Semiconductor and Integrated Optoelectronics

SIOE ‘16

Cardiff, Wales 5\textsuperscript{th} – 7\textsuperscript{th} April 2016

Programme and Abstracts
Conference Locations (see map on the opposite page)

**Tues 5th April:** Queens Buildings site CF24 3AA (North and South Buildings)
Queen's Buildings, 5 The Parade, Newport Road, CF24 3AA

NCP parking is available in the Knox Road car park (we cannot reimburse costs)

Registration will be in North Building foyer.
1st session will be in room N3-28 (third floor – 3 flight of stairs and turn left)
Poster session: The Forum (next to room 1.19 South Building – ask for directions)

**Wed 6th and Thurs 7th April:** Law Building CF10 3AT 0.22 for talks and Aberdare Hall CF10 3UP for refreshments

Law Building, Museum Avenue (entrance on opposite side of building - Park Place) CF10 3AT 0.22 is immediately to the right of the entrance.

On street pay and display on Museum Avenue (we cannot reimburse costs)

Cardiff Castle, Cardiff for Banquet – CF10 3RB

See Map – arrows indicate approximate position of entrances
SIOE ‘16

Croeso i Gaerdydd a chroeso unwaith eto i SIOE

It gives me great pleasure to welcome you to the 30th SIOE conference in Cardiff.

We have an exciting programme that demonstrates the continuing evolution of Semiconductor Integrated OptoElectronics. On Tuesday afternoon we begin with sessions on 1) “Photovoltaics” and 2) “Detectors”, which highlight some of the different technological approaches and the new materials being developed. We finish Tuesday with a reception and Poster session allowing you to interact and socialise with your colleagues. This reception is sponsored by IET Publishing and IET publishing will also be facilitating the special issue associated with the conference. The guest editor role will be taken this year by Dr Sam Shutts. Both Sam and myself will be pleased to talk to anyone that wants to expand their conference presentation for this special issue.

On Wednesday morning we change location and begin with a session entitled “Materials development” which is followed by sessions on “LEDs and Characterisation” and, in the afternoon, “Lasers”. We conclude with two tutorials - one on Quantum Dots and their application in devices and the other giving an overview of Terahertz technology. These are kindly given by Professor Peter Blood (Cardiff) and Professor Giles Davies (Leeds). After a full day we can relax in the 19th Century Library of Cardiff Castle with some music and refreshments, followed by the conference dinner in the banqueting hall of Cardiff Castle.

Following the conference banquet we start Thursday morning all too early with some stimulating presentations in a session on communications devices and systems. As usual I have to apologise to the speakers concerned for this early slot but the high quality of these talks does make the early start really worthwhile for the audience. The last session of the conference draws together activity focused towards integration, starting with very simple integrated substructures to produce THz output followed by elements required for electronic and photonic and photonic – photonic integration.

In putting together this programme I have relied on help from a large number of people including what seems like most of the staff in the School of Physics and Astronomy in Cardiff but particular mention goes to Sam Shutts, Stella Elliott, Rob Thomas, Sara Gillgrass and Lewis Kastein. I would also like to thank Cardiff University for sponsorship, IET Publishing for sponsoring the Poster Reception and the IOP Semiconductor Physics Group, Oxford University Press and IOP Quantum Electronics and Photonics Group for financial assistance. Finally I would like to thank IOP Wales for contributing to the musical introduction to the banquet.

I’m also pleased to be able to remind you to pick up our souvenir glass (the third in the series) as a memento of the meeting.

Prof. Peter Smowton, School of Physics and Astronomy, Cardiff University
Tuesday 5th April 2016

13-00 Onwards REGISTRATION: North Building Foyer

13-40 North Building N3.28 – Welcome

13-45 North Building N3.28: Session 1 – Photodiodes

13-45 “Breakdown characteristics on AlGaAsSb Avalanche Photodiodes”
X. Zhou, M. A. Moreno, S. Xie, J. S. Ng and C. H. Tan
Department of Electronic & Electrical Engineering, University of Sheffield, Mappin Street, Sheffield, S1 3JD, U.K.

