# Tentative Program

## 8th International Conference and Exhibition on

# Lasers, Optics & Photonics

**November 15 -17, 2017 Las Vegas, USA**

# Exemplifying the Prominence of Lasers, Optics and Photonics in today's world

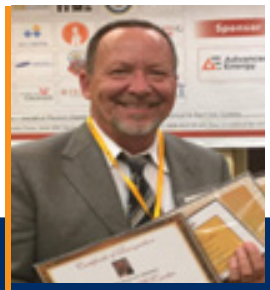
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**Shien-Kuei Liaw**
Professor and Chair
NTUST and Optoelectronic Technology Center, Taiwan



**Jesse A. Frantz**
Researcher
U.S. Naval Research Laboratory, USA

Dr. Frantz received his Ph.D. in Optical Sciences in 2004 from the Optical Sciences Center at The University of Arizona. He has been a research physicist at NRL since 2004 where his research has focused on microstructured optical surfaces and novel thin film materials. He established and manages a vacuum deposition cluster system facility in NRL's Optical Sciences Division used for a variety of projects including the fabrication of advanced, multi-layer thin film devices for optical applications.



**Priyalal Stephen**
Team Leader of II-VI Materials & Devices,
U.S. Army Research Laboratory, USA

Dr. Priyalal S. Wijewarnasuriya received his Ph.D. in Physics from the University of Illinois at Chicago. He was a member of technical Staff at the Rockwell Scientific Center, CA and was dedicated to demonstration of novel, large-format infrared focal plane arrays for tactical and strategic military applications as well as for astronomy using HgCdTe alloy. He is currently leading the development of the next generation of infrared materials and devices at the U.S. Army Research Laboratory (ARL), Adelphi, MD. He is the Team Leader of "II-VI Materials and Devices Team". Dr. Wijewarnasuriya has authored or co-authored over 100 papers in the open technical literature, four book chapters and has presented his work at numerous national and international conferences. Currently, Dr. Wijewarnasuriya serves as a member of the organizing Committee for two international conferences in the infrared technology area.



**John G. Ekerdt**
Associate Dean for Research
University of Texas at Austin, USA

John G. Ekerdt earned his PhD from the Univerisity of California, Berkeley in 1979. He is currently Associate Dean for Research in Engineering and the Dick Rothwell Endowed Chair in Chemical Engineering at the University of Texas at Austin. He has more than 300 refereed publications, two books and seven U.S. patents. Current research interests focus on the surface, growth and materials chemistry of metal, dielectric and perovskite films and nanostructures by developing and understanding the reactions and chemistry that control nucleation and growth of films and nanostructures.



**Simon Fafard**
President at Azastra Opto Inc and Prof. at uSherbrooke, Canada

Simon is focused on optoelectronic at uSherbrooke and is President at Azastra, a corporation supplying laser power converter products based on the new VEHSA technology. He has an h-index of 45 and is the inventor of over 30 patents. He raised over $20M of private and venture capital funding and also obtained numerous research grants. He led Cyrium to become a manufacturer of one of the highest performance multijunction III-V solar cells and led Azastra to manufacture the highest performance phototransducer products. As an entrepreneur he cumulates over 25 years of experience in Optoelectronics and Photonics while developing and commercializing numerous devices and products in the industry at Azastra, Aton, Cyrium, Alcatel Optronics, Kymata, and also in research labs at uSherbrooke, NRC, and UCSB.



**Hideyoshi Horimai**
Chief Technology Officer
Egarim Co. Ltd., Japan

Hideyoshi Horimai has received his PhD from The University of Tokyo. In 1998 he has invented the original holographic storage technology, so-called Collinear Holography, its disk format was approved at world first International Standard as "HVD" in 2007. His other developments were Holographic 3D-Image Printer System, 360-degree 3D Display, Digital Holographic Microscope, and Holographic Window for BIPV. Publishes dissertation more than 100 (invited paper over 20, maximum citation was 216 times, this paper ranked No. 8th in the recent 10 years citations Top15 in OSA, the cooperation to write books 7, public patent more than 300 in the world.

