



THE QUARTERLY EPIC NEWSLETTER FOR OPTICS

EDITORIAL

Preparing FP-7: The Stakes are High and Time is Short!

The 7th framework programme of the European Commission will be based on a budget of 37 billion euros, two times the size of FP-6. This programme will launch in 2007, but the planning for FP-7 will be largely completed at the end of this year in December. There is enormous opportunity in terms of new funding instruments and in terms of new programme directions. The personnel in the IST have made it clear to me that they are ready to listen to what EPIC has to advise.

To respond to this challenge, EPIC has been involved in a planning activity for several months. So far we have identified some important themes, and the membership has organised itself around these themes. The next big step is to develop some concrete recommendations. This step will form the basis for our communication with the Commission, and it is absolutely critical to have 100% prompt membership participation in this activity. We must act together both in order to develop the content of the recommendations, and to demonstrate high credibility for EPIC as an organisation that truly represents the needs and the aspirations of European industry.

Today, we have the following technology groups, and group leaders:

- Broadband: Andy Carter <andy.carter@bookham.com>
- Biophotonics and biometrics: Jerel Whittingham <Jerel.Whittingham@cenamps.com>
- Solid-state Lighting: Norbert Stath <norbert.stath@osram-os.com>
- Polymers: Euan Smith <esmith@cdtltd.co.uk>
- Security: Jean-Thierry Audren <jean-thierry.audren@sagem.com>
- New Materials: Matthias Krieger <krieger@satis-vacuum.ch>
- Lasers sources and systems: Wolfgang Gries <wolfgang.gries@spectra-physics.com>

We can create or end new technology groups whenever we need to. This is normal evolution.

In the period from September to the end of December, EPIC will organise visits between each prepared technology group and the European Commission. We will meet in the Commission offices in Brussels and present the results of our current work to determine opportunities and challenges, and our recommendations for Commission actions to support industry development. It is obvious that the technology groups need to complete this phase of the planning activity before September. Otherwise it will be too late to influence the FP-7 programmes. Each member must make rapid response to the group leaders a number one priority. If you too busy, or if you are planning to leave on vacation, be certain to appoint a replacement to continue this work in your absence. Do not let any communication from a group leader go unanswered. EPIC will post the results of each group's work on the members' pages so that you can follow the progress of each group and of EPIC as a whole.

For its own part, EPIC is working with the European Photovoltaic Industry Association, (EPIA), in order to broaden the rationale for a focussed programme on photonics such as a technology platform in FP-7. We will be a partner in a proposal during the next call to co-ordinate photonics research activities in FP-6. However, planning for FP-7 cannot wait for these actions to be initiated.

T.P. Pearsall, General Secretary

Production: Yole Developpement, Mathieu Quiblier

<http://www.epic-assoc.com>



European Photonics Industry Consortium

Name Change for NSC Nanosemiconductor

www.nanosemiconductor.com

On June 13, 2004, NSC Nanosemiconductor changed its corporate name to NL Nanosemiconductor GmbH. All e-mail addresses and telephone numbers remain unchanged. The "NL" stands for Nikolai Ledentsov, who is one of the founders and who is chiefly responsible for the technical and scientific development of NL Nanosemiconductor GmbH. NL Nanosemiconductor manufactures semiconductor lasers based on quantum-dot technology.

Jorgen Kurb has taken over as Managing Director, replacing Bernd Meyer, who has now become the Director of Business Development. In addition NL has organised a scientific advisory board of leading researchers in semiconductor laser technology around the world: Zhores Alferov (Nobel Laureate, Ioffe Institute), Pallab Bhattacharya (U. Michigan), Dieter Bimberg (TU-Berlin, and EPIC member), Dennis Deppe (U. Texas), and Victor Ustinov (Ioffe Institute).

Big Changes at Bookham Technologies

www.bookham.com

Bookham becomes a U.S. Company

Bookham Technology has announced that its board of directors has approved a proposal to change the corporate domicile of Bookham to the United States. The proposal reflects the transformation within Bookham, its business activities, customer base and ownership in the four years since its initial public offering. Bookham is seeking to locate closer to end demand customers for its products and facilitating management of its global operations.

The company remains committed to its operations outside the US, particularly its UK businesses and facilities, customers and employees and anticipates they will remain largely unaffected by this change of domicile. The company expects to continue to invest in the development of its UK technology base, and in particular in its two main UK facilities in Caswell and Paignton.

Bookham Enters the High-power Diode Laser Market

Bookham has developed and qualified a family of high power laser diode bars, based upon its telecoms market-leading 980nm gallium arsenide (GaAs) laser diodes, to meet the needs and opportunities of key industrial sectors. The initial products are now qualified and have been shipping during the current quarter.

Bookham completed the qualification of an 808nm 50W laser bar in December 2003. Laser bars at 808nm and 60W have now also been qualified. Bookham is now completing qualification of an 80W bar at 9xxnm. A 120W bar is planned for release by the end of the year. Wavelengths from 780nm to 1060nm are now available.