14-00 “RF and high speed characterization InGaAs PIN diode for Optical Fiber Applications”
Omar S. Abdulwahid, S. G. Multtlak, James Sexton, Kawa Iam, and Mohamed Missous
School of Electrical and Electronic Engineering, the University of Manchester, United Kingdom
Integrated Compound Semiconductors, Manchester, United Kingdom

14-15 “Proton Radiation effect on InAs avalanche photodiodes”
Xinxin Zhou, B. S. White, J. S. Ng and C. H. Tan
Department of Electronic and Electrical Engineering, University of Sheffield, Mappin Street, Sheffield, S1 3JD, U.K.

14-30 “Narrow spectral response (Al\textsubscript{x}Ga\textsubscript{1-x})\textsubscript{0.52}In\textsubscript{0.48}P visible photodiodes”
A. N. A. P. Baharuddin, JengShiuh Cheong, J. S. Ng, A. B. Krysa and J. P. R. David
Department of Electronic and Electrical Engineering, University of Sheffield, Mappin Street, S1 3JD, U.K.

14-45 “Evidence for the direct nature of the bandgap in Ge\textsubscript{0.92}Sn\textsubscript{0.08}/Si photodiodes using hydrostatic pressure”
Igor P. Marko, Timothy Eales, Seyed A. Ghetmiri, Wei Du, Yiyin Zhou, Shui-Qing Yu, and Stephen J. Sweeney,
Advanced Technology Institute and Department of Physics, University of Surrey, Guildford GU2 7XH, United Kingdom
Department of Electrical Engineering, University of Arkansas, Fayetteville, AR, USA, 72701
**15-00** “InAs/GaAs quantum dot infrared photodetectors monolithically grown on silicon substrates”


Department of Electronic and Electrical Engineering, University College London, London WC1E 7JE, United Kingdom

Institute for Nanoscience and Engineering, University of Arkansas, Fayetteville, Arkansas 72701, United States of America

Physics Department, Humboldt University Berlin, Newtonstr. 15, 12489 Berlin, Germany

United States Army Research Laboratory, 2800 Powder Mill Road, Adelphi, Maryland 20783-1197, USA

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**15-15 Refreshments Room N3.23 (Opposite N3.28)**

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**15-45 North Building N3.28: Session 2 – Photovoltaics**

**15-45** “Si-doped InAs/GaAs quantum dot solar cell with AlAs cap layers”

Dongyoung Kim, Mingchu Tang, Jiang Wu, Sabina Hatch, Yuriii Maidaniuk, Vitaly Dorogan, Yuriy I. Mazur, Gregory J. Salamo and Huiyun Liu

Department of Electronic and Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, United Kingdom

Institute for Nanoscience and Engineering, University of Arkansas, Fayetteville, Arkansas 72701, United States of America

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Federica Cappelluti, Arastoo Khalili, Mariangela Gioannini

Dipartimento di Elettronica e Telecomunicazioni, Politecnico di Torino, Corso Duca degli Abruzzi 24,10129, Torino, Italy.

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**16-15** “Device Integration of Concentrator Photovoltaics and Thermoelectrics”


Cardiff University, University of Glasgow, Exeter University, The University of Manchester, Harbin Institute of Technology, University of Exeter.
16-30 “GaAsBi based multiple quantum well photovoltaics”
University of Sheffield, Sheffield, South Yorkshire, S1 3JD, UK
Imperial College London, London, SW7 2AZ, UK

16-45 “SiGeSn and GaAsSbN 1-eV Solar Cells For Use in Lattice-Matched Multi-Junction Architectures”
Tomos Thomas, Tom Wilson and Ned Ekins-Daukes, Kian Hua Tan, Satrio Wicaksono, Wan Khai Loke and Soon Fatt Yoon, Rick Hoffman Jr, David Begarney and Andrew Johnson, Radek Roucka and Andrew Clark
Imperial College London, London, UK
Nanyang Technological University, Singapore
IQE plc., Cardiff, UK
Translucent Inc., CA, USA

