LOPS® 2024

4th Edition of Annual Conference on

Lasers, Optics, Photonics, Sensors, Bio Photonics & Ultrafast Nonlinear Optics

June 07-10, 2024

Venue: DoubleTree Resort by Hilton Hollywood Beach, 4000 South Ocean Dr., Hollywood, FL 33019

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Day 1 | Friday | June 07, 2024

Start of Session | 09:00

Session Chairs:
Dr. Alex Kazemi
Peter J. Delfyett

Welcome Ceremony	09:00-09:10	**Dr. Alex Kazemi, The Boeing Company, USA**
Keynote Speaker	09:10-09:40	**Talk: Lasers on Silicon** Douglas Dykaar, DifTek Lasers Inc., Canada
Plenary Speaker	09:40-10:20	**Talk: Update on Ultrafast optical physics for the generation of HHG and supercontinuum** Robert R. Alfano, The City College of New York, USA

Coffee Break @ 10:20-10:40 @ Refreshments

Plenary Speaker	10:40-11:20	**Talk: Recent advances in tabletop attosecond X-ray sources** Zenghu Chang, University of Central Florida, USA
Keynote Speaker	11:20-11:50	**Talk: LiDAR Enhancement using non-Classical Light** Amr S. Helmy, University of Toronto, Canada
Keynote Speaker	11:50-12:20	**Talk: Diffuse Optics in the Clinic: Recent Results** Arjun G. Yodh, University of Pennsylvania, USA

Lunch Break @ 12:20-13:00

Panel Discussion	13:10-14:10	**Industrial Panel Discussion** Moderator: Dr. Jose Pozo, CTO, OPTICA, USA **Introduction** : Peter J. Delfyett University of Central Florida, USA Dr. Alex Kazemi, The Boeing Company,USA Brock Koren, DRS DAY LIGHT Solutions, USA Ming Yan, Cytek Biosciences, USA Wojtek Walecki, Optoprofiler, LLC:, USA Lu Ping, OFS Fitel LLC, USA
Invited Speaker	14:10-14:30	**Talk: Recent progresses on deep-learning enabled, deep-ultraviolet scanning microscopy for tumor margin assessment** Bing Yu, Marquette University and Medical College of Wisconsin, USA

Coffee Break @ 14:30-14:45

Plenary Speaker	14:45-15:25	**Talk: Vibrational photothermal microscopy: new window for biology and medicine** Ji-Xin Cheng, Moustakas Chair Professor of photonics and optoelectronics, Boston University Photonics Center
Invited Speaker	15:25-15:45	**Talk: Multimodal In vivo Imaging Guided Stem Cell Retinal Therapy** Yannis Paulus, University of Michigan, USA
Invited Speaker	15:45-16:05	**Talk: Breaking the Limits in Photoacoustic Imaging: Faster, Deeper and More Colorful** Junjie Yao, Science Drive Duke University, USA
Keynote Speaker	16:05-16:35	**Talk: Toward Fully Stabilized Chip Scale Optical Frequency Combs Sources and Applications - Sources and Applications.** Peter J. Delfyett, University of Central Florida, USA

Day 1 Closing Ceremony @ 17:05 | End of the Session

Day 2 | Saturday | June 08, 2024

Start of Session | 09:00

Welcome Ceremony	09:00-09:10	**Session Chairs:** **Brock Koren** **Alexander Doronin**
Plenary Speaker	09:10-09:50	**Talk: Attosecond physics** Louis F. DiMauro, The Ohio State University, USA
Keynote Speaker	09:50-10:20	**Talk: Metabolic Nanoscopy for Studying Aging and Diseases** Lingyan Shi, UCSD Bioengineering, USA

Coffee Break @ 10:20-10:40

Plenary Speaker/Virtual	10:40-11:20	**Talk: Singularity Engineering by Meta-optics** Federico Capasso, Harvard University, USA
Invited Speaker	11:20-11:40	**Talk: New Generation Photoacoustic Imaging: From benchtop wholebody imagers to wearable sensors** Lei Li, Rice University, USA
Invited Speaker	11:40-12:00	**Talk: Synergistic Anticancer Potential of Green Synthesized Nanoparticles and Pheophorbide a-Mediated Photodynamic Therapy in lung cancer** Blassan P George, University of Johannesburg, South Africa

Lunch Break @ 12:00-13:00

Keynote Speaker	13:00-13:30	**Talk: Modeling and compensating polarization aberrations in optical systems** Boris Gramatikov, Wilmer Eye Institute, Johns Hopkins University, USA
Keynote Speaker	13:30-14:00	**Talk: Ionizing radiation acoustic imaging (iRAI) for mapping the dose deep in the patient during radiation thera** Xueding Wang, University of Michigan, USA
Keynote Speaker	14:00-14:30	**Talk: "Sensors and Micro/Nano-electro-mechanical Systems (MEMS/NEMS). Many sensors are built by micro/nanofabrication techniques and this provides a host of advantages including lower power consumption, small size and light weight." For small scale body optical sensors** Peter Hesketh, Georgia Institute of Technology, USA

