

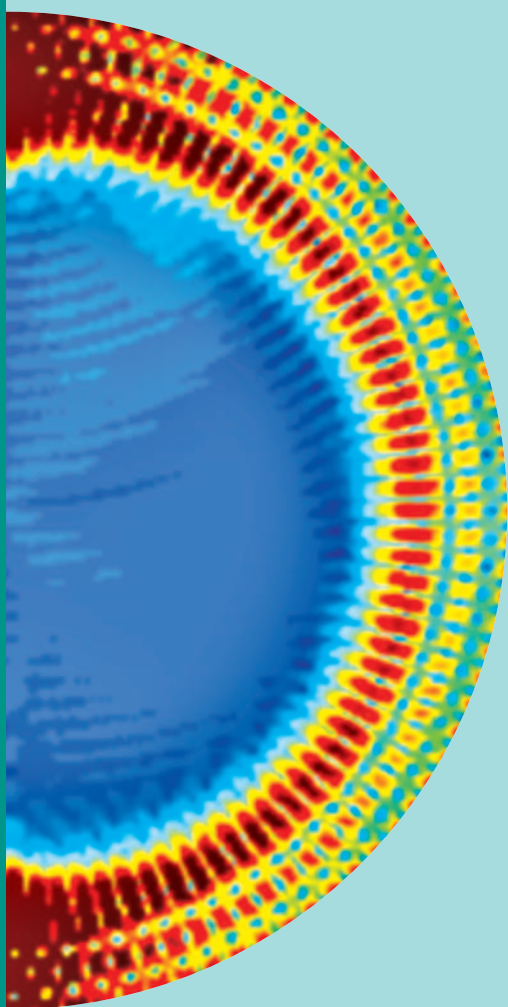
**PROGRAMME AND
REGISTRATION DOCUMENT**

Photon06

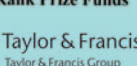
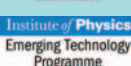
The UK's premier conference in optics and photonics

- 4–7 September 2006
University of Manchester
- www.photon06.org

Encompassing the Optics and Photonics Division Conference, the Quantum Electronics Conference, an Industry Technology Programme, an exhibition and tutorials



Institute *of* **Physics**



Enquiries and Further Information

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Further Information

Regular updates about Photon06 are published on the websites at www.photon06.org and www.ukcpo.org

Important Deadlines

Early registration deadline:	21 July
Accommodation booking deadline Sackville campus:	28 July
Hotel booking deadline:	4 August
Late registration deadline:	15 August
Cancellation deadline, On-site fee charge:	24 August

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Photon06

Photon06 is the largest optics event in the UK and the third in the series that began in Cardiff with Photon02 in September 2002. Photon06 will be held on 4–7 September 2006 at the University of Manchester. The meeting will comprise:

- **Optics and Photonics 2006:** the biennial conference of the Optics and Photonics Division of the Institute of Physics. The conference includes sessions representing the groups of the division, and from the Fringe Analysis Special Interest Group.
- **QEP-17:** the latest in the series of conferences initiated in 1973 by the Quantum Electronics and Photonics Group of the Institute.
- **Industry Technology Programme:** sessions of particular interest to those in the optics industry.
- **An exhibition of the latest optics and photonics technology**
- **Tutorials**

UKCPO

Photon06 is organised by the UK Consortium for Photonics and Optics - the UKCPO. The UKCPO is the organisation that represents the national photonics and optics community: manufacturers, researchers, industry, universities and government. Membership is open to all professional bodies, learned societies, trade associations, industry cluster groups and all similar organisations with interests in photonics and optics.

Current members include the Institute of Physics, the Institution of Engineering and Technology, the Scottish Optoelectronics Association, the Welsh Optoelectronics Forum, the Photonics Cluster, SepNet, the Fibreoptic Industry Association, the UK Industrial Vision Association, the Association of Industrial Lasers Users, EPSRC and the DTI.

To find out more about UKCPO and their activities, please visit www.ukcpo.org.

Photon06 Committees

Organising Committee

UKCPO President and Chair Photon06

Julian Jones (Heriot-Watt University)

UKCPO Vice-President, Deputy Chair Photon06, Chair QEP-17 and Local Organiser

Allan Boardman (Salford University)

UKCPO Executive Secretary and Exhibition Organiser

Chris Gracie (Scottish Optoelectronics Association)

Deputy Chair Photon06, Chair Optics and Photonics 2006

Andy Harvey (Heriot-Watt University)

Conference Co-ordinator

Jasmina Bolfek-Radovani (The Institute of Physics)

ITP Co-ordinator

Dipali Chauhan (The Institute of Physics)

Programme Co-ordinator

Claire Pantlin (The Institute of Physics)

International Advisory Committee

G Assanto (National Institute for Physics, University of Rome, Italy)

Michael Berry (Bristol University, UK)

Dmitry Budker (University of California Berkeley, USA)

Chris Dainty (National University of Ireland, Galway, Ireland)

Christian David (Paul Scherrer Institut, Switzerland)

Jesper Glückstad (Risø National Laboratory, Denmark)

Jim Hough (Glasgow University, UK)

Werner Jüptner (BIAS, Bremen, Germany)

Yuri Kivshar (Australian National University, Canberra, Australia)

Peter Knight (Imperial College, London, UK)

Roy Pike (King's College, London)

Roman Pisarev (Ioffe, Physico-Technical Institute, St Petersburg, Russia)

Wilson Sibbett (St Andrews University, UK)

Anatoly Snigirev (ESRF, France)

A P Sukhorukov (Moscow State University, Russia)

Peter Woods (National Physical Laboratory, UK)

Ewan Wright (Optical Sciences Center, Arizona, USA)

Photon06 Plenary Lectures

The following plenary speakers have been confirmed:

Plenary 1: Atom chips

E Hinds, Imperial College London (UK)

Plenary 2: The optics of microscopy

C Sheppard, University of Singapore (Singapore)

Plenary 3: Metamaterials, negative refraction, and a new design paradigm in optics

J Pendry, Imperial College London (UK)

Plenary 4: Keeping a tight focus on light

P Russell, University of Erlangen-Nuremberg (Germany)

Tutorials

The Photon06 strategy is to blend a number of exciting tutorial sessions into the conference format. These will be delivered daily and will include the following sessions:

- **Quantum information processing**

Steve Barnett, University of Strathclyde (UK)

- **Biophotonic medical imaging**

Hugh Barr, Cranfield Postgraduate Medical School (UK)

- **Adaptive optics**

Gordon Love, University of Durham (UK)

Post-Deadline Session

A post-deadline session will be held during the Wednesday midday break for the presentation of very recent results of particular significance. Delegates wishing to submit presentations for consideration for inclusion in this session should submit an abstract of about 200 words to the conference reception desk, before 17:00 on Monday, explaining the significance of the work to be presented. Successful authors will be notified by 10:00 on Tuesday. Please include a contact telephone number and/or e-mail address with your submission. Please note that any authors interested in submitting a paper for the post-deadline session, should pre-register for the conference.

General Information, Accommodation and Registration

Industry Exhibition

Monday 4 September 2006 09:30–17:00

Tuesday 5 September 2006 09:30–16:30

Location: Renold Building, University of Manchester

(see building nb.8 on campus map in this booklet)

The Exhibition is designed to complement the conferences and demonstrate the wealth-creating potential and economic standing of physics-based industries. It will provide a networking opportunity between industry and academia further complemented by the Industrial Technology Programme. It is a short distance from the conference facilities to ensure easy access. The exhibition will feature exhibitors from industry sectors addressed by the conferences at this year's Photon06. To enable a conference delegate to fit a visit into a busy schedule, conference coffee breaks and lunch, on exhibition days, will be held in the exhibition area. A visit to the exhibition will complement the basic science of the conference presentations through the applications focus of the ITP to a view of commercial products.

Admission to the Exhibition only is free. Please contact **soa@optoelectronics.org.uk** if you are interested in attending the exhibition, as advance registration is required.

The current list of exhibitors includes:

Santec Europe Ltd
Elliot Scientific Ltd
Photonic Solutions Plc
Coherent (UK) Ltd
Ocean Optics BV
Edinburgh Instruments
Laser Physics UK Ltd
Pro-Lite Technology LLP
Logitech Ltd
Institute of Physics Publishing
Bentham Instruments
Newport Spectra-Physics
Hamamatsu Photonics UK Ltd
Marks & Clerk
BFI Optilas Ltd
Lambda Photometrics Limited
Photonix Ltd
Innolas UK Ltd
Institute of Photonics
Photo-Sonics International Ltd
Gilden Photonics Ltd
HORIBA Jobin Yvon Ltd
Laser Lines Ltd
Edmund Optics Ltd
North West Development Agency
Cedip Infrared Systems Ltd
Toptica Photonics
Laser SAS
Elforlight
Oxford Instruments Nanoscience

Location and Venue

Situated centrally in mainland Britain, the city of Manchester has recently undergone one of the most ambitious urban regeneration projects ever undertaken in Britain. Its innovative new buildings have won the acclaim of architects world-wide. Manchester has a dynamic cultural life that is the envy of both UK and other European cities and has always been famous for its friendliness and warmth.

The conference, posters sessions and the exhibition will take place in the **Renold building** (see building nb.8 on campus map in this booklet) located on **Sackville street main campus**, University of Manchester. The campus is located close to both Piccadilly main line station and Oxford Road train station, with Victoria train station a little further away.

Manchester is ideally situated as a centre for visiting other parts of Britain. The region adjoins the spectacular scenery of the Lake District and Chester, York, Scotland and Shakespeare's Stratford are just a short journey away.

Travel Information

For detailed information about travel and directions to the venue and travel visit the Manchester University website address at: **<http://www.manchester.ac.uk/visitors/travel/directions/>**

Detailed instructions about travel and directions to the conference venue will be publicized in the Conference Handbook and on the conference website.

Car Parking

Delegates should make use of the multi-storey car park on Charles Street. Delegates are issued with a ticket on entry and pay on exit. Current charges are £8.00 for up to 10 hours and £10.00 for 24 hours.

Accommodation

Sackville Street Campus

Student accommodation has been pre-booked for participants at **Weston Hall** (see building nb.11 on campus map in this booklet), five minutes walking distance from the Renold Building. The price per night for a single B&B is £33.50 (VAT exempt).

The student rooms all offer single bedded rooms with en-suite shower/toilet, private telephone and tea/coffee making facilities. Shared lounge/kitchens with TVs, iron/ironing boards are also available to guests.

A limited number of hotel bedrooms is also available on a first-come first-served basis at the **Manchester Conference Centre** (see building nb.11 on campus map in this booklet) with its integral **Days Hotel**, situated just 300 metres from Piccadilly rail station and five minutes walking distance from the Renold building. The midweek price for B&B is £75.95 (incl VAT) and the Sunday price is £54 (incl VAT).

Participants wishing to book their accommodation at Weston Hall or the Days Hotel, should complete the accommodation form included at the back of this booklet and return at the latest by Friday 28 July to the address listed on the form. Any queries can be addressed to by emailing mcc.reg@manchester.ac.uk

Hotel accommodation in Manchester

Marketing Manchester is offering bedrooms from a selection of hotels (ranging between £70.00 and £135.00 for a single bedroom) located at a walking distance from the Renold Building on the Sackville street main campus.

The following hotels have been selected for participants:

Britannia Hotel
Jarvis Piccadilly Hotel
Ibis Hotel Manchester – Charles Street
Thistle Hotel Manchester
Malmaison Hotel

For further details about the hotels and to make (or amend) your reservation please go to www.ConferenceBookings.co.uk, enter the event reference MNCPHOTON06 and follow the instructions on the page. No reservations can be guaranteed if made after 4 August 2006.

The hotel bedrooms are all equipped with hairdryer, trouser press, tea/coffee making facilities, satellite TV and private telephone/ethernet connection.

For any queries about your reservation contact Derya Nielsen, Marketing Manchester, Churchgate House, 6th Floor, Oxford Street, Manchester, M1 6EU, UK.

Tel: 0161 238 4563

Fax: 0161 973 3723

E-mail: abs@marketing-manchester.co.uk

Social Events

Sunday 3 September, 19:00

Welcome Reception

An informal reception will be held in the Harwood Room, Barnes Wallis Building. The reception will be followed by a dinner in the Barnes Wallis Restaurant. Please note that dinner is not included in the conference fee

Monday 4 September, 19:15

Civic Reception

A drinks reception is being offered by the Manchester City Council. The City Council is 10-15 minutes walking distance from the campus. Directions on how to get there will be publicised in due course.

Participants wishing to attend the reception are requested to tick the appropriate box on the registration form.

Tuesday 5 September, 19:15

Drinks Reception at the Bridgewater Hall

The reception has been kindly sponsored by



Taylor & Francis
Taylor & Francis Group

An informal reception will take place at the Bridgewater Hall on Tuesday evening to provide networking opportunities for academics and industry representatives. The Bridgewater Hall is located on Lower Mosley Street in the heart of Manchester city centre.

Participants wishing to attend the event should tick the appropriate box on the registration form.

Wednesday 6 September, 19:15

Conference Dinner

The conference dinner reception is being kindly sponsored by Institute of Physics Publishing.

Institute of Physics PUBLISHING

The conference dinner will take place at the Manchester United Stadium located at Old Trafford. The dinner will be preceded by a drinks reception in the Manchester United Club Museum. Bus transport to the Manchester United Stadium will be organised for participants. Buses will depart from the conference venue.

Refreshments, Lunches and Sunday Evening Dinner

All conference refreshments and buffet lunches will take place in the Exhibition and poster area located on the ground floor of the Renold building.

A hot and cold buffet dinner is being offered to participants arriving on Sunday 4 September. The dinner will take place in the Barnes Wallis Restaurant, the Barnes Wallis Building. Please note that the dinner is not included in the registration fee; instead a place should be booked by using the registration form. Participants wishing to book a place should indicate this on the registration form. A place at the dinner costs £16.50.

Manchester offers a great variety of restaurants, bistros, pubs and cafes. No dinner has been organised for participants on Monday and Tuesday evenings; instead participants are invited to explore the city after the receptions. A list of recommended places to visit will be available at the conference.

Registration, Conference Fees

Registration

Early fee deadline 21 July
Late fee deadline 15 August
Cancellation deadline, On-site fee charge 24 August

You are strongly advised to register as early as possible. For any registrations received after 24 August, an **on-site fee charge** of £25.00 will be applied and confirmation of your booking cannot be guaranteed.

Online registration – to register online by credit/debit card please go to the conference web site www.photon06.org and click on the link for "Registration" (listed on the right-hand side menu). Please note that online payment is by credit/debit card only. Those registering at the member or concessionary rate will be required to submit their Institute of Physics membership number. For members or other societies please indicate from the drop-down list to which society you belong. Note that online registrations will be

General Information, Accommodation and Registration

accepted only if accompanied by a valid debit/credit card; all payments will be processed securely using WorldPay.

Hard-copy registration – if you are unable to pay by debit/credit card please use the hardcopy registration form enclosed in this document. Please mail your registration form which should be sent together with a remittance for fees to the Registrations Department, The Institute of Physics, 76 Portland Place, London W1B 1NT, UK. Alternatively fax your form on +44 (0)207 470 4900.

Conference Fees

Participants wishing to attend the Industry Technology Programme (ITP) sessions on Monday, Tuesday or Wednesday should choose the **ITP Fee** at a daily price of £85.00 plus VAT. The fee includes attendance of IPT sessions, refreshments, lunch, evening reception on the day of your attendance and conference materials but does NOT include attendance of any of the main conference sessions.

If you wish to attend the ITP sessions for more than one day you should choose the appropriate days on the registration form. The conference dinner is not included in the ITP fee and needs to be booked separately on the registration form. Please note that registration for the ITP sessions does not entitle you to attendance of OPD and QEP sessions. If you wish to attend any of these sessions you should register by choosing the Photon06 full or one-day conference fee (see paragraphs below).

A late cancellation/onsite IPT fee charge of £25.00 pounds will apply for late registration after 24 August.

The **full Photon06 conference fee** covers attendance at all sessions (QEP, OPD and ITP), refreshments, lunches, all social events (incl. the conference dinner) and the conference materials. You will be asked to indicate your attendance at the receptions on Sunday, Monday and Tuesday by using the registration form.

