UNITED Scientific Group

Optics-2021

2nd International Summit on

OPTICS, PHOTONICS AND LASER TECHNOLOGIES

June 28-30, 2021 | Virtual Event

Time Zone: London (UK) (GMT+1)

DAY-01 JUNE 28, 2021 | LONDON (UK) (GMT+1)

06:45-06:55 AV Check

06:55-07:00 Introduction to the meeting

Keynote Session

Session Chair: Koji Sugioka, RIKEN Center for Advanced Photonics, Japan

07:00-07:30 **Koji Sugioka**
RIKEN Center for Advanced Photonics, Japan
Advanced Femtosecond Laser Micro and Nanoprocessing

07:30-08:00 **David J. Moss**
Swinburne University of Technology, Australia
Advanced Applications of Integrated Kerr Optical Microcombs

08:00-08:30 **Gong-Ru Lin**
National Taiwan University, Taiwan
High-power White Lighting Communication with Tri-color R/G/B Laser Diode Mixing

08:30-09:00 **Lukas.W. Snyman**
UNISA, South Africa
On-chip Micro-biochemical Sensors with Si Avalanche Based Leds and Silicon Optical Spectrometric Detectors

09:00-09:30 **Dieter Suter**
TU Dortmund University, Germany
Optical Control of Spin Centers in Wide-Bandgap Semiconductors

09:30-10:00 **Zhigang Chen**
Nankai University, China
Nonlinear Control of Topological States in Photonics

10:00-10:15 Break

Invited Presentations

Applied Optics and Nanophotonics

Session Chair: Faiz Rahman, Ohio University, USA

10:15-10:35 **Sanbin Chen**, North China Research Institute of Electro-Optics, China
Pulsed Azimuthally Polarized Beam from Passively Q-Switched Rotating Nd:YAG Disk Laser

10:35-10:55 **Chiranjit Ghosh**, IIT (ISM) Dhanbad, India
Performance Analysis of Dispersion Compensation by Chirped FBG Cascades for 10 X 20 Gbps WDM Systems

10:55-11:15 **Jun-Jun Xiao**, Harbin Institute of Technology, China
Machine Learning for Nanophotonics: A Practice on Metagrating and Metasurface Inverse Design

11:15-11:35 **Dongjae Shin**, Samsung Advanced Institute of Technology, Korea (South)
Bulk-silicon Photonics Targeting DRAM Applications

11:35-11:55 **Xiao-Min Hu**, University of Science and Technology of China, China
Experimental High-dimensional Quantum Teleportation

11:55-12:15 **Ning Liu**, University of Limerick, Ireland
Active Hybrid Nanoplasmonics– explore the Special Optical Modes at the Semiconductor-insulator-metal Interface

12:15-12:35 **Faiz Rahman**, Ohio University, USA
Overcoming Phosphor Heating in Laser Diode-pumped Solid-state Light Sources

12:35-12:55 **Maysamreza Chamanzar**, Carnegie Mellon University, USA
Using Ultrasound to Guide and Steer Light

Poster Presentation

12:55-13:05 **Khaled Hamdy Mohamed Ibrahim**, Moscow State University of Technology, Russian Federation
Wire Electrical Discharge Machining Optically White or Transparent Al2O3 Ceramics Using Tio2 Powder and Nickel Coating

13:05-13:15 Break

Young Researcher Presentations

13:15-13:30 **Xiang Li**, WuHan university, China
A Lidar Denoising Method Using an Optical Vortex

13:30-13:45 **Shotaro Noda**, Kyoto Institute of Technology, Japan
Micro-Particle Measurement Using Phase Retrieval Holography

13:45-14:00 **Sedong Kim**, LSTME Busan Branch, South Korea
Study on Dispersion and Thermal Conductivity for Surface Treated MWCNTs in Aqueous Solution

14:00-14:15 **Shogo Nuno**, Kyoto Institute of Technology, Japan
Rotating Tire Shape Measurement by Sampling Moiré Method

14:15-14:30 **Afaf Mahmoud Abd-Rabou**, Helwan University, Egypt
Advanced Mathematical Model for Temperature Distributions Induced by a Pulsed Laser in Different Target Configurations Using Virtual Sources

14:30-14:45 **Paolo Ansuinelli**, Delft University of Technology, Netherlands
Regularization with a Priori Information for Ptychographic Imaging of EUV Mask Layouts

