Photonics

Newsletter

March 2007

European Commission
Information Society and Media

Contents

New Photonics Unit!

Photonics is a technology that is driving innovation in a wide range of application fields, from telecommunications to health care and from entertainment to lighting. Telecommunication was once the main domain where photonics research was supported by the European Commission, but nowadays the same technology is enabling products in many areas and this is a trend which has been actively supported by the Commission in FP6.

Today, some 200,000 people are employed directly in the photonics industry in Europe, and 2 million other jobs depend on it. The global market for products enabled by photonics is already 150 billion euro per annum and growing quickly. It is also a strategic technology – one must maintain the expertise and know-how in Europe so as to avoid being left behind in a very rapidly evolving market.

Europe is at the forefront of photonics research and has a strong industrial sector with a very large number of SMEs exporting world-wide.

The European Commission has recognised the importance of Photonics and has given it a prominent position in the 7th Framework Programme. Some 90 million euros have been allocated to funding of the basic photonics technologies in the period 2007 – 2008 alone, and it is expected that this level will increase over the lifetime of the programme.

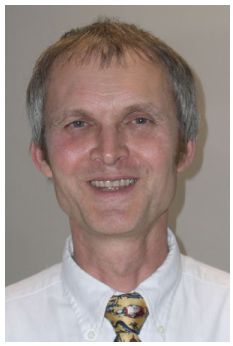
In addition to increasing the level of funding, there was a clear need to set up a unit dedicated to Photonics. The task of this unit is to stimulate the further evolution of Photonics at European level and also at national level.

We need to tackle the fragmentation of research efforts so that Europe can deliver the needed critical mass of quality research and can translate those research results into market success.

The Photonics technology platform, Photonics21, has been very successful in gathering the key players in the Photonics research community and industry into a single body and in articulating their vision as a comprehensive research strategy. There is much work still to be done and Photonics21 has an important role to play.

The person who the Commission has chosen to head up the new Photonics unit is Thierry Van der Pyl. Thierry has an extensive experience in the European Commission. Previously, he has headed the units for "High Performance Computing", "Microelectronics", "Trust and Confidence" and more recently the "Future and Emerging Technologies" unit.

¨I am convinced that Photonics will be the technology of the 21st century, and this is an area where the efforts of the Commission can make a real difference¨, says Thierry.



Keep an eye out for further news from the Photonics team via this quarterly published newsletter and through our web site!

Fascination of Light exhibition

The interactive travelling exhibition 'Fascination of Light' which has been developed and displayed very successfully in Germany during the past two years is now put on a European level. As part of the European campaign the exhibition travels through several European cities with the support of the European Commission and organised by institutions collaborating within the consortium Laserlab Europe with additional support from the NEMO Network of Excellence on Micro-Optics. The exhibition is based on a multidisciplinary approach where photonics and their pervasiveness in every-day life can be actively experienced through interactive, hands-on exhibition pieces, illustrative material and multimedia stations, functional models, visual aids, posters and simple experiments, which may provide inspirations for teaching.

The Fascination of Light exhibition was displayed in Brussels for two weeks on the campus of the Vrije Universiteit Brussel. The event was co-organised by the Department of Applied Physics and Photonics (TONA) of the Vrije Universiteit Brussel.

On March 5th 2007 Commissioner Viviane Reding opened the exhibition. In her opening speech the Commissioner specifically addressed the young people of today - boys and especially girls – who, as tomorrow's successful scientists and engineers, will have the opportunity to discover new knowledge and invent new ways to use that knowledge.

'A career in science can be a very rewarding one. You will be the ones who will create a bright future with tomorrow's inventions.'

Business decision makers and important players in the domain of science, innovation and education attended the opening event as well as the most important target group of the exhibition, the children: several school classes were present and actively enjoying the exhibits.

The Commissioner Viviane Reding, our Deputy Director General Peter Zangl and our Director Rosalie Zobel were then guided through the different booths.

There, they all had the opportunity to experience 'light' in everyday life through a variety of hands-on set-ups.

More info on: http://www.fascination-of-light.net/campaign/events/brussels/

Photonics in FP7 under Call 2

The second ICT call of FP7, which includes research in the area of 'Photonic components and subsystems' is expected to open 15th May 2007 (Objective ICT-2007.3.5).

The target outcome is:

a) Core photonic components and subsystems, which are essential in multiple application fields:

(1) High performance lasers
(2) High brightness, power efficient solid-state light sources for ICT and general lighting applications
(3) Optical fibres for high performance and for specific functions
(4) High performance image sensors
(5) Sensors exploiting innovative sensing principles.

b) Application-specific photonic components and subsystems for application fields, which are strategic for Europe and which are important drivers of photonics technology development. Components and subsystems for:

(1) truly cost effective broadband core networks at 40 Gb/s or beyond per channel;
(2) scalable, future-proof and economic broadband access and local area networks;
(3) minimally invasive medical diagnosis and prevention;
(4) sensing for environment, well-being, safety and security.

RTD on photonic components and subsystems may also cover related materials and fabrication technologies (including mounting and packaging), and related photonic system concepts.

c) Underlying technologies:

(1) *Integration and manufacturing technologies:* Holistic approaches for: reducing the size and cost of photonic components and subsystems; improving their performance, manufacturability and testability; increasing their degree of functional integration; advancing photonic/electronic convergence.

