonic devices enabled by ultra-thin, smooth, and low-loss doped silver	Invited	
	09:45-10:10	Xiao LIN	Fujian Normal University	Super-resolution computing phase imaging method in holographic data storage	Invited	
	10:10-10:30	**Break**				
	10:30-10:55	Lei LI	Sichuan University	Zoom liquid lens and its application in imaging system	Invited	Jianwen DONG
	10:55-11:20	Zheyu FANG	Peking University	Deep subwavelength control of circularly polarized light by using cathodoluminescence microscopy	Invited	
	11:20-11:45	Maowen SONG	Nanjing University	Using dynamic plasmonic colors for high density data storage and kaleidoscopic cryptography	Invited	
	11:45-12:05	Shujun ZHENG	Fujian Normal University	A new method for generating hybrid vector beam based on polarization holography	Oral	
	12:05-13:35	**Lunch**				
June 16, 2021 **Jinniu Hall**	13:35-14:00	Jianwen DONG	Sun Yat-Sen University	Micro-nano topological photonics	Invited	Tao LI
	14:00-14:25	Shulin SUN	Fudan University	Generating surface plasmons of complex wavefront and polarization with metasurfaces	Invited	
	14:25-14:50	Yan LIU	Xidian University	The bound states in the continuum in all-dielectric metasurfaces	Invited	
	14:50-15:15	Xin XIE	Northwestern Polytechnical University	Generalized Pancharatnam-Berry phase in rotationally symmetric meta-atoms	Invited	
	15:15-15:35	**Break**				
	15:35-16:00	Tao LI	Nanjing University	Large scale achromatic flat lens	Invited	Xiang ping LI
	16:00-16:25	Wei WANG	Sichuan University	Exploring light-matter interaction at nanoscale in plasmonic nanostructures	Invited	
	16:45-17:05	Dong ZHAO	University of Science and	Bio-inspired photonic masquerade with perturbative metasurfaces	Oral	

Date	Time	Name	Organization	Title	Remark	Host
			Technology of China			
June 17, 2021 **Jinniu Hall**	08:30-08:55	Tun CAO	Dalian University of Technology	Optical sorting of sub-10 nm chiral entities using non-chiral metasurface	Invited	Hailu LUO
	08:55-09:20	Yueqiang HU	Hunan University	Dielectric metasurfaces driven by extreme micro-nano fabrication	Invited	
	09:20-09:45	Kun HUANG	University of Science and Technology of China	Ultraviolet metasurfaces	Invited	
	09:45-10:10	Mengxin Ren	Nankai University	Lithium niobate metasurfaces—A new choice for nonlinear optics	Invited	
	10:10-10:30	**Break**				
	10:30-10:55	Jie ZHANG	Chongqing University	Preparation method and Raman enhancement properties of structured SERS substrates	Invited	Tun CAO
	10:55-11:15	Ziheng QIAN	University of Shanghai for Science and Technology	Dielectric bifocal metalens with adjustable circularly polarization of emergent light	Oral	
	11:15-11:35	Ruonan JI	Northwestern Polytechnical University	Chirality-Assisted metasurfaces for spin-decoupled and quasi-non-dispersive phase modulation	Oral	
	12:00-13:30	**Lunch**				
	13:30-13:55	Hailu LUO	Hunan University	Optical differential operation and image edge detection based on dielectric metasurfaces	Invited	Qin CHEN
	13:55-14:20	Xiaojun XIE	Southwest Jiaotong University	High performance integrated optoelectronic chip for microwave photonics	Invited	
	14:20-14:45	Ruiqi DUAN	West China Second University Hospital, Sichuan University	A novel label-free biosensor for detection of HE4 in urine based on localized surface plasmon resonance and protein G directional fixed	Invited	
	14:45-15:05	Yurong LI	Chongqing University	Super-resolution metalens of super-dispersion in THz regime	Oral	
	15:05-15:25	Jianxin XI	Anhui Normal University	Unidirectional excitation of UV surface plasmons by	Oral	

Date	Time	Name	Organization	Title	Remark	Host
				asymmetric nano-slit cavity assisted with a nano-grating		

Session 4: Advanced and Extreme Micro-Nano Manufacturing Technology

Micro-nano manufacturing technology plays an important role in fabricating opto-electronic chips, micro-sensors, micro-actuators and functional micro-nano systems. This session focuses on advanced and extreme micro-nano manufacturing technologies, including micro-nano optical lithography, direct writing lithography, 3D printing, flexible manufacturing, nano-imprinting, laser processing and cleaning, novel micro/nano-manufacturing and processing technologies etc. The relevant investigations could be the novel principles, methods, equipments, processes and materials. The goal of this session is to bring together the leading academic researchers to share their achievements and cutting edge results on the aspects above of novel manufacturing technologies, and to discuss and preview future developments and applications.

