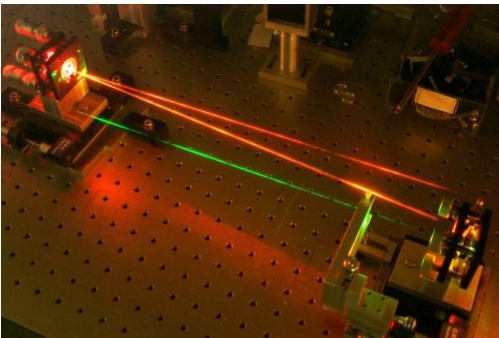


Photon10

INDUSTRY TECHNOLOGY PROGRAMME



24-25 August 2010

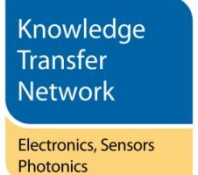
University of Southampton

www.photon.org.uk

Industry Technology Programme

- Showcasing TSB Collaborative R&D projects
- Future Collaborative Funding

IOP | Institute of Physics



Introduction

Welcome to the industry technology programme, the commercial sessions for this year's photon conference. The Industry Technology Programme at Photon10 is designed to provide a bridge to the commercial development of photonics enabled applications. Collaboration between academia and industry is often a key part of new product development and this year's ITP will focus on this interface.

In the past 5 years the Technology Strategy Board have helped to fund collaborative R&D projects involving Photonics worth over £130million. The first day of the ITP, chaired by the Electronics Sensors and Photonics KTN, will showcase some of these projects helping to disseminating the knowledge that has been developed and share experiences of being involved in TSB competitions. Projects in 3 key area of advanced lighting, imaging for health and security and next generation light sources will be featured from a range of different R&D competitions. This is an ideal opportunity to learn more about the output from collaborative R&D projects and the impact they are having on the partners and the market, now and in the future.

The second day of the ITP looks to the future, highlighting potential new collaborative projects and mechanisms of funding new product development and commercialisation often through collaboration. Technology Strategy Board and European collaborative funding mechanisms will be covered, including insights into EU Framework ICT call 6 due in the summer of 2010. EPSRC will also discuss their approach to joint industrial funding and there will be insights into full and mini Knowledge Transfer Partnerships and an update on regionally administered grants for R&D.

The ITP will close by opening the floor to delegates to pitch their concepts for future collaborative projects to attract additional partners and obtain feedback to refine their concepts.

Dr John Lincoln, SEPNET

Greg May, TSB

Alastair Wilson, ESP KTN

Sponsorship

We are grateful to SEEDA, the *South East England Development Agency* for sponsoring this meeting through SEPNET, the *South East Photonics Network* and for the support of the *Technology Strategy Board*, the *Photonics and Plastic Electronics Knowledge Transfer Network* and the *Institute of Physics*

Registration

Exhibition

The Photon10 exhibition is open to all ITP attendees during these times.

10:00 - 17:00 on Tuesday 24 August

10:00 - 16:00 on Wednesday 25 August

Exhibitors:

AeroTech Ltd

AMS Technology

Bentham Instruments

Coherent

Crystran Limited

DMOptics

Edinburgh Instruments

Elforlight Ltd

Elliot Scientific Ltd

ESP KTN

ESP KTN

Fianium

Fianium

FLIR Systems

Gilden Photonics Ltd

Hamamatsu Photonics UK Ltd

Horiba Scientific Ltd

Institute of Photonics

IOP Publishing

JD Photo-Tools

Lambda Photometrics Ltd

Laser 2000

Laser Components

Laser Lines Ltd

Laser Support Services

Lasermet Ltd

Newport Spectra Physics Ltd

OptoSci

Pacer

Photonic Solutions Ltd

PI (Physik Instrumente)