A late cancellation/onsite conference fee charge of £25.00 pounds will apply for late registration after 24 August.

The **one-day Photon06 conference fee** includes attendance of all sessions, refreshments, lunch, the reception on the day of the attendance and conference materials. You will be asked to indicate your attendance at the reception on the day of your attendance by using the registration form. The conference dinner is not included in the one-day conference fee and needs to be booked separately on the registration form.

A late cancellation/onsite fee charge of £25.00 pounds will apply for late registration after 24 August.

The fees are as follows:

	Before or on 21 July		After 21 July	
	Full fee	One-day	Full fee	One-day
Member* :	£299	£125	£340	£145
Non-Member† :	£370	£145	£405	£165
Concessionary§ :	£175	£100	£195	£120
The ITP fee:	£85.00 (plus VAT)		£95.00 (plus VAT)	

*Members of the Institute of Physics

The member rate is available to:

- All members of the Institute of Physics including those with

- applications pending Staff at Institute Affiliated Plus Schools
- Members of co-sponsoring UKCPO organisations (see list of cosponsors in this booklet)
- Members of other Physics societies which have a Companion Society or other collaboration agreement with the Institute of Physics (see list of co-sponsors in this booklet)
- Members of the Business Affiliates Network

† Non-Members

Registrants paying this fee will automatically become affiliate members of the Institute of Physics for 12 months. As an affiliate member you will be entitled to attend all future Conferences at the members' rate for the year and join one technical or professional group at no charge.

Membership of the Institute of Physics is open to all those that have an interest in physics, for more information see <http://iop.org/Membership/index.html> or contact membership@iop.org

§ Concessionary Rate

The concessionary rate is available to student/retired members of the Institute of Physics, and those on a career break or a low income.

Payment and VAT

Charges shown in this document are exempt from VAT unless otherwise indicated. Where VAT is applicable it is shown and calculated at the current standard rate of 17,5%. A tax invoice/receipt will be issued to those indicating that this is required on the registration form. The Institute's VAT number is 461-6000-84. Please note that payment must be received prior to the conference to guarantee your booking.

All payments must accompany the hard-copy registration form.

Methods of payment for hard-copy registration form:

a) Cheque, bank draft:

Payable to the Institute of Physics, may be in either EUROS (at a fixed rate) or British Sterling;

b) Postal Order:

Payable to the Institute of Physics, must be in British Sterling;

c) Bank Transfer:

Payable to the Institute of Physics bank, Lloyds Bank plc; Knightsbridge, 9-13 Brompton Road, London SW3 1DD.

British Sterling payments to account number 0253575 (Sort Code 30-94-81).

Euro payments (equivalent to the required Pound Sterling value on the day of transaction) to account number 86000359 (Sort Code 30-94-81).

US Dollar payments to account number 11306596 (Sort Code 30-94-81).

In all cases please quote the name of the participant and the conference reference code 760. A copy of the instruction to the bank should be enclosed with the Conference Registration Form. Applications received without payment or details of how payment will be made (a,b,c above) will not be accepted.

A copy of the receipt for your payment can be obtained from registrations@iop.org.

Confirmation of Booking, Registration Enquiries

Please note that payment must be received prior to the conference to guarantee your booking.

Online registration – A confirmation of your booking and statement of payment will appear on the screen if your registration has been successful. Please make sure you print the confirmation off for future reference. Confirmation of payment via WorldPay will be sent to you by email once the transaction has been completed. Hard-copy registration - You should receive confirmation of your booking within ten days of registering. If payment was not enclosed with the registration form, you will be sent a pro-forma invoice which must be settled before the conference.

For any enquiries about your booking (including payment), please contact registrations@iop.org

Cancellation policy

Registrants who cancel their booking before the cancellation deadline of 24 August will receive a full refund minus a 20% administrative charge. All cancellations must be in writing (please note that organisers cannot accept any cancellation made over the telephone, unless it is accompanied by a cancellation of the booking in writing). No refund can be made to those notifying cancellation after 24 August.

Visas

Visitors from many countries do not require a visa to enter the United Kingdom but you should check with your travel agent. Participants who do require a visa should allow plenty of time for their application to be processed. The Institute can issue invitation letters to those participants giving a presentation at the conference. For those not making a presentation, the Institute cannot issue any invitation letters, instead you will receive a confirmation of payment for registration at the conference.

Bursaries

The Optics and Photonics Division and the Quantum Electronics Group of the Institute will each offer a limited number of bursaries to support the attendance of graduate students at the meeting. A number of student bursaries will also be available from the Rank Prize Funds. In addition, the University of Manchester Photon Science Institute will offer a limited number of bursaries to fund the conference attendance.

The application form can be downloaded from the conference website in pdf format. Go to the “Conferences” link available at www.photon06.org and once on the page click on the link for Bursaries. Alternatively, go directly to <http://www.photon06.org/conferences.htm#bur>

The amount of the bursary will be sufficient to cover the registration costs and will be paid in the form of a waiver of the full student fee.

The following conditions apply:

1. Candidates can receive one bursary only.
2. Only candidates who have a paper accepted at the conference will be considered for a bursary.
3. Candidates should express their intention to stay for the full duration of the conference.
4. Candidates must submit a statement confirming that they are postgraduate students.
5. A statement of the suitability of the candidate to receive a bursary should be submitted by the candidate's supervisor, addressed to Jasmina Bolfek-Radovani at the Institute of Physics.

This can be done either by letter or via email with the supervisor's telephone number provided so that authenticity can be checked if necessary.

6. If applying for an **Institute of Physics** student bursary, applicants must be active student members of the Institute **and** of the relevant Group/s.
7. If applying for a **Rank Prize Funds** student bursary, candidates should be graduate students studying for a PhD in a relevant topic at a University in the UK or the Republic of Ireland.

Please note that incomplete applications will not be accepted. Please return your application by mail, fax or e-mail to Jasmina Bolfek-Radovani at the Institute of Physics.

Sponsors, Co-sponsors

The organisers would like to acknowledge generous support from:

BBSRC
EPSRC
DTI
Institute of Physics
Institute of Physics Publishing
Manchester Photon Science Institute
North West Development Agency
Rank Prize Funds
Taylor-Francis Group

The following UKCPO organisations have co-sponsored the meeting:

Association of Industrial Lasers Users
SepNet
Fibreoptic Industry Association
Institution of Engineering and Technology
Photonics Cluster
Scottish Optoelectronics Association
UK Industrial Vision Association
Welsh Optoelectronics Forum

In addition, the following societies have co-sponsored the meeting:

European Optical Society
Optical Society of America (CLEO Show Management)

Chair: I Walmsley, University of Oxford (UK)

09:30 Plenary 1: Atom Chips

E Hinds, Imperial College (UK)

10:15 Refreshment Break

QEP	OPD	OPD	ITP	QEP
<p>QEP: Quantum degenerate gases</p> <p>Chair: S Barnett, University of Strathclyde (UK)</p>	<p>OPD: Advanced imaging I</p> <p>Chair: To be confirmed</p>	<p>OPD: Optical fibre sensors</p> <p>Chair: To be confirmed</p>	<p>ITP: Innovative laser processing technologies for the next generation manufacture AILU Industrial Programme</p> <p>Laser Micro/Nano technology Chair: L Li, University of Manchester</p>	<p>QEP: Photonics in the institute for materials research</p> <p>Chair: G S McDonald, Salford University (UK)</p>
<p>10:45 Invited Quantum degenerate gases J Dalibard Laboratoire Kastler Brossel (France)</p> <p>11:15 Gauge potentials in Bose-Einstein condensates D R Murray, P Öhberg, D Gomila, S Barnett¹ Instituto Mediterraneo de Estudios Avanzados, IMEDEA CSIC-UIB (Spain) ¹University of Strathclyde (UK)</p> <p>11:30 Coupled Light-BEC dynamics in optical cavities G R M Robb, N Piovella, R Bonifacio¹ Universita degli Studi di Milano (Italy) ¹INFN (Italy)</p> <p>11:45 Invited Formation of bright matter-wave solitons during the collapse of attractive Bose-Einstein condensates S L Cornish, S T Thompson¹, C E Wieman¹ Durham University (UK) ¹JILA, University of Colorado (USA)</p>	<p>10:45 Invited Title to be confirmed R Juska University of Oxford (UK)</p> <p>11:15 Limits and possibilities in sub-wavelength imaging using negative refraction M Mazilu, K Dholakia University of St. Andrews (UK)</p> <p>11:30 High-resolution, three-dimensional solid-immersion imaging of a silicon lip-chip using the optical-beam induced current Method K Serrels, E Ramsay, D T Reid Heriot-Watt University (UK)</p> <p>11:45 Principles and performance comparison of various phase masks for the alleviation of optical aberration G Muyo, A R Harvey Heriot-Watt University (UK)</p> <p>12:00 Sinogram recovery for limited-view hard-field tomography E Constantino, K B Ozanyan The University of Manchester (UK)</p>	<p>10:15 Invited Challenges in construction monitoring using optical fibre sensor techniques K T V Grattan^{1,2}, T Sun^{1,2}, P A M Basheer^{2,3}, S E Taylor^{2,3} ¹City University (UK) ²Sengenja (UK) ³The Queen's University of Belfast (UK)</p> <p>11:15 Photonic guided-path tomography S Joshua, Y Keung, P J Scully, K B Ozanyan The University of Manchester (UK)</p> <p>11:30 A novel optical method for measuring disbond growth in bonded composite joints A Palaniappan, H Wang, S L Ogin, A Thorne, G Reed, A Crocombe, S Tjin¹ University of Surrey (UK) ¹Nanyang Technological University (Singapore)</p> <p>11:45 Quantitative drop spectroscopy using the fibre drop analyser: new theoretical and experimental approach for nanoscience applications N D McMillan, S R P Smith¹, M O'Neil², A C Bertho, B O'Rourke, K Tiernan³, A Augousti⁴, D Kennedy Carlow Institute of Technology (Republic of Ireland) ¹University of Essex (UK) ²Carl Stuart Ltd (Republic of Ireland) ³Dublin Institute of Technology (Republic of Ireland) ⁴Kingston University (UK)</p> <p>12:00 Polymer optical fibres (POF) as sweat sensors J Vaughan, P J Scully University of Manchester (UK)</p>	<p>10:45 Invited Laser nano-technology for electronic industry M-H Hong, Y Lin, GX Chen, ZB Wang, LS Tan, Q Xie, B Lukyanchuk, L P Shi, T C Chong Data Storage Institute and National University of Singapore (Singapore)</p> <p>11:15 Invited Recent developments in laser micro-processing technologies for manufacturing applications N Rizvi UK Laser Micromachining Centre, Gwynedd (UK)</p> <p>11:45 Invited Laser ablation of ITO thin films on glass for flat panel display manufacture M Henry, P M Harrison, J Wendland Powerlase Ltd (UK)</p>	<p>10:45 Tailoring the photonic band-gap by chemical vapour deposition of III-V semiconductors H M Yates, J Zhang, T Shen, D E Whitehead¹, M E Pemble¹ University of Salford (UK) ¹Tyndall National Institute (Republic of Ireland)</p> <p>11:00 Photonics theory: solitons, fractals and atto-second pulses G S McDonald, J M Christian, J G Huang, S C Benbow, P Chamorro-Posada, J Sanchez-Curto Salford University (UK)</p> <p>11:15 Novel optical fibre devices – projections and prospects R J Potton, S Yasir University of Salford (UK)</p> <p>11:30 Optical diagnostics of atmospheric pressure chemical vapour seposition by NIR diode laser spectroscopy P Martin, R Holdsworth¹, V Kasiutich, M Davis², D Sheel² University of Manchester (UK) ¹TDL Sensors Ltd (UK) ²University of Salford (UK)</p> <p>11:45 Comparative study of laser induced breakdown spectroscopy and secondary ion mass spectrometry applied to DC magnetron sputtered as-grown copper indium diselenide (CIS) R D Pilkington, J Hisek, N Lucas, A E Hill, J S Cowpe, J S Astin University of Salford (UK)</p>

from 12:00 Lunch

12:30 - Tutorial:

Adaptive optics G Love, University of Durham (UK)

QEP	OPD	OPD	ITP
<p>QEP: Quantum optics</p>	<p>OPD: Advanced imaging II</p>	<p>OPD: Optical fibre sensors : environmental applications</p>	<p>ITP: Large area laser processing technology</p>
<p>Chair: O Hess, University of Surrey (UK)</p>	<p>Chair: To be confirmed</p>	<p>Chair: To be confirmed</p>	<p>Chair: D Hand, Heriot Watt University</p>
<p>13:45 Invited Exploring the quantum with atoms and cavities <i>J M Raimond</i> <i>Laboratoire Kastler Brossel, ENS (France)</i></p>	<p>13:45 Detecting ocular aberrations using a holographic modal phase mask <i>A Corbett, D Gil Leyva, L Diaz-Santana¹, T Wilkinson, J Zhong¹</i> <i>University of Cambridge (UK)</i> ¹ City University (UK)</p>	<p>13:45 Fibre optic detection of harmful algal blooms in seawater <i>E O'Connell, W Lyons, E Lewis</i> <i>University of Limerick (Republic of Ireland)</i></p>	<p>13:45 Invited Laser cleaning of large-area aerospace components <i>M Turner, P Crouse¹, L Li¹</i> <i>Rolls-Royce plc (UK)</i> ¹ Laser Processing Research Centre, University of Manchester (UK)</p>
<p>14:15 Measurement master equation <i>J R Jeffers, S Barnett, J D Cresser¹, D T Pegg²</i> <i>University of Strathclyde (UK)</i> ¹ Macquarie University (Australia) ² Griffith University (Australia)</p>	<p>14:00 Semi-adaptive optics in confocal reflection and two-photon microscopy in rat brain <i>J Vijverberg, S P Poland, A Wright, J Girkin</i> <i>Institute of Photonics, University of Strathclyde (UK)</i></p>	<p>14:00 Optical fibre biosensor for oxygen and glucose monitoring based on Ruthenium/ORMOCER[®]/Enzyme layers <i>V Matejec, J Mrazek, S Dzyadevych¹, O Podrazky, K Rose², G Kuncova³, L Sasek⁴, N Jaffrezic-Renault⁵, P J Scully⁶, J S Young⁶</i> <i>Academy of Sciences of the Czech Republic (Czech Republic)</i> ¹ Institute of Molecular Biology & Genetics (Ukraine) ² Fraunhofer Institut Silicatforschung (Germany) ³ Institute of Chemical Process Fundamentals (Czech Republic) ⁴ SAFIBRA s.r.o (Czech Republic) ⁵ Ecole Centrale de Lyon (France) ⁶ University of Manchester (UK)</p>	<p>14:15 Invited Metal film patterning by laser ablation for large area flexible substrate applications <i>H V Snelling, D J Whitehead, B Ramsey¹, S Duby¹</i> <i>University of Hull (UK)</i> ¹ Brunel University, Uxbridge (UK)</p>
<p>14:30 Controlling the electron dynamics in a semiconductor quantum well structure <i>E Paspalakis, A Kanaki, M Tsaousidou, A F Terzis</i> <i>University of Patras (Greece)</i></p>	<p>14:15 Measuring atmospheric turbulence for free space optical communications <i>G D Love, C Dunlop, C Saunter, R Wilson</i> <i>University of Durham (UK)</i></p>	<p>14:15 On-board monitoring of exhaust emissions using a uv optical fibre based sensor <i>G Dooly, E Lewis, C Fitzpatrick</i> <i>University of Limerick (Republic of Ireland)</i></p>	<p>14:45 Invited Laser forming for the correction of distortion and design shape in aluminium structures <i>G Dearden, S Edwardson, E Abed, K Watkins</i> <i>The University of Liverpool (UK)</i></p>
<p>14:45 Quantum theory of fractional orbital angular momentum <i>J B Goette, S Franke-Arnold¹, R Zambrini², S Barnett</i> <i>University of Strathclyde (UK)</i> ¹ University of Glasgow, (UK) ² Instituto Mediterraneo de Estudios Avanzados (Spain)</p>	<p>14:30 Intra-cavity control of a solid-state laser using active optics <i>W Lubeigt, G Valentine, D Burns¹</i> <i>Institute of Photonics, University of Strathclyde (UK)</i></p>	<p>14:30 Measurement of horseradish peroxidase activity based on measurement of oxygen concentration using a novel fluorescent lifetime optrode <i>P Roche, R Narayanaswamy</i> <i>University of Manchester (UK)</i></p>	
<p>15:00 A Fibre-based micro-cavity <i>A Balocchi, R J Barbour, T Steinmetz¹, Y Colombe¹, J Reichel¹, R J Warburton</i> <i>Heriot-Watt University (UK)</i> ¹ Ludwig-Maximilians-university (Germany)</p>	<p>14:45 A maximum likelihood approach to wavefront sensing. <i>Y Jiao, J G Walker</i> <i>University of Nottingham (UK)</i></p>	<p>14:45 Fibre Bragg grating based hydrogen sensing <i>R R Maier, J S Barton, J D Jones, S McCulloch¹, B J Jones¹</i> <i>Heriot Watt University (UK)</i> ¹ AWE Plc (UK)</p>	
	<p>15:00 V groove measurement with white light interferometer <i>F Gao, J M Coupland, J Petzing</i> <i>Loughborough University (UK)</i></p>	<p>14:45 Hydrogen sensing using palladium coated long period gratings <i>R R Maier, T Allsop, R Neal¹, J S Barton², D J Webb³, I Bennion</i> <i>Aston University (UK)</i> ¹ University of Plymouth (UK) ² Heriot Watt University (UK)</p>	