- Laser Processing and Cleaning
- 3D Additive Manufacturing, 3D Lithography
- Super-Resolution Optical Lithography and Processing
- Flexible Micro/Nano- Manufacturing
- Ultraviolet, Deep & Extreme Ultraviolet Lithography
- Electron Beam, Ion Beam and Laser Direct Writing Lithography
- Novel Micro/Nano- Manufacturing and Processing Technologies
- Nano-imprint Technologies

Chairman/Co-Chairman:

Bingheng LU, Academician of Chinese Academy of Engineering, Xi 'an Jiaotong University

Yayi WEI, Institute of Microelectronics, Chinese Academy of Sciences

Xuanming DUAN, Jinan University

Zheng CUI, Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences

Xiangchao WANG, Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences

Song HU, Institute of Optics and Electronics, Chinese Academy of Sciences

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Qing yang Hall**	08:30-08:55	Zheng CUI	Suzhou Institute of Nano-tech and Nano-bionics, Chinese Academy of Sciences	Additive manufacturing by printing for flexible electronics	Invited	Hong zhong LIU
	08:55-09:20	Yanlin SONG	Institute of Chemistry, Chinese Academy of Sciences	Green printing technology for manufacturing functional devices	Invited	
	09:20-09:45	Shisheng XIONG	Fudan University	Directed self-assembly of block copolymers for sub-10nm fabrication	Invited	
	09:45-10:10	Meiling ZHENG	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	Breaking the optical diffraction limit in cross-scale manufacturing by using maskless optical projective lithography	Invited	
	10:10-10:30	**Break**				
	10:30-10:55	Changsi PENG	Soochow University	Epitaxial growth of nanostructure arrays induced by laser patterning	Invited	Zheng CUI
	10:55-11:20	Xueqing LIU	Jilin University	Femtosecond laser assisted etching for micro-optics applications	Invited	
	11:20-11:45	Ran JI	GremanLitho	Industrial application of nano-imprint in the production of micro - nano optical devices	Invited	
	11:45-12:05	Chunsan DENG	Huazhong University of Science and Technology	4D printing of light-driven soft actuators assembled with different unit structures	Oral	
	12:05-13:30	**Lunch**				
	13:30-13:55	Gang CHEN	Chongqing University	Vectorial super-resolution optical field devices and characterization technique	Invited	Xuan ming DUAN
	13:55-14:20	Hui GAO	Huazhong University of Science and Technology	Silicon Nitride based functional metasurface devices in the visible range	Invited	
	14:20-14:45	Dongshi ZHANG	Shanghai Jiao Tong University	Ultrafast laser ablation of semiconductor and metal materials	Invited	
	14:45-15:10	Lingfei JI	Beijing University of Technology	Regulation of ultrafast laser filamentation in transparent material for precision processing	Invited	
	15:10-15:30	**Break**				

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Qing yang Hall**	15:30-15:55	Hongzhong LIU	Xi'an Jiaotong University	Multiphysical-Fields constrained and assisted manufacturing technologies for nano/microstructured surface and interface	Invited	Song HU
	15:55-16:20	Kaichen XU	Zhejiang University	Laser manufacturing of fully soft materials-based tilt sensor and system integration	Invited	
	16:20-16:45	XinQuan ZHANG	Shanghai Jiao Tong University	"5+" axis ultra-precision cutting technology for generation of multi-scale optical micro structure	Invited	
	16:45-17:05	Chong XIE	Xi'an Jiaotong University	Numerical modeling of powder stream in extreme high-speed linear laser material deposition	Oral	
	17:05-17:25	Meiyi WU	Institute of Advanced Science Facilities, Shenzhen	Novel EUV Lithography photomask absorber candidates	Oral	

