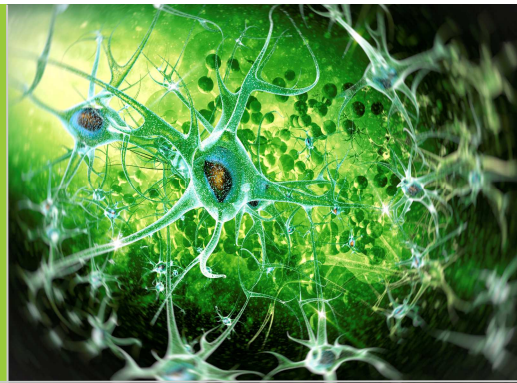


# Advances in photonic techniques for biomedical sciences

Date: Wednesday 14th June 2017

Venue: Technology and Innovation Centre, University of Strathclyde, Glasgow.



## PROGRAMME

### 09.55 Introduction and Welcome

Laurence Devereux, Xmark Media, on behalf of the programme committee

### Session 1: Photonics in Medicine

Chair: Dr Alastair McInroy

### 10.05 Recent Advances in Photodermatology and Photodynamic Therapy

Dr Ewan Eadie, *NHS Tayside*

### 10.30 "Lighting up the Lung"- Beginning the journey to understand disease before we can diagnose or treat it

Dr Kev Dhaliwal, *University of Edinburgh*

### 10.55 Imaging of the human retina

Dr Jano Van Hemert, *Optos PLC*

11.20 - break in the hall

### Session 2: Advances in Optical Manipulation and Microscopy

Chair: Dr Lynn Paterson

### 11.45 Holographic micro-endoscopy through multimode waveguides

Dr Tomas Cizmar, *University of Dundee*

### Keynote

### 12.10 Optical manipulation and biomedical applications of HOT nanoparticles

Professor Lene Broeng Oddershede, *NBI, University of Copenhagen*

### 12.50 Intensity based three-dimensional super-resolution imaging

Dr Sebastian Van de Linde, *University of Strathclyde*

13.15 - lunch break

### 14.15 Poster session in the hall (see over)

### Session 3: Optics and Cells

Chair: Professor Rory Duncan

### 15.00 The Latest Optoelectronic Gadgets for Cells – New Biophotonic Tools for Cell Biology and Beyond

Professor Malte Gather, *University of St. Andrews*

### 15.25 Optimal Fluorophores for Maximising FLIM-FRET Biosensor Capabilities

Dr Kirsty Martin, *Beatson Institute for Cancer Research*

### 15.50 Optical manipulation and sensing within femtosecond-laser fabricated devices

Dr Lynn Paterson, *Heriot Watt University*.

16.15 Closing remarks

16.20 Award of poster prizes

## PROGRAMME COMMITTEE

### Dr Graeme Whyte (Chair)

Institute of Biological Chemistry, Biophysics and Bioengineering, *Heriot-Watt University*.

### Dr Tom Brown

Reader in Photonics  
*University of St Andrews*

### Prof Rory Duncan

Head of Institute of Biological Chemistry, Biophysics and Bioengineering,  
*Heriot-Watt University*

### Prof Gail McConnell

Chair of Biophotonics at the Strathclyde Institute of Pharmacy and Biomedical Sciences, *University of Strathclyde*

### Dr Ally McInroy

Senior Programme Manager,  
*Technology Scotland*

### Dr Lynn Paterson

Institute of Biological Chemistry, Biophysics and Bioengineering, *Heriot-Watt University*

IT IS FREE TO ATTEND THE CONFERENCE, THE ROADSHOW EXHIBITION AND THE PHOTONICS TUTORIALS

SUPPORTED BY



A conference at:



**Photonex** SCOTLAND

Photonics Technology Roadshow

14th June 2017 · University of Strathclyde

## ADMINISTRATION AND ORGANISATION

Brenda Hargreaves, Enlighten Meetings/Xmark Media Ltd

T: +44 (0) 1372 750555 • Email: [info@enlightenmeetings.co.uk](mailto:info@enlightenmeetings.co.uk)

Information and to register  
[www.photonex.org/scot](http://www.photonex.org/scot)

# Advances in photonic techniques for biomedical sciences

Date: Wednesday 14th June 2017

Venue: Technology and Innovation Centre, University of Strathclyde, Glasgow.