17-00 “InAs Based Thermophotovoltaic Array for Waste Heat Recovery”
Physics Department, Lancaster University, Lancaster, LA1 4YB, UK,
CST Global Ltd., Hamilton International Technology Park, Blantyre, Glasgow, G72 0BN, UK,
NSG Technical Centre, Hall Lane, Lathom, L40 5UF, UK
Materials Processing Institute, Grangetown, Middlesbrough, TS6 6US, UK"

17-30 – 20-00 The Forum, (next door to room 1.19 South Building)
Session 3: Posters and IET Publishing Reception

1) “Theory of InGaBiAs/InP alloys for mid-infrared quantum well lasers”
Wanshu Xiong, Christopher A. Broderick and Judy M. Rorison,
Department of Electrical and Electronic Engineering, University Bristol, Bristol BS8 1UB, U.K.

2) “Concept and numerical simulations of a 17 nm tunable sampled-grating distributed-Bragg reflector (SG DBR) laser emitting at 976 nm”
Mahmoud Tawfieq, B. Sumpf, H. Wenzel and G. Tränkle
Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Gustav-Kirchhoff-Straße 4, 12489 Berlin, Germany
3) “Selective Epitaxy and Growth on Structured Surfaces of Indium Phosphide of LP-MOVPE for Mid-Infrared Quantum Cascade Lasers”
Hannes Schmeiduch, Frederic Demmerle, Stephan Saller, Stephan Sprengel, Ralf Meyer and Markus-Christian Amann
Walter Schottky Institut, Technische Universitaet Muenchen, Am Coulombwall 4, 85748 Garching, Germany

4) “Superstrate Based Optically Reconfigurable Microwave Circuits”
A. W. Pang, C. D. Gamlath, M. A. Collett and M. J. Cryan
Department of Electrical and Electronic Engineering, University of Bristol, U.K

5) “High Principal Quantum Number Excitons in Cuprous Oxide”
School of Physics and Astronomy, Cardiff University.
Joint Quantum Centre (JQC), Department of Physics, Durham University.

6) “Transient thermal study of InP-based type-II heterostructure lasers under pulsed operation”
Ganpath K. Veerabathran, S. Sprengel, S. Karl and M.-C. Amann
Walter Schottky Institut, Technische Universität München, Germany

7) “Solar Thermal Characterisation of Micro and Nano-Patterned Solar Absorbers”
H. Cen, N. Ahmad, S. Nunez-Sanchez, A. Reip, P.J. Dobson, I.Bickerton, N.A. Fox and M.J.Cryan
Department of Electrical and Electronic Engineering, University of Bristol
School of Chemistry, University of Bristol
Oxford nanoSystems Ltd, G53 West Building, R12 STFC ITAC, Harwell, Oxford, UK

8) “Transient FT Spectroscopy of Dilute Holmium Ions in Rare Earth Crystals”
Ryan H. Stock, Chris Hodges, William. S. Royle, Michael J. Graf, Boris Z. Malkin, Sean R. Giblin and Stephen A. Lynch
School of Physics and Astronomy, Cardiff University, Cardiff, United Kingdom
Department of Physics, Boston College, Chestnut Hill, MA 02467 USA 3. Kazan Federal University, Kazan 420008, Russian Federation
9) “Gallium Nitride Grating Coupler Design”
Department of Electrical and Electronic Engineering, University of Bristol, BS8 1UB, UK
Department of Electrical and Electronic Engineering, University of Bath

10) “Experimental and Physical Modelling of Resonant Tunneling diode with Offset Slot Antenna for Sub-Millimeter Wave Applications”
Saad Gazai Muttlak, M. A. Md Zawawi and M. Missous
School of Electrical and Electronic Engineering, University of Manchester, UK

11) “Laser Metrology of Photocatalytic Reactions for Water Treatment”
Jessica Mabin, Eman Alghamdi, Chris Hodges, Simon J. Freakley, and Stephen A. Lynch
School of Physics and Astronomy, Cardiff University, Cardiff, United Kingdom
Cardiff Catalysis Institute, School of Chemistry, Cardiff University, Cardiff, United Kingdom

