

**SECOND ANNOUNCEMENT AND
CALL FOR PAPERS**

Photon06

The UK's premier conference in optics and photonics

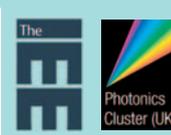
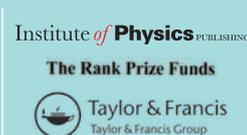
- 4–7 September 2006
University of Manchester
- www.photon06.org

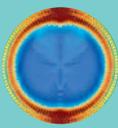
Encompassing the Optics and Photonics
Division Conference, the Quantum
Electronics Conference, an Industry
Technology Programme, an exhibition
and tutorials

Abstract submissions due by 10 March 2006



Institute *of* **Physics**





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;
- **an Industry Technology Programme** sessions of particular interest to those in the optics industry;
- **an exhibition of the latest optics and photonics technology;**
- **tutorials**

Contributions to all Photon06 events are welcomed. If you would like to offer a paper, we invite you to submit an abstract by **10 March 2006**.

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 Electrical Engineers, the Scottish Optoelectronics Association, the Welsh Optoelectronics Forum, the Photonics Cluster, BAE Systems (Sowerby research laboratory), 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.

For details on how to become a member please contact the UKCPO Secretary, Chris Gracie
chris.gracie@optoelectronics.org.uk.

Organising Committee

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Peter Woods (National Physical Laboratory, UK)

Ewan Wright (Optical Sciences Center, Arizona, USA)

Photon06 Plenary Lecturers

The following plenary speakers have been confirmed:

E Hinds (Imperial College London, UK)

J Pendry (Imperial College London, UK)

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

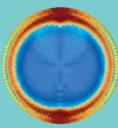
Steve Barnett, University of Strathclyde, UK

Biophotonic medical imaging

Hugh Barr, Cranfield Postgraduate Medical School, UK

Adaptive optics

Gordon Love, University of Durham, UK



Optics and Photonics 2006

This is the biennial conference of the Optics and Photonics Division (formerly the Applied Optics Division) that brings together researchers in the fields of the Optical, Materials and Characterisation, Instrument Science and Technology groups. A special issue of Journal of Optics A: Pure and Applied Optics will be devoted to this conference.

The programme will consist of the following sessions and invited speakers:

- **Advanced imaging, microscopy and adaptive optics**
R Juskaitis, University of Oxford, UK
- **Diffraction optics**
M Taghizadeh, Heriot-Watt University, UK
- **Environmental optics**
G Vaughan, University of Manchester, UK
- **EUV and x-ray optics**
- **Fibre optic systems**
KTV Grattan, City University, UK
P Ferraro, INOA, Italy
- **Industrial technologies and materials processing**
- **Instrumentation and measurement**
Y Yan, University of Kent, UK
- **Optical diagnostics and engineering**
- **Optical techniques for material characterisation**
- **Optical tweezers**
K Dholakia, University of St Andrews, UK
- **Optical vortices**
C Paterson, Imperial College London, UK
- **Photonics and imaging in biology and medicine**
P French, Imperial College London, UK
- **Structured optical materials**

Optics and Photonics 2006 will also encompass sessions of the Fringe Analysis Special Interest Group (FASIG). This is the latest in a series of national and international meetings dating back to 1985. It will be devoted to the latest innovations in interferometry, photomechanics and optical metrology, including their application to industrial measurement problems. Papers describing research in the following areas are particularly encouraged:

- new measurement and analysis techniques
- phase shifting and phase unwrapping
- high-speed measurements on solids and fluids
- micrometre measurement techniques and applications
- shape measurement and 3D machine vision.

A special issue of the journal Optics and Lasers in Engineering will be devoted to the best papers from the FASIG conference containing previously unpublished work. Authors of the selected extended abstracts will be invited to contribute full papers for this special issue.

QEP-17

This is the 17th meeting of a famous series and is organised by the Quantum Electronics and Photonics Group of the Institute of Physics.

The programme will consist of the following sessions and invited speakers:

- **Advances in laser science**
P Corkum, National Research Council of Canada, Canada
- **Coherent atom manipulation**
D Meschede, Universität Bonn, Germany
- **Computational optics**
R Ziolkowski, University of Arizona, USA
- **Dilute nitride semiconductors**
E O'Reilly, The Tyndall National Institute, Ireland
- **Laser spectroscopy of molecular interactions**
K Müller-Dethlefs, University of Manchester, UK
- **Metamaterials**
V Shalaev, Purdue University, USA
- **Microstructured photonic materials**
J Knight, University of Bath, UK
- **Nanophotonics and plasmonics**
N Engheta, University of Pennsylvania, USA
- **Surface plasmon waveguides and resonators**
K Krenn, Karl-Franzens University, Austria
- **Nonlinear optics**
G-L Oppo, University of Strathclyde, UK
- **Optical properties of nanostructures**
J Finley, Walter Schottky Institute, Germany
- **Quantum degenerate gases**
J Dalibard, Laboratoire Kastler Brossel, France
- **Quantum information processing**
J Rarity, University of Bristol, UK
- **Quantum optics**
J-M Raimond, Laboratoire Kastler Brossel, France
- **Semiconductor optoelectronics**
- **Ultrafast processes in semiconductors**
L Viña, Autónoma University in Madrid, Spain

