Scientific Program

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference and Exhibition on
Lasers, Optics & Photonics

September 08-10, 2014 Hilton Philadelphia Airport, USA

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OMICS Group Conferences
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Email: *optics2014@omicsgroup.us*

08:00-08:30 Registrations

Independence A

OMICS Group Conferences
Accelerating Scientific Discovery

08:30-09:00 **Opening Ceremony**

Keynote Forum

09:00-09:05 **Introduction**

09:05-09:30 **Chandra Kumar Naranbhai Patel**
Pranalytica Inc., USA

09:30-09:55 **Anthony Krier**
Lancaster University, United Kingdom

09:55-10:20 **Mahi R Singh**
The University of Western Ontario, Canada

Coffee Break 10:20-10:35 @ Ball Room Foyer

Track 1: Advanced Science and Technology for Laser Systems
Track 2: Optics and Lasers in Medicine

Session Chair: Sergey Mirov, University of Alabama at Birmingham, USA
Session Co-Chair: Shivadeo Bapat, Maharashtra Medical Foundation, India

10:35-10:55 **Mid-infrared lasers based on transition metal doped II-VI semiconductors**
Sergey Mirov, University of Alabama at Birmingham, USA

10:55-11:15 **New wavelengths generation in T-cavity vertical-external-cavity surface-emitting lasers**
Mahmoud Fallahi, University of Arizona, USA

11:15-11:35 **Mechanical effects of light: Radiation pressure, photon momentum, and the torentz force law**
Masud Mansuripur, The University of Arizona, USA

11:35-11:55 **Quantum cascade lasers in bio-medical applications the reality check**
Igor E Trofimov, PTAC Inc. Princeton, USA

11:55-12:15 **Integrated silicon photonic chips for highly multiplexed early cancer biomarker detection**
Ray T Chen, University of Texas at Austin, USA

12:15-12:35 **High-efficiency interband cascade lasers**
Igor Vurgaftman, Naval Research Laboratory, USA

12:35-12:55 **Force-induced regulation of epigenetic state in cancer cells**
Arash Tajik, University of Illinois, Urbana

12:55-13:15 **Application of laser light to treat prostatic proliferative diseases in the ageing man**
Simone Chevalier, McGill University, Canada

Lunch Break 13:15-13:45 @ Benjamin's

13:45-14:05 **Application of multiphoton microscopy in diagnosis and therapy of early cancer**
Jianxin Chen, Fujian Normal University, China

14:05-14:25 **The ABCs of mid-infrared quantum-well lasers**
Yves Rouillard, Universite Montpellier 2, France

14:25-14:45 **Thermalization and condensation dynamics of a photon Bose-Einstein condensate**
Jan Klaers, University of Bonn, Germany

14:45-15:05 **Recent advances in optically-injected Q-cascade lasers**
Frederic Grillot, Ecole Nationale Superieure des Telecommunications, France

15:05-15:25 **Ultrafast dynamics explaining pH probe mechanism in borondipyrromethene-benzimidazole compound**
Halime Gul Yaglioglu, Ankara University Engineering Faculty, Turkey

15:25-15:45 **Compact solutions in room temperature operating terahertz imaging systems**
Gintaras Valusis, Center for Physical Sciences and Technology, Lithuania

15:45-16:05 **Development of a high power coherent quantum cascade laser array mounted in extended-cavity system**
Raphael Vallon, Université de Reims, France

Coffee Break 16:05-16:20 @ Ball Room Foyer

16:20-16:40 **Extreme confinement and propagation regimes of terahertz surface waves on planar metallic waveguides**
Juliette Mangeney, UPMC University, France

16:40-17:00 **Injection locking of mid-infrared quantum cascade laser by direct microwave modulation**
Maria Amanti, Université Paris Diderot, France

17:00-17:20 **High performance, low dissipation QCL across the Mid-IR range**
Alfredo Bismuto, Alpes Laser SA, Switzerland

17:20-17:40 **Lasers and optics in clinical urology**
Shivadeo Bapat, Maharashtra Medical Foundation, India

17:40-18:00 **Sensitive detection of aerosols and gases using Raman scattering**
Roshan L Aggarwal, MIT Lincoln Laboratory, USA

18:00-18:20 **New functionalities in optical fibers using "Lab on Fiber" technology**
Andrea Cusano, University of Sannio, Italy

18:20-18:40 **Polarization evolution; a method to measure nonlinear interaction in light filaments**
Ladan Arissian, University of New Mexico, USA