12) “Development of highly reflective distributed Bragg reflectors for vertical cavity surface emitting lasers above 2 µm”
Alexander Andrejew, S. Sprengel and M.-C. Amann
Walter Schottky Institut, Technische Universitaet Muenchen, Am Coulombwall 4, 85748 Garching, Germany

13) “Travelling-wave modelling of dynamic performance of wavelength-tunable laser diodes using the integrated VPI and PICS3D software”
Onur Duzgol, Georgios Kyritsis, and Nick Zakhleniuk
School of Computer Science and Electronic Engineering, University of Essex, Colchester, Essex, CO4 3SQ, UK.

14) “Printed Plasmonic GaAs Nanolasers”
Lucas Lafone, Ngoc Nguyen, Michael P. Nielsen, Edmund Clarke, Paul Fry, Stefan A. Maier, and Rupert F. Oulton
Department of Physics, Imperial College London, London, SW7 2AZ, UK
National Facility for III-V Technologies, University of Sheffield, Sheffield, S1 3JD, UK
15) “Triple Barrier Resonant Tunnelling Heterostructures for Terahertz Radiation Emission”
Craig P. Allford, P. D. Buckle, M. Missous,
School of Physics and Astronomy, Cardiff University, Queen’s Buildings, The Parade, Cardiff, CF24 3AA, Wales, UK
School of Electrical and Electronic Engineering, Sackville Street Building, The University of Manchester, Manchester, M13 9PL, England, UK

Wednesday 6th April 2016
8-30 Room 0.22 Law Building – Session 4: Materials Development

8-30 “Theory of near- and mid-infrared dilute bismide quantum well lasers”
Chris A. Broderick, W. Xiong, I. P. Marko, S. J. Sweeney, E. P. O’Reilly, and J. M. Rorison
Department of Electrical and Electronic Engineering, University of Bristol, Bristol BS8 1UB, U.K.
Advanced Technology Institute and Department of Physics, University of Surrey, Guildford GU2 7XH, U.K.
Tyndall National Institute, Lee Maltings, Dyke Parade, Cork, Ireland
Department of Physics, University College Cork, Cork, Ireland

8-45 “Experimental and theoretical study of optical gain in GaAsBi/GaAs quantum well diode laser structures”
Advanced Technology Institute and Department of Physics, University of Surrey, Guildford GU2 7XH, United Kingdom
Department of Electrical and Electronic Engineering, University of Bristol, Bristol BS8 1UB, UK
Materials Science Center and Faculty of Physics, Philipps-Universität Marburg, 35032 Marburg, Germany
Tyndall National Institute, Lee Maltings, Dyke Parade, Cork, Ireland
Department of Physics, University College Cork, Cork, Ireland

9-00 “Catalyst Free GaN Nanowires Grown on (111) Si Substrate by MOVPE”
Xiang Yu, S Shen, Y Hou, Y Gong, A Hazari, P, Bhattacharya and and T Wang
Department of Electronic and Electrical Engineering, University of Sheffield, Mappin Street, Sheffield S1 3JD, United Kingdom
Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, Michigan 48109-2122, USA
9-15 “Growth of High-Quality Self-Catalyzed GaAsP Nanowires and Dot-in-Wire Structure”
Yunyan Zhang, Jiang Wu, Ana M. Sanchez, Martin Aagesen, Dongyoung Kim, Pamela Jurczak, Suguo Huo, Huiyun Liu
Department of Electronic and Electrical Engineering, University College London, London WC1E 7JE, United Kingdom;
Gasp Solar ApS, Gregersensvej 7, Taastrup DK-2630, Denmark;
Department of Physics, University of Warwick, Coventry CV4 7AL, United Kingdom
London Centre for Nanotechnology, University College London, London WC1H 0AH, United Kingdom

