

EPSRC Centre for Doctoral Training in Intelligent Sensing and Measurement

Annual Conference

Wednesday 4 November 2020

Zoom [link will be sent to all registered attendees]

PROGRAMME

Session 1

Chair: *Andrew Earle, University of Glasgow*

09:00 **Welcome**

Invited Speaker

09:10 **Mobile Phone Enabled Infectious Disease Diagnostics – Applications in Village Communities in Rural Africa**

Prof Jon Cooper, Wolfson Chair of Bioengineering (Biomedical Engineering), James Watt School of Engineering, University of Glasgow, UK

Fourth Year CDT-ISM Students

09:50 **Electrochemical Sensors for Molten Salt Reactors**

Nigel Lucas, University of Edinburgh

10:03 **Using Microlasers for a Sensing Platform**

Jason Norman, University of Edinburgh

10:16 **Novel Probes for Multimodal Functioning at the Nanoscale.**

David Atkins, University of Glasgow

10:29 **Adaptive LiDAR Based on Structured Illumination and SPAD-array Imaging**

Konstantinos Bantounos, University of Edinburgh

10:42 **Break**

Session 2

Chair: *Jack Radford, University of Glasgow*

Third Year CDT-ISM Students – 3 Minute Thesis Presentations

11:00 **Automated Smartphone Microscopy for Parasite Detection in Low-Resource Settings**

Oliver Higgins, University of Glasgow

11:04 **Tunable Electrochemical Gels for Sensing Applications**

Ian Bennett-Wright, University of Edinburgh

11:08 **A Fluorescent Needle in a Haystack: FBAs in DNA**

Alix Bailie, University of Edinburgh

11:12 **A Novel Near-UV Photodetector Based on Silicon Carbide**

Alberto Moreno Guerrero, University of Edinburgh

11:16 Electrochemical Sensing for Continuous Monitoring of Fetal Health

Kayleigh Doherty, University of Edinburgh

11:20 A Pendulum-Based MEMS Gravimeter

Richard Walker, University of Glasgow

11:24 Innovative Rheology (i-Rheo) for Material Characterisation and Diagnostics

Matthew Smith, University of Glasgow

Fourth Year CDT-ISM Students

11:28 Electrospinning for Wearable Flexible Sweat Sensors

Michael Chung, University of Edinburgh

11:40 Stress Under the Microscope: Using PSF Engineering for 3D Time Resolved Traction Force Microscopy

Michael Handley, University of Glasgow

11:52 Developing an Electrochemical Glucose Sensor using Nanoband Electrodes

Fiona Moore, University of Edinburgh

12:04 Lunch Break

Session 3

Chair: *Alix Bailie, University of Edinburgh*

CDT-ISM Alumni Invited Presentation 1

13:15 Integrating Fluidic Intelligence into Soft Matter

Asst Prof Markus Nemitz, Department of Robotics Engineering, Worcester Polytechnic Institute, USA

Third Year CDT-ISM Students – 3 Minute Thesis Presentations

13:30 Atomic Layer Deposition for the Fabrication of Superconducting Nanowire Single-Photon Detectors

Ciaran Lennon, University of Glasgow

13:34 Optical Systems for the Testing and Measurement of Components for LISA

Andrew Earle, University of Glasgow

13:38 Development of an optical sensor for continuous monitoring of tumour oxygenation and pH

Gregory Myles, University of Edinburgh

13:42 Head Based Microwave Sensing

Mark Evans, University of Edinburgh

13:46 SiC Cold Emitters for Medical Imaging. Transforming Radiology

Salvador Barranco-Cárceles, University of Edinburgh

13:50 Ge-on-Si waveguide SPADs: Guiding and Detecting Photons in One Device

Conor Coughlan, University of Glasgow

13:54 Shedding light on the brain with diffuse photons and AI

Jack Radford, University of Glasgow

Fourth Year CDT-ISM Students

13:58 Monitoring the Chemical Microenvironment of Cystic Fibrosis

William Skinner, University of Edinburgh

14:10 Ultra-Small Size, Ultra-Low Power Implantable Microchip for the Detection of Biopotential Signals

Jose Cortes Guzman, University of Edinburgh

14:22 Path to Snapshot Gigapixel Microscopy
Thomas Aidukas, University of Glasgow

14:34 Break

Session 4

Chair: Salvador Barranco-Cárceles, *University of Edinburgh*

Invited Speakers

- 15:00 Early Bedside Broadband Near-infrared Spectroscopy (bNIRS) Markers of Neonatal Brain Injury: Quantifying In-vivo Mitochondrial Function**
Prof Ilias Tachtsidis, Professor in Biomedical Engineering, Department of Medical Physics and Biomedical Engineering, University College London, UK
- 15:30 Time-of-Flight Imaging and Applications**
Prof Daniele Faccio, Professor of Quantum Technologies, School of Physics and Astronomy, University of Glasgow, UK
- 16:00 Dense, Low-Cost Networks for Imaging Urban Air**
Prof Ronald C Cohen, Professor of Chemistry and of Earth and Planetary Sciences, University of California, Berkeley, USA
- 16:30 - Close Virtual Networking Session**