Date	Time	Name	Organization	Title	Remark	Host
June 17, 2021 **Qing yang Hall**	08:30-08:55	Huigao DUAN	Hunan University	Extending the capability of lithography with mechanical processes	Invited	Shisheng XIONG
	08:55-09:20	Yifang CHEN	Fudan University	Applications of 3D greyscale electron beam lithography	Invited	
	09:20-09:45	Dongxu YANG	Institute of Optics and Electronics, Chinese Academy of Science	E-beam and EUV lithography with a fullerene-platinum coordination complex	Invited	
	09:45-10:10	Yang LI	Sichuan University	Functional micro-optical elements fabrication by ultrafast laser	Invited	
	10:10-10:30	**Break**				
	10:30-10:55	Dacheng WANG	Microsystem and Terahertz Research Center, China Academy of Engineering Physics	Physical analysis and emerging fabrication of dielectric meta-structures for terahertz wave manipulation	Invited	Yifang CHEN

Date	Time	Name	Organization	Title	Remark	Host
June 17, 2021 **Qing yang Hall**	10:55-11:20	Zongsong GAN	Huazhong University of Science and Technology	Research progress of far-field dual-beam super-resolution lithography	Invited	
	11:20-11:40	Litian ZHANG	Beijing University of Technology	Influence of the laser cavitation dynamics on hard bone tissue ablation with Ho:YAG laser underwater	Oral	
	11:40-12:00	Keyan WANG	Xi'an Jiaotong University	A novel rota table inner_surface laser cladding method	Oral	
	12:00-13:30	**Lunch**				
	13:30-13:55	Zhengfen WAN	University of Shanghai for Science and Technology	Laser direct-writing graphene and its applications	Invited	Huigao DUAN
	13:55-14:20	Zuyong WANG	Hunan University	New insights and return of a forgotten technique: Laser engineering in future healthcare applications	Invited	
	14:20-14:45	Zhennan TIAN	Jilin University	3D waveguide preparation by femtosecond laser direct writing	Invited	
	14:45-15:10	Kaihu ZHANG	China Academy of Space Technology	Progress in laser processing of fiber composite materials and their application prospects in aerospace applications	Invited	
	15:10-15:30	**Break**				
	15:35-16:00	Tian YANG	Shanghai Jiao Tong University	Plasmonic sensors on fiber tips	Invited	Zong song GAN
	16:00-16:20	Yuqing DONG	Sichuan University	Morphology regulation mechanism of microwave plasma micro jet for etching Si-based materials	Oral	
	16:20-16:40	Wentao JIA	Changchun University of Science and Technology	Modulation of polarized vector field by lithography system	Oral	
	16:40-17:00	Xuhao FAN	Huazhong University of Science and Technology	Fabrication of 3D nano-wrinkled architectures via ultrafast laser direct writing	Oral	
	17:00-17:20	Tengda DI	Dalian University of Technology	Microstructure and properties of FeCoNiCrAl high-entropy alloy coating by directed laser deposition	Oral	

Date	Time	Name	Organization	Title	Remark	Host
June 17, 2021 **Long quan Hall**	08:30-08:55	Yang ZHAO	Beijing Institute of Technology	laser direct writing technology in energy storage devices	Invited	Wei XIONG
	08:55-09:20	Gaofeng LIANG	Chongqing University	Recent progress in evanescent wave-based photolithography	Invited	
	09:20-09:45	Zongwei XU	Tianjin University	Atomic scale defects in wide band gap semiconductors: Fabrication and spectral characterization	Invited	
	09:45-10:10	Liang WANG	University of Science and Technology of China	Microsphere-assisted plasmonic lithography	Invited	
	10:10-10:30	**Break**				
	10:30-10:55	Wei XIONG	Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology	Ultrafast laser induced synthesis, assembly and 3D structuring of semiconducting nanomaterials	Invited	Yang ZHAO
	10:55-11:20	Wenhao LI	Changchun Institute of Optics, Fine Mechanics and Physics, CAS	Large area nanometer precision diffraction gratings manufacturing technology	Invited	
	11:20-11:40	Huaiyu CUI	Harbin Institute of Technology	Micro/nano-structures induced by capillary discharged extreme ultraviolet laser on various materials	Oral	
	11:40-12:00	Chenchen SONG	Dalian University of Technology	Microstructure and mechanical properties of Ti6Al4V/Inconel718 functionally graded materials by direct laser deposition	Oral	
	12:00-13:30	**Lunch**				