Dr. Douglas R McCarter, Dhc, is the Technical Integrator of McCarter Machine & Technology Inc. , founded in 1981. McCarter' s patented and proprietary silicon processes achievements were documented by published technical papers and over 50 oral presentations. In turn, McCarter has won many awards, mentioned in Forbes.com, Kiplinger Letter, Entrepenuer.com, Nasa Tech Briefs, Missile Defense Briefs Open and Classified, and recognized as the current world expert in precision silicon components. McCarter has served as member of editorial staff of Advanced Optical Technology, in Munich Germany since 2012. In 2016, Dr. Babin, Congressman District 37 and leader of Nasa Committee endorsed McCarter' s development of McCarter Silicon Space Systems. In addition to over 3000 hours of Technical Schools, McCarter has been directly mentored by the late Frank Anthony, Bell Labs and past 10 years Roger Paquin Perk & Elmer retired Materials Expert.



**Douglas McCarter**
Vice President
McCarter Machine Inc., USA



Nikolay Vasilyev has completed his PhD in 1985 at Physical Faculty of Leningrad State University (now Sain-Petersburg State University, SPbGU). He has continued his postdoctoral studies and researches at Scientific Research Insnitute of Physics of the University. Working knowledge and experience are in three dimensional optical holography, second harmonic generation, electro-optical effect and shutters, strong excitation in semiconductors, time-resolved optical spectroscopy of semiconductors, and diluted magnetic semiconductos. He is a Senior Researcher in Solid State Physics Department at SPbGU. He has about 50 publications, with 20 being published in reputed journals.

**Nikolay Vasilyev**
Researcher
Saint-Petersburg State University, Russia

Kasezawa graduated Shizuoka University in 1984. And he managed many companies of the technical system. He is an inventor of Holo-Window.

2012 he applied a patent of the hologram research and development "stereoimage projection device" . 2013 he applied a patent of the hologram research and development "collecting mechanism, light of the sun electrical generator, window structure and windowpane" .

He won the Best Paper Award with IWH (International Workshop on Holography and Related Technologies) 2015 Okinawa and also IWH2016 Taiwan. His article "Holographic window for solar power generation" was appeared in the Optical Review (2016).



**Toshihiro Kasezawa**
CEO
Egarim Co. Ltd., Japan



Ching Eng Jason PNG completed his PhD at the age of 30 years from Surrey University and MBA from INSEAD and Tsinghua. He is the director of Electronics & Photonics Department, Institute of High Performance Computing (IHPC) A*STAR, a premier organization. He published more than 90 papers in reputed journals, conferences, books, and book chapters. He is President and Founding Chair for URSI Singapore Committee, SPIE Photonics West Committee member, and also serves as topic editor for Frontiers in Physics and Taylor CRC Press. Funded by INSEAD, Singapore Government and investors, Jason started up A*STAR' s first silicon photonics spin-off company Optic2connect offering end-to-end solutions for telecoms and datacenters.

**Dr Ching Eng Jason**
Director
IHPC, A*STAR, Singapore

Manijeh Razeghi is the Walter P. Murphy Professor of Electrical Engineering at Northwestern University and Director of the Center for Quantum Devices, which she founded in 1991 after a successful 10-year career as the Director of Exploratory Materials at Thomson-CSF, France. She is one of the leading scientists in the field of semiconductor science and technology, having pioneered the development and implementation of major modern epitaxial techniques. Her current research interest is in nanoscale optoelectronic quantum devices from deep-UV up to terahertz. At Northwestern University she has commercialized aluminum-free pump lasers, developed type-II superlattices for next generation infrared imagers (an area in which she holds key patents), and currently holds most of the quantum cascade lasers records for high power and tunability. She has authored 18 books, 31 books chapters, and more than 1000 journal publications. She is editor, associate, and board member of many journals, including Nano Science and Nano technology. Her awards include the IBM Europe Science and Technology Prize, the SWE Lifetime Achievement Award, the R.F. Bunshah Award, the IBM faculty award, Jan Czochralski Gold Medal, and many best paper awards. She is a fellow of SWE, SPIE, IEC, OSA, APS, IOP, IEEE, and MRS.



