

The Future Photonics Hub combines the expertise of researchers from the University of Southampton's Optoelectronics Research Centre and the National Epitaxy Facility at the University of Sheffield. This schedule outlines the papers and posters (co-)authored by our researchers at the forthcoming SPIE Photonics West 2019 conference (San Francisco, USA)*.

*Authors from these institutions are shown in *italics*.

Saturday February 2, 2019

BIOS - Colloidal Nanoparticles for Biomedical Applications XIII (10892)

Session 3: Nano-Bio Complexes and Assemblies (Room 305, South Level Three):

14:20 Light-induced response in DNA-nanoparticle crystals, #10892-9. *De Fazio, El-Sagheer, Kahn, Brown, Muskens, Gang, Kanaras.*

Session 3: Multifunctional Nanoparticles for Biomedical Applications (Room 305, South Level Three):

15:30 DNA – Gold Nanoparticles Designed for mRNA Sensing in Cells: Imaging of the Gold Nanoparticles Using Two Photon Photoluminescence Spectroscopy. (Invited Paper), #10892-11. *Kyriazi, Muskens, Kanaras.*

Sunday February 3, 2019

BIOS - Fiber Lasers XV: Technology and Systems (10875)

Session 4: Microfluidic Devices II (Room 156, South Upper Mezzanine)

11:00 Multiplexed detection of CRP-SAA1 by laser direct-write-fab'ed multiple flow-path lateral flow devices, #10875-17. *He, Katis, Galanis, Teeling, Holmes.*

Course - Laser Sources: High-Power Fiber Sources (SC748). Instructor: Prof. Johan Nilsson

Monday February 4, 2019

OPTO - Plenary Session (10520)

08:00 Welcome and opening remarks. *Prof. Graham Reed, OPTO Symposium Chair (207/215, South Level Two)*

OPTO - Silicon Photonics XIV (10923)

Session 1: Fabrication Technology (Room 153, South Upper Mezzanine)

11:00 Rapid device prototyping using the CORNERSTONE platform (Invited Paper), #10923-2. *Littlejohns, Tran, Du, Stankovic, Yan, Sharp.*

Session 2: Silicon Waveguides I (Room 153, South Upper Mezzanine)

14:00 Engineering sub-wavelength silicon waveguides for sensing applications in the near-infrared and mid-infrared band (Invited Paper), #10923-6. *Perez et al including Soler-Penades, Nedeljkovic, Mashanovich.*

14:30 Suspended low-loss germanium waveguides for the mid-infrared, #10923-7. *Osman, Nedeljkovic, Penades, Wu, Qu, Khokhar, Mashanovich.*

BIOS - Microfluidics, BioMEMS, and Medical Microsystems XVII (10875)

Session 5: Manufacturing III (Room 156, South Upper Mezzanine)

14:50 Laser-direct-writing to enable filtration in paper-based devices, #10875-24. *Galanis, Sones, Katis, He, Eason, Thomas, Xianyu, Stevens.*

Session 10: Applications (Room 156, South Upper Mezzanine)

16:10 Laser direct-write patterned paper-based devices for detection of bacterial pathogens, #10875-44. *He, Katis, Bryant, Keevil, Somani.*

BIOS - Poster session (Intercontinental Hotel, Grand Ballroom (3rd Floor) and Intercontinental Ballroom (5th Floor))

17:30-19:00 Swept-source optical coherence tomography using pulsed mid-infrared light. #10890-84. *Lin, Revin, Groom, Matcher.*

LASE - Fiber Lasers XVI: Technology and Systems (10897)

Session 3: kW-Class Fiber Lasers and Amplifiers I (Room 205, South Level Two)

13:20 Full non-destructive characterization of doped optical fibre preforms, #10897-11. *Vivona, Zervas.*

Tuesday February 5, 2019

OPTO - Optical Components and Materials XVI (10914)

Session 4: Sensors (Room 313, South Level Three)

08:30 Mid-infrared waveguide evanescent wave sensing (Invited Paper), #10914-13. *Ganapathy, Vlk, Jágerská, Mittal, Wilkinson.*

OPTO - Silicon Photonics XIV (10923)

Session 5: Silicon Photonic Sensors (Room 153, South Upper Mezzanine)

09:50 Integration of mid-infrared silicon-on-insulator photonics with microfluidics, #10923-18. *Qi, Rowe, Mittal, Banakar, Wu, Nedeljkovic, Wilkinson, Mashanovich.*

OPTO - Smart Photonic and Optoelectronic Integrated Circuits XXI (10922)