Session 5: Novel Opto-electronic Materials and Devices

This session mainly focuses on the electromagnetic and acoustic manipulation theories, methods and applications based on subwavelength structures. In traditional methods, the manipulation of waves is mainly realized by bulky materials, which relies on a curved shape, and thus hard to be light-weighted and compactable. Besides, the traditional materials can hardly realize multifunctional manipulation of waves, such as controlling the amplitude, phase distribution and polarization at the same time. Due to the extraordinary characteristics of metamaterials and metasurfaces, the manipulation methods of the objects have been greatly expanded, and the all-vector control is realized. The amplitude, phase and polarization can be simultaneously controlled by properly designing the unit cells of the metamaterials or metasurfaces. The novel applications of the electromagnetic and acoustic materials that used to be hard to realize have also been constructed, such as planar lenses, beam deflectors, and OAM generators, etc.

- Applications and Technologies of Metamaterials and Metasurfaces
- Novel Acoustic Materials
- Novel Opto-electronic Devices
- Novel Opto-electronic Effect
- Novel Electromagnetic Material

Chairman/Co-Chairman:

Zhuo XU, Xi 'an Jiaotong University
Jihong WEN, National University of Defense Technology
Xinbin CHENG, Tongji University
Qing ZHAO, University of Electronic Science and Technology of China

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Long quan Hall**	08:30-08:55	Zhigang ZANG	Chongqing University	High efficient WLEDs based on inorganic perovskite nanocrystals for visible light communication	Invited	Zhuo XU
	08:55-09:20	Yijia HUANG	Sichuan Normal University	Polarization-dependent metasurfaces achieving multifunctional electromagnet manipulations	Invited	

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Long quan Hall**	09:20-09:45	Xiaoping HUANG	University of Electronic Science and Technology of China	Anisotropic optical properties of the nanostructured metal gratings	Invited	
	09:45-10:10	Dongliang TANG	Hunan University	Light modulations and applications of the micro/nano structures	Invited	
	10:10-10:30	**Break**				
	10:30-10:55	Baidenger Agyekum TWUMASI	University of Electronic Science and Technology of China	Electromagnetic time reversal super resolution microwave wireless power transfer to sensors embedded in concrete	Invited	Jihong WEN
	10:55-11:15	Yue WU	Hebei University of Technology	FDTD model of thin film structure applied in optoelectronic devices	Oral	
	11:15-11:35	Lvhan XU	University of Electronic Science and Technology of China	Large-aperture liquid crystal lens spliced by rectangular aperture liquid crystal lens array	Oral	
	11:35-11:55	Jingjing HE	Wuhan University	Spectral-domain asymptotics for electromagnetic scattering from a point-source excitation target coated with a uniaxial electric anisotropic medium based on physical optics	Oral	
	12:00-13:30	**Lunch**				
	13:30-13:55	Min WANG	Northwestern Polytechnical University	Study of a metasurface-based multi-functional polarization converter	Invited	Xinbin CHEN
	13:55-14:20	Jiafu WANG	Air Force Engineering University	Dispersion engineering of spoof surface plasmon polaritons	Invited	
	14:20-14:45	Hongxing ZHENG	Hebei University of Technology	Electromagnetic interference analysis and suppression methods of power distribution network in three-dimensional packaging system	Invited	

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Long quan Hall**	14:45-15:10	Shaolin ZHOU	South China University of Technology	Active photonic and optoelectronic integrated devices enabled by integration of phase change materials	Invited	
	15:10-15:30	**Break**				
	15:30-15:55	Jialin LI	University of Electronic Science and Technology of China	Recent study on holographic artificial impedance surface (HAIS) at UESTC	Invited	Qing ZHAO
	15:55-16:20	Haibin ZHANG	Institute of Optics and Electronics, Chinese Academy of Science	Research on the self-assembly techniques and the Pproperties of optical metamaterials with disordered structures	Invited	
	16:20-16:45	Jiaqi WANG	Sun Yat-Sen University	Self-powered optical system enabled by triboelectric nanogenerators towards wireless sensing, color-tunable lighting and smart window applications	Invited	
	16:45-17:10	Jie ZHENG	Sichuan Normal University	The modulation of SPR properties based on high-quality Al nanostructures	Invited	
	17:10-17:30	Liyifei XU	University of Electronic Science and Technology of China	Perovskite/Silicon tandem solar cell: Surface recombination analysis	Oral	
	17:30-17:50	Weibo LIANG	Hebei University of Technology	Simulation of frequency selective structures with the hybrid implicit explicit single field FDTD method	Oral	
	17:50-18:10	Lianghong YAN	Chengdu Fine Optical Engineering Research Center, Laser fusion research center	Sol-gel silica antireflection coatings with high laser damage thresholds	Oral	