9-30 “The influence of basal plane stacking faults (BSFs) in (11\{\underline{2}\}2) semi-polar InGaN/InGaN quantum wells on overgrown semi-polar GaN investigated by confocal PL”
Rick M. Smith, Y. Zhang, J. Bai, K. Xing, X. Yu, B. Xu, Y. Gong, M. Athanasiou, Y. Hou and T. Wang
Department of Electronic and Electrical Engineering, University of Sheffield,

9-45 “Valence band mixing in telecoms wavelength quantum dots”
Edmund Harbord, Edmund Clarke, and Ruth Oulton
HH Wills Physics Laboratory, University of Bristol, Tyndall Avenue, Bristol, BS8 1TL, UK
EPSRC National Centre for III-V Technologies, University of Sheffield, Mappin Street, Sheffield, S1 3JD, UK
Department of Electrical and Electronic Engineering, University of Bristol, BS8 1UB, UK

10-00 “Chalcogen Double Donors in Silicon as Natural Quantum Dots”
School of Physics and Astronomy, Cardiff University, Cardiff, United Kingdom
Ioffe Physical-Technical Institute, Russian Academy of Sciences, St. Petersburg, Russia

10-15 Coffee/ Tea Aberdare Hall

10-45 Room 0.22 Law Building – Session 5: LEDs and Characterisation
10-45 “Identifying facet efficiency in angled facet deep-etched ridge structures”
Sara Gillgrass, R. Thomas and P.M. Smowton
School of Physics and Astronomy, Cardiff University, The Parade, Cardiff, CF24 3AA
11-00 “GaSb/GaAs quantum-ring light emitting devices”
Peter D. Hodgs, A. J. Robson, Q. D. Zhuang, L. Danos, S. McDougall and M Hayne
Department of Physics, Lancaster University, Lancaster LA1 4YB, UK
Department of Chemistry, Lancaster University, Lancaster LA1 4YB, UK
CST Global Ltd, 4 Stanley Blvd, Hamilton International Technology. Park, Glasgow G72 0BN, UK

11-15 “Properties of mid-infrared interband cascade light emitting devices”
Advanced Technology Institute & Department of Physics, University of Surrey, Guildford, GU2 7XH, UK
Code 5613, Naval Research Laboratory, Washington DC 20375, USA
Sotera Defense Solutions, Inc., 7230 Lee DeForest Drive, Suite 100, Columbia MD 21046

11-30 “Precise optimisation of internal optical mode loss in InAs quantum dot lasers through a modulated segmented contact method”
Peter Rees, P.M. Smowton, P. Blood
School of Physics and Astronomy, Cardiff University, Queens Buildings, The Parade, Cardiff CF24 3AA, UK

11-45 “Characterisation of GaNAs/GaN PN junction diode with scanning probe microscopy”
Department of Materials Science and Metallurgy, University of Cambridge, Cambridge CB3 0FS, UK
School of Physics and Astronomy, University of Nottingham, Nottingham NG7 2RD, UK

12-00 “Long wavelength semi-polar InGaN LEDs from green to amber overgrown on regularly-arrayed micro-rod templates”
Yun Zhang, F. Guzman, B. Xu, X. Yu, Y. Gong, Y. Hou, J. Bai, and T. Wang
Department of Electronic and Electrical Engineering, University of Sheffield, UK

12-15 Lunch Aberdare Hall
13-15 Room 0.22 Law Building Session 6: Lasers

13-15 “Slope efficiency of quantum dot lasers”
Peter Blood
School of Physics and Astronomy, Cardiff University, CF24 3AA, Wales, UK

13-30 “Characteristics of III-V on Si 1300nm Quantum Dot Laser material examined with segmented contact test structures”
Stella N Elliott, S Shutts, A Sobiesierski, P M Smowton, M Tang, J Wu and H Y Liu
School of Physics and Astronomy, Cardiff University, Queens Buildings, The Parade, Cardiff CF24 3AA, UK
Department of Electronic and Electrical Engineering, University College London, London, WC1E 7JE, UK

13-45 “InAs/GaAs Quantum Dot Lasers Grown on Si Substrates with Optimised InGaAs/GaAs Defect Filter Layer”
Mingchu Tang, Siming Chen, Jiang Wu, Qi Jiang, Mengya Liao, Ken Kennedy, Richard Beanland, Alwyn Seeds, Huiyun Liu
Department of Electronic and Electrical Engineering, University College London, London WC1E 7JE, United Kingdom
Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield, S1 3JD, U.K.
Department of Physics, University of Warwick, Coventry, CV4 7AL, U.K.