**Manijeh Razeghi**
Director, Center for Quantum Devices Northwestern University, USA

**Program at a Glance**

## Day 1

| | | |
|---|---|---|
| **Reception/Registration** | **08.00-09.00** | |
| | **Time** | **General Session** |
| Least of 3 Keynote/Plenary Talks | 09.00-09.15 | Inaugural Address |
| | 09.15-09.45 | Keynote/Plenary Talk 1 |
| | 09.45-10.15 | Keynote/Plenary Talk 2 |
| | 10.15-10.45 | Keynote/Plenary Talk 3 |
| Panel Discussions/Group Photo | | |
| **Coffee/Tea Break 10.45-11.00 (Networking)** | | |
| 11.00-12.40 | | 5 Speakers (20 Mins Each) |
| | | |
| **Lunch Break 12.40-13.30** | | |
| 13.30-15.30 | | 6 Speakers (20 Mins Each) |
| | | |
| **Coffee/Tea Break 15.30-15.45 (Networking)** | | |
| 15.45-17.25 | | 5 Speakers (20 Mins Each) |

Morning Sessions / Evening Sessions

19 Speakers for **Day 1**

## Day 2

| | **Time** | **Session 1** | **Session 2** |
|---|---|---|---|
| 09.00-10.40 | | 5 Speakers (20 Mins Each) | 5 Speakers (20 Mins Each) |
| | | | |
| **Coffee/Tea Break 10.40-10.55 (Networking)** | | | |
| 10.55-12.35 | | 5 Speakers (20 Mins Each) | 5 Speakers (20 Mins Each) |
| | | | |
| **Lunch Break 12.35-13.25** | | | |
| **13.25-15.05** | | **5 Speakers (20 Mins Each)** | **5 Speakers (20 Mins Each)** |
| Poster Sessions | | | |
| **Coffee/Tea Break 15.05-15.20 (Networking)** | | | |
| **15.20-17.00** | | **5 Speakers (20 Mins Each)** | **5 Speakers (20 Mins Each)** |

Morning Sessions / Evening Sessions

40 Speakers on **Day 2**

## Day 3

| | **Time** | **Session 1** | **Session 2** |
|---|---|---|---|
| 09.00-10.40 | | 5 Speakers (20 Mins Each) | 5 Speakers (20 Mins Each) |
| | | | |
| **Coffee/Tea Break 10.40-10.55 (Networking)** | | | |
| 10.55-12.35 | | 5 Speakers (20 Mins Each) | 5 Speakers (20 Mins Each) |
| | | | |
| **Lunch Break 12.35-13.25** | | | |
| 13.25-15.05 | | 5 Speakers (20 Mins Each) | 5 Speakers (20 Mins Each) |
| | | | |

Morning Sessions / Evening Sessions

30 Speakers on **Day 3**

**Awards & Closing Ceremony**

# Featured Speakers

# Keynote Opportunities Available

**Title:** **Anti-Reflection Surface Structures on Optics as an Alternative to Thin Film Anti-Reflection Coatings**
**Jesse A. Frantz,** *U.S. Naval Research Laboratory, USA*

**Title:** **Development of High-Operating Long Wave HgCdTe Devices at Army Research Laboratory**
**Priyalal Stephen** *Wijewarnasuriya, U.S. Army Research Laboratory, USA*

**Title:** **Study of Low Density Sites on Silicon Dioxide Surfaces using Fluorescent Probes and the Role of these Sites in Nucleation of Semiconductor and Metal Films**
**John G. Ekerdt,** *University of Texas at Austin, USA*

**Title:** **Unconventional Semiconductors For Advanced III-Nitride Photonics**
**Can Bayram,** *University of Illinois at Urbana-Champaign, USA*

**Title:** **Laser power conversion efficiencies exceeding 60%, featuring strong photon recycling, in ultra-thin GaAs n/p junctions based on high-photovoltage vertical epitaxial heterostructure architectures**
**Simon Fafard,** *Université de Sherbrooke and Azastra Opto Inc, Canada*

**Title:** **Broadband Nonlinear THz Spectroscopy Using Gas Plasma THz Source**
**Masashi Yamaguchi,** *Rensselaer Polytechnic Institute, USA*

**Title:** **Bridging Nano and Macro: Multimaterial Multifunctional Fibers**
**Xiaoting Jia,** *Virginia Tech, USA*

**Title:** **High Power/Energy Optics**
**Apollonov Victor Victorovich,** *A.M. Prokhorov General physics institute RAS, Russia*

**Title:** **The Effects of Laser Characteristics on Energy Generation in Particles on a Surface**
**Peng-Sheng Wei,** *National Sun Yat-Sen University, Taiwan*

**Title:** **Quantum Laser Interactions with Select Silicate Specimens**
**Michelle R. Stem,** *Complete Consulting Services, USA*