Bookham Acquires Onetta and Builds Optical fiber Amplifier Business

Bookham has acquired Onetta, a California company, in an all-stock deal. Onetta designs and manufactures intelligent erbium-doped fiber amplifiers for optical communication networks.

The Onetta team brings added revenue and the additional customer base. In addition, Onetta skills could strengthen Bookham's position in design and manufacture of optical line subsystems. The deal is valued at \$23.3 million to acquire assets valued at \$7.5 million. In the first quarter of 2004 Onetta generated revenues of \$3.3 million and made a loss of \$2.1 million.

Spectra-Physics Acquired by Newport

www.newport.com

Newport Corporation has announced it has signed an agreement to purchase Spectra-Physics for \$300 million. The purchase price is comprised of \$200 million in cash, \$50 million in Newport Corporation common stock, and a \$50 million promissory note bearing 5% interest and payable in 2009. The acquisition is expected to create a company with approximately \$400 million in annualised sales.

Newport CEO Deuster stated that he expects this transaction to create many new and expanded opportunities for Newport in markets for photonics, biophotonics and nanotechnology.

Osram and Vishay Sign License Agreement for LEDs

www.osram-os.com

Osram GmbH, Munich, and Vishay Semiconductor GmbH, today announced they have entered into an agreement covering the use of patents. On payment of a licence fee, Vishay is acquiring the right to manufacture and sell LEDs for white light with conversion technology and surface-mount LEDs for high-current applications, for which Osram hold patents.

The white LED technology developed by the Osram Opto Semiconductors subsidiary and being licensed by Vishay enables white LEDs to be produced with blue emitting InGaN (Indium Gallium Nitride) chips by using a suitable phosphor converter.

"Our patent portfolio is the result of many years of research and development, and we are sure that both partners will profit from this agreement. With this new licence agreement, yet another global LED manufacturer has underlined the importance of our patent portfolio," said Dr. Rüdiger Müller, President and CEO of Osram Opto Semiconductors.

EPIC Membership is Growing

<http://www.epic-assoc.com>

Strong interest across the Europe in EPIC programmes has helped to bring twelve new members into the EPIC organisation since April 2004. There are now over 40 member organisations. EPIC is anticipating to be a full-strength with 70 – 80 members by the end of 2004.

Organisation	Country	Speciality
AUDI	Germany	Automotive Lighting
ESKO Graphics	Denmark	Laser Printing Technologies
German Aerospace Center	Germany	Defence and Security
Haute Ecole Arc (Swiss)	Switzerland	Education and Research
Leybold Optics	Germany	Manufacturing Tools of Precision Optics
LPM-INSA LYON	France	Education and Research
Modulight	Finland	Telecommunications
SAES Getters	Italy	Optical components
Saint-Gobain	France	Materials for Optics
Time-Bandwidth Products	Switzerland	Ultra-fast Lasers
TU-Berlin	Germany	Quantum-Dot Lasers
Wroclaw Univ. of Technology	Poland	Education and Research

Complete information on the contact person, address, and telephone number for these new members can be found on the members' page. The membership directory is updated on a weekly basis.

AIXTRON, STMicroelectronics, and CEA-LETI Develop Ultra-Thin Gate-Insulation Process for Advanced CMOS Transistors

www.aixtron.com

This new process, Based on AIXTRON's Tricent[®] reactor, significantly reduces transistor leakage current by the deposition of 'high-k' gate-insulation material. The three companies are developing new process technologies aimed at the 45nm or 65nm technology nodes for low-power CMOS platforms optimised for portable applications.

The process, called AVD[®] (Atomic Vapor Deposition), has demonstrated excellent *Equivalent Oxide Thickness* values of 1.15nm based on hafnium dioxide / silicon dioxide / silicon (HfO₂/SiO₂/Si) stacks offering leakage current densities as low as $J_L=6.8 \cdot 10^{-2} A/cm^2$ at 1.5V. The results were obtained by the Advanced Modules team of researchers from ST and CEA-Leti at ST's Crolles facility using a Tricent AIXTRON 200/300 mm bridge cluster tool. The HfO₂ deposited layer process was developed in conjunction with AIXTRON, and the wafer processing and the characterisation were performed at CEA-LETI facilities in Grenoble.

In addition to the capability to precisely deposit thin dielectric 'high-k' layers, the AVD technique also allows the deposition of metal gates necessary for the 45 nm-and-below CMOS technology nodes.

"The co-operation with STMicroelectronics and CEA-LETI is an integral part of our strategic CMOS development effort strengthening AIXTRON's position in emerging semiconductor applications. By working with one of the leading semiconductor device manufacturers and one of the top research organizations in the industry, AIXTRON will remain at the forefront of cutting edge enabling MOCVD process technology development", said Tim McEntee, Executive Vice President and COO Semiconductor Equipment/ AIXTRON AG.