14:45-15:00 **Ngoc-Tan Truong**, ENSTA Bretagne (Lab-STICC), France
Improving the Quality of the Position of a Receiver by Combining the Robust-extended Kalman Filter and the Long-short-term Memory Technique

15:00-15:15 **Victor Laborde**, Liege Space Center, Belgium
Using Multilayers Diffractive Optical Elements for Dual Band Infrared Remote Sensing

15:15-15:30 **Alfred Puro**, EvroAkademia, Estonia
Tensor Tomography of the Residual Stress Field in Graded -index YAG's Single Crystals

15:30-15:45 **Victor Contreras**, Universidad Nacional Autonoma de Mexico, Mexico
Visualizing Standing Waves of Single-axis Acoustic Levitators by Rainbow Schlieren Deflectometry

15:45-16:00 **Simranjit Singh**, Punjabi University Patiala, India
Ngpon2 for Future Communication Systems

16:00-16:15 **Miaoxin Gong**, Lund University, Sweden
Fiber-based Stray Light Suppression in Spectroscopy Using Periodic Shadowing

16:15-16:30 Break

Keynote Session

16:30-17:00 **Yves-Alain Peter**
Polytechnique Montréal, Canada
Gas Sensing with Optical Microresonators

Invited Presentations

Nonlinear Optics and Fiber Optics

17:00-17:20 **Thibaut Sylvestre**, CNRS, FEMTO-ST Institute, UBFC, France
Mid-infrared Fiber-based Supercontinuum Laser Sources

17:20-17:40 **Salman Noach**, Jerusalem College of Technology, Israel
External Cavity Raman Laser in the SWIR Spectral Region Based on Tm:YLF / Tm:YAP and KGW Raman Crystal

17:40-18:00 **Lubomir Kovachev,** Bulgarian Academy of Sciences, Bulgaria
Influence of the Longitudinal Ponder-motor Force on the Filamentation Process

18:00-18:20 **Nikolay Korneev**, INAOE, Mexico
The WKB Approximation for Zakharov-Shabat Scattering Problem

18:20-18:40 **Jason Fleischer**, Princeton University, USA
Enhanced Phase Retrieval Using Nonlinearity

Young Researcher Presentations

18:40-18:55 **Gawarai Dieu-donne**, The University of Maroua, Cameroon
Impact of Higher Order Nonlinear Effects on Modulational Instability and Pulse Train Generation in Birefringent Lakshmanan-porsezian-daniel Model

18:55-19:10 **Carlos Wiechers**, Universidad de Guanajuato, Mexico
Noble Metal Nanoparticles Size Distribution Reconstruction from VIS-NIR Spectra Using Maximum Likelihood Method

19:10-19:25 **Chaoyang Ti**, Worcester Polytechnic Institute, USA
Turnkey All-fiber Modular Optical Tweezers

19:25-19:40 **Deepak Sapkota**, University of California, USA
Four-wave Mixing in a Triple-core Microstructure Fiber for Parametric Devices

DAY-02 JUNE 29, 2021 | LONDON (UK) (GMT+1)

Keynote Session

Session Chair: Francesco Chiavaioli
Francesco Chiavaioli, National Research Council of Italy, Institute of Applied Physics "Nello Carrara", Italy

07:00-07:30 **Andrea Cusano**
University of Sannio, Italy
The Technological Roadmap Towards Multifunctional Plug & Play Platforms

07:30-08:00 **Francesco Chiavaioli**
National Research Council of Italy, Institute of Applied Physics "Nello Carrara", Italy
Lossy Mode Resonance in Fiber Optics: Applications and Perspectives

Invited Presentations

Advances in Optics and Photonics

Session Chair: Prashant B. Patel, Instrumentation Department, DIT, India

08:00-08:20 **Gilad Marcus**, Hebrew University of Jerusalem, Israel
Carrier to Envelope Phase (CEP) Stable, 2.37μm, Ultrashort Pulses from a Hybrid Parametric – Laser Amplifier

08:20-08:40 **Jagneet Kaur Anand**, University of Delhi, India
Study of Instantaneous Poynting Vector in Optical Waveguides and Applications in Surface Plasmon Resonance Based Sensors

08:40-09:00 **Prashant B. Patel**, Instrumentation Department, DIT, India
Optical Mach Zehnder Interferometer Sensors