Session 6: Intelligent Sensing and Applications

With the development of artificial intelligence technology, intelligent sensing technology has attracted wide attention. The continuous breakthroughs in material science and device technology promote the rapid development of intelligent sensing technology. At present, intelligent sensing technology is widely used in information technology, intelligent display, optical communication and rail transit, etc. This topic mainly focuses on the science, technology and application of intelligent sensing, covering interdisciplinary fields such as Photodetecting Devices and Systems, Optical Waveguide and Optical Fiber Sensing, Non-destructive Testing and Sensing Technology, Sensing Technology and Applications of Advanced LiDARs, Intelligent Sensing Technology for Rail Transport and Intelligent Information Processing for Computer Vision, etc. Relevant researchers are welcome to join the session, show the latest research results, and jointly discuss and prospect the future research trends.

- Photodetecting Devices and Systems
- Optical Waveguide and Optical Fiber Sensing
- Non-destructive Testing and Sensing Technology
- Sensing Technology and Applications of Advanced LiDARs
- Intelligent Sensing Technology for Rail Transport
- Intelligent Information Processing for Computer Vision

Chairman/Co-Chairman:

Yadong JIANG, University of Electronic Science and Technology of China
Tao ZHU, Chongqing University
Bo QI, Institute of Optics and Electronics, Chinese Academy of Sciences
Kaichen XU, Zhejiang University
Chao WANG, University of Electronic Science and Technology of China

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Jin jiang Hall**	08:30-08:55	Yongkang DONG	Harbin Institute of Technology	High-performance distributed Brillouin optical fiber sensing	Invited	Yadong JIANG
	08:55-09:20	Feng WANG	Nanjing University	Enlarging dynamic strain range in UWFBG array based φ-OTDR assisted with polarization signal	Invited	

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Jin jiang Hall**	09:20-09:45	Leiting PAN	Nankai University	Cell imaging and manipulation at the nano/micro-scale	Invited	
	09:45-10:10	Min ZHANG	Peking University	High definition distributed acoustic sensing system	Invited	
	10:10-10:30	**Break**				
	10:30-10:55	Fumin ZHANG	Tianjin University	Precise distance measurement technology based on micro-comb	Invited	Tao ZHU
	10:55-11:20	Qitao ZHOU	China University of Geosciences, Wuhan	Materials and devices for low energy consumption detection	Invited	
	11:20-11:40	Jindong WANG	Chongqing University	A novel ultrafast interrogation method of FBG sensors	Oral	
	11:40-12:00	Xi LUO	Kunming University of Science and Technology	Application of optical testing method in human motion capture	Oral	
	12:00-13:30	**Lunch**				
	13:30-13:55	Xiaodong WU	University of California, Berkeley	Flexible sensors and electronic skins	Invited	Kaichen XU
	13:55-14:20	Dongyi CHEN	University of Electronic Science and Technology of China	Smart wearable and healthcare	Invited	
	14:20-14:45	Xi PENG	Sichuan University	Recent developments in image restoration	Invited	
	14:45-15:10	Mengdi HAN	Peking University	Soft, 3D microsystems for biomedicine	Invited	
	15:10-15:30	**Break**				
	15:30-15:55	Haojie ZHANG	Beijing University of Posts and Telecommunications	Functionalized optical fiber platforms for integrated nanosheet materials	Invited	

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Jin jiang Hall**	15:55-16:20	Jiulin GAN	South China University of Technology	Flexible optical fiber fluorescence sensor	Invited	Chao WANG
	16:20-16:45	Rong SU	Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences	Advances in interference microscopy for surface topography measurement	Invited	
	16:45-17:10	Yuan GONG	University of Electronic Science and Technology of China	Optofluidic laser biosensors	Invited	
	17:10-17:30	Xiaofeng XU	Changchun University of Science and Technology	Convolutional neural networks with nanophotonic circuits	Oral	
	17:30-17:50	Shuhao CAI	Nanjing University of Science and Technology, ITMO University	Fiber Mach-Zehnder interferometers fabricated by nanosecond pulsed laser and refractive index sensing applications	Oral	
	17:50-18:10	Ao YANG	Beijing Institute of Technology	Interested region selection and super-resolution reconstruction of depth image for scanning lidar	Oral	