Industry Technology Programme

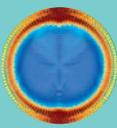
The theme of the Photon06 Industrial Technology Programme will be 'Connecting emerging Optoelectronic technologies with future markets'. The programme will showcase the most recent technological advances, illustrate innovative industrial applications and identify emerging future markets. Bridging the divide between academia and industry, the programme will consist of a number of technology-industry focussed sessions. The provisional programme is as follows:

Monday 4 September

Industrial technologies and materials processing

Session 1: Innovative industrial laser processing technologies for next generation manufacture

Organised by the Association of Industrial Laser Users (AILU), this should be of interest to both academic and industrial delegates at Photon 06. It will concentrate on innovations in laser materials processing in two areas: power photonic sources (from high power CW fibre to table top femto-second lasers) and industrial technologies with a high potential future impact (from nanotechnology to rapid manufacturing).



Session 2: New developments in high power lasers

Organised by the Association of Industrial Laser Users (AILU).

For further details on how to submit an abstract, please go to www.photon06.org and follow instructions on abstract submission for Optics and Photonics 2006.

For further details about the above programme, please e-mail lin.li@manchester.ac.uk

Tuesday 5 September

Optoelectronic chemical gas and chemical sensing – requirements and technology

Organised by the UK Optoelectronic Chemical Sensing Network (OptoCem.Net), a DTI Knowledge Transfer Network established to promote the development of gas and chemical sensing using optoelectronics. Presentations will focus on the needs of the oil/gas and water/environment industries and on the emerging technologies which can address these needs. Reference will be made to the results of a Roadmapping exercise conducted in the first half of 2006.

Session 1: Water industry- requirements and technology

Session 2: Gas sensing – requirements and technology

Session 3: Oil industry – requirements and technology

For further details about the above programme, please e-mail alistair.tweedie@blueyonder.co.uk

Wednesday 6 September

Commercialisation, funding and global perspective

Optoelectronics is an all-pervasive enabling technology that can be applied to a vast number of markets and the importance to the UK economy has been reinforced by the recent establishment of the photonics Knowledge Transfer Network (KTN). The business & innovation programme will be useful for large companies searching for new markets and product-enhancing technologies and for small and medium sized enterprises seeking to develop and expand their businesses. The programme will cover issues related to new start ups and other business-critical themes: IP, legal issues, patents, funding, international collaboration, knowledge transfer and effective networks.

Benefits to your company

- Build new customer relationships. Market your company to large and medium sized technology enterprises.
- Raise funding for your company. Market your company to global investors and get their direct feedback

Benefits to you personally

- Learn how to establish your own disruptive business models by learning from the best technopreneurs from around the world
- Get practical operational insights from successful entrepreneurs on how to grow your company in the global market
- Become an active part of a global network for 21st century entrepreneurs

The event will provide an excellent opportunity for networking and establishing new collaborations between academia-industry and industry-industry within the UK and internationally.

For further details about the above programme please e-mail dipali.chauhan@iop.org

Optics and Photonics Committee

Andy Harvey (Chair), (Heriot Watt University)
Andy Augousti (Kingston University)
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Leslie Laycock (BAE Systems)
Scott McMeekin (Glasgow Caledonian University)
Harvey Rutt (University of Southampton)
Peter Smowton (University College of Wales, Cardiff)
Terence Shepherd (Qinetiq)
Nikolay Zheludev (University of Southampton)
Ian Walmsley (University of Oxford)

Exhibition

Monday 4 September – Tuesday 5 September 2005

The exhibition is an integral and valuable part of the conference programme. It provides an opportunity for researchers, developers, engineers, entrepreneurs, systems integrators and managers to mix. The Photon06 conference infrastructure and the special location of the exhibition will ensure that the exhibition is a pivotal experience for the conference delegates, so that old acquaintances can be renewed and new contacts created.

If you are interested in exhibiting at Photon06, please e-mail chris.gracie@optoelectronics.org.uk.



Location and Venue

The conference and the exhibition will take place in the Reynold building located on the University of Manchester campus. The University is located close to both Piccadilly main line station and Oxford Road train station, with Victoria train station a little further away. Further details about directions to the venue will be available in due course.