**Title:** **Wide Band Gap III-Nitride Semiconductor Devices**
**Ryan McClintock,** *Northwestern University, USA*

**Title:** **New Frontiers in Monolithic, Tunable, Mid-Infrared Lasers**
**Steven Slivken,** *Northwestern University, USA*

**Title:** **High Quality Nitride Materials (AlN and AlGaN) on Si and Sapphire Substrates and UV-LED Applications**
**Ilkay Demir,** *Cumhuriyet University, Turkey*

**Title:** **Characterization of Optically Pumped Semiconductor Lasers in Pulsed Mode**
**Yanbo Bai,** *Coherent Inc., USA*

**Title:** **Split-and-Delay Units for Soft and Hard X-Ray Free-Electron Lasers**
**Sebastian Roling,** *Westfälische Wilhelms-Universität Munster, Germany*

**Title:** **Room-temperature-protonation-driven optoelectronic device with water-gated thin-film-transistor structure**
**TAKAYOSHI KATASE,** *Tokyo Institute of Technology, Japan*

**Title:** **Transparent and conductive materials for opto-electronic applications**
**Bellet Daniel,** *Grenoble INP, France*

**Title:** **Semi random lasing on ZnO nanoparticles originated by laser induced breakdown**
**Vasilev Nikolai,** *Saint-Petersburg State University, Russia*

**Title:** **From Nanoelectronics to Nanophotonics: Toward Integrated Nanosystems**
**Wei Zhou,** *Virginia Tech, USA*

**Title:** **Performance of Incoherently and Coherently Combined Fibre and Quantum Cascade Lasers**
**Robert J. Grasso,** *EOIR Technologies, USA*

**Title:** **From Nanoelectronics to Nanophotonics: Toward Integrated Nanosystems**
**Wei Zhou,** *Virginia Tech, USA*

**Title:** **Wavefront Propagation Simulations for a Hard X-Ray Split-and-Delay Unit at the European XFEL**
**Victor Kärcher,** *Westfälische Wilhelms-Universität Münster, Germay*

**Title:** **Nonlinearity Compensation Using Optical Phase Conjugation in Optical Fiber Transmission Systems**
**Mohammad A. Z. Al-Khateeb,** *Aston University, UK*

**Title:** **Surface modification of PET film via a large area atmospheric pressure plasma: an optical analysis of the plasma and surface characterization of the polymer film**
**Farzad Rezaei,** *North Carolina State University, USA*

**Title:** **On-chip integrated a 3D-CMOS Si photodetector array with a fiber couplers platform for remote optical fiber monitoring**
**IMAN SABRI ALIREZAEI,** *Institute of Micro and Sensor Systems (IMOS), Germany*

**Title:** **Novel sources and resonators for high-resolution molecular spectroscopy in the mid infrared**
**Simone Borri,** *CNR-INO – Istituto Nazionale di Ottica, Italy*

**Title:** **Technique of Optical Frequency Comb Generation from a Bismuth-Based Harmonically Mode-Locked Fiber Laser**
**Yutaka Fukuchi,** *Tokyo University of Science, Japan*

**Title:** **Quantum cascade Lasers for sensitive trace gas sensing applications**
**Jagadeeshwari Manne,** *Lam Research Corporation, USA*

**Title:** **Automatized optical quality assessment of photovoltaic modules**
**Johannes Mario Hepp,** *Bavarian Center for Applied Energy Research, Germany*

**Title:** **1mm-thick See-through Holographic RGB Illumination Unit ~ Ega-rim ~**
**Hideyoshi Horimai,** *Egarim Co. Ltd., Japan*

**Title:** **Liquid phase growth of GaSe crystal for highly efficient THz wave generation**
**Yohei Sato,** *Tohoku University, Japan*

**Title:** **Holographic Window for Solar Power Generation System**
**Toshihiro Kasezawa,** *Egarim Co. Ltd., Japan*

**Title:** **Silicon photodetectors operating at 1.55 μm and 2 μm using graphene**
**Maurizio Casalino,** *National Research Council of Italy, Italy*

**Title:** **W-band signal propagation in a WDM-over-OCDMA system**
**Morad Khosravi Eghbal,** *UNIVERSITY OF TEXAS AT SAN ANTONIO, USA*

**Title:** **An Adaptive Non-Imaging Optical Method to Optimize Secondary Optics of Concentrating Solar Power Collectors**
**Guangdong Zhu,** *National Renewable Energy Laboratory, USA*