Coffee Break @ 14:30-14:45

Keynote Speaker	14:45-15:15	**Talk:** Haishan Zeng, University of British Columbia, Canada
Keynote Speaker	15:15-15:45	**Talk: Neuron Counting and Optical Characteristics in Human Brain Tissues: A Noninvasive Study in Visible and Near-Infrared Spectra** Jamal H. Ali, CUNY, USA
Keynote Speaker	15:45-16:15	**Talk: Unveiling the Depths of Cell Biology Using Multi-Laser Spectral Flow Cytometry** Ming Yan, Cytek Biosciences, USA
Keynote Speaker	16:15-16:45	**Talk: NeuralRTE: A new photon transport simulation algorithm for assessment of light propagation in biological tissues'** Alexander Doronin, Victoria University of Wellington, New Zealand
Keynote Speaker	16:35-17:05	**Talk: Multicomponent Photochemotherapeutic drugs for Photodynamic diagnosis and Photodynamic therapy in cancer** Heidi Abrahamse, University of Johannesburg, South Africa

Day 2 Closing Ceremony | End of the Session

Day 3 | Sunday | June 09, 2024

Start of Session | 09:00

Welcome Ceremony	09:00-09:10	**Session Chairs:** **Angela B Seddon** **Lingyan Shi**
Plenary Speaker (Virtual)	09:10-09:50	**Talk: Longitudinally-Structured Light Fields for Sensing and Dynamic Behavior** Alan E. Willner, University of Southern California, USA
Keynote Speaker	09:50-10:20	**Talk: The past, present, and future of Quantum Cascade Lasers Technology (QCL-IR)** Brock Koren, DRS DAY LIGHT Solutions, USA

Coffee Break @ 10:20-10:40

Plenary Speaker (Virtual)	10:40-11:20	**Talk:** Paul Corkum, University of Ottawa, Canada
Invited Speaker	11:20-11:40	**Talk: Which wavelength of light for photo-biomodulation therapy can penetrate deeper into the spinal canal?** Piao, Daching, Oklahoma State University, USA
Invited Speaker	11:40-12:00	**Talk: Correlations between intraocular pressure regulation and the biomechanical behaviors of distal aqueous outflow vasculature** Guan (Gary) Xu, Univeristy of Michigan, USA

Lunch Break @ 12:00-13:00

Keynote Speaker	13:00-13:30	**Talk: Paradigm shift in the operations and applications of volume Bragg gratings** Ivan Divliansky, CREOL, USA
Keynote Speaker	13:30-13:50	**Talk: Raman-based Noninvasive Continuous Glucose Monitoring (CGM)** Jeon Woong Kang, MIT, USA
Invited Speaker	13:50-14:10	**Talk: Non- and Minimally-Invasive Optical Monitoring of the Central Nervous System During Critical Care** David R. Busch, University of Texas Southwestern, USA
Keynote Speaker	14:10-14:30	**Talk: Lateral heterostructures with arbitrary shape and material composition in two-dimensional materials** Ali Adibi, Georgia Institute of Technology, USA

Coffee Break @ 14:30-14:45

Keynote Speaker	14:45-15:15	**Talk: Advanced Fiber optic Sensing Systems for Aviation and Aerospace Applications** Dr. Alex Kazemi, The Boeing Company Fiber Optic Architect PD Advanced Concept, Chairman, LOPS2024
Keynote Speaker	15:15-15:45	**Talk: Mid-infrared (MIR) continuous wave, room temperature, first time fibre lasing beyond 5 μμm.** Angela B Seddon, University of Nottingham, UK
Keynote Speaker	15:45-16:15	**Talk: The emergence of Super Resolution Optical Photothermal Infrared Spectroscopy and Imaging** Mustafa Kansiz and Craig Prater, Photothermal Spectroscopy Corp., USA
Invited Speaker	16:15-16:35	**Talk : Challenges of and developments towards off-contact diffuse reflectance spectroscopy** Piao, Daching, Oklahoma State University, USA
Invited Speaker	16:35-16:55	**Talk: Emerging Fiber Technologies for Distributed Optical Fiber Sensing** Lu, Ping, OFS Fitel LLC, USA

Day 3 Closing Ceremony | End of the Session

Day 4 | Monday | June 10, 2024

Please download Zoom Meeting Application (Free Download)

Session Chairs: Dr. Alex Kazemi Bing Yu Keerthi Rajana		
Invited Speaker/ Virtual Talk	09:30-10:00	**Talk: Visible Resonance Raman Scattering in Brains.** Binlin Wu, Southern Connecticut State University, USA
Pending	10:00-10:30	**Talk:** Andrei Afanasev, The George Washington University, USA
Student Speaker Talk/ Virtual Talk	10:30-10:50	**Talk: Kidney Cancer Classification Model Using Deep Learning** Joseph Neumann, Southern Connecticut State University, USA
Invited Speaker/ Virtual Talk	10:50-11:10	**Talk: Machine-Learning-based Opening Object Recognition** Yang Yue, Xi'an Jiaotong University, China

Keynote Speaker/ Virtual Talk	11:10-11:40	**Talk:** Jessica Ramella-Roman, Florida International University, Miami, USA

Speaker Opportunities Available !
Conference Closing Ceremony

Time slots including Q&A