2009

ANNUAL REPORT EPIC-ASSOC

EPIC
European Photonics Industry Consortium

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EXTENDING EPIC'S FOOTPRINT

The EPIC Governing board is working with your General Secretary Tom Pearsall to implement the plan to Extend EPIC's Footprint in Photonics. There are four key elements to this action:

1. **Photonics-21**
   We encourage EPIC members to participate at all levels. Photonics-21 is the best resource available to shape the position of the European Commission in the photonics domain. Participating EPIC members are developing policy and priorities for investment in R&D at both the European and State levels. In 2009, I was pleased to see that seven EPIC members were newly appointed to the Photonics-21 Board of Stakeholders and five EPIC members were appointed or re-appointed to the Executive Board.

2. **Business Development**
   A specific strength in EPIC's work for its members is the development of business connections and cooperation between members. Invest in Photonics brings together SMEs and investors: two hundred people attended the latest edition of this key event.
   In 2010 EPIC will extend this concept to create an initiative on sensors for defense and security, involving SMEs and defense companies.

3. **Key Enabling Technologies**
   In September of 2009, the European Commission, led by the DG-Enterprise, produced a white paper naming Photonics as one of Five Key Enabling Technologies.
   EPIC members can be proud of the fact that it is the organization that introduced Photonics to the European Commission in 2003. However, this is only the beginning. There is still much work to be done. Your Board of Governors is working actively to assure that the actions taken in favor of photonics are making good sense for the future of photonics in Europe. Please let us know your views.

4. **EPIC's Financial Situation**
   I am pleased to report that EPIC's financial situation is in good shape. Our financial resources are based on medium and long-term engagements, and this strategy has enabled us to move smoothly through the business recession of 2009. The board has approved the 2010 budget. It is about 330 k euros and balanced.

Growth is important:

- Enables delivery of more value to members
- Greater impact at national, European and international levels
- Additional resources are needed to support this growth.

EPIC needs growth to Extend its Footprint. The EPIC Board is working on this challenge, and we are seeking additional Board members to help develop successful initiatives.

Jean-François Coutris

REPORT OF THE GENERAL SECRETARY

by Thomas P. Pearsall

EPIC priorities and challenges for 2010

In 2009, EPIC membership included 75 voting member organisations and 450 associates. We were pleased to announce at our annual meeting in Brussels that EPIC-led programmes returned more than 2.500.000 euros in direct benefits to our members. This return is more 11 times the amount of all the membership dues paid in 2008.

In 2008, EPIC started to work with the World Bank on Intelligent Lighting for commercial buildings. This is lighting that is both energy efficient and that improves productivity. EPIC member Philips reminds us that public and commercial buildings consume 60% of global lighting electricity usage. Buildings worldwide account for a surprisingly high 40% of global energy. The resulting carbon footprint exceeds that of all transportation combined. Large and attractive opportunities exist to reduce the energy use of buildings at lower costs and higher returns than other sectors. Philips is a principal contributor to the report on Energy Efficiency in Buildings from the World Business Council for Sustainable Development. EPIC is pleased to support Philips in this initiative.

In 2009, the EPIC-led NEXPRESSO proposal for components and systems exchange was accepted by the European Commission and will run through 2013. Seven EPIC members are participating: HE-ARC, IMEC, Multitel, Opticsvalley, PERFOS, Sagem, and Wroclaw University of Technology. In 2010, EPIC is ready to help its members make the most of the call 7 from the European Commission. There are interesting calls from both ICT and NMP. We can help you to organize and write your proposal.

In addition to revenues, EPIC continues to build member benefits and resources. Our conference support programme helps to pay conference fees for EPIC members. As a result we were able to extend our information coverage for members of more key photonics events, creating a win-win benefit. We will continue to research and publish key market reports, such as “LEDs: The 2009 Market Review” and “Report on Photovoltaics: PV Market Overview 2009”. EPIC strives to be the first resource of reliable market and technology developments in photonics.

EPIC is a leading producer of photonics workshops in Europe, thanks to our members who identify the topics and develop the programmes. In 2010 we will prepare reports or workshops on LED manufacturing, access technologies for fiber optic communication at ECOC and at the FTTH Council Europe meetings, and on fiber lasers in Dresden. We are planning the business roundtable for photonic sensors which brings together innovators and integrators in Defense and Security.

