

Poster Programme - Tuesday 24 August

OPD

Advances in terahertz technology

P.2-01

Resolving absorption features near the noise floor of a terahertz time domain spectrometer using signal processing.

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(¹University of Southampton, UK, ²University of Cambridge, UK)

Computational photonics

P.2-02

Geometry optimisation of photonic crystals

E Hart, A Sobester, K Thomas, K Djidjeli, M Molinari and S J Cox (University of Southampton, UK)

P.2-03

The multi-valued all-optical logic: current progress and future directions

A Boubas¹ and M Bettayeb² (¹Imperial College London, UK, ²University of Sharjah, United Arab Emirates)

Optical and quantum metrology

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Stress determination in Si-SiO₂ systems by Raman Spectroscopy and Spectroscopic Ellipsometry

W Rzodkiewicz¹ and P Borowicz^{1,2} (¹Institute of Electron Technology, Poland, ²Institute of Physical Chemistry PAS, Poland)

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Development of a real time imaging ellipsometer

D Langstaff and Matt Gunm (Aberystwyth University, UK)

P.2-06

Optical ID and timing system for indoor cycling

F Culfaz¹, A McCarthy¹, H McArdle¹, L Laycock¹, P Barratt² and M Parker³ (¹BAE Systems Advanced Technology Centre, UK, ²English Institute of Sport, UK, ³British Cycling, UK)

Optical tweezing and micro-manipulation

P.2-07

UV laser light induced azopolymeric films surface organization

I D Apostol (INFLPR, Romania)

P.2-08

Optically assisted microinjection of mammalian cells

W Ramsay, M Bechu, G Razinskas and L Paterson (Heriot-Watt University, UK)

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Optical trapping of low symmetry particles investigated using three different numerical techniques

S Hanna and S Simpson (University of Bristol, UK)

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Numerical simulation of optical particle trapping and associated interactions

J Taylor (Durham University, UK)

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Active pixel sensor improves closed loop control of multiple optically trapped objects

M Pollard, S Botchway, E Freeman, R Halsall, T Parker, R Turchetta, M Towrie and A Ward (STFC Rutherford Appleton Lab, UK)

Optics and microfluidics

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Microlenses for μ flow cytometry

H C Hunt and J Wilkinson (Optoelectronics Research Centre, UK)

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Creating optofluidic channels in ice

D McGloin, S Anand and A Engelbrecht (University of Dundee, UK)

Polarisation optics

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Statistics of Stokes parameters in polarization speckle with coherent background: implication in measurement of the scattered object surface

S Zhang and W Wang (Heriot Watt University, UK)

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Depolarization of light in optical fiber

N I Petrov (LG Technology Centre, Moscow, Russia)

Diffractive optics

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Dual adaptive optics system for laser processing of diamond

R Simmonds, A Jesacher, T Wilson and M J Booth (Department of Engineering Science, University of Oxford, UK)

QEP

Advances in laser science

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Novel cavity effects in ultra-broadband multiline Raman generation

C Rose, G McDonald and J Christian (University of Salford, UK)

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Intra-cavity MEMS Lasers

W Lubeigt, A Kelly, J Gomes, G Brown, D Uttamchandani and D Burns (University of Strathclyde, UK)

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Investigations of classical and quantum mechanisms of failure in sub-second Mortality of high power AlGaAs lasers

C Clark¹, J F Boucher², G Buller³ and J Wilson³ (¹Helia Photonics Ltd, UK, ²Laser Components Canada, Canada, ³Heriot-Watt University, UK)

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A platform for GaAs Opto-electronic integrated circuits based on GaAs/AlGaAs regrowth upon patterned InGaP

D Childs, K Groom, B Stevens, P Greenwood, J Roberts, M Lomas, M Hugues, H Shahid and R Hogg (University of Sheffield, UK)

P.2-21

Aging of erbium doped silicate xerogels as laser material

V Ranga¹, R Khanna² and H Acharya³ (¹Government College, India, ²Principal, BMIT, India, ³Indian Institute of Technology, India)

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Long-pulse operation of a HoYAG laser

I Elder and Daniel Thorne (Selex Galileo, UK)

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Femtosecond pulsed synchronously in-well pumped VECSEL

W Zhang¹, A McDonald¹, T Ackemann², E Riis² and G McConnell¹ (University of Strathclyde, UK)

P.2-24

Short pulsed laser machining for high precision applications

F Albr¹, S Giet¹, M Kidd², J Shephard¹, N Weston² and D Hand¹ (¹Heriot-Watt University, UK, ²Renishaw Plc, UK)