Pro Lite

Stock Optics Ltd

Thorlabs

Toptica

Programme Summary

TSB Photonics Project Showcase Tuesday 24 August		Nuffield Lecture Theatre A
10:15	ITP welcome	
10:30	LED Lighting, Majd Zoorob, PhotonstarLED	
11:00	Manufacturing Emissive Nanotechnology Devices In Polymers (MENDIP), Richard Kirk, PolyPhotonix	
11:30	Novel LEDs for Efficient Lighting Solutions, Gareth Jones et al	
12:00	Lunch	
13:45	Low-cost nanosecond OPO for gas spectroscopy and material characterisation. J.C.Gates, University of Southampton et al	
14:15	Development and Applications of Advanced “ns-class” Fibre Lasers, Steve Norman, SPI Lasers UK Ltd, et al	
14:45-	Novel Tunable Laser Spectroscopy Instrumentation for Breath Analysis, David Jackson, M Squared Lasers et al	
15:15	Coffee	
15:45	Realising the Benefits of Fluorescence Lifetime for Drug Discovery Applications, R Dennis Edinburgh Instruments et al	
16:15	Low cost self powered wireless vision system for perimeter security & road monitoring, Nikolai Ptitsyn, Microsharp et al	
16:45	Face Recognition At Intermediate Distances (FRAID), John McAvoy Cybula (TBC)	
17:15	ULTRAFast and WHITELASE – TSB Funded Projects Past and Present and their Impact on Technology and Business Development, John Clowes, Fianium et al	
17:45	Close	

Collaborative Funding & Support Wednesday 25 August		Nuffield Lecture Theatre A
10:15	Supporting Collaborative Research in the Engineering and Physical Sciences, M.Ball EPSRC.	
10:45	Technology Strategy Board Challenges, Greg May, Technology Strategy Board	
11:15	Collaboration Opportunities in the Life Sciences, a Research Council Perspective, Alex Chaix, TSB & BBSRC	
11:45	Collaboration for Competitiveness, Don Spalinger, University of Southampton	
12:00	Innovation and growth funding in the South East, Guy Whitaker Solent IGT	
12:15	Lunch	
13:45	NEXPRESSO an European FP7 project bringing Academia and Industry together, Chris Gracie, Scottish Optoelectronics Association	
14:15	Upcoming European Framework Funding Opportunity – ICT Call 7 foreseen for late September 2010, Peter Walters (TUV & FP7UK)	
14:45	An evaluator’s perspective on reviewing EU proposals, Nick Doran, Swansea University	
15:15	Coffee	
15:45	Collaborative development proposal pitches and concepts, 12, 5 min presentations	
17:00	Close	

Tuesday 24 August

TSB Photonics Project Showcase

Nuffield Lecture Theatre A

Advanced Lighting Projects

- | | |
|--------------|---|
| 10:15 | ITP welcome
Alastair Wilson, ESPKTN; John Lincoln, SEPNET; Greg May ,Technology Strategy Board |
| 10:30 | LED Lighting,
Majd Zoorob PhotonstarLED, et al
Abstract awaited |
| 11:00 | Manufacturing Emissive Nanotechnology Devices In Polymers (MENDIP),
Richard Kirk, PolyPhotonix.
PolyPhotonix will be one of the first companies to bring OLED (Organic Light Emitting Diodes) lighting technology to market. OLEDs are a highly efficient lighting source that can be used in a wide variety of applications due to their unique physical characteristics, being flat, flexible and conformable, new uses and markets are being invented. PolyPhotonix is developing novel manufacturing processes to meet this demand and will move into early production in 2011. There is significant industry interest and ‘pull ‘ for lighting solutions that better energy efficiency combined with a new design aesthetic, PolyPhotonix is working with a number of industry partners to achieve this |
| 11:30 | Novel LEDs for Efficient Lighting Solutions,
Gareth Jones et al
The research project “Novelels” was conceived in 2007 and funded by the DTI (which then became the Technology Strategy Board) through the Technology Programme scheme. The project developed advanced LED solutions which were evaluated in aircraft lighting and LCD backlighting applications.
Led by Enfis, an innovative SME developing LED arrays and light engines, the consortium consists of University of Bath and Brunel University developing GaN LED chips and novel phosphors, IQE as a manufacturer of GaN epi-wafers, Exxelis and GE aviation developing LED backlights for LCD displays for consumer and aircraft applications. Airbus and AgustaWestland complete the consortium as end user specifiers and evaluators of the technology developed |
| 12:00 | Lunch |

Next generation light sources

13:45 Low-cost nanosecond OPO for gas spectroscopy and material characterisation
J.C. Gates, Peter G.R. Smith, Corin B.E. Gawith, Hazel Hung, Huw E. Major, Christian Rahlff, University of Southampton.