QEP	OPD	OPD	ITP
<p>QEP: Coherent atom manipulation</p> <p>Chair: E Hinds, Imperial College (UK)</p> <p>15:45 Invited Building multi particle neutral atom systems one by one - a bottom-up approach for quantum information processing D Meschede Universitat Bonn (Germany)</p> <p>16:15 Microcavities on atom chips for the coherent manipulation of single atoms M Trupke, G Dutier, E A Hinds Imperial College London (UK)</p> <p>16:30 Zero-point cooling and heating rate measurements of a single $^{88}\text{Sr}^+$ ion V Letchumanan, M Brownnutt, G Wilpers, P Gill, A Sinclair National Physical Laboratory (UK)</p> <p>16:45 Invited Manipulating molecules using intense light fields P Barker Heriot-Watt University (UK)</p>	<p>OPD: Advanced imaging III</p> <p>Chair: To be confirmed</p> <p>15:45 When looking through a rotating window is the transmitted image rotated? M J Padgett, L Allen, J Leach, G B Whyte, J Girkin¹, A Wright¹, P Öhberg¹, S Barnett¹ University of Glasgow (UK) ¹ University of Strathclyde (UK)</p> <p>16:00 Geometrical volume imaging in laser resonators and 3D fractal laser modes J Nelson, J K Courtial University of Glasgow (UK)</p> <p>16:15 Training modules for an advanced interactive course on optical design B Blandford, L Chen, A Fairhurst AMO (UK)</p> <p>16:30 A comparison of CIE $L^*a^*b^*$ and spectral methods for the analysis of sliced hamfading C Sheridan, M O'Farrell, E Lewis, C Flanagan, J Kerry¹, N Jackman¹ University of Limerick (Republic of Ireland) ¹ Echo Food Solutions International Ltd (Republic of Ireland)</p> <p>16:45 Effects of laser parameters on laser ignition of an internal combustion engine J Mullett, R Dodd, G Triantos, G Dearden, T Shenton, K Watkins, S Carroll¹, A Scarisbrick¹, S Keen² The University of Liverpool (UK) ¹ Ford Motor Company (UK) ² GSI Group Inc. (UK)</p> <p>17:00 Structured Illumination Microscopy Using Light Emitting Diodes V Poher, G T Kennedy, D Elson, P M French, M Neil, H Zhang¹, E Gu¹, Z Gong¹, C Griffin¹, J Girkin¹, M D Dawson¹ Imperial College London (UK) ¹ University of Strathclyde (UK)</p>	<p>OPD: Optical fibre systems</p> <p>Chair: To be confirmed</p> <p>15:45 An Investigation into the feasibility of adapting an integrating sphere for use as a gas absorption cell E Hawe, E Lewis, C Fitzpatrick, P Chambers University of Limerick (Republic of Ireland)</p> <p>16:00 Variational approach to dispersion-managed soliton transmission systems M Ferreira, M Sousa University of Aveiro (Portugal)</p> <p>16:15 Bit error rate improvement by nonlinear optical decision element I Nasieva, S Boscolo, S K Turitsyn Aston University (UK)</p> <p>16:30 Heavily Er doped silica fibre-based single frequency fibre laser for high resolution sensing application Y Shen, Y Qiu, B Wu, W Zhao¹, S Chen¹, T Sun¹, K T V Grattan¹ Zhejiang University (PR China) ¹ City University (UK)</p> <p>16:45 Characterizations of photonic crystal fibres by using finite element-based full-vectorial numerical methods B Rahman, A Kabir, K Namassivayane, M Rajarajan, K T V Grattan City University (UK)</p> <p>17:00 Analysis of optical damage mechanisms in hollow core waveguides delivering nanosecond pulses from a Q-switched Nd:YAG laser J Parry, T Stephens, J Shephard, J D Jones, D P Hand Heriot-Watt University (UK)</p>	<p>ITP: Future high power laser applications</p> <p>Chair: M Green, AILU</p> <p>15:45 Invited Potential applications of high-power lasers in nuclear decontamination and decommissioning J Spencer, P Crouse¹, L Li¹ Nexia Solutions plc, BNFL Group (UK) ¹ The University of Manchester (UK)</p> <p>16:15 Invited Chip-free high speed laser cutting of float glass P D Warren, J M Williams, L Li¹, W. Wang¹ Pilkington European Technology Centre (UK) ¹ Laser Processing Research Centre, The University of Manchester (UK)</p> <p>16:45 Laser processing of composite materials D Hand Heriot-Watt University (UK)</p>

17:15 Close

17:30 Posters

19:15 Civic Reception, Manchester City Council

Chair: A R Harvey, Heriot-Watt University (UK)

09:00 Plenary 2: The optics of microscopy
C Sheppard, National University of Singapore (Singapore)

09:45 Refreshment Break

QEP	OPD	OPD	ITP	QEP
<p>QEP: Quantum information processing I</p> <p>Chair: M Kim, Queen's University of Belfast (UK)</p> <p>10:15 Invited Technologies for Optical Quantum Logic J Rarity University of Bristol (UK)</p> <p>10:45 A microengineered ion trap array for distributed quantum computing P J Dugdale, B Brkić, S Taylor, C Sutcliffe, P R Chalker, J F Ralph University of Liverpool (UK)</p> <p>11:00 Cloning and Joint Measurements of Incompatible Components of Spin T Brougham, E Andersson, S Barnett University of Strathclyde (UK)</p> <p>11:15 Coherent Optical Control of Spin Dynamics in Semiconductor Quantum Dots G Slavcheva, O Hess University of Surrey (UK)</p> <p>11:30 Scalable Ion Trap Arrays for QIP M Brownnutt, G Wilpers, P Gill, R C Thompson, A G Sinclair National Physical Laboratory (UK)</p> <p>11:45 Finding the general form of master equations E Andersson, J D Cresser¹, M J W Hall², University of Strathclyde (UK) ¹ Macquarie University (Australia) ² Australian National University (Australia)</p>	<p>OPD: Photonics and imaging in biology and medicine I</p> <p>Chair: To be confirmed</p> <p>10:15 Multidimensional fluorescence imaging P French Imperial College London (UK)</p> <p>10:45 Spectral imaging for in vivo and in vitro imaging E Theofanidou, I AL-Abboud, A Hargreaves¹, A Gorman, A R Harvey Heriot-Watt university (UK) ¹ AstraZeneca (UK)</p> <p>11:00 Fluorescence lifetime imaging microscopy in microfluidic devices using inexpensive LEDs as excitation sources A Elder, S Matthews, K Yunus, J Frank¹, A Fisher, C Kaminski University of Cambridge (UK) ¹ Sandia National Laboratories (USA)</p> <p>11:15 Quantitative time lapse FRET imaging of protein interactions in living cells A Elder, A Domin, J Pines¹, G Kaminski, C Kaminski University of Cambridge (UK) ¹ Cancer Research UK Gurdon Institute, University of Cambridge (UK)</p> <p>11:30 Fluorescence lifetime imaging using light emitting diodes G T Kennedy, D Elson, I Munro, V Poher, P M French, M Neil Imperial College (UK)</p> <p>11:45 Low cost portable instrument for in-vivo drug detection M J O'Dwyer, M J Padgett, I D Samuel¹, P Marsh¹, J Ferguson², J Woods² University of Glasgow (UK) ¹ University of St. Andrews (UK) ² Photobiology Unit Ninewells Hospital (UK)</p> <p>12:00 Multiple Scattering in HPIV: Use of ODT Analysis Techniques J Lobera, J M Coupland Loughborough University (UK)</p>	<p>OPD: Optical fibre sensors: in-fibre gratings</p> <p>Chair: To be confirmed</p> <p>10:15 Invited Ultra-sensitive strain detection in optical fiber resonators G Gagliardi, M Salza, P Ferraro, P De Natale Istituto Nazionale di Ottica Applicata (INOA) del CNR (Italy)</p> <p>10:45 Long period gratings (LPG's) for cure monitoring applications S J Buggy, E Chehura, S James, R P Tatam Cranfield University (UK)</p> <p>11:00 Multiplexing of fibre optic long period grating based interferometric sensors R P Murphy, S James, R P Tatam Cranfield University (UK)</p> <p>11:15 Dynamic two-axis curvature measurement using multicore fibre Bragg gratings A Fender, W N MacPherson, A J Moore, J S Barton, J D Jones, S McCulloch¹, B J Jones¹, D Zhao², L Zhang² Heriot-Watt University (UK) ¹ AWE Plc (UK) ² University of Birmingham (UK)</p> <p>11:30 Smart surface using fibre Bragg grating sensors B M Cowie, D J Webb, P Brett Aston University (UK)</p> <p>11:45 Experimental and theoretical study of locally transverse loaded fibre Bragg gratings for pressure sensing applications R N Correia, E Chehura, S James, R P Tatam Heriot-Watt University (UK)</p> <p>12:00 Investigation into the temperature response of FBG fibre lasers based on ultra short highly doped erbium fibre cavities J Leighton, W Zhao, Y Shen¹, W J Boyle, T Sun, K T V Grattan City University (UK) ¹ Zhejiang University (PR China)</p>	<p>ITP</p> <p>Session 1: Chemical sensing users – perspective and needs Chair: M Scott, SWIG</p> <p>10:15 Application specific considerations J Proctor Yorkshire Water (UK)</p> <p>10:45 Communicating with the sensors – radio possibilities S Russell WRc (UK)</p> <p>11:15 Sensing in the oil industry M Salisbury Shell Global Solutions (UK)</p>	<p>QEP: Laser spectroscopy of molecular interactions</p> <p>Chair: To be confirmed</p> <p>10:15 Invited Non-covalent interactions in molecular clusters K Muller-Dethlefs The University of Manchester, The Photon Science Institute (UK)</p> <p>10:45 The weak hydrogen bond in the fluorobenzene-ammonia van der Waals complex: insights into the effects of electron withdrawing substituents and ionisation on pi vs in-plane bonding M Cockett, N Tonge, I Pugliesi, E MacMahon University of York (UK)</p> <p>11:00 Shape matters! Spectroscopy as a probe of 3D structure L Snoek University of Oxford (UK)</p> <p>11:15 Molecular alignment effects on rapid passage signals of nitrous oxide G Duxbury, N J Langford, S Wright, T McCulloch University of Strathclyde (UK)</p>

12:00 Lunch

12:30 Tutorials:

Quantum information processing S Barnett, University of Strathclyde (UK)
Biophotonic medical imaging H Barr, Cranfield Postgraduate Medical School (UK)

QEP	OPD	OPD	ITP
<p>QEP: Quantum information processing II</p>	<p>OPD: Photonics and imaging in biology and medicine II</p>	<p>OPD: Optical instrumentation and diagnostic applications</p>	<p>ITP: Optoelectronic gas sensing – opportunities and solutions</p>
<p>Chair: I Walmsley, University of Oxford (UK)</p>	<p>Chair: To be confirmed</p>	<p>Chair: To be confirmed</p>	<p>Chair: R Brogue, GASG</p>
<p>13:45 Invited On the distribution of polarisation entanglement in optical fibers <i>H Huebel, T Lederer, A Poppe, A Zeilinger¹</i> <i>University of Vienna (Austria)</i> ¹ <i>Institute for Quantum Optics and Quantum Information (Austria)</i></p>	<p>13:45 Fizeau-based optical coherence tomography (OCT) using a fibre imaging bundle <i>G Sarantavgas, H Ford, R P Tatam</i> <i>Cranfield University (UK)</i></p>	<p>13:45 Invited Characterisation of granular and particulate materials through digital imaging <i>YYan</i> <i>University of Kent (UK)</i></p>	<p>13:45 Industrial opportunities for optical gas sensors <i>R Brogue</i> <i>GASG (UK)</i></p>
<p>14:15 Quantum comparison of coherent states and quantum public key distribution <i>E Andersson, M Curty¹, I Jex²</i> <i>University of Strathclyde (UK)</i> ¹ <i>University of Erlangen-Nuremberg (Germany)</i> ² <i>Czech Technical University in Prague (Czech Republic)</i></p>	<p>14:00 Fibre optical coherence tomography (FOCT) interferometer design <i>E Jonathan</i> <i>Harare Institute of Technology (Zimbabwe)</i></p>	<p>14:15 Ultra-sensitive absorption spectroscopy for the measurement of ethane <i>C Patterson, L McMillan¹, G M Gibson, M J Padgett, K D Skeldon</i> <i>University of Glasgow (UK)</i> ¹ <i>University of Dundee (UK)</i></p>	<p>14:15 New optical components: just what we needed in gas detection <i>J Saffell</i> <i>Alphasense Ltd (UK)</i></p>
<p>14:30 Passive optical network approach to gigahertz-clocked multi-user quantum key distribution <i>V Fernandez, R J Collins, K J Gordon, S D Cova¹, I Rech¹, P D Townsend², G S Buller</i> <i>Heriot-Watt University (UK)</i> ¹ <i>Politecnico di Milano (Italy)</i> ² <i>University College Cork (Republic of Ireland)</i></p>	<p>14:15 Measuring optical density in 3-D using optical tomography – application to radiotherapy treatment planning <i>N Krstajic, S J Doran</i> <i>University of Surrey (UK)</i></p>	<p>14:30 Density measurements of high-velocity metallic sprays using x-radiography and high-speed photography <i>C Lloyd, W G Proud, A Rimmer¹</i> <i>University of Cambridge (UK)</i> ¹ <i>AWE plc (UK)</i></p>	<p>14:45 Improving process measurements using tunable diode laser systems <i>P Stockwell</i> <i>IMA Limited (UK)</i></p>
<p>14:45 Maximum confidence measurements <i>S Croke, S Barnett, E Andersson, J Jeffers, C Gilson¹, P Mosley², I Walmsley²</i> <i>University of Strathclyde (UK)</i> ¹ <i>University of Glasgow (UK)</i> ² <i>University of Oxford (UK)</i></p>	<p>14:30 Medical applications of ethane breath analysis <i>K D Skeldon, C Patterson, L McMillan, M J Padgett</i> <i>University of Glasgow (UK)</i></p>	<p>14:45 High-speed spatially-resolved flame thermometry using blue diode lasers <i>I S Burns, J Hult, G Hartung, C Kaminski</i> <i>University of Cambridge (UK)</i></p>	
<p>15:00 Towards a mid-infrared single photon source <i>G R Nash, S Smith, C J Bartlett¹, L Buckle¹, M Emeny¹, T Ashley¹</i> <i>University of Bristol (UK)</i> ¹ <i>QinetiQ (UK)</i></p>	<p>14:45 Sensitive optical biosensor based on whispering-gallery modes of dielectric microspheres <i>J Lutti, W Langbein, P Borri</i> <i>Cardiff University (UK)</i></p>	<p>15:00 A supercontinuum based wavelength agile gas sensor <i>R Watt, C Kaminski, J Hult</i> <i>University of Cambridge (UK)</i></p>	
	<p>15:00 Hybrid coatings as transducers in optical biosensors for oxygen and glucose monitoring <i>K Rose, R Fernandez-Lafuente¹, S Dzyadevych², N Jaffrezic³, G Kuncova⁴, V Matejec⁵, P Scully⁶</i> <i>Fraunhofer Institut Silicatforschung (ISC) (Germany)</i> ¹ <i>University of Madrid (UAM) (Spain)</i> ² <i>Institute of Molecular Biology & Genetics (Ukraine)</i> ³ <i>Ecole Centrale de Lyon (France)</i> ⁴ <i>Institute of Chemical Process Fundamentals (Czech Republic)</i> ⁵ <i>Institute of Radio Engineering and Electronics (Czech Republic)</i> ⁶ <i>The University of Manchester (UK)</i></p>		