18:40-19:00 **Antimonide-based short period superlattices for long wavelength infrared photodetection applications**
Devki N Talwar, Indiana University of Pennsylvania, USA

19:00-20:00 Cocktails sponsored by **Journal of Lasers, Optics & Photonics** @ Ball Room Foyer

Day 2 September 09, 2014

Independence A

Keynote Forum

08:35-09:00 **Sven Hofling**
University of St Andrews, United Kingdom

Track 3: Optoelectronics Engineering
Track 4: Optical Communications and Networking

Session Chair: Ian Ferguson, UNC Charlotte, USA
Session Co-Chair: Hiroshi Ito, Kitsato University, Japan

09:00-09:20 **Optical and optoelectronic properties of hexagonal boron nitride epilayers**
Jingyu Lin, Texas Tech University, USA

09:20-09:40 **Annie get your 'GaN'': III-Nitrides for energy applications**
Ian Ferguson, UNC Charlotte, USA

09:40-10:00 **Widely tunable terahertz wave photomixer based on uni-traveling-carrier photodiode**
Hiroshi Ito, Kitasato University, Japan

10:00-10:20 **Manufacturing and performance of quantum cascade lasers for industrial applications**
Mariano Troccoli, AdTech Optics Inc., USA

10:20-10:40 **Magnetic and electronic materials in optical fibers**
Daniel Homa, Virginia Tech, USA

Coffee Break 10:40-10:55 @ Ball Room Foyer

10:55-11:15 **Hybrid switching for scalable and efficient data delivery in the big data era**
Weiqiang Sun, Shanghai Jiao Tong University, China

11:15-11:35 **Gallium nitride compound semiconductors for ultraviolet, visible, and terahertz photonics**
Can Bayram, IBM Research, USA

11:35-11:55 **Continuous visible-light emission at room temperature In Mn-doped Si light-emitting diodes**
Masaaki Tanaka, The University of Tokyo, Japan

11:55-12:15 **Synthesis of nanometric iron oxide and chromium oxide films by reactive pulsed laser deposition for thermo sensors and thermo converters**
Viktor A Nikirin, NAS, Ukraine

12:15-12:35 **An optical fiber based sensing system for label-free real-time biomedical/environmental diagnosis by using Surface Plasmon Polaritons**
Heongkyu Ju, Gachon University, Korea

12:35-12:55 **Control of coherence in a Ξ system and its utility in optical switching**
Ayan Ray, Variable Energy Cyclotron Centre, India

Track 5: Advancements in Photonics

Session Chair: Leonas Valkunas, Vilnius University, Lithuania
Session Co-Chair: Gianluca Gagliardi, Nazionale di Ottica (INO), Italy

12:55-13:15 **Fluoride glasses and fibers for mid-infrared applications**
Mohammed Saad, Thorlab Inc., USA

Lunch Break 13:15-14:00 @ Benjamin's

14:00-14:20 **Landau level excitation using photoconductive THz antennas**
Mayer A Landau, US Air Force Research Laboratory, USA

14:20-14:40 **Spectral response analysis of ZnO nanowire photoconductors and metal-oxide-semiconductor photodiodes**
Jose Luis Pau, Univ. Autónoma de Madrid, Spain

14:40-15:00 **Challenges and new breakthroughs in infrared imaging**
Hooman Mohseni, Northwestern University, USA

15:00-15:20 **Efficiency of excitation dynamics and regulation ability in photosynthetic light-harvesting**
Leonas Valkunas, Vilnius University, Lithuania

15:20-15:40 **Liquid droplet whispering-gallery mode optical resonators**
Gianluca Gagliardi, Nazionale di Ottica (INO), Italy

15:40-16:00 **Analytic theory of low threshold lasing in photonic spiral media**
Vladimir Belyakov, Landau Institute for Theoretical Physics, Russia

16:00-16:20 **Light-matter coupling in imperfect superlattice of coupled microresonators**
Vladimir V Rumyantsev, A.A. Galkin Donetsk Physico-Technical Institute of NASU, Ukraine

Coffee Break 16:20-16:35 @ Ball Room Foyer

16:35-16:55 **Maximizing the bandwidth while minimizing the spectral fluctuations using supercontinuum generation in photonic crystal chalcogenice fibers**
Curtis R Menyuk, University of Maryland Baltimore County, USA

16:30-17:30 Poster Presentations @ Ball Room Foyer

Track 8: Featured Technologies in Lasers, Optics and Photonics

Session Chair: Douglas McCarter, McCarter Technology Inc., USA
Session Co-Chair: Jay W Dawson, Lawrence Livermore National Laboratory, USA