We present results on the use of a novel low-cost optical PPLN parametric oscillator (OPO) for applications in gas spectroscopy and material characterisation applications. The source features turn-key operation and gives wavelength selectable IR radiation from 1.361 to 4.5 microns with 13nS pulses at 2kHz repetition rate. Total output powers up to 80mW are available shared between signal and idler beams. We will present data on the output beam parameters and results taken on atmospheric pressure gas samples in novel configurations.

14:15 Development and Applications of Advanced “ns-class” Fibre Lasers
Dr Steve Norman, Chief Technology Officer, SPI Lasers UK Ltd
Prof Mikhail Zervas Chief Scientist at SPI Lasers; also with the Optoelectronics Research Centre at the University of Southampton. Prof Bill O’Neill, Institute for Manufacturing, University of Cambridge

This paper addresses “nanosecond pulsed fibre laser technology” that has been the subject of two TSB-supported projects involving SPI Lasers, the ORC and the IfM.

The partners have successfully collaborated on joint projects since 2006 and under the current “SMART” project are developing high-precision ns-class pulsed fibre laser technology and novel materials processing applications for same.

The paper will review “ns” fibre laser technology, illustrating some of the leading-edge applications in which they have been utilised at IfM. The learnings and benefits of this productive joint collaboration under the TSB programmes will also be discussed.

14:45 Novel Tunable Laser Spectroscopy Instrumentation for Breath Analysis
David Jackson, Graeme Malcolm, Gareth Maker, Gordon Robertson M Squared Lasers. Jonny Terry, Cameron Rae, Malcolm Dunn. University of St Andrews

In this work we investigate the use of broadly tunable optical parametric oscillators operating in the Mid Infra-Red (2.7microns to 4.5microns) spectral region for the analysis of low concentrations of gases within the breath. Such traces of gases may be useful as biomarkers for disease detection and monitoring. We will discuss a broadly tunable and flexible laser platform and spectroscopic detector for breath spectroscopy that enables multispecies analysis. Several important disease groups that fall within the capability of this novel approach will also be discussed.

15:15 Coffee

Imaging for health and security and next generation light sources

15:45 Realising the Benefits of Fluorescence Lifetime for Drug Discovery Applications
R. B. Dennis (Edinburgh Instruments) and G Cotton (Almac Sciences Scotland)

The intrinsic property of fluorescence lifetime as the reporting modality in biochemical and cell based assays is attractive as it is independent of probe concentration and volume, antibody and radioisotope free, cost effective and enables the effects of background interference from fluorescence compound libraries, which lead to false positives and negatives in drug screening, to be minimised.

Following the TSB funded FLASH project, the partners have launched the FLexyte platform, comprising the NanoTaurus FLT plate reader and universal assays using novel long lifetime (ca 17ns) fluorophores for both protein kinases and proteases, important target classes for cancer, inflammation and cardiovascular diseases.

16:15	Low cost self powered wireless vision system for perimeter security & road monitoring (TBC) Nikolai Ptitsyn, Microsharp et al (TBC) Abstract awaited
16:45	Face Recognition At Intermediate Distances (FRAID) (TBC) John McAvoy Abstract awaited
17:15	ULTRAFast and WHITELASE – TSB Funded Projects Past and Present and their Impact on Technology and Business Development John Clowes, Fianium Since 2006, Fianium have been involved in two TSB-funded collaborative R&D projects; ULTRAFast and WhiteLase, both developing and exploiting state-of-the art Ultrafast fibre laser technology. This presentation describes the technology, objectives and background to both projects and highlights the experiences, achievements and impact of collaborative R&D on Fianium’s business
17:45	Close