Date	Time	Name	Organization	Title	Remark	Host
June 17, 2021 **Jin jiang Hall**	08:30-08:55	Yiming ZHU	University of Shanghai for Science and Technology	Spintronic based ultrabroadband terahertz emitters: from fundamentals to applications	Invited	Yong kang DONG
	08:55-09:20	Weili ZHANG	University of Electronic Science and Technology of China	Imaging applications based on multimode fiber mediate lasers	Invited	
	09:20-09:45	Guolu YIN	Chongqing University	Optical fiber distributed shape sensing technology	Invited	
	09:45-10:10	Guoqing WANG	Southern University of Science and Technology	Ultrafast contactless sensing with remotely placed optical fiber sensors based on in-fiber grating	Invited	
	10:10-10:30	**Break**				

Date	Time	Name	Organization	Title	Remark	Host
June 17, 2021 **Jin jiang Hall**	10:30-10:55	Biqiang JIANG	Northwestern Polytechnical University	Optical fiber microstructure-integrated devices for optical modulation and sensing applications	Invited	Rong SU
	10:55-11:20	Yidong TAN	Tsinghua University	Frequency-shifted laser feedback interferometry: principles and typical applications	Invited	
	11:20-11:40	Yi ZHANG	National University of Defense Technology	Noble gas relaxation time measurement in the operation mode of NMR gyro	Oral	
	11:40-12:00	Ye YUAN	University of Electronic Science and Technology of China	The spectral diagnosis of a plasma synthetic jet actuator	Oral	
	12:00-13:30	**Lunch**				
	13:30-13:55	Chao WANG	University of Electronic Science and Technology of China	Optical non-contact stress and strain measurement of aero-engine's turbine blade	Invited	Bo QI
	13:55-14:20	Guiyun TIAN	University of Electronic Science and Technology of China	Electromagnetic/optical thermography detection methods and applications	Invited	
	14:20-14:45	Changrui LIAO	Shenzhen University	Femtosecond laser fabrication and applications of optical fiber microstructured devices	Invited	
	14:45-15:10	Ruohui WANG	Northwest University	Two-dimensional vector accelerometer based on special fiber bragg grating	Invited	
	15:10-15:30	Jinyang LIN	Institute of Optics and Electronics, Chinese Academy of Science	Research on line-of-sight stabilization control for servomechanism tracking system based on moving platform using sensor fusion technology	Oral	

Forum 1: Laser Intelligent Manufacturing Summit Forum (in Chinese)

As the main application direction of laser technology, laser processing technology plays the irreplaceable role and leads the development of laser technology in the fields of rail transit, nuclear power, automobile, battery, electronic product and healthcare, etc. Guided by the national strategy of upgrading "manufacturing" to "intelligent manufacturing", how to realize the automation and intelligence of laser processing equipment and how to build the intelligent manufacturing system of laser processing industry are demanding prompt solution. This forum mainly focuses on the processing intelligent technology and development of high-end equipment for laser welding, laser additive manufacturing and remanufacturing, laser cleaning, laser shock peening and laser micro/nano manufacturing, etc. It mainly focuses on the laser intelligent manufacturing technology, covers the important progress of the laser industry from multiple perspectives, and deeply interprets the development trend of laser intelligent manufacturing industry.

- The Development Trend of Laser Processing Technology
- Laser Intelligent Manufacturing Technology
- Laser Intelligent Manufacturing of High-end Equipment
- Opportunities and Development of Laser Smart Manufacturing Industry

Chairman/Co-Chairman:

Hui CHEN, Southwest Jiaotong University
Minghui HONG, Fellow of Singapore Academy of Engineering, National University of Singapore
Bo GU, Chinese Optical Society

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Shufeng Hall**	08:30-08:40	Bo GU		Opening Ceremony		Hui CHEN/ Minghui HONG
	08:40-09:10	Zhuguo LI	Shanghai Jiao Tong University	Research and applications of laser additive manufacturing of new high-strength metal materials	Invited	
	09:10-09:40	Genyu CHEN	Han's Laser/Hunan University	Laser welding of thick plate, 3D cutting, 3D printing and cleaning technology and equipment	Invited	