(2) *Design methodologies and tools:* Holistic and widely applicable approaches for designing photonic components to improve design quality and efficiency. This includes work on modelling, simulation and characterisation.

d) Complementary measures:

- *Joint assessment* by users of prototype components, subsystems and equipment from European suppliers.
- *Networking, integration and structuring* of advanced photonics RTD capacities and activities.

e) Support measures:

- Access to centres of expertise and foundries to facilitate the deployment of advanced technologies.
- Raising the interest of young people in careers in photonics, and stimulating crossnational schemes for graduate education.
- Supporting the development of RTD strategies through roadmapping, consensus building, coordination with Member or Associated States, and international cooperation.

Infoday 26th April 2007, Brussels

To prepare for this Call, an Information Day on Photonics will take place **in Brussels** on **April 26th 2007** at **Avenue de Beaulieu 25, room 0/01**. The photonics topics in the 2007-2008 Workprogramme will be presented, followed by the chance for prospective proposers to present their ideas and meet potential partners. An agenda is attached.

If you are interested in attending, please register by e-mail at INFSO-PHOTONICSINFODAY@ec.europa.eu with your full contact details. Places will be reserved on a first come, first served basis.

If you would like to present your idea for a research proposal, please submit this to the same address before April 20th. Presentations should be maximum 3 slides in PowerPoint (or equivalent) and include your contact details. These presentations will also be posted on the photonics website.

The contact person is:

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AGENDA:

09:30 Registration, Coffee

10:00 Introduction (John Magan, Deputy Head of Unit)
10:05 Photonics in the 2007-2008 ICT Workprogramme;
what's new with STREPs , IPs in FP7
(Thierry Van der Pyl, Head of Unit)
10:20 Getting a successful project together – The OLLA experience
(Peter Visser, Philips Lighting Aachen)
10:40 Results of the consultation workshops that took place in March 2007
- NoEs (Ronan Burgess, EC)
- Assessment actions (M. Hohenbichler, EC)
- Access actions (M. Ziegler / C. Helmrath, EC)
11:25 Q&As
12:05 Organisation of the afternoon proposers' session (John Magan)

12:10 *Lunch Break*

14:00 Proposers' pitches – max 2 min / 3 slides each (presentations to be submitted in advance) followed by breakout into bilateral discussions

16:00 End

Project News

(1) NEMO Network of Excellence is running since Sept. 1st 2004 and aims at providing Europe with a complete Micro-Optics food-chain by setting up durable service and technology centres for Optical Modelling and Design; Measurement and Instrumentation, Mastering, Prototyping and Replication; Hybrid Integration and Packaging; Reliability and Standardization. The NEMO newsletter is published quarterly and it highlights upcoming activities organized by the NEMO network, upcoming workshops, conferences and events in the field of micro-optics, tutorials on micro-optics, breakthroughs in the research domain etc. In order to register to receive regularly this newsletter go to http://www.micro-optics.org/www/resources/newsletter.

(2) MONA project, launched under FP6, is contributing to the coordination of research in photonics and nanotechnologies. The goal of the project (MONA: Merging Optics and NAnotechnologies) is to leverage synergies in photonics and nanotechnologies, seeking to increase the impact and efficiency of investment on European research. MONA's newsletter can be found in http://www.ist-mona.org/newsletter.asp

(3) OPERA2015 project has as its main objective to compile an inventory of existing European Optics and Photonics research and industry infrastructure and support for the development of a mid to long term strategic vision of European Photonics industry and research. This lead to the Photonics 21 technology platform launched in Dec 2005. OPERA2015's newsletter can be found in http://www.opera2015.org/newsletters/default.asp

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For any comments or contributions on future issues of this newsletter and to subscribe/unsubscribe send an e-mail to the editor (Subject: PHOTONICS Newsletter)

(4) EPIXNET project provides a platform to its academic and industrial partners for sharing and integrating research facilities and research know-how in the field of photonic integrated components and circuits. For news and events on EPIXNET activities go to http://claudia.intec.ugent.be/epixnet/index.php?id=53

(5) ACCORD project aims at bringing together suppliers of photonic components, researchers and end-users. It solicitates pre-competitive prototypes from suppliers and puts them at the disposal of researchers at no costs. Available prototypes are published on the project's website and researchers can respond to regular calls for proposals to apply for them. Currently a call is open with a deadline on 13 April 2007.

Useful links

(1) The UK photonics industry received a major boost with the launch of 'Photonics: A strategy for success' report at the QE2 Conference Centre on 13th July 2006. Background information can be found on DTI site.

(2) The BMBF in Germany supports optical technologies through comprehensive funding measures. A branch of high technology has developed around the different forms of use, which has brought about many innovations. Germany is among the world leaders in many areas of application (see more on http://www.opera2015.org/national/de.asp).

(3) More info on national activities can also be found in http://www.opera2015.org/national/db.asp

Future Events

March 2007

Access to Centres of Expertise and Foundries in Photonics, Workshop 26th March 2007, Brussels

Prototype Assessment in Photonics,
Workshop 27th March 2007, Brussels.

Networking, Integration and Structuring of Advanced Photonics R&D Capacities and Activities – networks of excellence
Workshop 30 March 2007 – Brussels.

June 2007

Laser Munich
18-21 June 2007 'Laser 2007 - World of Photonics' Trade Fair