09:00-09:20 **Eberhard E. Müller**, Technical University Berlin. Germany
Bose-Einstein Condensation in an Ideal Photon Gas

09:20-09:40 **Marc Dielen**, Morphotonics B.V, Netherlands
Roll-to-plate Nanoimprint Lithography: Application to Fabrication of High Aspect Ratio Micro-structures

09:40-10:00 **Gianluca Ruffato**, University of Padova, Italy
A Novel Insight into Conformal Transformations of Structured Light Beams

10:00-10:20 **Etienne Brauns**, Retired as Expert Researcher from VITO - Flemish Institute for Technological Research, Belgium
On the Impossibility of a Photon to Inherit any Source's Velocity Vector Component, in what ever Direction in Space, Thereby Falsifying the Equivalence Principle for Photons

Young Researchers Presentations

10:20-10:35 **Reza Heydarian**, Aalto University, Finland
Geometrical Optics Enables Magnified Far-field Subwavelength Imaging by a Simple Glass Microsphere

10:35-10:50 **Cesar Abraham Torrico Chavez**, Universidad Catolica Boliviana, Bolivia
Tricorn-like Structures in an Optically Injected Semiconductor Laser

Poster Presentations

10:50-11:00 **Jing Huang**, South China University of Technology, China
Statistical Analyses of ASE Noise in Fibers

11:00-11:10 **Hui Li**, Peking University, China
The Ground-based Verification System for Chinese Space Station Ultracold Atoms Gases

11:10-11:20 **Gia-Hong Hong**, National Changhua University of Education, Taiwan
Ring Lighting Optic System Design for Fundus Camera

11:20-11:30 **Ivan Chelibanov**, ITMO University, Russia
Photo-Induced Change of 9,10-Diphenylanthracene Polymorphes

11:30-11:40 **Vladimir Chelibanov**, ITMO University, Russia
SERS-substrate Based on Mos2 on Copper Demonstrates the Dominance of the Chemical Signal Amplification Mechanism

11:40-11:50 **Radi I. Khrapko**, Moscow Aviation Institute, Russian
Explanation of the Beth's Experiment

11:50-12:00 **Tesfay Gebremariam Tesfahannes**, Arbaminch University, Ethiopia
Optical Micro-Cavity and its Application

12:00-12:10 **Nagham Shiltagh**, University of Kerbala, Iraq
The Effect of Silver Nanoparticles on the Mixture of the MB - dye / PVA - polymer by Absorption and Emission Spectra Measurements

12:10-12:20 **Juan Carlos Gomez Conde**, Universidad Autonoma De Puebla, Mexico
Dynamic Self-calibrating Phase Shifting Algorithm for Measurements Out-of-range Module 2ϖ

12:20-12:40 Break

Keynote Session

Session Chair: Francesco Chiavaioli, National Research Council of Italy, Institute of Applied Physics "Nello Carrara", Italy

12:40-13:10 **Dennis K. Killinger**
University of South Florida, USA
Lidar and Laser Remote Sensing of the Environment

13:10-13:40 **Jianqiu Cao**
National University of Defense Technology, China
Study on High-power All-fiber Amplifier Operating Near 980 nm

13:40-14:10 **Jacob Khurgin**
Johns Hopkins University, USA
What is the Best Medium for Sub-wavelength Field Enhancement?

14:10-14:40 **Yongfeng Lu**
University of Nebraska Lincoln, USA
Laser Vibrational Excitation of Precursor Molecules in the Growth of Pure and Doped Diamonds

14:40-15:10 **Federico Capasso**
Harvard University, USA
Compact Quantum Cascade Laser Pumped Molecular Lasers from 200 Ghz to Multi-terahertz

Invited Presentations

Lasers in Micro, Nano and Bio Systems and Lightwave Technology

Session Chair: SIMA Felix, INFLPR - Center for Advanced Laser Technologies, Romania

15:10-15:30 SIMA Felix, INFLPR - Center for Advanced Laser Technologies, Romania
Hybrid Laser Technologies for Biomimetic Material Processing

15:30-15:50 Stephan Krause, Martin-Luther-University Halle-Wittenberg
Ultra-short Laser Micro-machining by Spatially Shaped Ps- and Fs-Pulses for Depth-Selective μ-TLM Resistivity Test Structures in TCO Contact Layers