QEP	OPD	OPD	ITP
<p>QEP: Quantum dots</p> <p>Chair: P Snowton, Cardiff University (UK)</p>	<p>OPD: Photonics and imaging in biology and medicine III</p> <p>Chair: To be confirmed</p>	<p>OPD: Optical instrumentation and diagnostic techniques</p> <p>Chair: To be confirmed</p>	<p>ITP: Optoelectronic chemical sensing – platform technologies</p> <p>Chair: A Tweedie, SOA</p>
<p>15:45 Invited</p> <p>Optically probing charge and spin excitations in quantum dots and molecules</p> <p>J J Finley Technical University of Munich (Germany)</p>	<p>15:45</p> <p>Two-photon ablation with 1278 nm laser radiation</p> <p>P Fischer, A McWilliam, L Paterson, C Brown, W Sibbett, K Dholakia, M P Macdonald University of St Andrews (UK)</p>	<p>15:45</p> <p>Development of two-frequency planar doppler velocimetry</p> <p>T O Charrett, R P Tatam Cranfield University (UK)</p>	<p>15:45</p> <p>Advances in diode laser technology for trace gas analysis</p> <p>P Martin TDL Sensors Ltd (UK)</p>
<p>16:15</p> <p>Single quantum dots in semiconductor microcavity pillars as single photon sources</p> <p>K J Gordon, J A Timpson¹, S Pellegrini, R E Warburton, D Sanvitto¹, A Daraei², P S S Guimaraes¹, S Lam¹, D M Whittaker¹, M S Skolnick¹, A M Fox¹, C Hu², Y-L D Ho², R Gibson², J G Rarity², A Tahaoui¹, M Hopkinson¹, P W Fry¹, G S Buller Heriot-Watt University (UK) ¹University of Sheffield (UK) ²University of Bristol (UK)</p>	<p>16:00</p> <p>Investigation of laser interaction with porcine dermal collagen sheet using various cw and pulsed lasers</p> <p>Y Tsang, M R Dickinson, T A King The University of Manchester (UK)</p>	<p>16:00</p> <p>Reconfigurable multichannel system for hard-field tomography</p> <p>S Garcia Castillo, K B Ozanyan The University of Manchester (UK)</p>	<p>16:15</p> <p>Evanescence wave liquid sensors</p> <p>G Emmerson Stratophase Ltd (UK)</p>
<p>16:30</p> <p>Photon antibunching from a single charge tunable semiconductor quantum dot</p> <p>P A Dalgarno, R Lambert, B Gerardot, R E Warburton, P Petroff¹ Heriot-Watt University (UK) ¹University of California (USA)</p>	<p>16:15</p> <p>Diffraction bar-codes as high capacity optical microtags for chemical and biological applications</p> <p>S Birtwell, G Galitonov, A Whitton, H Morgan, N Zheludev University of Southampton (UK)</p>	<p>16:15</p> <p>Digital alternatives to analogue balanced detection for optical tomography</p> <p>R Hafiz, K B Ozanyan The University of Manchester (UK)</p>	<p>16:45</p> <p>Smart holograms – a novel sensing platform</p> <p>S Kabilan Smart Hologram Limited (UK)</p>
<p>16:45</p> <p>Coherent dynamics of single quantum dot exciton qubit driven by detuned optical pulses with electrical readout</p> <p>R S Kolodka, A J Ramsay, F Bello, P W Fry, W K Ng, A Tahaoui, H Y Liu, M Hopkinson, D M Whittaker, A M Fox, M S Skolnick University of Sheffield (UK)</p>	<p>16:30</p> <p>Polarization absorbance in vertebrate photoreceptor cells: using laser tweezers in physiological optical measurements</p> <p>N W Roberts, M R Dickinson, H F Gleeson University of Manchester (UK)</p>	<p>16:30</p> <p>Surface profile measurement of aspheric optics using synthetic aperture interferometry</p> <p>A Biswas, J M Coupland Loughborough University (UK)</p>	<p>16:45</p> <p>A large magnetic storage ring for Bose-Einstein condensates</p> <p>I Norris, A S Arnold, C Garvie, E Riis University of Strathclyde (UK)</p>
<p>17:00</p> <p>Control of hole tunneling in charge tunable quantum dots</p> <p>J McFarlane, P Dalgarno, B Gerardot, R Warburton, K Karrai¹, P Petroff² Heriot-Watt University (UK) ¹Ludwig-Maximilians-Universität (Germany) ²University of California (USA)</p>	<p>16:45</p> <p>Transient photoacoustic signal decay in bio-tissue irradiated in vitro by Nd:YAG laser pulses</p> <p>G Gondek, T Li, R Lynch¹, R Dewhurst The University of Manchester (UK) ¹Unilever Research and Development Port Sunlight (UK)</p>	<p>16:45</p> <p>A large magnetic storage ring for Bose-Einstein condensates</p> <p>I Norris, A S Arnold, C Garvie, E Riis University of Strathclyde (UK)</p>	<p>17:00</p> <p>Wavefront sensing for 3-D particle metrology and velocimetry in engineering</p> <p>N Angarita, H Campbell¹, C Towers, A Greenaway¹, D Towers University of Leeds (UK) ¹Heriot-Watt University (UK)</p>
<p>17:15</p> <p>Spontaneous emission properties of quantum dots deposited on layer-by-layer grown polyelectrolyte films</p> <p>K Vamsi, Y Rakovich, A Bradley, J Donegan, S Byrne, Y Gun'ko Trinity College Dublin (Republic of Ireland)</p>	<p>17:00</p> <p>In vitro and in vivo studies of bio-responsive polymers</p> <p>X Dai, M E Eccleston, K Yunas, A Fisher, N K H Slater, C F Kaminski University of Cambridge (UK)</p>	<p>17:00</p> <p>Wavefront sensing for 3-D particle metrology and velocimetry in engineering</p> <p>N Angarita, H Campbell¹, C Towers, A Greenaway¹, D Towers University of Leeds (UK) ¹Heriot-Watt University (UK)</p>	<p>17:00</p> <p>Wavefront sensing for 3-D particle metrology and velocimetry in engineering</p> <p>N Angarita, H Campbell¹, C Towers, A Greenaway¹, D Towers University of Leeds (UK) ¹Heriot-Watt University (UK)</p>

17.30 Posters

19:15 Drinks reception, Bridgewater Hall

Chair: A Boardman, University of Salford (UK)

09:00 Plenary 3: Metamaterials, Negative Refraction, and a New Design Paradigms in Optics

J Pendry, Imperial College London (UK)

09:45 Refreshment Break

QEP	OPD	OPD	FASIG 1	ITP
<p>QEP: Microstructured photonic materials</p> <p>Chair: T Shepherd, QinetiQ Malvern (UK)</p> <p>10:15 Invited INVITED: Origins and limitations of photonic bandgap fibres J C Knight University of Bath (UK)</p> <p>10:45 Photonic bandgap fibre based on a 2-d array of cladding rings J M Stone, F Luan, G J Pearce, T A Birks, J C Knight, D M Bird University of Bath (UK)</p> <p>11:00 The Preparation and Characterisation of Novel Photonic Crystal Thin Films using the Langmuir-Blodgett Method D E Whitehead, M Bardosova, I M Povey, R H Tredgold, M E Pemble Tyndall National Institute (Republic of Ireland)</p> <p>11:15 Device Fabrication in High-Index 3D Photonic Crystals O M Roche, J Scrimgeour, J S King¹, D N Sharp, C F Blanford, E Graugnard¹, R G Denning, C J Summers¹, A J Turberfield University of Oxford (UK) ¹ Georgia Institute of Technology (USA)</p> <p>11:30 The effect of disorder on high finess photonic crystal microcavities A Chalcraft, D Whittaker, S Lam, J Timpson, D Sanvitto, M Fox, M S Skolnick, D O'Brien¹, T F Krauss¹, M Hopkinson, A Tahaoui University of Sheffield (UK) ¹ University of St. Andrews (UK)</p> <p>11:45 Giant gyrotropy in bi-layered chiral structures V Fedotov, A Rogacheva, A S Schwanecke, N Zheludev University of Southampton (UK)</p>	<p>OPD: Optical environmental sensing I</p> <p>Chair: To be confirmed</p> <p>10:15 Invited Lidar remote sensing of the atmosphere G Vaughan University of Manchester (UK)</p> <p>10:45 Lidar monitoring of Aircraft Emissions for Environmental Air Quality S Christie, M Bennett, A Graham¹ University of Manchester (UK) ¹ Manchester Metropolitan University (UK)</p> <p>11:00 Autonomous Doppler Lidar System for Atmospheric Boundary Layer Monitoring K Bozier, F Davies, C Collier University of Salford (UK)</p> <p>11:15 An airborne intra-pulse quantum cascade laser spectrometer for trace molecule detection G Duxbury, N Langford, S Wright University of Strathclyde (UK)</p> <p>11:30 Bio-aerosol detection using intrinsic fluorescence and elastic light scattering analysis W R Stanley, P H Kaye, V E Foot¹, K L Baxter¹, S J Barrington¹ University of Hertfordshire (UK) ¹ Defence Science and Technology Laboratory (UK)</p> <p>11:45 Silica based air-core photonic crystal fibres for mid-IR gas sensing applications J Shephard, N Gayraud, W MacPherson, R Maier, J Jones, D Hand, J Stone¹, A George¹, J Knight¹, M Mohebbi² Heriot-Watt University (UK) ¹ University of Bath (UK) ² K. N. Toosi University of Technology (Iran)</p> <p>12:00 An Improved Algorithm for Locating a Gas Source Using Inverse Methods L Thomson, B Hirst¹, G Gibson, S Gillespie², K Skeldon, M Padgett University of Glasgow (UK) ¹ Shell Global Solutions International BV (The Netherlands) ² Shell Global Solutions (UK)</p>	<p>OPD: Optical tweezers</p> <p>Chair: To be confirmed</p> <p>10:15 Invited Optical micromanipulation takes hold K Dholaki University of St Andrews (UK)</p> <p>10:45 Optical Tweezers for Nanomechanical Manipulation and Characterization of Biological Cells K Liu Keele University (UK)</p> <p>11:00 Manipulation of growth patterns in filamentous fungus using optical tweezers D Burnham, D McGloin, G Wright¹, N Read¹ University of St. Andrews (UK) ¹ University of Edinburgh (UK)</p> <p>11:15 Optical Tweezers Controlled Micro-Structured Probes for Nanometre Scale 3D Imaging and PicoNewton Force Microscopy M Towrie, S Botchway, W Fischer², R Halsall, D Jenkins, I Loader, P Matousek, P O'Neill², A Parker, M Pollard, R Stevens, R Turchetta, A Ward¹ CCLRC Rutherford Appleton Laboratory (UK) ¹ University of Oxford (UK) ² MRC Harwell (UK)</p> <p>11:30 Optically bound particle arrays in an evanescent field C Bain, C D Mellor¹, T Fennerty Durham University (UK) ¹ National Institute for Medical Research (UK)</p> <p>11:45 Size resolution with Light Induced Dielectrophoresis (LIDEP) S Neale, M Macdonald, M Mazilu, K Dholakia, T Krauss University of St Andrews (UK)</p> <p>12:00 An optical trapped nanohand for manipulating micron-sized particles G M Gibson, L Baron, F Beck, G B Whyte, M J Padgett University of Glasgow (UK)</p>	<p>FASIG 1</p> <p>Chair: A Moore, Heriot-Watt University (UK)</p> <p>10:15 Invited Resolution enhanced technologies in optical metrology W Osten University of Stuttgart (Germany)</p> <p>10:45 StaFF: Nanometre precision interferometers for the international linear collider P Coe, A J Reichold, D Urner University of Oxford (UK)</p> <p>11:00 2λ-contouring with digital holography using a fs-pulse laser J Müller, C Falldorf, W Jüptner Bremen Institute for applied beam technologies BIAS (Germany)</p> <p>11:15 Fast three-dimensional Hough transform for automated calibration of multiple 3-D sensors O Ogundana, C Coggrove¹, R Burguete², J Huntley Loughborough University (UK) ¹ Phase Vision Ltd. (UK) ² Airbus UK (UK)</p> <p>11:30 Phase-stepped gauge block interferometry in a Fizeau interferometer using a frequency-tunable visible laser diode M O'Hara, B Bowe, V Toal Centre for Industrial and Engineering Optics (Republic of Ireland)</p> <p>11:45 Phase and colour extraction for colour fringe projection system based on optimum frequency selection Z Zhang, C Towers¹, D Towers¹ Heriot-Watt University (UK) ¹ University of Leeds (UK)</p> <p>12:00 Analytic phase-to-height model for measuring object shape using structured light non-collimated projections B Rajoub, M Lalor, D R Burton, M Gdiesat Liverpool John Moores University (UK)</p>	<p>ITP</p> <p>Chair: P Melville, Institute of Physics (UK)</p> <p>10:15 Invited UK Scene KTN Director, UK Photonics Knowledge Transfer Network (UK)</p> <p>10:45 Invited Commercialising university invention M Cox, Heriot-Watt University (UK)</p> <p>11:15 Invited Successfully commercializing photonics technology S Jaiswal, Senior Consultant, TTP LTD (UK)</p>