Wednesday 25 August

Collaborative Funding

Nuffield Lecture Theatre A

- 10:15** **Supporting Collaborative Research in the Engineering and Physical Sciences,**
Mathew Ball EPSRC.
EPSRC are the main UK government agency for funding research and training in engineering and the physical sciences, investing more than £850 million a year. We support research into a broad range of areas including manufacturing, engineering, materials science, information and communications technologies. Over 40% of our portfolio is partnered by industry. This talk will discuss opportunities for funding for collaborative research and highlight some success stories.
- 10:45** **Technology Strategy Board Challenges,**
Greg May, Technology Strategy Board
An overview of the Technology Strategy Board, its role in promoting innovation in the UK and its various funding mechanisms will be presented. This talk will describe not only the Collaborative Research and Development programmes such as the ones showcased at the conference, but also the wide assortment of other funding mechanisms sponsored by the Technology Strategy Board. This includes Knowledge Transfer Networks (KTNs), Knowledge Transfer Partnerships (KTPs), SBRI and an array of European Collaborative R&D programs. The target audience is representatives from UK based industries and academic institutions.
- 11:15** **Collaboration Opportunities in the Life Sciences, a Research Council Perspective,**
Alex Chaix, TSB & BBSRC
New tools, resources and technologies are very important in advancing the biosciences, particularly as they become increasingly data-rich and multidisciplinary, and biologists need to collaborate with mathematicians, engineers, physicists and chemists. BBSRC works, with other Councils and funders, at the interface of biological and physical sciences to ensure that technical and engineering solutions can address biological problems.
Advances in real time bioimaging, cellular probes to study metabolism in vivo, microarrays, sensors, labs on chips, robotics and high-throughput screening all have applications in biology. BBSRC funded basic science and collaborative schemes play an important part in the development of tools for research scientists and industry partner alike.
- 11:45** **Collaboration for Competitiveness,**
Don Spalinger, Hilary Smith University of Southampton.
In the period 2001 – 2007 Universities generated £10.3 Bn in economic value through collaboration with business. This significant value was translated via a number of knowledge exchange mechanisms into providing collaborating companies with a competitive edge. Companies participating in Knowledge Transfer Partnerships (KTP) reported an increase of over £220,000 in annual profits before tax; the creation of three genuine new jobs and an increase in skills of existing staff.
This session will provide information about KTP and other schemes which provide collaborating partners with access to funding, world class expertise and facilities and excellent students

12:00	<p>Innovation and growth funding in the South East, Guy Whitaker Solent IGT</p> <p>Ensuring the success of high growth companies and the innovation that fuels them are critical to our economy today, and for our futures tomorrow. The Innovation & Growth Teams operate across the South East of England providing specialist, in depth support to meet the special needs of these dynamic companies. From raising finance, to commercialising IP, to management coaching, to collaborating with other high growth companies and promoting open innovation, our team of more than 50 Portfolio Directors work intensively with each company, investing significant time and resources to help them unlock their greatest opportunities</p>
12:15	Lunch
13:45	<p>NEXPRESSO an European FP7 project bringing Academia and Industry together Chris Gracie, Scottish Optoelectronics Association</p> <p>NEXPRESSO creates and implements a network for evaluation by researchers of prototype photonics components and systems manufactured by SMEs, at no net cost to either the university or the SME. As a result, students experience the next generation of emerging technologies and products as identified by European industries. This training orients students toward advanced technology jobs in Europe, thus helping to develop a highly educated and productive workforce in Europe.</p> <p>SMEs that participate in the NEXPRESSO programme have a new and valuable resource for implementing research and development that is precisely focussed on the products and on the issues that are most relevant to that company's continued growth and success.</p>
14:15	<p>Upcoming European Framework Funding Opportunity – ICT Call 7 foreseen for late September 2010 Peter Walters (TUV & FP7UK)</p> <p>The European Commission will publish its 2 year work programme 2011-2012 this summer – the first of 3 large calls for proposals opens in September. The Collaborative research opportunity presented will be described together with an overview of UK's past framework performance. The new work programme will be described calling particular attention to the</p> <ul style="list-style-type: none"> - Core and disruptive photonic technologies and - Flexible, Organic and Large Area Electronics and Photonics <p>Objectives, which will feature in Calls which will which will open in both 2010 and 2011.</p>
14:45	<p>An evaluator's perspective on reviewing EU proposals, N.Doran, University of Swansea.</p> <p>The talk will discuss the FP7 evaluation experience from the evaluator perspective. The presentation will try to convey the excitement, boredom and difficulty of the process as well as hopefully giving some indication of how to treat your imagined evaluator to get the best outcome for your proposal. No success can be guaranteed however and all views expressed are those of just one individual (I do not represent any organisation in this context).</p>
15:15	Coffee
15:45	<p>Collaborative development proposal pitches and concepts</p> <p>12, 5 min presentations</p>

17:00 close