16:55-17:15 **Space invader asteroids - Detect and Deter Geoscience meets Astroscience**
Douglas R McCarter, McCarter Technology Inc., USA

17:15-17:35 **New approach to low-cost solid state lighting using controlled spalling**
Stephen W Bedell, IBM T. J. Watson Research Center, USA

17:35-17:55 **High performance tunable semiconductor lasers for spectroscopy**
Siamak Forouhar, Jet Propulsion Laboratory, USA

17:55-18:15 **Overview of optical fiber and fiber laser R&D at Lawrence Livermore Laboratory**
Jay W Dawson, Lawrence Livermore National Laboratory, USA

18:15-18:35 **Linear optical methods as ultrashort pulse diagnostics**
Adam Borzsonyi, University of Szeged, Hungary

18:45-19:45 Cocktails sponsored by **Journal of Lasers, Optics & Photonics @ Ball Room Foyer**

Independence A

Keynote Forum

08:35-09:00 **Belkacem Meziane**
University d'Artois, France

09:00-09:25 **Mehdi Anwar**
University of Connecticut, USA

Track 6: Nanophotonics and Biophotonics

Session Introduction

Session Chair: Edik U Rafailov, Aston University, United Kingdom
Session Co-Chair: Ting Mei, Northwestern Polytechnical University, China

09:25-09:45 **Compact quantum dot based ultrafast lasers for biophotonics application**
Edik U Rafailov, Aston University, United Kingdom

09:45-10:05 **A Novel CMOS-compatible hybrid material and device platform for reconfigurable integrated nanophotonics**
Ali Adibi, Georgia Institute of Technology, Atlanta

10:05-10:25 **Gold nanorods in biological imaging and sensing**
Yu Chen, Strathclyde University, United Kingdom

10:25-10:45 **Characterizing and imaging nanoparticles with surface plasmon polaritons**
Angela Demetriadou, Imperial College London, United Kingdom

Coffee Break 10:45-11:00 @ Ball Room Foyer

11:00-11:20 **From superhydrophobicity for SERS/TERS-like applications to hot-electrons based nanoscopy (to say nothing of the adiabaticity)**
Remo Proietti Zaccaria, Istituto Italiano di Tecnologia (IIT), Italy

11:20-11:40 **A meshless k·p method for analyzing electronic structures of quantum dots**
Ting Mei, Northwestern Polytechnical University, China

Track 7: Quantum Science and Technology
Track 9: Applications and Trends in Optics and Photonics

Session Chair: Michael A Stroscio, University of Illinois at Chicago, USA
Session Co-Chair: Branislav Vlahovic, North Carolina Central University, USA

11:40-12:00 **Charge transfer in nanostructures for solar energy and biochemical detector applications**
Branislav Vlahovic, North Carolina Central University, USA

12:00-12:20 **Nonlinear energy transfer in metallic nancocomposites**
Mahi R Singh, The University of Western Ontario, Canada

12:20-12:40 **Design of a novel heterostructure photodetectors with dramatically enhance signal-to-noise based on resonant interface-phonon-assisted transitions and engineering of energy states to enhance transition rates**
Michael A Stroscio, University of Illinois at Chicago, USA

12:40-13:00 ***p* x *n* Transverse thermoelectrics: A new class of materials with possible optoelectronic applications**
Matthew Grayson, Northwestern University, USA

Lunch Break 13:00-13:45 @ Benjamin's

13:45-14:05 **Mid-infrared semiconductor laser based trace gas analyzers: advances, applications and future outlook**
Stephen So, Sentinel Photonics, USA

14:05-14:25 **Characterization of new type-I quantum well cascade Lasers**
Sherrie S Bowman, Army Research Lab, USA

14:25-14:45 **Suppression of phonon-mediated dephasing in adiabatic rapid passage on a single semiconductor quantum dot**
Kimberley C Hall, Dalhousie University, Canada

14:45-15:05 **Quantum interference effects and molecular electronics**
Philippe Lafarge, Université Paris Diderot, France

15:05-15:25 **Photorefractive surface solitons due to quadratic electro-optic effect**
Kaiyun Zhan, China University of Petroleum, China

15:25-15:45 **Multi-level authentication platform using electronic nano-signatures**
Mehdi Anwar, University of Connecticut, USA

15:45-16:10 **Closing Ceremony**

Coffee Break 16:10-16:25 @ Ball Room Foyer

Bookmark your dates

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3rd International Conference and Exhibition on
Lasers, Optics & Photonics
September 01-03, 2015 Valencia, Spain