from 12:00 Lunch

12:30 Post-deadline Session

QEP	OPD	OPD	FASIG2	ITP
<p>QEP: Metamaterials</p>	<p>OPD: Optical environmental sensing II</p>	<p>OPD: Holographic optical tweezers</p>	<p>OPD: FASIG2 speckle interferometry</p>	<p>Session 2: The competition and markets</p>
<p>Chair: A Boardman, University of Salford (UK)</p>	<p>Chair: To be confirmed</p>	<p>Chair: To be confirmed</p>	<p>Chair: M Lalor, Liverpool John Moores University (UK)</p>	<p>Chair: P Melville, Institute of Physics (UK)</p>
<p>13:45 Invited Negative refractive-index metamaterials in optics <i>V M Shalaev</i> <i>Purdue University (USA)</i></p>	<p>13:45 Invited Aeroengine exhaust emissions monitoring <i>M Hilton</i> <i>University of Reading (UK)</i></p>	<p>13.45 Superresolution in optical tweezers <i>L Thomson, Y Boissel, E Yao, G B Whyte, J K Courtial</i> <i>University of Glasgow (UK)</i></p>	<p>13:45 Temporal phase measurement methods in speckle interferometry for art conservation <i>R M Groves, G Pedrini, E Kouluompi¹, S Hackney², T Green², V Tomari³, W Osten</i> <i>Universität Stuttgart (Germany)</i> ¹ <i>National Gallery – Alexandros Soutzos Museum (Greece)</i> ² <i>Tate (UK)</i> ³ <i>Foundation for Research and Technology-Hellas (Greece)</i></p>	<p>13:45 Invited Overview on North America <i>B Musk, Entropix Ltd (UK)</i></p>
<p>14:15 Depolarization volume and correlation length in the homogenization of bianisotropic composites <i>J Cui, T Mackay</i> <i>University of Edinburgh (UK)</i></p>	<p>14:15 Measuring trace hydrocarbons in gas turbine engine exhausts - a comparison of optical spectroscopic and conventional sampling techniques <i>M Johnson, M Hilton, W Stocksley</i> <i>University of Reading (UK)</i></p>	<p>14:00 Holographic optical manipulation of airborne particles <i>D Burnham, D McGloin</i> <i>University of St. Andrews (UK)</i></p>	<p>14:00 High-speed, sub-nyquist speckle pattern interferometry using two binary diffraction gratings <i>T Wu, S A Earl, J D Jones, A J Moore</i> <i>Heriot Watt University (UK)</i></p>	<p>14:15 Invited Overview on Asia <i>Speaker to be confirmed</i></p>
<p>14:30 A covariant view of negative refraction <i>M McCall</i> <i>Imperial College London (UK)</i></p>	<p>14:30 Optical measurements of pollution dispersion at commercial airports <i>M Bennett, S M Christie, A Graham¹</i> <i>University of Manchester (UK)</i> ¹ <i>Manchester Metropolitan University (UK)</i></p>	<p>14:15 Multi-point holographic optical velocimetry in microfluidic systems <i>J Leach, H Mushfique, J Cooper, R Di Leonardo¹, M J Padgett</i> <i>University of Glasgow (UK)</i> ¹ <i>INFN-CRS SOFT (Italy)</i></p>	<p>14:15 Desensitising a polarisation based speckle interferometer for the polarisation direction of incoming scattered light <i>P Somers, N Bhattacharya</i> <i>Delft University of Technology (The Netherlands)</i></p>	<p>14:45 Invited Overview on Europe <i>Speaker to be confirmed</i></p>
<p>14:45 Asymmetric transmission of light through a planar chiral meta-material <i>V Fedotov, P Mladyonov¹, S Prosvirnin¹, A Rogacheva, Y Chen², N Zheludev</i> <i>University of Southampton (UK)</i> ¹ <i>Institute of Radio Astronomy and Kharkov National University (Ukraine)</i> ² <i>Rutherford Appleton Laboratory (UK)</i></p>	<p>14:45 Monitoring of carbon dioxide exhaust emissions using mid-infrared spectroscopy <i>J Mulrooney, J Clifford, C Fitzpatrick, P Chambers, E Lewis</i> <i>University of Limerick (Republic of Ireland)</i></p>	<p>14:30 Numerical simulations of generalised phase contrast – based counter propagating-beam traps <i>P Rodrigo, I Perch-Nielsen, J Glückstad</i> <i>Risø National Laboratory (Denmark)</i></p>	<p>14:30 Comparison of multiple viewing direction shearography with multiple illumination direction shearography <i>D Francis, S James, R P Tatam</i> <i>Cranfield University (UK)</i></p>	
<p>15:00 Correlation of split ring resonator (SRR) resonant features in the near infrared with geometry <i>N P Johnson, A Khokhar, S McMeekin¹, C Jin, H Chong, R DeLaRue</i> <i>University of Glasgow (UK)</i> ¹ <i>Glasgow Caledonian University (UK)</i></p>	<p>15:00 Measurement of hydrocarbon exhaust emissions using an optical fibre based mid-infrared sensor <i>J Clifford, J Mulrooney, C Fitzpatrick, P Chambers, E Lewis</i> <i>University of Limerick (Republic of Ireland)</i></p>	<p>14:45 A finger interface for holographic optical tweezers <i>G Whyte, J Leach, G Gibson, M Padgett</i> <i>University of Glasgow (UK)</i></p>	<p>14:45 Single-shot depth-resolved displacement field measurement using phase-contrast polychromatic speckle interferometry <i>P D Ruiz, M de la Torre-Ibarra¹, J Huntley</i> <i>Loughborough University (UK)</i> ¹ <i>Centro de Investigaciones en Óptica (Mexico)</i></p>	
		<p>15:00 Anomalous particle transport in nematic liquid crystals <i>S A Tatarikova, D R Burnham, A K Kirby, G D Love</i> <i>University of Durham (UK)</i></p>	<p>15:00 Reflection holographic element-based electronic speckle interferometer for vibrational analysis <i>R Jallapuram, V Toal, S Guntaka</i> <i>Dublin Institute of Technology (Republic of Ireland)</i></p>	
				<p>15:15 Refreshment Break</p>

QEP	OPD	QEP	FASIG 3	ITP
<p>QEP: Nanophotonics and plasmonics</p> <p>Chair: N Zheludev, University of Southampton (UK)</p> <p>15:45 Invited Surface plasmon waveguides and resonators <i>J R Krenn</i> <i>Karl-Franzens University (Austria)</i></p> <p>16:15 Long-range surface plasmon polariton propagation in photonic crystals: The role of out-of-plane scattering <i>A Boltasseva, T Søndergaard¹, S Bozhevolnyi¹</i> <i>COM • DTU (Denmark)</i> ¹ <i>Department of Physics and Nanotechnology (Denmark)</i></p> <p>16:30 Optical spectroscopy of assemblies of interacting metallic nanowires: a route to designing non-linear optical devices. <i>W Dickson, W Hendren, P Evans, G Wurtz, R J Pollard, R Atkinson, A V Zayats</i> <i>Queen's University of Belfast (UK)</i></p> <p>16:45 A nanoparticle as a bit of optical memory <i>B F Soares, M Bashevoy, K MacDonald, F Jonsson, N Zheludev</i> <i>University of Southampton (UK)</i></p> <p>17:00 Invited Nanoscale circuit elements and circuit theory in optics: concepts and potentials <i>N Engheta</i> <i>University of Pennsylvania (USA)</i></p>	<p>Optical techniques for materials characterisation and processing</p> <p>Chair: To be confirmed</p> <p>15:45 Invited The use of fibre bragg gratings for ultrasonic lamb wave detection and source location <i>G Thursby, D Betz¹, B Culshaw, W Staszewski²</i> <i>University of Strathclyde (UK)</i> ¹ <i>Daimler Chrysler (Germany)</i> ² <i>University of Sheffield (UK)</i></p> <p>16:00 A non-contact method for evaluating material properties and structural defects using laser generated ultrasound <i>B Sorazu, S Atique¹, G Thursby¹, B Culshaw¹</i> <i>University of Glasgow (UK)</i> ¹ <i>University of Strathclyde (UK)</i></p> <p>16:15 A novel OCT-based micro-indentation technique for mechanical characterization of soft materials <i>Y Yang, P Bagnaninchi, M Aheame, K Liu</i> <i>Keele University (UK)</i></p> <p>16:30 Graphite anisotropy measurements using laser-generated ultrasound <i>B Dutton, R J Dewhurst</i> <i>University of Manchester (UK)</i></p> <p>16:45 Polymer based substrates for surface enhanced raman spectroscopy <i>J Vaughan, P J Scully</i> <i>University of Manchester (UK)</i></p> <p>17:00 Patterning and integration of OLED polyfluorene polymers on matrix addressable UV AlInGaN micropixelated Light Emitting Diodes <i>B Guilhabert, E Gu, M Wu, G Heliotis¹, C Belton¹, P Stavrinou¹, D Bradley¹, M Dawson</i> <i>University of Strathclyde (UK)</i> ¹ <i>Imperial College London (UK)</i></p>	<p>QEP: Advances in laser science</p> <p>Chair: M Dawson, University of Strathclyde (UK)</p> <p>15:45 Invited Control and measurement of attosecond pulses <i>N Dudovich, O Smirnova, Y Mairesse, J Levesque, M Yu Ivanov, D M Villeneuve, P B Corkum</i> <i>National Research Council of Canada (Canada)</i></p> <p>16:15 Self-starting femtosecond Cr⁴⁺:YAG laser mode locked with a GaInNAs saturable Bragg reflector <i>C Leburn, A D McRobbie, A Lagatsky, C Brown, W Sibbett, S Calvez¹, D Burns¹, M D Dawson¹, J Gupta², G Aers²</i> <i>University of St Andrews (UK)</i> ¹ <i>University of Strathclyde (UK)</i> ² <i>Institute for Microstructural Sciences (Canada)</i></p> <p>16:30 4GLS - The UK's fourth generation light source project <i>W R Flavell, E Seddon, M W Poole¹, P Weightman²</i> <i>CCLRC Daresbury Laboratory (UK)</i> ¹ <i>Daresbury Laboratory (UK)</i> ² <i>Liverpool University (UK)</i></p> <p>16:45 Spectral narrowing and locking of a vertical external-cavity surface-emitting lasers using a volume Bragg grating <i>S Giet, H Sun, S Calvez, M D Dawson, S Suomalainen¹, M Guina¹, M Pessa¹</i> <i>Institute of Photonics – University of Strathclyde (UK)</i> ¹ <i>Optoelectronics Research Centre, Tampere University of Technology (Finland)</i></p> <p>17:00 High power Nd:YAG planar waveguide lasers in MOPA configuration <i>A B Russell, F Sun, H J Baker, D Hall</i> <i>Heriot-Watt University (UK)</i></p> <p>17:15 Orion - a new high power laser facility for the UK <i>N W Hopps, E J Harvey, N C Honiatt, P M R Jinks, M J Norman, P A Treadwell</i> <i>AWE plc (UK)</i></p>	<p>FASIG 3</p> <p>OPD: FASIG 3 New techniques and applications</p> <p>Chair: J Huntley, Loughborough University (UK)</p> <p>15:45 Hybrid genetic algorithm using a parametric method to solve the two-dimensional phase unwrapping problem <i>S Karout, M Gdeisat, D Burton, M Lalor</i> <i>Liverpool John Moores University (UK)</i></p> <p>16:00 Application of digital speckle radiography to measure the internal displacement fields of a shock loaded material <i>D Williamson, D Chapman, W Proud, P Church¹</i> <i>University of Cambridge (UK)</i> ¹ <i>QinetiQ (UK)</i></p> <p>16:15 Theoretical and experimental analysis of wavelength-multiplexed PTV <i>R Wang, A Moore</i> <i>Heriot Watt University (UK)</i></p> <p>16:30 A comparison between wavelet fringe analysis algorithms <i>A Abid, M Gdeisat, D Burton, M Lalor</i> <i>Liverpool John Moores University (UK)</i></p> <p>16:45 An amplified two-colour FSI system for 3-D co-ordinate measurement <i>P Coe, J Cox, M Dehchar, E Dobson, S Gibson, D Howell, A Mitra¹, R Nickerson</i> <i>University of Oxford (UK)</i> ¹ <i>Fermilab (USA)</i></p> <p>17:00 Phase extraction without unwrapping phase and taking advantage of Fourier interferometry <i>C Meneses-Fabián, R Rodríguez-Vera, F.Mendoza-Santoyo, G Rodríguez-Zurita¹</i> <i>Centro de Investigaciones en Óptica (México)</i> ¹ <i>Benemérita Universidad Autónoma de Puebla (México)</i></p>	<p>ITP</p> <p>Session 3: Bringing it all together</p> <p>Chair: P Melville, Institute of Physics (UK)</p> <p>15:45 Invited UK public funding for commercialisation <i>A Slight, Head of Business Development, Targeting Innovation Ltd (UK)</i></p> <p>16:15 Invited EU Funding: Framework 7 - R & D funding opportunity or administrative threat? <i>H Edwards, Innovation Advisor, Oxford Innovation Limited (UK)</i></p> <p>16:45 Invited An answer to the problem of connecting technology with markets <i>A Hurden, Senior Consultant, Scientific Generics Ltd (UK)</i></p>

17:30 Posters

19:15 Conference dinner, Manchester United Stadium

Chair: J Jones, Heriot-Watt University (UK)

08:50 Fenia Berz Award

09:00 Plenary 4: Keeping a tight focus on light
P Russell, University of Erlangen-Nuremberg (Germany)

09:45 Refreshment Break

QEP

QEP

OPD

OPD

Nonlinear optics I

QEP: Semiconductor optoelectronics

OPD: Optical vortices

OPD: Structured optical materials

Chair: A Boardman, University of Salford (UK)

Chair: M Fox, University of Sheffield (UK)

Chair: To be confirmed

Chair: To be confirmed

10:15 Invited

Dissipative lattice solitons in Bose-Einstein condensates and nonlinear optics

G L Oppo
University of Strathclyde (UK)

10:45

Slow light using cavity solitons in semiconductor resonators.

T Ackemann, W J Firth, G Oppo, A Scroggie, A Yao
University of Strathclyde (UK)

11:00

Spatial solitons with intra-cavity photonic crystals

D Gomila, G L Oppo
University of Strathclyde (UK)

11:15

Localized polaritons and second harmonic generation in a resonant medium with quadratic nonlinearity

D V Skryabin, A Yulin, A Maimistov¹
University of Bath (UK)
¹ Moscow Engineering Physics Institute (Russia)

11:30

Generation of travelling surface plasmon waves by free-electron impact

M V Bashevoy, F Jonsson, A V Krasavin, N I Zheludev, Y Chen¹, M I Stockman²
University of Southampton (UK)
¹ Rutherford Appleton Laboratory (UK)
² Georgia State University (USA)

11:45

Phase retention in SPM super-broadened pulses

P Kinsler, J Tyrrell, G H New
Imperial College London (UK)

10:15 Invited

Tailoring the extreme band structure of dilute nitride alloys for optoelectronics device applications

E P O'Reilly
Tyndall National Institute (Republic of Ireland)

10:45

Material challenges for the development of long wavelength GaInNAs/GaAs quantum well lasers

D G McConville, S J Sweeney, A R Adams, R Riechert¹, H Riechert¹
University of Surrey (UK)
¹ Infineon Technologies Corporation (Germany)

11:00

1.3µm emitting self assembled quantum dot lasers

P M Smowton, I Sandall, C Walker, J D Thomson, A Sobiesierski, T J Badcock¹, D J Mowbray¹, H Liu¹, M Hopkinson¹
Cardiff University (UK)
¹ University of Sheffield (UK)

11:15

The temperature dependence of the peak gain in p-doped and intrinsic 1.3 µm InAs/GaAs quantum-dot lasers

N F Massé, I P Marko, S J Sweeney, A D Andreev, A R Adams, N Hatori¹, M Sugawara¹
University of Surrey (UK)
¹ Fujitsu Laboratories Ltd (Japan)

11:30

High performance 2.2µm optically pumped vertical external cavity surface emitting laser

J Hopkins, A Maclean, D Burns, J Ng¹, M Steer², M Hopkinson¹, S Calvez, H Sun
University of Strathclyde (UK)
¹ University of Sheffield (UK)
² EPSRC National Centre for III-V Technologies (UK)

11:45

A study of the afterpulsing phenomenon in InGaAs/InP single-photon avalanche diodes

S Pellegrini, R E Warburton, L J J Tan¹, J S Ng¹, A Krysa¹, K Groom¹, J P R David¹, S Cova², G S Buller
Heriot-Watt University (UK)
¹ University of Sheffield (UK)
² Politecnico di Milano (Italy)

10:15

Optical vortices and adaptive optics

C Paterson
Imperial College London (UK)

10:45

Topology and statistics of optical vortex lines in 3D speckle fields

K O'Holleran, M R Dennis¹, M J Padgett
University of Glasgow (UK)
¹ University of Southampton (UK)

11:00

Adaptive optics with singular beams

B Boruah, M Neil
Imperial College London (UK)

11:15

Rows of optical vortices from elliptic perturbations

M R Dennis
University of Southampton (UK)

11:30

Fourier relationship of angle and angular momentum of light

E Yao, S Franke-Arnold, J K Courtial, S Barnett¹, M Padgett
University of Glasgow (UK)
¹ University of Strathclyde (UK)

10:15

Title to be confirmed

M Schubert
University of Nebraska-Lincoln (USA)

10:45

Femtosecond Laser Modification of Poly(methyl methacrylate) - Parametric Study

A Baum, W Perrie¹, P Scully, P Fielden, N Goddard, C Thomas, M Basanta
The University of Manchester (UK)
¹ The University of Liverpool (UK)

11:00

Fabrication of Er³⁺-doped silicate glass waveguides by PLD for planar amplifiers

S Shen, W Chow, A Jha, R Thomson¹, A Kar¹, M Martino²
University of Leeds (UK)
¹ Heriot-Watt University (UK)
² University of Lecce (Italy)