15:50-16:10 Yuliya Kozlova, RUDN University, Russia Federation
Treatment of Hypersensitivity of Dentine of the Teeth with the Use of Diode Laser with Wavelength of 810 Nm

16:10-16:30 Romana Schirhagl, University in Groningen, Netherlands
Optical Nanoscale Magnetic Imaging for Detecting Stress Responses in Living Cells

16:30-16:50 Umut Aydemir, Uludag University, Turkey
2D Materials/Ag Nanoparticles Coated Surface Plasmon Resonance Based U-shaped Fiber Optic Sensors for Bio-sensing Applications

16:50-17:10 Jorge Luis Dominguez Juarez, UNAM, Mexico
Microfabrication with Low-Average Power of Green Light to Produce PDMS Microchips

17:10-17:30 Luis Octavio Castanos Cervantes, Tecnologico de Monterrey, Mexico
The Quantum Rabi Model with Driving and Dissipation

17:30-17:50 Matt Kalinski, Utah State University, USA
Multi-Electron Trojan-Like Wavepackets on Synchronous Langmuir Bulb Wire Regular Polygon Trajectories

Young Researchers Presentation

17:50-18:05 Hardik Vaghasiya, Martin-Luther-University Halle-Wittenberg, Germany
Theoretical Study and Experimental Validation of Ultra-Short Laser Ablation Mechanism for Silicon Surface Micro-Functionalization

DAY-03 JUNE 30, 2021 | LONDON (UK) (GMT+1)

Optical Communication and Networking Optical Materials, Engineering and Technology

Young Researchers Presentations

Session Chair: Raman Sharma, Himachal Pradesh University, India

07:00-07:15 Yang Yue, Nankai University, China
Challenge and Trend in High-Baud-Rate Coherent Optical Communication Systems

07:15-07:30 Putu Artawan, Universitas Pendidikan Ganesha (Undiksha), Indonesia
Bi-ellipse Based Microstrip Array Antenna for Radar Communication System

07:30-07:45 Salman Ahmad, COMSATS University Islamabad, Pakistan
Lensless Microscopy Using Different Fresnel Zone Plate Photomask Modulation

07:45-08:00 Fırat Diker, Sabancı University, Turkey
Deterministic Construction of Arbitrary W States

08:00-08:15 Anastasiia A. Vornovskikh, Far Eastern Federal University, Russian
Reactive SPS of SiO2 and LiF-doped Nd3+:YAG Transparent Ceramics

08:15-08:30 Rajagopalan Krishnan, University of the Free State, South Africa
Yb3+ Free Phosphor and its Application as a Fingerprint Marker in Forensic Science

08:30-08:45 Nataly Kozak, IMCNASU, Ukraine
Photostability and Beam Strength of Polyurethane Matrices for Active Element of Solid- state Dye Lasers

08:45-09:00 Manman Ding, Fudan University, China
LD-pumped 3 μm Er:Y2O3 Ceramic Laser at Room Temperature

09:00-09:15 Suwan Sun, Shanghai University, China
Cavity Dissipative Structures in Optical Resonators with Transient Loss Perturbation

09:15-09:30 Xuanxi Li, Jiangsu Normal University, China
Wavelength Tunable Diamond Raman Laser ~2.5 μm

Invited Presentations

09:30-09:50 Jinlong Wei, Huawei German Research Center, Germany
Harvesting Machine Learning for High Quality Signal Processing in Data Center Networks

09:50-10:10 Xujin Yuan, Beijing Institute of Technology, China
Scattering Suppression Mechanism of Random Type Electromagnetic Metamaterials

10:10-10:30 Yoshiki Nakata, ILE, Osaka University, Japan
Beam Shaping to Extremely Flattop Polygon by Using a Virtual Phase Grating

10:30-10:50 Byoung-Kwon Ahn, Chungnam National University, South Korea
High-speed Optical Investigation of Air Jet in Cross Stream Flow

10:50-11:10 **Pham Tien Dat**, NICT, Japan
Optical and Radio Convergence for 5G-and-beyond Networks

11:10-11:30 **Raman Sharma**, Himachal Pradesh University, India
Strain Modulated Carrier Mobility and Optical Properties of Graphene Nanowiggles

11:30-11:50 **Moustafa H. Aly**, Arab Academy for Science, Technology and Maritime Transport, Egypt
Optical Communications Illuminates the Future