**Title:** **Parity detection achieving Heisenberg limit in an SU(1,1) interferometer with coherent and squeezed vacuum input states**
**Dong Li,** *Microsystem and Terahertz Research Center, China*

**Title:** **Improvement of Optical Transmission Capacity by Data Compression and Amplitude/Phase/Frequency 3-Dimentional Modulation**
**Dong Sun Seo,** *Myongji University, South Korea*

**Title:** **Glass optics replication in a digitalized production environment**
**Holger Kreilkamp,** *Fraunhofer-Institute for Production Technology IPT, Germany*

**Title:** **The MOCVD overgrowth studies of III-Nritride on Bragg grating for distributed feedback lasers**
**Junze Li,** *Microsystem & Terahertz Research Center, China*

**Title:** **Nano-patterned Hyperbolic Metamaterials for High-frequency Nanowire Quantum Dots Single Photon Source**
**Feiliang Chen,** *Microsystem and Terahertz Research Center, China*

**Title:** **Recent developments on the internal quantum efficiency for III-N light-emitting diodes**
**Wengang Bi,** *Hebei University of Technology, China*

**Title:** **Doped ZnO Nanostructures for M-IR Plasmonics**
**Mohamed Taha,** *Ecole Centrale de Lyon, France*

**Title:** **Simulation of thermal reaction of biological tissues to laser-induced fluorescence and photodynamic therapy**
**Alexey Seteikin,** *Amur State University, Russia*

**Title:** **Commercializing Potassium Terbium Fluoride, KTF (KTb3F10) Faraday Crystals for High Laser Power Optical Isolator Applications**
**Wolfgang Schlichting,** *Northrop Grumman SYNOPTICS, USA*

**Title:** **Mechanical concepts in Laser based additive manufacture**
**WU CHENWU,** *Chinese Academy of Sciences, China*

**Title:** **Metamaterial based nanobiosensors and nanophotodetectors**
**Ekmel Ozbay,** *Nanotechnology Research Center, Turkey*

**Title:** **Visibility Range of the Laser and LED Signaling Lights at Runway Aircraft Landing**
**Gennady A. Kaloshin,** *Institute of Atmospheric Optics Russian Academy of Sciences, Russia*

**Title:** **Capturing spin dynamics with laser-based tabletop soft x-ray sources**
**Patrick Grychtol,** *European XFEL, Germany*

**Title:** **Highly Conductive Free-Standing Reduced Graphene Oxide Thin Films for Fast Photoelectric Devices**
**HE JUNHUI ,** *Technical Institute of Physics and Chemistry, CAS, China*

**Title:** **Simulation of perfect absorber at visible frequencies using TiN-based refractory plasmonic metamaterials**
**Mo Li,** *Microsystem & Terahertz Research Center, China*

**Title:** **Three dimensional Luneburg lens at optical frequencies achieved by laser direct writing technique**
**Xuan-Ming Duan,** *Chinese Academy of Sciences, China*

**Title:** **Optimization of Boron Isotopes Separation by the Specific Choice of Laser Pulse Shape within the Laser Assisted Retarded Condensation(SILARC) Method**
**Konstantin Lyakhov,** *Jeju National University, South Korea*

**Title:** **Nanostructured Photodetectors: From Ultraviolet to Terahertz**
**Xiaosheng Fang,** *Fudan University, China*

**Title:** **Bi-stage time evolution of nano-morphology on inductively coupled plasma etched fused silica surface caused by surface morphological transformation**
**Xiaolong Jiang,** *China Academy of Engineering Physics, China*

**Title:** Computational Study of Forced Shear Layer Aero-Optics
**Chung-Chyi Chou,** *Da-Yeh University of Department of Fire and Safety, Taiwan*

**Title:** Two-photon polymerization of high resolution 3D hydrogels for cell imaging and tissue engineering
**Mei-Ling Zheng,** *Chinese Academy of Sciences, China*

**Title:** Laser Induced Breakdown for Quantitative Gas Property Measurements and Ignition
**Hyungrok Do,** *Seoul National University, South Korea*

**Title:** Mode-Division Multiplexed Transmission over Few-Mode Fibers
**Filipe M. Ferreira,** *Aston University, UK*

**Title:** Wound healing modulation after irradiation with a blue LED photocoagulator
**Francesca Rossi,** *Italian National Research Council, Italy*