EPIC Organises Symposium on New Opportunities in European Photonics

<http://www.epic-assoc.com>

To be held at ECOC '2004 Stockholm, Sweden, Thursday September 9, 2004

SCOPE

The recovery of the photonics industries in Europe is now well underway. While there are still episodes of restructuring and downsizing, many companies have successfully re-aligned their products to growing markets. In this symposium you will hear about where to find these growing markets, and to learn from both large and small companies about how they are addressing product needs and opportunities in this broad field of "Photonics".

Important trends in this recovery are manufacturing of components in higher volumes and lower costs, development of plug-and-play packaging, and focus on the significant potential for photonics in specific applications such as automobile, lighting, and biophotonics.

The Symposium on New Opportunities in European Photonics will showcase seven invited presentations highlighting the new dimensions of the photonics industry by organisations that have been successful in adapting to the rapidly changing scene.

SPEAKERS AND TITLES OF THEIR PRESENTATIONS:

- Thomas Pearsall, EPIC, France
"Roadmapping a Durable Photonics Industry in Europe"
 - Jean-Christophe Eloy, Yole Développement, France
"Market Opportunities for Photonic Components and Systems"
 - Graham Cross, Farfield Sensors, United Kingdom
"Commercialisation of Optical Waveguide Biosensor Technology"
 - Marina Meliga, Agilent, Italy
"Sources for Plug and Play Components for Datacom and Telecom Applications"
 - Michael Hohenbichler, Information Society Technologies, European Commission Brussels, Belgium
"Photonics in the Seventh Framework Programme "
 - Torsten Sven Schaal, Daimler-Chrysler AG, Germany
"Optical Communications Inside and Outside the Automobile"
 - Klaus Streubel, Osram Opto Semiconductors GmbH, Germany
"LEDs and Solid-State Lighting"
- Panel Discussion



European Commission Announces Three Calls for Proposals

Call 3 Deadline 22 September 2004, 28 million euros

Please visit: http://fp6.cordis.lu/fp6/call_details.cfm?CALL_ID=138

Call 3 also has an action to encourage participation of organisations from the new member states in IST research programmes.

Joint Call: Deadline 14 October 2004, 180 million euros

EPIC has already sent you a preliminary announcement for the Joint call. The size of this call is 180 million euros. It is divided into three programme areas:

- Nanophotonics and nanoelectronics
- Biosensors
- Technologies for flexible manufacturing

Please visit: http://fp6.cordis.lu/fp6/call_details.cfm?CALL_ID=136

FET call: Deadline 22 September, 80 million euros

This call is focussed on nanotechnologies, new computing architectures and biomimetic structures. FET proactive initiatives aim at focusing resources on visionary and challenging long-term goals that are timely and have strong potential for future impact.

Please visit: http://fp6.cordis.lu/fp6/call_details.cfm?CALL_ID=137

Call for Posters: EPIC Organises European Workshop on Photonics in the Automobile

Submit your abstract today and help advance photonics technologies and applications in the automobile!

European Workshop on Photonics in the Automobile

29 November–1 December 2004
Geneva, Switzerland

Many photonics-based devices, systems, and components have come to play a crucial role in the function of today's automobile. View the full program, submit your abstract today and work with other leading engineers and scientists on how such devices, systems, and components might be fully integrated into the automobile of the future.

Submission topics include:

- Lighting and Signaling
- Navigation
- Sensors
- Non-technology Considerations
- Display Technologies
- Communications Networks

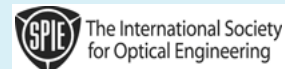
Your contribution matters.

Plan now to participate in the European Workshop on Photonics in the Automobile!

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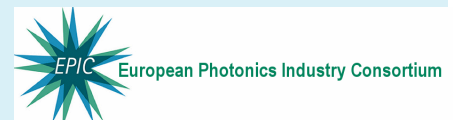


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To see the full programme and to submit your abstract :

<http://www.spie.org/events/4367>



Thalès and Alcatel Sign Deal, Join R&D Forces

www.thales.com www.alcatel.com

Thalès and Alcatel have announced the creation of a joint research laboratory dedicated to semiconductor technologies, targeting applications in telecommunications, defence, space and security. The laboratory, known as the Alcatel-Thalès III-V Lab, contributes to expertise in the field of optoelectronic and microelectronic components based on III-V technologies.

The new laboratory combines the relevant industrial research activities from Alcatel in optoelectronic components for telecommunications, and the microwave electronics and optoelectronics R&D for defence applications from Thalès.

The current Alcatel laboratory was already born out of a fusion with the France Telecom Laboratory CNET. The current fusion with Thalès represents a further dilution of Alcatel's involvement in components technology. The main objectives of the lab are to anticipate scientific and technical advances and their impact on future systems; establish scientific and industrial partnerships; industrial transfer to parent companies, industrial partners or high-tech small and medium enterprises.

The microwave activities will be located at the Alcatel facility at Marcoussis, while the optoelectronics work will be done at the new Thalès facility under construction at Palaiseau next to the Ecole Polytechnique.



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