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.

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.

Manchester has a large and busy international airport, about 10 miles (16km) south of the city, 30 minutes from the University and only 20 minutes from the city centre. The Airport serves 175 worldwide destinations directly and offers flights from 22 British and Irish destinations. There are 28 daily flights from London, 29 daily flights from Scotland and 26 daily flights from Ireland. From the airport's railway station six trains each hour make the 20-minute journey into the heart of Manchester.

Trains from city centre stations into the rest of the UK, connect London and Manchester with a journey of 2 ½ hours, as well as travelling directly to a wide range of cities including tourist attractions such as Chester, York, Scotland and Stratford.

Half of Britain's motorway network passes through Manchester with approximate journey times of 2 hours to Birmingham, 3 ½ hours to London and 4 hours to Edinburgh by car allowing easy road access for delegates from the UK.

Social events

Photon06 offers a rich social programme of events. There will be an informal reception on Sunday evening. A civic reception at the Manchester Town Hall will be organised on Monday evening. On Tuesday evening participants will be able to attend an optional get-together evening aimed at facilitating networking opportunities between academics and industry representatives. The Tuesday evening reception is being sponsored by the Journal in Modern Optics. The conference dinner will take place on Wednesday evening at the Manchester United stadium. The drinks reception before the dinner is being kindly sponsored by the Institute of Physics Publishing.

Abstract submission

Oral and poster presentations are welcome for Optics and Photonics 2006 and QEP-17. Please submit a 250 word abstract (figure and references are not permitted) to the appropriate website following the instructions carefully by the extended deadline of **10 March 2006**. If you are unable to submit your abstract on-line, please send a copy to claire.pantlin@iop.org.

Submission of Abstracts

- For Optics and Photonics 2006 please go to www.photon06.org
- For QEP-17 please go to http://groups.iop.org/QE/news_photon06.html

Authors will receive confirmation that their abstract has been submitted successfully together with a reference number which should be quoted when making subsequent enquiries.

Please direct enquiries with regards to the programme to claire.pantlin@iop.org

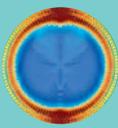
On acceptance of abstracts, authors will be invited to submit an article of 2 - 6 pages for publication in the Conference Proceedings. These proceedings will form the permanent conference archive and will be published on the conference web pages.

Bursaries

The Optics and Photonics Division and the Quantum Electronics Group 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.

For further details about the above, please visit the conference website at www.photon06.org or contact Jasmina Bolfek-Radovani at the Institute of Physics (see details at the end of this booklet).



Photon06 Provisional Overview

Plenary 1				
QEP: Quantum information processing	OPD: Advanced imaging 1	OPD: Fibre optic systems	ITP: Industrial technologies and materials processing	
Tutorial 1				
QEP: Quantum degenerate gases	OPD: Advanced imaging 2	OPD: Fibre optic systems	ITP: Industrial technologies and materials processing	
QEP: Coherent atom manipulation	OPD: Advanced imaging 2	OPD: Fibre optic systems		
Posters				
Plenary 2				
QEP: Quantum optics	OPD: Photonics and imaging in biology and medicine 1	ISAT: Instrumentation & measurement 1	ITP: Optoelectronic gas and chemical sensing	
Tutorial 2				
QEP: Advances in laser science	OPD: Photonics and imaging in biology and medicine 2	ISAT: Instrumentation & measurement 2	ITP: Optoelectronic gas and chemical sensing	
QEP: Nanophotonics and plasmonics	OPD: Photonics and imaging in biology and medicine 3	OPD: Optical diagnostics in engineering	ITP: Optoelectronic gas and chemical sensing	
Posters				
Plenary 3				
QEP: Optical properties of nanostructures	OPD: Environmental optics 1	OPD: Optical tweezers 1	FASIG: Techniques	
Tutorial 3				
QEP: Metamaterials	OPD: Environmental optics 2	OPD: Optical tweezers 2	FASIG: Applications	ITP: Commercialisation funding and global perspective
QEP: Microstructured photonic materials	OPD: Optical techniques for materials characterisation 1	OPD/QEP: Optical vortices	QEP: Computational optics	ITP: Commercialisation funding and global perspective
Posters				
Plenary 4				
QEP: Semiconductor optoelectronics	QEP: Nonlinear optics	OPD: Diffractive optics	OPD: Structured optical materials	
QEP: Dilute nitride semiconductors	QEP: Ultrafast processes in semiconductors	OPD: Diffractive optics	OPD: EUV & x-ray optics	

Further Information

Updated information about Photon06 is published at www.photon06.org and www.ukcpo.org

For more details about Photon06, please contact:

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