14-00 “Physical Properties of Type I GaInAsSb/GaSb lasers emitting in the Mid-infrared range of 2.3-2.9 µm”
Timothy Eales, Igor P. Marko, Barnabas A. Ikyo, Alf R. Adams, Stephen J. Sweeney, Shamsul Arafin, Stephan Sprengel and M.-C. Amann
Advanced Technology Institute and Department of Physics, University of Surrey, Guildford, Surrey GU2 7XH, United Kingdom
Walter Schottky Institut, Technische Universität München, Am Coulombwall 3, 85748 Garching, Germany

14-15 “Generation of optical picosecond pulses with monolithic colliding pulse mode-locked lasers”
Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Gustav-Kirchhoff-Straße 4, 12489 Berlin, Germany
14:30 “Feedback Sensitivity of InAs/GaAs Fabry-Perot Quantum-Dot Lasers Operating on the Excited State Transition”
Heming Huang, K. Schires, D. Arsenijević, T. Sadeev, D. Bimberg and F. Grillot
CNRS LTCI, Télécom ParisTech, Université Paris-Saclay, 46 rue Barrault, 75013 Paris, France
Institut für Festkörperf3rphysik, Technische Universität Berlin, Berlin 10623, Germany
King Abdulaziz University, Jeddah, KSA
Center for High Technology Materials, University of New-Mexico, 1313 Goddard SE, Albuquerque, NM, USA

14:45 Tea / Coffee Aberdare Hall

15:30 Room 0.22 Law Building Session 7: Tutorials

15:30 “Quantum dots as atom-like structures”
Peter Blood
School of Physics and Astronomy, Cardiff University, CF24 3AA, Wales, UK

16:30 “Terahertz frequency imaging and spectroscopy: an overview”
A. Giles Davies
School of Electronic and Electrical Engineering, University of Leeds.

18:00 Cardiff Castle: Music (Library) followed by Dinner
Thursday 2\textsuperscript{nd} April

\textbf{8-30 Room 0.22 Law Building – Session 8: Comms}

\textbf{8-30 “Controlling Cavity Field For Ultrafast Photonic Devices”}
Chao-Yuan Jin
Department of Electronic and Electrical Engineering, Faculty of Engineering, University of Sheffield, Mappin Street, Sheffield S1 3JD, United Kingdom.

\textbf{8-45 “All-Optical Regenerative Memory Based on Quantum Dot Semiconductor Optical Amplifiers (QD-SOAs)”}
Yosef Ben Ezra, B.I. Lembrikov
Faculty of Electrical Engineering and Electronics, Holon Institute of Technology, 52 Golomb Str., P.O.B. 305, Holon 58102, Israel

\textbf{9-00 “InP Optical Modulator with Integrated Amplification and Attenuation providing over 40dB of Dynamic Range across the C-Band”}
Kate A. Hazelton, N. D. Whitbread, A. J. Ward, S. K. Jones
Oclaro Technology Ltd., Caswell, Towcester, NN12 8EQ, UK

\textbf{9-15 “32 GHz Miniaturised InP Mach Zehnder Modulator For Data-Centre Interconnects”}
Alexandros G. Maziotis, A. J. Ward, S. K. Jones, R. A. Griffin, N. D. Whitbread
Oclaro Technology Ltd, Caswell Science and Technology Park, Towcester, NN12 8EQ, UK

\textbf{9-30 “Artificial Neural Network Equalization for Integrated Polymer Optical Systems”}
Priyanka. E. de Souza, R. V. Penty and I. H. White
Centre for Photonic Systems, University of Cambridge, 9 JJ Thomson Ave, Cambridge, CB3 0FA, United Kingdom