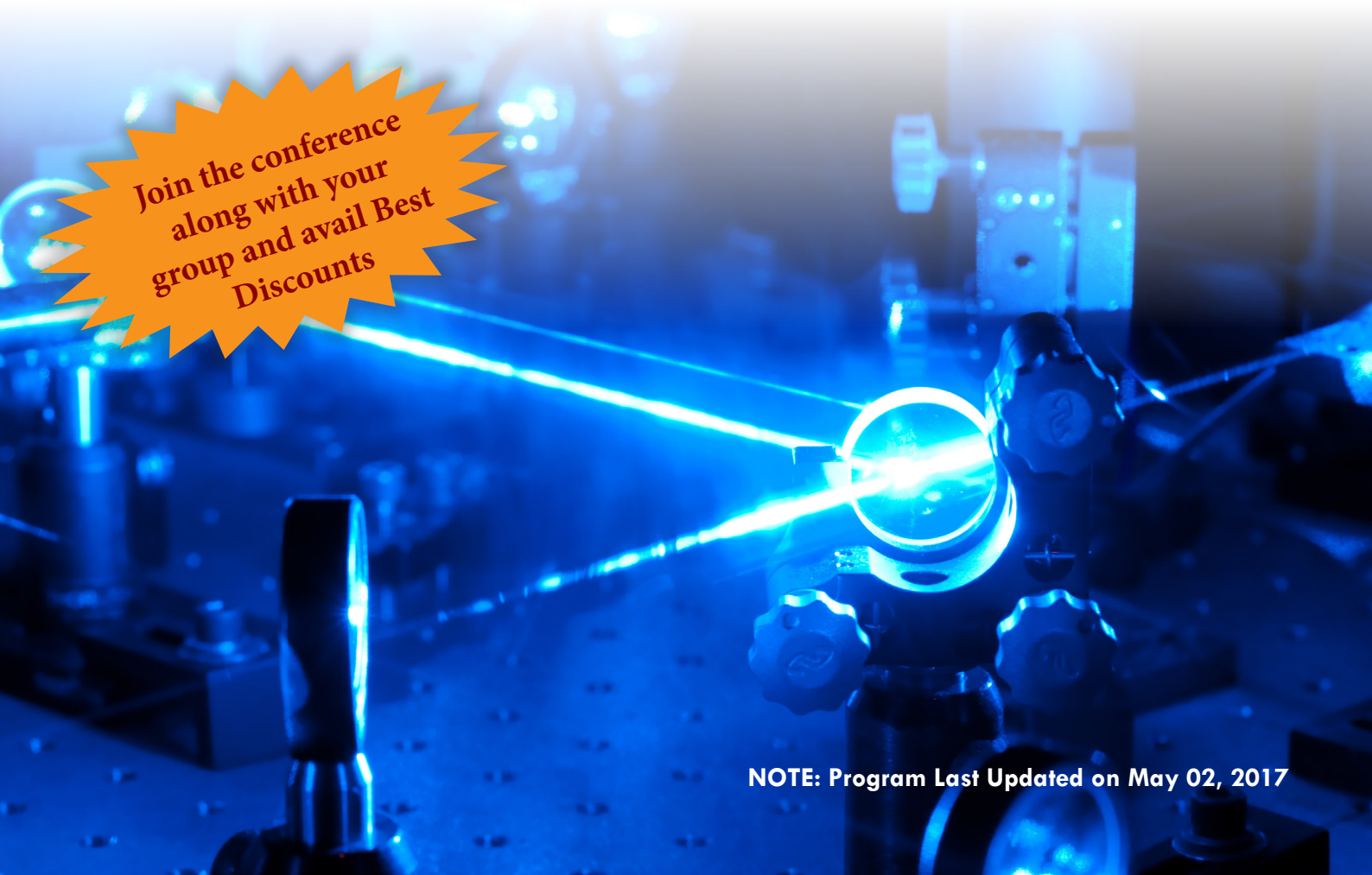
**Title:** Fiber-optics Reflectance Spectroscopy for the direct identification of natural red and purple dyes on textiles
**Edgar Casanova González,** *Universidad Nacional Autónoma de México, Mexico*

**Title:** The structure analysis of flower-like microparticles by confocal microscopy
**Songwen Tan,** *The University of Sydney, Australia*

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**NOTE: Program Last Updated on May 02, 2017**

# Tourist Atrractions



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