11:15

Control of single quantum dot and collective spontaneous emission in 2D photonic crystal nanostructures

M Kaniber, F Hofbauer, S Grimminger, M Bichler, G Abstreiter, J J Finley
Walter Schottky Institut (Germany)

11:30

NIR and UV femtosecond laser micro-structuring of materials

W Perrie, A Baum¹, P Scully¹, M Sharp, S Edwardson, K Watkins
The University of Liverpool (UK)
¹ The University of Manchester (UK)

12:00 Lunch

QEP	QEP	OPD	OPD
<p>Nonlinear optics II</p> <p>Chair: T Shepherd, QinetiQ Malvern (UK)</p>	<p>QEP: Semiconductor dynamics</p> <p>Chair: G S Buller, Heriot-Watt University (UK)</p>	<p>Diffractive optics</p> <p>Chair: To be confirmed (UK)</p>	<p>EUV & X-ray optics</p> <p>Chair: To be confirmed</p>
<p>13:00 Invited Resonant metamaterial-based electrically small microwave and optical radiating and scattering systems <i>R W Ziolkowski</i> <i>The University of Arizona (USA)</i></p>	<p>13:00 Invited Polariton stimulation and its spin dynamics in semiconductor microcavities <i>L Viña, D Martin, A Amo, D Ballarini</i> <i>Universidad Autónoma de Madrid (Spain)</i></p>	<p>13:00 Invited Recent advances in the design and fabrication of diffractive and micro-optical elements <i>M R Taghizadeh, A J Waddie</i> <i>Heriot Watt University (UK)</i></p>	<p>13:00 Invited Title to be confirmed <i>P Doyle</i> <i>University College London (UK)</i></p>
<p>13:30 The influence of noise on collective light-atom interactions <i>G R M Robb, W J Firth</i> <i>University of Strathclyde (UK)</i></p>	<p>13:30 Spectral-temporal investigations of laser emission following injection of a femtosecond pulse <i>D K Baxter, C D O'Rourke, J Allam</i> <i>University of Surrey (UK)</i></p>	<p>13:30 Dynamic holographic wave-front references for interferometric optical testing <i>M Neil, E Atad-Ettedgui¹, G D Love², B Boruah, D Henry³</i> <i>Imperial College London (UK)</i> ¹ <i>Royal Observatory (UK)</i> ² <i>University of Durham (UK)</i> ³ <i>UK Astronomy Technology Centre (UK)</i></p>	<p>13:30 Soft X-ray and EUV polarimetry using numerically optimised broadband multilayer optical elements <i>A G Michette, A K Powell, S J Pfauntsch, M MacDonald, Z Wang¹, H Wang¹, J Zhu¹, F Wang¹, Z Gu¹, L Chen¹, F Schafers²</i> <i>Daresbury Laboratory (UK)</i> ¹ <i>Tongji University (PR China)</i> ² <i>BESSY GmbH (Germany)</i></p>
<p>13:45 Optimisation of high power four-wave mixing in a photonic crystal fibre <i>T Sloanes, K J McEwan, L Michaille¹</i> <i>DSTL (UK)</i> ¹ <i>QinetiQ (UK)</i></p>	<p>13:45 Ultrafast reflectivity modulation in AlGaAs photonic crystal waveguides <i>P Murzyn, A Z Garcia-Deniz, D O Kundys, A M Fox, J P R Wells, D M Whittaker, M S Skolnick, T K Krauss¹, J S Roberts</i> <i>University of Sheffield (UK)</i> ¹ <i>University of St Andrews (UK)</i></p>	<p>13:45 Phase and amplitude errors in digital holograms <i>A Georgiou, W A Crossland</i> <i>Cambridge University (UK)</i></p>	<p>13:45 Wavelength control of soft x-ray by ionization effects on high harmonic generation in a capillary <i>A de Paula, M Praeger, S Stebbings, J Baumberg, C A Froud, E T Rogers, B Mills, D C Hanna, W S Brocklesby, J G Frey</i> <i>University of Southampton (UK)</i></p>
<p>14:00 Phase-sensitive scattering of a continuous wave on a soliton <i>A Yulin, D V Skryabin, J Knight, A Efimov¹, A Taylor¹</i> <i>University of Bath (UK)</i> ¹ <i>Los Alamos National Laboratory (USA)</i></p>	<p>14:00 Bistable localized emission states in broad-area vertical-cavity surface-emitting lasers with frequency-selective feedback <i>Y Tanguy, T Ackemann, W J Firth, A Naumenko¹, P Paulau¹, N Loiko¹, R Jaeger²</i> <i>University of Strathclyde (UK)</i> ¹ <i>Academy of Sciences of Belarus (Belarus)</i> ² <i>Ulm Photonics (Germany)</i></p>	<p>14:00 Achromatic white light Bessel beams formed using a spatial light modulator <i>A Wright, J Leach¹, E Esposito², G M Gibson¹, G McConnell², M J Padgett¹, J Girkin</i> <i>University of Strathclyde (UK)</i> ¹ <i>University of Glasgow (UK)</i> ² <i>Strathclyde Institute for Biomedical Science (UK)</i> ³ <i>University of Glasgow (UK)</i></p>	<p>14:00 The dependence of soft X-ray generation on the nature of the gas in a gas filled capillary <i>S Stebbings, M Praeger, A de Paula, J Baumberg, C Froud, E Rogers, B Mills, D Hanna, W Brocklesby, J Frey</i> <i>University of Southampton (UK)</i></p>
<p>14:15 Nonlocality and amplification of fluctuations in feedback systems <i>F Papoff, R Zambrini</i> <i>IMEDEA (Spain)</i></p>	<p>14:15 Computational modelling of passive mode-locking in two-section InGaAs quantumdot lasers: fundamental analysis and optimization <i>E Gehrig, O Hess</i> <i>University of Surrey (UK)</i></p>	<p>14:15 Conical diffraction <i>M Berry, M Jeffrey</i> <i>University of Bristol (UK)</i></p>	<p>14:15 Study of asymmetry for mirror imaging system in extreme ultraviolet lithography <i>A Nugrowati, S Pereira, J Braat</i> <i>Delft University of Technology (The Netherlands)</i></p>
			<p>14:30 Modulated x-ray tube using velocity modulation <i>M Sanduk</i> <i>Laser and Opto-Electronics (Iraq)</i></p>

14:30
Close of Conference

P1.1

Focusing atomic and molecular species with high intensity fields

R Fulton, S Purcell, P Barker
Heriot-Watt University (UK)

P1.2

Spectral narrowing of the coherent Rayleigh scattering line shape

H T Bookey, P Barker, M Schneider¹
Heriot-Watt University (UK)
¹ Princeton University (USA)

P1.3

Light propagation in media with 4-level atomic interference

S Kajari-Schroeder, G Morigi¹, S Franke-Arnold², G Oppo³
Ulm (Germany)
¹ Autonoma de Barcelona (Spain)
² University of Glasgow (UK)
³ University of Strathclyde (UK)

P1.4

Control of atomic decay rates via manipulation of reservoir mode frequencies

I E Lington, B Garraway
University of Sussex (UK)

P1.5

Hybrid cluster state proposal for a quantum game

M S Tame
Queens University of Belfast (UK)

P1.6

Entropic uncertainty and joint measurements

T Brougham, E Andersson, S Barnett
University of Strathclyde (UK)

P1.7

Coherent effects and double dark states in a system with decay interference

E Paspalakis, A Fountoulakis, A Terzis
University of Patras (Greece)

P1.8

Coherent population transfer in a dense collection of three-level systems

S Evangelou, E Paspalakis
University of Patras (Greece)

P1.9

Casimir interaction between excited atom and dielectric medium

Y Sherkunov
Institute for High Energy Densities of Russian Academy of Sciences (Russia)

P1.10

Diamond defects and quantum dots: sources of single photons

R Hubbard, Y Ovchinnikov¹, J Y Cheung¹, R Murray, A G Sinclair¹
Imperial College London (UK)
¹ National Physical Laboratory (UK)

P1.11

Entanglement reciprocation between qubits and continuous variables

C Ogden, M Paternostro, S Bose¹, M Kim
Queen's University Belfast (UK)
¹ University College London (UK)

P1.12

Hi-fidelity postselecting optical devices

J R Jeffers
University of Strathclyde (UK)

P1.13

Fidelity for pure state optical post-selection

C S Hamilton, S Barnett, J R Jeffers
University of Strathclyde (UK)

P1.14

Optical stark deceleration of cold molecules

R Fulton, A I Bishop, P Barker
Heriot-Watt University (UK)

P1.15

Fourier dynamics of Bose-Einstein condensates

G Whyte, P Öhberg¹, J Courtial
University of Glasgow (UK)
¹ University of Strathclyde (UK)

P1.16

Self-Localisation of Bose-Einstein condensates in optical lattices with boundary losses

R Livi, R Franzosi, G L Oppo¹
Universita 'di Firenze (Italy)
¹ University of Strathclyde (UK)

P1.17

The ultimate departure from geometrical optics: vortex optical field around plasmonic nanoparticle

M Bashevov, V Fedotov, N Zheludev
University of Southampton (UK)

P1.18

Quantifiable measurements using two photon interference

P J Thomas, J Y Cheung, C Chunnillall
National Physical Laboratory (UK)

P1.19

Application of doppler optical coherence tomography technique for fluid dynamic studies

M Bonesi, D Churmakov, L Ritchie, D A Mendel¹, I Meglinski
Cranfield University (UK)
¹ National Physical Laboratory (UK)

P1.20

Anomalous particle transport in nematic liquid crystals

S A Tatarikova, D R Burnham, A K Kirby, G D Love
Durham University (UK)

P1.21

Spatially resolved x-ray spectra from microscale diffraction pattern

M Praeger, C A Froud, E T Rogers, D C Hanna, J G Frey, W S Brocklesby, S Stebbings, A de Paula, B Mills, J Baumberg
University of Southampton (UK)

P2.1

Novel gold nano-structured arrays for plasmon resonance sensors

A Sheridan, A Clark, A Glidle, J M Cooper, D Cumming
University of Glasgow (UK)

P2.2

Optical magnetic mirror

A S Schwanecke, Y Chen¹, V Fedotov, V Khardikov², S Prosvirnin², N Zheludev

University of Southampton (Germany)

¹ Rutherford Appleton Laboratory (UK)

² Institute of Radio Astronomy and Kharkov National University (Ukraine)

P2.3

Optical investigations of porous silicon coated with a-Si:H using PECVD

P Rathinasamy, I Ferreira, H Aguas, E Fortunato, R Martins
New University of Lisbon (Portugal)

P2.4

Novel configurations for a surface-plasmon optical sensor based on semiconductor light-emitting diodes

P Porta, H Summers
Cardiff University (UK)

P2.5

Negative and positive refraction in photonic crystal structures

C R Bennett, T J Shepherd
QinetiQ (UK)

P2.6

Imaging of enhanced fluorescence by nanostructured gold particles

A Mac raighne, Y Rakovich, E Mc Cabe
TCD (Republic of Ireland)

P2.7

Guidance applied to quantum operations in josephson charge qubits

C Hill, J F Ralph, E Griffith
University of Liverpool (UK)

P2.8

Rapid state purification in a superconducting charge qubit

E Griffith, C Hill, J F Ralph, K Jacobs¹
University of Liverpool (UK)
¹ Louisiana State University (USA)

P2.9

Spatially and temporally resolved phase matching calculations for high harmonic generation in a capillary

E T Rogers, M Praeger, S Stebbings, A de Paula, C A Froud, B Mills, J Baumberg, D C Hanna, W S Brocklesby, J G Frey
University of Southampton (UK)

P2.10

Optical properties of noble-metallic nanoparticle chains embedded in a graded-index host

K Yu
Chinese University of Hong Kong (PR China)

P2.11

Linewidth enhancement factor in compressively strained single- and multiple-layer InGaAsP quantum wire lasers

M Khayer, A Haque¹
Bangladesh University of Engineering and Technology (Bangladesh)
¹ East West University (Bangladesh)

P2.12

Theoretical modelling of the effect of well width on the absorption spectrum of quantum dots-in-a-well infrared photodetectors

N Vukmirovic, D Indjin, Z Ikonc, P Harrison
University of Leeds (UK)

P2.13

Study of phase retardation in subwavelength metal gratings

R Zheng, P Lambkin, P Hughes¹
Tyndall National Institute (Republic of Ireland)
¹ SensL (Republic of Ireland)

P2.14

Nonlinear plasmonics in a gallium/aluminium nano-composite

K MacDonald, A Krasavin, B F Soares, M Bashevoy, F Jonsson, N Zheludev
University of Southampton (UK)

P2.15

Polarization properties of metal films under anomalously enhanced transmission conditions

A Kats, M Nesterov, A Nikitin
Institute for Radiophysics and Electronics of NAS Ukraine (Ukraine)

P2.16

Scattering of light from nanostructures

K Holms, F Papoff
Strathclyde University (UK)

P2.17

Dispersion properties of subwavelength waveguide formed by silver nanorods.

N Giannakis, J Inglesfield¹, P Belov, Y Zhao, Y Hao
Queen Mary University of London (UK)
¹ Cardiff University (UK)

P2.18

Dissipative solitons and generalised nonlinear excitations in negative phase velocity metamaterials

A D Boardman, N King, Y Rapoport¹
University of Salford (UK)
¹ National Taras Shevchenko University (Ukraine)

P2.19

Operation of multi-mode 2 micron Tm-silica fibre lasers with in-band pumping

Y Tsang, T A King
The University of Manchester (UK)

P2.20

Quantum-dot based saturable absorber for femtosecond modelocked operation of a solid-state laser

A McWilliam, A Lagatsky, C Brown, W Sibbett, A Zhukov¹, V Ustinov¹, A Vasil'ev¹, E Rfailov²
University of St Andrews (UK)
¹ Ioffe Institute, St Petersburg (Russia)
² University of Dundee (UK)

P2.21

A model of a QCW diode pumped passively Q-switched solid state laser

C Mercer, Y Tsang, D Binks
The University of Manchester (UK)

P2.22

Thermal management in disk lasers: doped-dielectric and semiconductor laser gain media in thin-disk and microchip formats

A Kemp, A Maclean, J Hopkins, D Burns
University of Strathclyde (UK)

P2.23

High power intracavity second harmonic generation in vertical external-cavity surface-emitting lasers at 1060nm

A Maclean, A Kemp, J Kim¹, K Kim¹, T Kim¹, D Burns
University of Strathclyde (UK)
¹ Samsung Advanced Institute of Technology (South Korea)

P2.24

Characterisation of extended cavity alpha-distributed feedback laser at 1062 nm

W A Syed, J Shy¹
COMSATS Institute of Information Technology (Pakistan)
¹ National Tsing Hua University (Taiwan)

P2.25

Frequency-doubling of a continuous-wave red VECSEL to produce 100mW at 337nm

L G Morton, J Hastie, M D Dawson, A Krysa¹, J Roberts¹
University of Strathclyde (UK)
¹ University of Sheffield (UK)

P2.26

Efficient near 3 micron dysprosium-doped ZBLAN fiber laser pumped with near 1.1 micron Yb-doped fiber laser

A El-Taher, Y Tsang, D Binks, T A King, S Jackson¹

The University of Manchester (UK)

¹ The University of Sydney (Australia)

P2.27

Polarization properties of spatial emission structures of broad-area vertical-cavity surface-emitting lasers

T Ackemann, N Loiko¹, I Babushkin², M Schulz-Ruhtenberg³, K Huang⁴

University of Strathclyde (UK)

¹ Academy of Sciences of Belarus (Belarus)

² Max-Born Institut (Germany)

³ Universitaet Muenster (Germany)

⁴ National Chiao Tung University, (Taiwan)

P2.28

Giant excess noise in asymmetric lasers and gain-guides

W J Firth, E Wright¹, A Yao

University of Strathclyde (UK)

¹ University of Arizona (USA)

P2.29

Transparency in Atomically-Doped Coupled Resonator Optical Waveguides

A Kanaki, V Yannopoulos¹, E Paspalakis²

University of Patras (Greece)