\textbf{9-45 “Simulation of small-signal modulation response of optical injection-locked wavelength-tunable laser diodes”}
Onur Duzgol, Georgios Kyritsis, and Nick Zakhleniuk
School of Computer Science and Electronic Engineering, University of Essex, Colchester, Essex, CO4 3SQ, UK
“Colloidal quantum dot and epitaxial quantum-well platelet colour-converters for visible light communication”


Institute of Photonics Department of Physics, SUPA, University of Strathclyde, 99 George St, Glasgow G1 1RD, UK

School of Engineering, University of Glasgow, Glasgow G12 8LT, UK

Department of Engineering Science, University of Oxford, Oxford OX1 3PJ, UK

Electronic & Electrical Engineering, University of Sheffield, Sheffield, UK

10-15 Aberdare Hall Coffee

“Terahertz frequency generation with monolithically integrated dual wavelength Distributed Bragg Reflector semiconductor laser diode”

Jared O. Gwaro, Carsten Brenner, Bernd Sumpf, Andreas Klehr, Jörg Fricke, and Martin R. Hofmann

Institute for Photonic und Terahertz Technology, Ruhr Universität Bochum, Universitätsstraße 150 D-44780 Bochum, Germany

Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Gustav-Kirchhoff-Str. 4, 12489 Berlin, Germany

“Optimized THz Devices based on low-temperature grown III-V semiconductor compounds”

Yuekun Wang, Ioannis Kostakis, Daryoosh Saeedkia and Mohamed Missous

School of Electrical and Electronic Engineering, University of Manchester, UK

TeTechS Inc., Waterloo, Ontario, Canada

“Reliability and performance of deep-etched III-V lasers grown directly on Silicon substrates”

Samuel Shutts, Stella N. Elliott, Peter M. Snowton, Angela Sobieserski, Jiang Wu, Mingchu Tang, Huiyun Liu and Richard Beanland

Physics and Astronomy, Queens Building, The Parade, Cardiff, CF24 3AA

Department of Electronic and Electrical Engineering, University College London, Torrington Place, WC1E 7JE

Department of Physics, University of Warwick, Coventry CV4 7AL, United Kingdom
11-30 “Taper design for up-down coupling between active and passive waveguides”
Shane P. Duggan, P.E. Morrissey, R.N. Sheehan and F.H. Peters
Department of Physics, University College Cork, College Road, Cork, Ireland
Tyndall National Institute, Lee Maltings, Dyke Parade, Cork, Ireland

11-45 “Monolithically integrated III-V semiconductor nanowires on silicon-on-insulator as a new platform for full optical links”
Wook-Jae Lee, Hyunseok Kim, Alan C. Farrell, Pradeep Senanayake & Diana. L. Huffaker
Department of Electrical Engineering, University of California Los Angeles, Los Angeles, California 90095, United States
California Nano-Systems Institute, University of California Los Angeles, Los Angeles, California 90095, United States

12-00 “Extreme light focusing with silicon hybrid gap plasmon waveguides”
Michael P. Nielsen, Lucas Lafone, Aliaksandra Rakovich, Themistoklis P. H. Sidiropoulos, Mohsen Rahmani, Stefan A. Maier, and Rupert F. Oulton
Department of Physics, Imperial College London, London, SW7 2AZ, UK

12-15 “Reconfigurable laser arrays for integrated chip-based sensing”
Robert Thomas, S. Gillgrass, A. Sobiesierski, J. Piasecka, M.D.Holton, H.D. Summers, D. Barrow and P.M. Smowton
School of Physics and Astronomy, Cardiff University, 5 The Parade, Cardiff, CF24 3AA, UK.
Centre for Nanohealth, College of Engineering, Swansea University, Singleton Park, Swansea SA2 8PP
Cardiff School of Engineering, Cardiff University, The Parade, Cardiff CF24 3AA, UK

12-30 Aberdare Hall Lunch

Conference Close