11:50-12:10 **Elena S. Ignat'eva**, Mendeleev University of Chemical Technology of Russia, Russia
Enhanced Luminescence from Ni2+-Doped Germanosilicate Glass-ceramics with High Gallium Content

12:10-12:30 **Jianhong Ke**, Huawei Technologies, Canada
Performance Analysis of Transmitter One-sample-per-symbol Approach

12:30-12:50 **Egidijus Vanagas**, Evana Technologies, Ltd., Lithuania
Silicon Wafer Cleaving Technology

12:50-13:10 **Sandor Kokenyesi**, University of Debrecen, Hungary
Laser Stability and Non-linear Optical Properties of Acrylate Polymer-chalcogenide Glass Nanocomposites for Photonic Applications

13:10-13:25 Break

Invited Presentations

Infrared & Applied Spectroscopy Biomedical & Applied Optics

Session Chair: Masatoshi Kajita, NICT, Japan

13:25-13:45 **Aiko Narazaki**, Advanced Industrial Science and Technology (AIST), Japan
Laser-induced Forward Transfer of Biomaterials Prepared by Biomimetic Process

13:45-14:05 **Masatoshi Kajita**, NICT, Japan
Prospect for the Precision Measurement of Transition Frequencies of Molecular Ions

14:05-14:25 **Zhengang Lu**, Harbin Institute of Technology, China
Electromagnetic Shielding for Optical Transparent Components

14:25-14:45 **Sivarama Krishnan**, Indian Institute of Technology Madras, India
Photoelectron Imaging and Multi-coincidence Spectroscopy of Doped Quantum Fluid He Nanodroplets with Extreme Ultraviolet Photons

14:45-15:05 **Thomas Marty**, Heckenweg 6a, 5430 Wettingen, Switzerland
Spectroscopy with Cesium Vapor Cells of the D2 Transition

15:05-15:25 **Carlos H. Mastrangelo**, University of Utah, USA
Microsystems for Smart Adaptive Contact Lenses

Young Researchers Presentations

15:25-15:40 **Zuo Zhiyu**, Peking Union Medical College, China
Blood Cancer Diagnosis Using Ensemble Learning Based on a Random Subspace Method in Laser-induced Breakdown Spectroscopy

15:40-15:55 **Wai Jue Tan**, University of Exeter, UK
Single vs Double Anti-crossing Phenomena in the Strong Coupling Between Surface Plasmons and Molecular Excitons

15:55-16:10 **Lorenzo Lombardi**, University of Pavia, Italy
Absolute Distance Measurement by a Bistable Ring-laser

16:10-16:25 **Kosta Oubrerie**, Laboratoire d'Optique Appliquée, France
Axiparabola: A New Tool for High Intensity Optics

Keynote Talk

16:25-16:55 **Felix Abt**
Orell Fussli Security Printing, Switzerland
Laser Drilling in Banknote Production

Invited Presentations

Applied Remote Sensing, Quantum Electronics, Optoelectronics

Session Chair: Ali Khenchaf, ENSTA Bretagne (Lab-STICC), France

16:55-17:15 **Victor Kulikov**, University of Dayton, USA
Atmospheric Turbulence Sensing with Single-mode Fiber Transceiver and Moving Target

17:15-17:35 **Carmelo Rosales-Guzman**, Centro de Investigaciones en Optica, México
Generation and Characterization of Complex Vector Modes with Digital Micromirror Devices

17:35-17:55 **Sakineh Chabi**, University of New Mexico, USA
Two-dimensional Silicon Carbide: The Emerging Semiconducting Material

17:55-18:15 **Kevin Knabe**, Vescent Photonics, USA
Robust, Field-deployed Laser Modules for Next Generation Quantum Sensors

18:15-18:35 **George Yury Matveev**, IT Consultant, Denmark
Quantum Elliptic Curve

18:35-18:55 **Ali Khenchaf**, ENSTA Bretagne (Lab-STICC), France
Sensors and Oceanic Remote Sensing

Young Researchers Presentations

18:55-19:10 **Saeed Asiri**, KACST, Saudi Arabia
Quantum-state Reconstruction of a Mechanical Mirror in a Hybrid System

19:10-19:25 **Daigo Oue**, Imperial College London, UK
Electromagnetism at Thermal Equilibrium: A Density Operator Approach

19:25-19:30 Closing Remark

Thank you for connecting !

UNITED Scientific Group

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