P2.30

Performance and operations of the 100TW beamline of the HELEN laser

N W Hopps, M Girling, D I Hillier, M F Kopec, J R Nolan, D Winter

AWE plc (UK)

P2.31

Modeling and theory involving metamaterial photonic structures

A D Boardman, N King, L Velasco

University of Salford (UK)

P2.32

Measurement and modelling of the effect of velocity changing collisions on the Dicke Narrowing in water

G Duxbury, N J Langford, S Wright, T McCulloch

University of Strathclyde (UK)

P2.33

Geometrical technique for closed loop 3-dimensional laser forming

E Abed, S Edwardson, G Dearden, K Watkins

The University of Liverpool (UK)

P2.34

Applications of acousto-optic devices to spectral imaging systems

J Ward, E Wachman¹, C N Pannell²

Gooch & Housego PLC (UK)

¹ ChromoDynamics Inc. (USA)

² (USA)

P2.35

Quantum interference with photon pairs using two separated micro-structured fibres

J Fulconis, O Alibart, W Wadsworth, J G Rarity

University of Bristol (UK)

P3.1

A comparison of air-core fibers for optical pulse shaping

M Mohebbi

K. N. Toosi University of Technology (Iran)

P3.2

Gyroelectric cubic-quintic dissipative solitons

A D Boardman, L Velasco

University of Salford (UK)

P3.3

Damped harmonic oscillator model for chaos pass filtering in optical chaos communications using injection-locked semiconductor lasers

A Murakami, K A Shore

University of Wales, Bangor (UK)

P3.4

Dynamic structural equilibrium in self-assembled nanoparticles at the fiber tip: probing with second harmonic generation

B F Soares, F Jonsson, K MacDonald, A Denisjuk, N Zheludev

University of Southampton (UK)

P3.5

Transverse spatial structures and OPCPA

C Tsangaris, P Kinsler, G H New

Imperial College London (UK)

P3.6

Criteria for optical carrier shocking in the presence of dispersion

S Radnor

Imperial College London (UK)

P3.7

Fluorescence up-conversion and lasing in semiconducting polymers

G Tsiminis, G A Turnbull, I D Samuel

University of St. Andrews (UK)

P3.8

Collective scattering of light due to recoil in a room temperature gas

G R Robb, P Barker¹

University of Strathclyde (UK)

¹ Heriot-Watt University (UK)

P3.9

Optical frequency measurements using femtosecond combs

B Walton, K Hosaka, S N Lea, H S Margolis, P Gill

National Physical Laboratory (UK)

P3.10

Nonlinear optical characterisation of indium phosphide

T Sloanes, K J McEwan, P Milsom

DSTL (UK)

P3.11

Powerful light pulse backscattering in bulk Kerr dielectrics

O Khasanov, T Smirnova, O Fedotova, A Sukhorukov¹

Institute of Solid State and Semiconductor Physics NASB (Belarus)

¹ Moscow State University (Russia)

P3.12

Radiation enhancement and radiation suppression by a left-handed metamaterial

A Boardman, K Marinov

University of Salford (UK)

P3.13

Sub-wavelength imaging using layered metal-dielectric structure operating in the canalization regime

P Belov, Y Hao

Queen Mary University of London (UK)

P3.14

Investigation of strain in semiconductor by optical orientation

W Wang, K Allaart, D Lenstra

Vrije University Amsterdam (The Netherlands)

P3.15**Identification of the optimum modulation frequency for FM seeded frequency-shifted feedback laser ranging**A Shore, D Kane¹

University of Wales, Bangor (UK)

¹ Macquarie University (Australia)**P3.16****Implant processing of InGaAs/GaAs quantum dots for potential monolithic photonic integration**S Ahmed, P Too¹, J Lin²

COMSATS Institute of Information Technology (Pakistan)

¹ Plastic Logic (UK)² Eindhoven University (The Netherlands)**P3.17****Low temperature properties of InSb/AlInSb quantum well light emitting diodes**B Mirza, G R Nash¹, S Smith, M K Haigh¹, L Buckle, M Emeny, T Ashley

University of Bristol (UK)

¹ QinetiQ (UK)**P3.18****Demonstration of enabling technologies for the monolithic integration of semiconductor lasers and waveguide optical isolators**

B Holmes, D Hutchings

University of Glasgow (UK)

P3.19**n-doped Si/SiGe quantum cascade structures for far-infrared emission**Z Ikonic, I Lazic, V Milanovic, R W Kelsall¹, D Indjin¹, P Harrison¹

University of Belgrade (Serbia)

¹ University of Leeds (UK)**P3.20****Controlled splitting of resonant modes in spherical microcavities confined in an optical tweezers**M Gerlach, Y Rakovich, J Donegan, N Gaponik¹, A Rogach²

Trinity College Dublin (Republic of Ireland)

¹ TU Dresden (Germany)² Ludwig-Maximilians-Universitaet Muenchen (Germany)**P3.21****Two-colour operation of a femtosecond optical parametric oscillator**

B J Gale, J Sun, D T Reid

Heriot Watt University (UK)

P3.22**Hybrid photonic crystal thin films based on colloidal particle assemblies modified using chemical vapour deposition and atomic layer deposition**

I Povey, J Costello, F Chalvet, D Whitehead, M Bardosova, K Thomas,

M Pemble, H M Yates¹

Tyndall National Institute (Republic of Ireland)

¹ University of Salford (UK)**P3.23****Extraordinary transmission through planar quasicrystal**J Garcia de Abajo, V Fedotov¹, N Papisimakis¹, A Schwanecke¹,Y Chen², N Zheludev¹

Centro Mixto CSIC-UPV/EHU (Spain)

¹ University of Southampton (UK)² Rutherford Appleton Laboratory (UK)**P3.24****Bend loss in bandgap-guiding photonic crystal fibre**

G J Pearce, J Stone, F Luan, T A Birks, J Knight, D M Bird

University of Bath (UK)

P3.25**Stibnite inverse opal**

A Khokhar, R DeLaRue, N P Johnson

University of Glasgow (UK)

P3.26**Light pipes in contact giving a novel organic optical source**A Vasdekis, G Town, G A Turnbull¹, I D Samuel¹

Macquarie University (Australia)

¹ University of St Andrews (UK)**P3.27****Multicore microstructured fibres for high channel density optical interconnects**

C R Bennett, D M Taylor, T J Shepherd, L Michaille

QinetiQ (UK)

P3.28**Liquid micro-optics**

G A Turnbull, C McDougall, J Stewart, M Buck

University of St Andrews (UK)

P3.29**Embedded metal mask enhanced evanescent near field optical lithography (ENFOL)**

B Sefa-Ntiri, P D Prewett

University of Birmingham (UK)

P3.30**Ultrasmall photonic crystal coupler for wave division multiplexing networks**R Chatta, C Ben Neila¹, M Zghal¹

Institut Supérieur des Etudes Technologiques en Communications

(Iset'Com) (Tunisia)

¹ Ecole Supérieure des Communications de Tunis (Sup'Com) (Tunisia)**P3.31****Bulk p-i-n GaInNAs photodiodes lattice-matched to GaAs**W M Soong, J S Ng, M J Steer, M Hopkinson, J P R David, J Chamings¹,S Sweeney¹, A R Adams¹

University of Sheffield (UK)

¹ University of Surrey (UK)**P3.32****High power optically In-well pumped 850nm VECSEL**W Zhang, T Ackemann, S McGinily¹, M Schmid, E Riis, A Ferguson

University of Strathclyde (UK)

¹ Denfotex Light Systems Ltd (UK)

P1.1

Rapid scanning of fluorescently labelled protein residues on surgical instruments

V Kovalev, P Richardson, R R Maier¹, J Barton¹, A Jones
University of Edinburgh (UK)
¹ Heriot Watt University (UK)

P1.2

Monte Carlo model for PS-OCT imaging in turbid birefringent media

D Churmakov, I Meglinski, M Bonesi, L Ritchie
Cranfield University (UK)

P1.3

Fluorescence lifetime imaging (FLIM) and time-resolved fluorescence anisotropy imaging (TR-FAIM) of cells

C L Jones, N Sergeant, K Suhlring
Kings College London (UK)

P1.4

Fluorescent lifetime microscopy of human dental tissue utilising a white light source based on photonic crystal fibre

G McConnell, J Girkin¹, S Ameer-Beg², P R Barber³, B Vojnovic⁴, T Ng², A Banerjee⁵, T Watson⁵, R Cook⁵
Strathclyde Institute for Biomedical Sciences (UK)
¹ University of Strathclyde (UK)
² Richard Dumbleby Department Of Cancer Research (UK)
³ Gray Laboratory Cancer Research Trust (UK)
⁴ Gray Cancer Institute (UK)
⁵ King's College Dental Institute London (UK)

P1.5

Hyperspectral imaging (HSI) of the eye for early detection of retinal diseases

I ALabboud, E Theofanidou, A R Harvey¹
Heriot-Watt university (UK)
¹ Heriot Watt University (UK)

P1.6

Development of an optical technique (laser heating and thermal imaging) for the non-intrusive measurement of sap flow in trees

C Helfter, J Shephard¹, J Martinez-Vilalta¹, M Mencuccini¹, D P Hand
Heriot-Watt University (UK)
¹ University of Edinburgh (UK)

P1.7

Form birefringence in biological lamellar cellular structures

N W Roberts
University of Manchester (UK)

P1.8

Extended depth of imaging in multi-photon laser scanning microscopy using passive pre-dispersion compensation

G McConnell
Strathclyde Institute for Biomedical Sciences (UK)

P1.9

Development of non-invasive photoplethysmography to assess lower limb peripheral perfusion

S Hu, J Zheng, S Xin¹, V Crabtree, P R Smith
Loughborough University (UK)
¹ University of Shanghai for Science and Technology (PR China)

P1.10

Snapshot spectral imaging in the visible and infrared

A R Harvey, A Gorman, S Kudesia
Heriot Watt University (UK)

P1.11

Rapidly-controlled wavelength flexible light source for fluorescence lifetime imaging

E Esposito, S Poland¹, J Girkin¹, G McConnell
Centre for Biophotonics (UK)
¹ Institute of Photonics (UK)

P1.12

Three-dimensional recognition of micro-organisms using a digital holographic microscope

N Wu, N A Halliwell, J M Coupland
Loughborough University (UK)

P1.13

Investigation of enhanced temperature sensitivity of long-period grating sensor using an ultra wide band source

T Venugopalan, T L Yeo, T Sun, K T V Grattan
City University (UK)

P1.14

A five-sensor multipoint optical fibre ethanol concentration sensor system based on artificial neural network pattern recognition

D King, W Lyons, C Flanagan, E Lewis
University of Limerick (Republic of Ireland)

P1.15

Vibration amplitude measurements with a single frame using structured-light-pattern of a four-core optical fibre

N Inci
Bogazici University (Turkey)

P1.16

Fluorescence spectral characteristics in high concentration er-doped fibres for grating-based fibre sensor systems

S Abi Kaed Beyh, T Sun, K Grattan
City University (UK)

P1.17

Fibre optic hydrogen gas detection based on thin Palladium Films

K Gleeson, E Lewis
University of Limerick (Republic of Ireland)

P1.18

Carrier reshaping and MUX-DEMUX filtering in 0.8 bit/s/Hz WDM RZ-DPSK transmission

R Bhamber, S K Turitsyn, V Mezentsev
Aston University (UK)

P1.19

Hybrid Laser/EDM drilling improves fuel injection nozzle production method

C Diver, L Li¹, J Atkinson¹
Dephi Automotive Systems (Germany)
¹ University of Manchester (UK)

P1.20

Corrosion studies of laser-formed metallic alloy sheets

Z Liu
The University of Manchester (UK)

P1.21

Laser peen forming of thin sheet ferrous materials

K Edwards, G Dearden, K Watkins, S Edwardson
The University of Liverpool (UK)

P1.22

Influence of pulse shaping and other important factors on drilling efficiency

P French, R Goff¹, M Naeem², P Scully, M Sharpe³, K Watkins⁴
Lairdside Laser Engineering Centre (UK)
¹ The University of Manchester (UK)
² GSI Lumonics (UK)
³ Lairdside Laser Engineering Centre (UK)
⁴ The University of Liverpool (UK)

P1.23

Vortex pulsed beams in dielectrics with photo-induced ionisation

O Khasanov, T Smirnova, O Fedotova, A Sukhorukov¹
Institute of Solid State and Semiconductor Physics NASB (Belarus)
¹ Moscow State University (Russia)

P2.1

Optical guiding of aerosols

M Summers, D McGloin, J Reid¹
University of St Andrews (UK)
¹ University of Bristol (UK)

P2.2

Inter-particle hydrodynamic couplings in optical tweezers

S Keen, J Leach, R Di Leonardo¹, G M Gibson, M J Padgett
Glasgow University (UK)
¹ Università di Roma (Italy)

P2.3

Algorithms for shaping 'self-reconstructing' light beams

L Thomson, J K Courtial
University of Glasgow (UK)

P2.4

Dual fibre optical trap for airborne particles

D Rudd, D McGloin
University of St Andrews (UK)

P2.5

An optically driven pump for microfluids

H Mushfique, J M Cooper, J Leach, M Padgett, R di Leonardo¹
University of Glasgow (UK)
¹ INFN-CRS Soft (Italy)

P2.6

Characterization of local defects on reflector surfaces of automobile headlights using optical profilometry

M Ohlídal, I Ohlídal¹, F Vizda²
Brno University of Technology (Czech Republic)
¹ Masaryk University (Czech Republic)
² University of Defence (Czech Republic)

P2.7

Thermal stability of intrinsic stresses in diamond-like carbon films studied using optical methods

I Ohlídal, M Ohlídal¹, D Franta, V Cudek¹, V Bursikova
Masaryk University (Czech Republic)
¹ Brno University of Technology (Czech Republic)

P2.8

Ellipsometric investigations of the SiO₂ refractive index and thickness in the neighbourhood of gate in MOS structures

W Rzdokiewicz, L Borowicz
Institute of Electron Technology (Poland)

P2.9

Image reconstruction for chemical species tomography with an irregular and sparse beam array

J Davidson, C Garcia-Stewart, K Ozanyan, P Wright, S Pegrum¹, H McCann
University of Manchester (UK)
¹ Roush Technologies Ltd (UK)

P2.10

Construction and characterization of a novel FT raman spectrometer

K Chang, M Dickinson, T King
University of Manchester (UK)

P2.11

Photon counting laser altimeter for planetary exploration – the technology demonstrator

J Blazej, I Prochazka, K Hamal, M Fedyszyn, F Yang¹, P Huang¹, H Michaelis², U Schreiber³
Czech Technical University (Czech Republic)
¹ Shanghai Observatory (PR China)
² DLR e.V. (Germany)
³ Forschungseinrichtung Satellitengeodäsie der TU-München (Germany)

P2.12

EUV time-integrated and time-resolved spectroscopy of Nitrogen filled capillary discharge plasma

J Blazej, M Tamas, L Pina, A Jancarek, S Palinek, P Vrba¹, M Vrbova
Czech Technical University (Czech Republic)
¹ Institute of Plasma Physics of Academy of Sciences (Czech Republic)

P2.13

Comparison between two-site and neural network models for signal processing in chemical sensor

R Al-Jowder, R Narayanaswamy
University of Manchester (UK)

P2.14

Characterization studies of oxygen sensor based on porous silicon

P Rathinasamy, I Ferreira, E Fortunato, R Martins
New University of Lisbon (Portugal)

P2.15

A high-speed chemical species tomography system for application in a multi-cylinder automotive engine

P Wright, J Davidson, S Garcia-Castillo, S Pegrum¹, S Colbourne¹, T Litt², S Litt², K Ozanyan, H McCann
University of Manchester (UK)
¹ Roush Technologies Ltd (UK)
² AOS Technology Ltd (UK)

P2.16

Measuring insect flight: High-speed close-range photogrammetry for dynamic shape measurement

I D Wallace, N Lawson, A R Harvey, J D Jones, A J Moore
Heriot Watt University (UK)

P2.17

Tilt scanning interferometry: a novel technique for mapping structure and three-dimensional displacement fields