Date	Time	Name	Organization	Title	Remark	Host
June 16, 2021 **Shufeng Hall**	09:40-10:10	Chunming WANG	Huazhong University of Science and Technology	Laser cleaning process of light alloy surface and its applications	Invited	Hui CHEN/ Minghui HONG
	10:10-10:30	**Break**				
	10:30-11:00	Xin LIN	Northwestern Polytechnical University	Numerical simulation for laser additive manufacturing	Invited	
	11:00-11:30	Shaofeng GUO	HUNAN DK LASER CO., LTD.	High-power single-mode fiber lasers that accelerate high-end laser processing	Invited	
	11:30-12:00	Jian YANG	HALL LASER Com. Ltd.	Welding process study of high-reflectivity metals with blue light semiconductor lasers	Invited	
	12:00-13:30	**Lunch**				
	13:30-14:00	Chengxin LI	Xi'an Jiaotong University	Study on microstructure and properties of typical metal and cermet coatings by ultra high speed laser cladding	Invited	
	14:00-14:30	Lingqiang SUN	Huaray Precision Laser	The development and prospects of ultra-short and ultra-fast laser processing	Invited	
	14:30-15:00	Lei LIU	Tsinghua University	Ultrafast laser nanojoining	Invited	
	15:00-15:20	**Break**				
	15:20-15:50	Chuang CAI	Southwest Jiaotong University	Welding process stability and defects suppression of narrow-gap rotating laser-MIG hybrid welding of thick aluminum alloys	Invited	
	15:50-16:20	Hengyang MO	Wuhan Huagong Laser Engineering Co.,Ltd	Analysis of laser industry development under intelligent manufacturing	Invited	
	16:20-16:50	Yizhe ZHAO	National University of Singapore0	Biomimetic functional interface materials via laser micro/nanoprocessing	Invited	
	16:50-17:20	Wenjing CHEN	Xihua University	Study on microstructure control and fracture mechanism of laser cladding remanufacturing for axles	Invited	

Forum 2: The 4th Opto-Electronic Engineering and Technology Forum (in Chinese)

To promote academic exchanges and technical cooperation in the field of optoelectronics, the Editorial Office of *Opto-Electronic Engineering* plans to hold the 4th Opto-Electronic Engineering and Technology Forum in Chengdu on June 17, 2021, where the excellent editorial board member awards, excellent reviewer awards and excellent author awards will be announced. Moreover, prestigious and established scientists together with young scholars in the field of optoelectronic engineering from China will also be discussing new ideas, technologies and applications in the development of optoelectronic technology, as well as the ideas and thoughts on the development of scientific journals in Chinese.

Date	Time	Name	Organization	Title	Remark	Host
June 17, 2021 **Chenghua Hall**	09:00-09:05		Institute of Optics and Electronics, Chinese Academy of Sciences	Opening Ceremony		
	09:05-09:20	Minghui HONG	National University of Singapore	Report of Opto-Electronics Journal Series		
	09:20-09:30	**Break**				
	09:30-10:00	Lingfei JI	Beijing University of Technology	Ultrafast laser processing of advanced materials	Invited	Minghui HONG
	10:00-10:30	Xiaopeng SHAO	Xidian University	Computational imaging technology and advance	Invited	
	10:30-11:00	Kaichen XU	Zhejiang University	Laser manufacturing of multifunctional flexible sensors & system integration	Invited	
	11:00-11:30	Guoxing ZHENG	Wuhan University	Resonant metasurfaces and novel micro-nano optical meta-devices	Invited	
	11:30-13:30	**Lunch**				
	13:30-14:00	Xueqing LIU	Jilin University	Femtosecond laser processing of hard materials: technologies and applications	Invited	

Date	Time	Name	Organization	Title	Remark	Host
June 17, 2021 **Cheng hua Hall**	14:00-14:30	Xiao LIN	Fujian Normal University	Holographic optical storage technology	Invited	
	14:30-15:00	Jingye CHEN	Zhejiang University	Technical status and development trend of Lidar	Invited	
	15:00-15:30	Mingfeng XU	Institute of Optics and Electronics, Chinese Academy of Sciences	Phase regulation metasurfaces and applications	Invited	