## POSTERS

- Optical Coherence Tomography (OCT) imaging of Antarctic Krill**  
Tom Edwards(a), Josep Mas(a), Martin Cox(b), So Kawaguchi (b), Robert King(b), Kishan Dholakia(a) SUPA, School of Physics & Astronomy, University of St Andrews Science Branch, Australian Antarctic Division, Kingston, Australia
- A 340/380 nm light emitting diode illuminator for Fura-2 AM ratiometric calcium imaging of live cells with better than 5 nM precision**  
Peter Tinning, Aimee Franssen, Shehla Hridi, Trevor J. Bushell, and Gail McConnell, University of Strathclyde
- A Computational Method for Two-Dimensional Quantitative Analysis of Standing Wave Images of Red Blood Cells**  
Ross Scrimgeour, Peter Tinning, David Li, Gail McConnell, University of Strathclyde
- Low Nonlinearity, Missing-Code Free multi-channel Time-to-Digital Converters Based on 28-nm FPGAs With Embedded Bin-Width Calibrations**  
Haochang Chen and David Day-Uei Li, University of Strathclyde
- Yellow Orange Monolithic Diamond Raman Laser Operating in the nanosecond and Picosecond regime.**  
Sean Reilly 1, Vasili G Savitski 1, Jari Nikkinen 2, Anti Harkonen 2, Hangyu Liu 1, Mircea Guinea 2, Erdan Gu 1, Martin D Dawson 1, and Alan J Kemp 1 Institute of Photonics, Department of Physics, SUPA, University of Strathclyde, Glasgow, G1 1RD Optoelectronics Research Centre, Tampere University
- Hyperspectral Microscopy of Near-Infrared Fluorescence Enables Enhanced Multiplexing Imaging Capabilities Over 17 Carbon Nanotubes Species In Various Biological Samples**  
Nick Barnett, Pro-Lite Ltd
- 1064 nm Raman: The Right Choice for Biological Samples?**  
Ozan Akkus, Leonard Case Jr, Shan Yang, David Creasey, Nick Barnett; Case Western Reserve University, Jackson State University, Wasatch Photonics Inc, Pro-Lite Technology Ltd
- Hyperspectral imaging for Early Stage Detection of Arthritis**  
Trond Loke, Ivar Baarstad Hallvard Skjerpung, Norsk Elektro Optikk AS (NEO/Hyspex); Nick Barnett, Pro-Lite Technology Ltd
- Real-time and non-invasive measurements of cell mechanical behaviour using optical coherence phase microscopy**  
Dawn Gillies, University of Edinburgh
- Widefield fluorescence lifetime imaging and temporally resolvable single molecule localisations with a SPAD imager**  
Istvan Gyongy, University of Edinburgh
- Trapped between two beams – orienting living cells in a dual-beam laser trap using all in-fibre-based higher-order -mode manipulation**  
Kai Skodzek, Heriot-Watt University
- Laser assisted etching of micro-optics for optical biopsy instruments**  
Ross Callum, Heriot-Watt University
- BK channels activity is disrupted in diabetes mellitus**  
Allende Miguelez, Heriot-Watt University
- Ghost Imaging using the modes of a Photonic Lantern**  
Duncan McNicholl, Heriot-Watt University
- Novel multicore optical fibres for on-chip optical manipulation**  
Georgia Anastasiadi, Heriot-Watt University
- Characterising cross-coupling in coherent fibre bundles**  
Antonios Perperidis<sup>1,2\*</sup>, Helen E. Parker<sup>2</sup>, Ahmed Karam-Eldaly<sup>1</sup>, Yoann Altmann<sup>1</sup>, Kevin Dhaliwal<sup>2</sup>, Robert R. Thomson<sup>3,2</sup>, Michael G. Tanner<sup>3,2</sup> and Stephen McLaughlin<sup>1</sup>  
Institute of Sensors, Signals and Systems (ISSS), Heriot Watt University, EH14 4AS, UK <sup>2</sup>EPSRC IRC “Hub” in Optical Molecular Sensing & Imaging, MRC Centre for Inflammation Research, Queen’s Medical Research Institute (QMRI), University of Edinburgh, EH16 4TJ, UK <sup>3</sup>Institute of Photonics and Quantum Sciences (IPAQS), Heriot Watt University, EH14 4AS, UK
- Microstructural Elastographic Characterisation of Prostate Biopsies Tissues using Optical Coherence Elastography**  
Yuting Ling<sup>1, 2, ‡</sup>, Chunhui Li<sup>1, 2, ‡</sup>, Kanheng Zhou<sup>1,2</sup>, Guangying Guan<sup>1,2</sup>, Stephen Lang<sup>3</sup>, David McGloin<sup>2</sup>, Ghulam Nabi<sup>1</sup>, Zhihong Huang<sup>1,2</sup>  
<sup>1</sup>Division of Cancer Research, University of Dundee, Ninewells Hospital and Medical School, Dundee DD1 9SY, UK <sup>2</sup>School of Science and Engineering, University of Dundee, Dundee, DD1 4HN, UK <sup>3</sup>Department of Pathology, University of Dundee, Ninewells Hospital and Medical School, Dundee DD1 9SY, UK  
‡: These authors contributed equally to this work.
- The measurement of phase velocity of surface acoustic wave in tissue mimicking material**  
Kairui Feng, University of Dundee
- Edinburgh Super-Resolution Imaging Consortium**  
Dr Rebecca Saleeb, ESRI, Heriot-Watt University

## ADMINISTRATION AND ORGANISATION

Brenda Hargreaves, Enlighten Meetings/Xmark Media Ltd

T: +44 (0) 1372 750555 • Email: [info@enlightenmeetings.co.uk](mailto:info@enlightenmeetings.co.uk)

Information and to register  
[www.photonex.org/scot](http://www.photonex.org/scot)