J Huntley, P Ruiz
Loughborough University (UK)

P2.18

Three-dimensional phase unwrapping algorithms: a comparison

H Abdul-Rahman, M Gdeisat, D Burton, M Lalor
Liverpool John Moores University (UK)

P2.19

Modal analysis with a CMOS multipoint vibrometer

S Earl, T Wu, J Jones, A Moore
Heriot Watt University (UK)

P2.20

Fringe analysis applied to the measurement of the absolute length and surface form of gauge blocks up to 100 mm in length

M O'Hara, B Bowe, V Toal
Centre for Industrial and Engineering Optics (Republic of Ireland)

P2.21

Phase extraction using Fourier interferometry without carried frequency: an application to study vibrations

C Meneses-Fabian, R Rodríguez-Vera, F Mendoza-Santoyo, C Perez-Lopez, G Rodríguez-Zurita¹
Centro de Investigaciones en Óptica (Mexico)
¹ Benemérita Universidad Autónoma de Puebla (Mexico)

P3.1

Surface modification of titanium nitride by picosecond Nd:YAG laser

B M Gakovic, M Trtica, D Batani¹, T Desai¹, D Vasiljevic-Radovic²

Institute of Nuclear Sciences VINCA (Serbia)

¹ *Universita degli Studi di Milano Bicocca (Italy)*

² *IHTM - Institute of Microelectronic Technologies (Serbia)*

P3.2

Femtosecond laser modification of poly(methyl methacrylate) - optical components

A Baum, W Perrie¹, P Scully

The University of Manchester (UK)

¹ *The University of Liverpool (UK)*

P3.3

SpeckNet: Optical Communication, Beam Conditioning and Location Discovery

C Reardon, C Carlsson

University of St Andrews (UK)

P3.4

Title to be confirmed

K Weir, M McCall

Imperial College London (UK)

P3.5

Molecularly imprinted polymer (MIP) as sensing material for the detection of metal ion

S Ng, R Narayanaswamy

University of Manchester (UK)

P3.6

Investigation of rare earth doped microcavity laser utilising whispering gallery resonator for environmental sensing

T Yeo, S Chen, T Sun, K TV Grattan

City University (UK)

P3.7

Application of a FTUV system to measure ambient pollution in central Manchester and at Manchester Airport

I Cruz-jimate, M Bennett

University of Manchester (UK)

P3.8

Use of diffuse reflections in tunable diode laser absorption spectroscopy

D Masiyano, J Hodgkinson, R P Tatam

Cranfield University (UK)

P3.9

Whole-cell optical biosensor of PCBs

P Gavlasová, G Kuncová, M Macková¹

Institute of Chemical Process Fundamentals Academy of Sciences of the Czech Republic (Czech Republic)

¹ *Institute of Chemical Technology (UK)*

P3.10

Chemiluminescence micro-biosensor for herbicide detection and monitoring

D G Varsamis, E Touloupakis, P Morlacchi¹, D Ghanotakis, M Giardi¹,

D C Cullen²

University of Crete (Greece)

¹ *National Research Council of Italy (Italy)*

² *Cranfield University (UK)*

P3.11

Cost effective hybrid processing

S Brown, J F Snowdon

Heriot Watt University (UK)

P3.12

Factors influencing the bend angle per pass in multi-pass laser forming

S Edwardson, K Bartkowiak, E Abed, C Carey, K Edwards, G Dearden,

K Watkins

University of Liverpool (UK)

P3.13

Hot electron microwave incremental conductivity of gallium nitride

J Kundu, C Sarkar, P Mallick

NIST (India)

P3.14

Optimum deposition parameters for direct laser fabrication (DLF) of quasi-hollow structures

S Davis, K Watkins¹, G Dearden, E Fearon, J Zeng

University of Liverpool (UK)

P3.12

Competition for the cationic core in NO-X complexes between the rydberg electron and the ligand

T Wright, D Bergeron, V Ayles, A Musgrave

University of Nottingham (UK)

accommodation booking form

Photon06

4-7 September 2006
University of Manchester, UK

Please return your booking form by 28 July to the address listed at the bottom of the form

1. Personal and contact details (please write clearly)

Title	First name	Surname
Address		
Town	County/state	Country
Postcode/Zip code		
Daytime telephone	Fax	
E-mail address		

2. Accommodation requirements

Bed and breakfast is offered on-site for conference delegates. Prices are per night.

3* single hotel room at Days Hotel: £75.95 (VAT incl): midweek; £54 (VAT incl): Sunday

En-suite single room in Weston Hall (student hall of residence): £33.50 (VAT exempt)

Nights required: Sunday 3 September; Monday 4 September; Tuesday 5 September; Wednesday 6 September

Other nights:

3. Payment methods

Full payment is required.

Please charge my credit/debit card: Visa MasterCard Delta Switch

Card number

Expiry date / Issue number

Security number (last three digits):

Cardholder's name:

House number:

Post Code:

Signed:

Date:

I have enclosed a cheque made payable to The University of Manchester

The completed booking form should be returned to:

ConferCare (Photon 06), STARS, The University of Manchester, Barnes Wallis Building, P.O. Box 88, Sackville Street, Manchester, M60 1QD, UK Tel: +44 (0)161 306 4068 Fax: +44 (0)161 306 4070 E-mail: mcc.reg@manchester.ac.uk

registration form

Photon06

4-7 September 2006

University of Manchester, UK

Please return your registration form by 21 July for the early fee to apply.

Please post this form to Jasmina Bolfek-Radovani, Institute of Physics, 76 Portland Place, London W1B 1NT, UK or fax the form on +44(0)20 7470 4900.

1. Personal and contact details (please write clearly)

Title _____

Surname or family name _____

Forenames _____

Correspondence/billing address _____

Town _____ County/state _____ Country _____

Postcode/Zip code _____

Daytime telephone _____ Fax _____

E-mail address _____

Company/institution name (for label badge) _____

2. Payment methods

Payment (by one of the methods listed below) must accompany the registration form. Please note that your registration will not be processed until payment has been received in full.

- Cheque (made payable to The Institute of Physics)
- Bank transfer (enclose details)
- Payment will follow from employer
- Credit card* (complete below)
 - Visa MasterCard American Express Switch Delta

Card number

Expiry date / Issue number

Credit card holder's name _____

→ Registration details continue overleaf

3. Membership

Institute of Physics membership ID number: _____

Office Use Only
760

NB: not specifying membership or discount affiliation will result in your being invoiced for the full non-member rate.

If you are attending the ITP programme only, you will not be charged the non-member rate, but we still ask you to complete this section.

- AILU APS SepNet BP Net CAP DPG DTI EOS EPS EPSRC
 FASIG FIA IET JSAP PC SME Club SOA UKIVA WOF

4. Conference fees

Please read carefully the section on conference/ITP fees in the registration document before completing this section.

	Before or on 21 July		After 21 July	
	Full fee	One-day fee	Full fee	One-day fee
Member	<input type="checkbox"/> £299	<input type="checkbox"/> £125	<input type="checkbox"/> £340	<input type="checkbox"/> £145
Non-member	<input type="checkbox"/> £370	<input type="checkbox"/> £145	<input type="checkbox"/> £405	<input type="checkbox"/> £165
Concessionary member	<input type="checkbox"/> £175	<input type="checkbox"/> £100	<input type="checkbox"/> £195	<input type="checkbox"/> £120

ITP Fee (daily rate) £85 (plus VAT) £95 (plus VAT)

5. Which day/s will you be attending the conference:

Please note that you must complete this section if you have chosen the ITP fee or the one-day conference fee

- Monday, 4 September Tuesday, 5 September Wednesday, 6 September Thursday, 7 September

6. Conferences

Please tick what conference/s you plan to attend at Photon06?

- Optics and Photonics Division Conference (OPD) QEP-17 Industry Technology Programme (ITP)

7. Meals

I would like to book a place at the dinner on Sunday 3 Sept, Barnes Wallis Restaurant, University of Manchester £16.50

8. Social Programme

I will attend the Welcome reception, Sunday 3 Sept FREE

I will attend the Civic Reception (Manchester City Council), Monday 4 Sept FREE

I will attend the drinks reception at Bridgewater, Tuesday 5 Sept FREE

10. Conference dinner at the Manchester United Stadium

Please note that a place at the dinner is included in the full conference fee, but not in the one-day conference fee and ITP fee.

1 place at the conference dinner, Wednesday 6 Sept £45 (incl VAT)

1 place for the accompanying person at the conference dinner, Wednesday 6 Sept £45 (incl VAT)

11. Special dietary requirements

- Diabetic Vegetarian Vegan Gluten-free Other, please specify

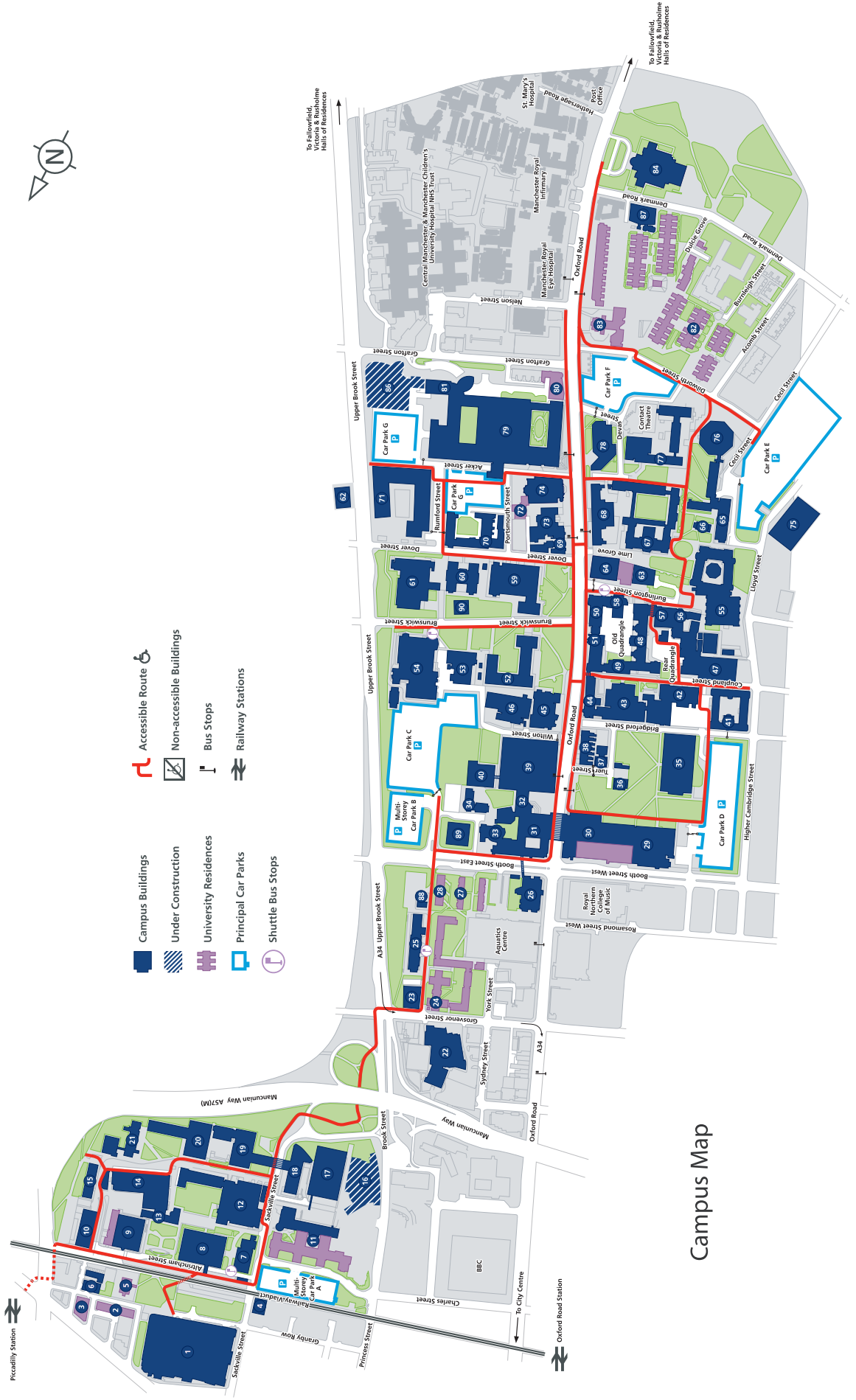
12. Abstract book

I would like to order an extra copy of the abstract book for £20

13. Data Protection Act

Data collected for this event may be used to promote other similar events sponsored by the Institute or other similar bodies. Please tick the box if you do not wish to receive such material.

TOTAL AMOUNT PAYABLE **£**



- Campus Buildings
- Under Construction
- University Residences
- Principal Car Parks
- Shuttle Bus Stops
- Accessible Route
- Non-accessible Buildings
- Bus Stops
- Railway Stations

Campus Map

Piccadilly Station

Oxford Road Station

To Fallowfield, Victoria & Rushmore Halls of Residences

To Fallowfield, Victoria & Rushmore Halls of Residences

To City Centre

Photon 06 Programme Overview

Monday 4 September

09:30	Plenary 1: E Hinds, Imperial College London (UK)								
10:15	Refreshment Break								
10:45	QEP: Quantum degenerate gases	OPD: Advanced imaging I	OPD: Optical fibre sensors	QEP: Photonics in the institute for materials research				ITP: ALLU	
12:00	Lunch								
12:30	Tutorial: G Love, University of Durham (UK)								
13:45	QEP: Quantum optics	OPD: Advanced imaging II	OPD: Optical fibre sensors: environmental applications					ITP: ALLU	
15:15	Refreshment Break								
15:45	QEP: Coherent atom manipulation	OPD: Advanced imaging III	OPD: Optical fibre systems					ITP: ALLU	
17:30	QEP Posters	OPD Posters							
19:15	Civic Reception, Manchester City Council								

Tuesday 5 September

09:00	Plenary 2: C Sheppard, National University of Singapore (Singapore)								
09:45	Refreshment Break								
10:15	QEP: Quantum information processing I	OPD: Photonics and imaging in biology and medicine I	OPD: Fibre optic sensors: in-fibre gratings	QEP: Laser spectroscopy of molecular interactions				ITP	
12:00	Lunch								
12:30	Tutorials: S Barnett, University of Strathclyde (UK), H Barr, Cranfield Postgraduate Medical School (UK)								
13:45	QEP: Quantum information processing II	OPD: Photonics and imaging in biology and medicine II	OPD: Optical instrumentation and diagnostic applications					ITP	
15:15	Refreshment Break								
15:45	QEP: Quantum dots	OPD: Photonics and imaging in biology and medicine III	OPD: Optical instrumentation and diagnostic techniques					ITP	
17:30	QEP Posters	OPD Posters							
19:15	Drinks reception, Bridgewater Hall								

Wednesday 6 September

09:00	Plenary 3: J Pendry, Imperial College London (UK)								
09:45	Refreshment Break								
10:15	QEP: Microstructured photonic materials	OPD: Optical environmental sensing I	OPD: Optical tweezers	OPD: FASIG 1: Shape and measurement				ITP	
12:00	Lunch								
12:30	Post deadline session								
13:45	QEP: Metamaterials	OPD: Optical environmental sensing II	OPD: Holographic optical tweezers	OPD: FASIG 2: Speckle Interferometry				ITP	
15:15	Refreshment Break								
15:45	QEP: Nanophotonics and Plasmonics	OPD: Optical techniques for material characterisation and processing	QEP: Advances in laser science	OPD: FASIG 3: New techniques and applications				ITP	
17:30	QEP Posters	OPD Posters							
19:15	Conference dinner, Manchester United Stadium								

Thursday 7 September

09:00	Plenary 4: P Russell, University of Erlangen-Nuremberg (Germany)								
09:45	Refreshment Break								
10:15	QEP: Nonlinear optics I	QEP: Semiconductor optoelectronics I	OPD: Optical vortices	OPD: Structured optical materials					
12:00	Lunch								
13:00	QEP: Nonlinear optics II	QEP: Semiconductor dynamics	OPD Diffractive optics	OPD: EUV & x-ray optics					
14:45	Close of conference								