P.2-25

Sm³⁺ visible spectroscopy in tellurite and silicate bulk glass and fibres

B Richards¹, A Jha¹, M Pau², S Bhadra², S Das² and M Pal² (¹University of Leeds, UK, ²Central Glass and Ceramic Research Institute, India)

P.2-26

Measurements of loss and birefringence in optical quality synthetic diamond and the implications for diamond Raman lasers

G Bonner^{1,2}, W Lubeigt¹, D Burns¹ and A Kemp¹ (¹Institute of Photonics, University of Strathclyde, Glasgow, UK, ²Macquarie University, Australia)

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Compton profile study of Hg₂Cl₂

M S Dhaka¹, G Sharma², M C Mishra³, R K Kothari⁴ and B K Sharma⁴ (¹Physics Department, Engineering College Bikaner, India, ²Department of Physics, Bansthali University, India, ³Department of Physics, Govt. College, India, ⁴Physics Department, University of Rajasthan, India)

Advances in terahertz technology

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Terahertz speed-of-light tomography

K Ozanyan¹, P Wright¹, M Stringer² and B Miles² (¹University of Manchester, UK, ²University of Leeds, UK)

Atom-photon interactions

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Abnormal features of interaction of moving atoms with radiation under extreme Cherenkov condition in non-uniform potential fields

M Vysotskyy and V Vysotskii (Kiev National Shevchenko University, Ukraine)

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An integrated atom-photon junction

M Kohnen, M Succo, R Nyman, P Petrov, M Trupke and E Hinds (Imperial College, London, UK)

Optics and quantum metrology

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Low cost time interval analysers for quantum key distribution

R Nock, J Rarity and N Dahnoun (University of Bristol, UK)

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Determination of time-variation of the fine structure constant using two optical transitions in a single ion of ¹⁷¹Yb⁺

S King^{1,2}, S Webster¹, R Godun¹, G Huang¹, B Walton¹, H Margolis¹, S Lea¹ and P Gill^{1,2} (¹National Physical Laboratory, UK, ²Clarendon Laboratory, UK)

Quantum coherent control

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Quantum control using the PSOPT software

S Hadjiloucas and V Becerra (University of Reading, UK)

Quantum information

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Computational information geometric analysis of quantum channel additivity

L Gyongyosi, and S Imre (Budapest University of Technology and Economics, Hungary)

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EPR entanglement in ultracold atom systems

T Fogarty¹, J Goold², M Paternostro³ and T Busch¹ (¹University College Cork, Republic of Ireland, ²Singapore Centre for Quantum Technologies, Singapore, ³Queens University Belfast, UK)

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Thermal versions of continuous-variable cluster states and their nonlocality

G McKeown, H Jeong, F Semiao and M Paternostro (Queen's University Belfast, UK)

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Structural change of vortex lattices in 2D Bose Einstein condensates

N Lo Gullo¹, M Paternostro² and T Busch¹ (¹University College Cork, Republic of Ireland, ²Queen's University Belfast, UK)

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Perfect state transfer within networks with nontrivial logical topologies

T Brougham¹, G Nikolopoulos² and I Jex¹ (¹Czech Technical University, Czech Republic, ²Foundation of Research and Technology, Greece)

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Telecommunications wavelength photoresponse mapping of superconducting nanowire single photon detectors

J O'Connor¹, P Dalgarno¹, C Natarajan¹, M Tanner¹, Ri Warburton¹, S Miki², Z Wang², M Sasaki², B Baek³, S Woo Nam³ and R H Hadfield¹ (¹Heriot-Watt University, UK, ²NICT, Japan, ³NIST, USA)

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Generation of atomic cluster states by QND measurements

D Milne and N Korolkova (University of St Andrews, UK)

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An entanglement concentration scheme for two atomic ensembles

R Tatham and N Korolkova (University of St Andrews, UK)

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Generalized quantum measurements of atomic qubits

A Dada¹, M Everitt^{2,3}, M Jones², V Kendon² and E Andersson¹ (¹Heriot-Watt University, UK, ²University of Leeds, UK, ³National Institute of Informatics, Japan)

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High-speed free-space quantum key distribution system for urban applications

M J Garcia, D Arroyo, N Denisenko, D Soto and V Fernandez (Spanish National Research Council, CSIC, Spain)

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Multi-photon quantum walks in waveguide arrays