Session 13: Smart Silicon Photonics (Room 152, South Upper Mezzanine)

10:55 Variable index silicon nitride for CMOS photonics applications (Invited Paper), #10922-59. *Gardes et al.*

OPTO - Advanced Fabrication Technologies for Micro/Nano Optics and Photonics XII (10930)

Session 10: High-throughput Fabrication using a DMD or other SLM Device (Room 153, South Upper Mezzanine)

13:30 Neural networks for predictive laser machining capabilities, #10932-7. *Mills, Heath, Grant-Jacob, Xie, Mackay, Eason.*

OPTO - Silicon Photonics XIV (10923)

Session 6: Silicon Waveguides II

13:50 Germanium ion implantation for trimming the coupling efficiency of silicon racetrack resonators, #10923-25. *Milosevic, Yu, Chen, Aktas, Khokar, Mallis, Thomson, Peacock, Reed.*

BIOS - Multiphoton Microscopy in the Biomedical Sciences XIX (10882)

Session 14: Technology Development II

15:55 Wide-field multiphoton imaging in scattering media (TRAFIX), #10882-49. *Escobedo-Montalban et al. including Andrews.*

LASE - Solid State Lasers XXVIII (10896)

Session 1: Eye-Safe and Mid-IR Lasers (Room 203, South Level 2)

08:40 1.6 micron Er:YGG waveguide amplifiers, #10896-3. *Mackenzie, Kurilchick, Prentice, Carpenter, Grant-Jacob, Gates, Smith, Gawith.*

11:00 High power 1726 nm operation of a thulium fiber laser pumped in-band by an erbium-only fiber laser, #10896-23. *Burns, Shardlow, Barua, Jefferson-Brain, Sahu, Clarkson.*

LASE - Vertical External Cavity Surface Emitting Lasers (VECSELs) IX (10901)

Session 4: Modelocking (Room 208, South Level 2)

17:15 Towards dual frequency comb VECSELs with DMD laser-ablated spatial mode masks, #10901-18. *Woods, Heath, Chen Sverre, Keenlyside, Mills, Garnache, Apostolopoulos.*

Wednesday February 6, 2019

OPTO - Advances in Photonics of Quantum Computing, Memory, and Communication XII (10933)

Session 5: Entanglement and Circuits (Room 213, South Level 2)

08:45 Modular linear optical circuits for quantum information processing, #10933-9. *Gates, Mennea, Clements, Smith, Bannerman, Renema, Kolthammer, Walmsley, Smith.*

OPTO - Optical Components and Materials XVI (10914)

Session 9: Rare-Earth Doped Materials II (Room 313, South Level 3)

10:30 SiO₂-SnO₂ and SiO₂-HfO₂ transparent glass ceramics activated by rare-earth ions (Invited Paper), #10926-61. *Ferrari et al. including Gates, Sazio.*

OPTO - Advanced in Photonics of Quantum Computing, Memory and Communication (10933)

Session 6: Quantum Communication and Networks (Room 213, South Level 2)

11:10 A quantum light-emitting diode for the standard telecom window around 1550 nm, #10933-16. *Müller et al. including Heffernan.*

OPTO - Quantum Sensing and Nano Electronics and Photonics XVI (10926)

Session 14: Photonic Integrated Circuits (Room 304, South Level 3)

13:40 UV laser-written waveguide devices for all optical quantum information processing (Invited Paper), #10923-61. *Smith.*

OPTO - Poster Session

18:00 High-birefringence UV-written waveguide-based heralded single-photon sources operating at 1550 nm, #10933-33. *Mennea, Posner, Eckstein, Hiemstra, Bannerman, Smith, Kolthammer, Gates, Walmsley, Smith.*

LASE - Laser-based Micro- and Nanoprocessing XIII (10906)

Session 7: Direct Write Processing Ablation and Surface Modification (Room 50, South Lower Mezzanine)

15:00 Image-based monitoring of high-precision laser machining via a convolutional neural network, #10906-35. *Mills, Heath, Grant-Jacob, Xie, Mackay, Eason.*

LASE - Solid State Lasers XXVIII: Technology and Devices (10896)

Session 6: Novel Laser Concepts (Room 203, South Level 2)

16:10 Amplification of a radially polarized beam in a thermally-guiding fiberrod amplifier, #10896-40. *Jefferson-Brain, Smith, Burns, Shardlow, Clarkson.*

17:30 Generation and amplification of a LGo1 laser with a thermally-guiding fiber-rod, #10896-44. *Jefferson-Brain, Liu, Shardlow, Clarkson.*

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