J Meinecke, J Carolan, J C F Matthews, A Politi, A Peruzzo, M Lobino, K Poulios, X-Q Zhou, M G Thompson and J L O'Brien (Centre for Quantum Photonics, H. H. Wills Physics Laboratory & Department of Electrical and Electronic Engineering (UK)

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Quantum process tomography of an integrated controlled-NOT gate

P Shadbolt, M R Verde, A Peruzzo, J C F Matthews, M Lobino, A Laing, A Politi, and J L O'Brien (Centre for Quantum Photonics, H. H. Wills Physics Laboratory & Department of Electrical and Electronic Engineering (UK))

Quantum optics

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3D FDTD modelling of photonic crystal defect layer in 3-D inverted structure

Y-L-D Ho, P Ivanov, M C and J Rarity (University of Bristol, UK)

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Laser induced nutation of dipole vectors and quantum superposition

R Bordoloi¹, R Bora² and G Baruah³ (¹Tinsukia College, India, ²Namrup College, India, ³Dibrugarh University, India)

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Demonstration of Einstein-Podolsky-Rosen correlations in an angle - orbital angular momentum basis

J Leach¹, B Jack¹, A Yao², J Romero¹, A Jha³, S Franke-Arnold¹, D G Ireland¹, R Boyd³, S Barnett² and M Padgett¹ (¹University of Glasgow, UK, ²University of Strathclyde, UK, ³University of Rochester, USA)

Silicon and carbon photonics

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Metal-coated Ge/Si plasmonic stubs on silicon waveguides for electro-absorption modulation

Z Ikonic, R Thomas and R Kelsall (University of Leeds, UK)

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Spectral signatures of spatio-temporal solitons in arrays of silicon-on-insulator photonic wires

W Ding¹, C de Nobrega¹, G Hobbs¹, W Wadsworth¹, J Knight¹, A Gorbach¹, O Staines¹, D Skryabin¹, A Samarelli², M Sorel² and R De La Rue² (¹University of Bath, UK, ²University of Glasgow, UK)

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Optical coupling in Ge/SiGe QCSE EAMs

L Lever, Z Ikonic and R Kelsall (University of Leeds, UK)

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Avalanche rapidity dependence on triggering photons number

J Blazej and I Prochazka (Czech Technical University in Prague)

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Exciton reactions on carbon nanotubes: role of spatial distribution

J Allam¹, R Sutton¹, M Sajjad¹, K Litvinenko¹, Z Wang¹, S Siddique¹, Q-H Yang², T Brown³ and W Loh⁴ (¹University of Surrey, UK, ²Tianjin University, China, ³University of Southampton, UK, ⁴University of Southampton, UK)

Structured materials and structured colour

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Local light-ray rotation around arbitrary axes

J Courtial, B Sundar and A Hamilton (University of Glasgow, UK)

Trapping and manipulation

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Immersing ions in strongly correlated quantum gases

T Busch¹, J Goold¹, H Doerk² and T Colarco³ (¹University College Cork, Republic of Ireland, ²Max-Planck Institute for Plasma Physics, Germany, ³University of Ulm, Germany)

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Computational information geometric analysis of quantum channel additivity

J Sanders, M Dickinson and H Gleeson (The University of Manchester, UK)

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Micromanipulation of beads and CHO cells using micro light emitting diode arrays to control a miniaturised optoelectronic tweezers device s

A Zarowna-Dabrowska^{1,2}, S L Neale², D Massoubre¹, J McKendry¹, B R Rae³, R K Henderson³, M J Rose⁴, H Yin², M D Dawson¹, J M Cooper² and E Gu¹ (¹Institute of Photonics, University of Strathclyde, UK, ²Electronics & Electrical Engineering, University of Glasgow, UK, ³Institute for Integrated Micro and Nano Systems, Joint Research Institute for Integrated Systems, The School of Engineering, University of Edinburgh, UK, ⁴Electronic Engineering and Physics, University of Dundee, UK)

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Multiple optical trapping with optical speckle field

V Shvedov^{1,2}, A Rode², Y Izdebskaya¹, A Desyatnikov¹, W Krolikowski² and Y Kivshar¹ (¹Nonlinear Physics Centre, Research School of Physics and Engineering, Australian National University, Australia, ²Laser Physics Centre, Research School of Physical Sciences and Engineering, Australian National University, Australia)

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Optical pipeline for transport of particles

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Fibre optics and waveguides

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Semiconductor filled microstructured optical fibres with single mode guidance

N Vukovic, N Healy, F Poletti and A Peacock (Optoelectronics Research Centre, University of Southampton, UK)