Thomas P. Pearsall - EPIC Secretary General

SUMMARY BALANCE SHEET

ASSETS

	2009	2008
Fixed Assets	**3986**	**3115**
Current Assets	**190 008**	**244 109**
Membership fees to be paid	67 859	48 529
Cash in bank (BNP)	92 240	192 433
Charges paid in advance	2 305	3 147
R&D Contracts	27 604	0
Total Assets	**193 994**	**247 224**

LIABILITIES

	2009	2008
Retained Earnings	**49 974**	**66 359**
Provision for payments and charges		
Owed to suppliers	19 745	20 977
Social charges to be paid	42 970	40 467
Subtotal	62 715	61 444
Income paid in advance	81 805	119 421
Total Liabilities	**193 994**	**247 224**

INCOME

	2009	2008
Annual Membership Fees billed	190 648	204 685
European programmes participation	216 368	203 817
Sale of services	41 834	9001
Interest of savings accounts	1 243	3 150
Total Revenues	**450 093**	**420 653**

EXPENSES

	2009	2008
Supplies, charges, operating expenses	251 481	175 656
Taxes	11 936	12 022
Salaries and consulting fees	141 402	143 619
Social Charges	60 942	64 256
Provision for depreciation	668	535
Total Expenses	**466 429**	**396 088**

EPIC WORKSHOPS & SYMPOSIA

In 2009 EPIC organized following events:

Visit to members and prospect in Lannion
18-20 January 2009

Symposium on New Developments on FTTH, during FTTH Annual Meeting, Copenhagen*
11-13 February 2009

Visit to members in Berlin
4-6 March 2009

OLED-100 Summer School, Krutyn*
2-8 June 2009

Symposium on Next Generation Optical Access*
22 September 2009

Visits to Arab Gulf States*
4-9 April 2009
26 September-2 October 2009

IOA Annual Meeting, Gwangju Korea*
11-14 October 2009

4 **EPIC** members on Video, Berlin
16-17 November 2009

Visit to members in Switzerland
14-18 December 2009

EPIC Symposium on New Development on FTTH, FTTH Council Europe Annual Meeting, Copenhagen, Denmark, 12 February 2009

EPIC organised a 1-day session on New Developments in FTTH. This session aimed to inform customers who install and maintain fibre networks about new services and capabilities that will improve the performance of fibre-based systems in the next five-year period, thereby stimulating investment in new networks and connections.

- Thomas P. Pearsall, EPIC
  Introduction to Access Technologies
- Erwan Nedellec, France Telecom
  Network Features for Higher Capacity, Architectures and Services
- Jim Everett, Photonics 21
  Photonics-21 and FTTH
- Godehard Walf, Fraunhofer HHI
  Access Networks for 10 Gbps Everywhere
- Mike Wale, Bookham
  Technology Routes for Cost-effective, High Performance, Next-generation Access Components
- Christophe Kazmierski, Alcatel Lucent Bell Labs
  Optical Components for Future Access Networks
- David Smith, CIP
  Technologies for Next Generation WDM-based FTTH

Fibre to the Home Council Europe

EPIC's s conference support programme helped members to attend following events:

11th European Lighting Conference LUX Europa 2009
Istanbul, Turkey
September 9-11, 2009

ForumLED
Lyon, France
December 3-4, 2009

For the events marked with a (*), a CD-report was published and distributed to the EPIC membership.

Symposium on Next Generation Optical Access, ECOC 2009 Vienna, Austria, September 22, 2009
EPIC organised the symposium Next Generation Optical Access. The audience of industry and research experts in Fiber technologies attended following programme:

- Edward Uzzell - Sony, Germany
  What will be the killer application for FTTH and would end users ever need more than ~100 Mbit/s?
- Hartwig Tauber - FTTH Council Europe, Belgium
  How much will end users pay for more bandwidth and what will be the best way to deliver it?
- Frank Effenberger - HUAWEI, United Kingdom
  Next generation PONs: lessons learned from GPON and GE-PON
- David Smith - CIP, United Kingdom
  Reducing the Optical Component Cost for Future Fibre Access
- Gerlas van den Hoven - GENEXIS, The Netherlands
  Prospects for point-to-point technology to deliver 1Gbit/s to the home
- Chang-Hee Lee - LG-Nortel Co. Ltd, Korea)
  WDM-PON Overview
- Glen Kramer - Teknovus, Inc, USA
  10G-EPON: Drivers, Challenges and Solutions
- Stefan Dahlfort - Ericsson, Sweden
  Comparison of 10 Gbit/s PON vs WDM-PON
- Jun-ichi Kani - NTT, Japan
  Next generation PONs: an operator's view
- Panel Discussion
  After GPON and GE-PON what will be the next optical access technology to see widespread deployment? What will be the key enabling optical component innovations and how will required cost reductions be achieved?

ECOC 2009 Vienna • • • Austria

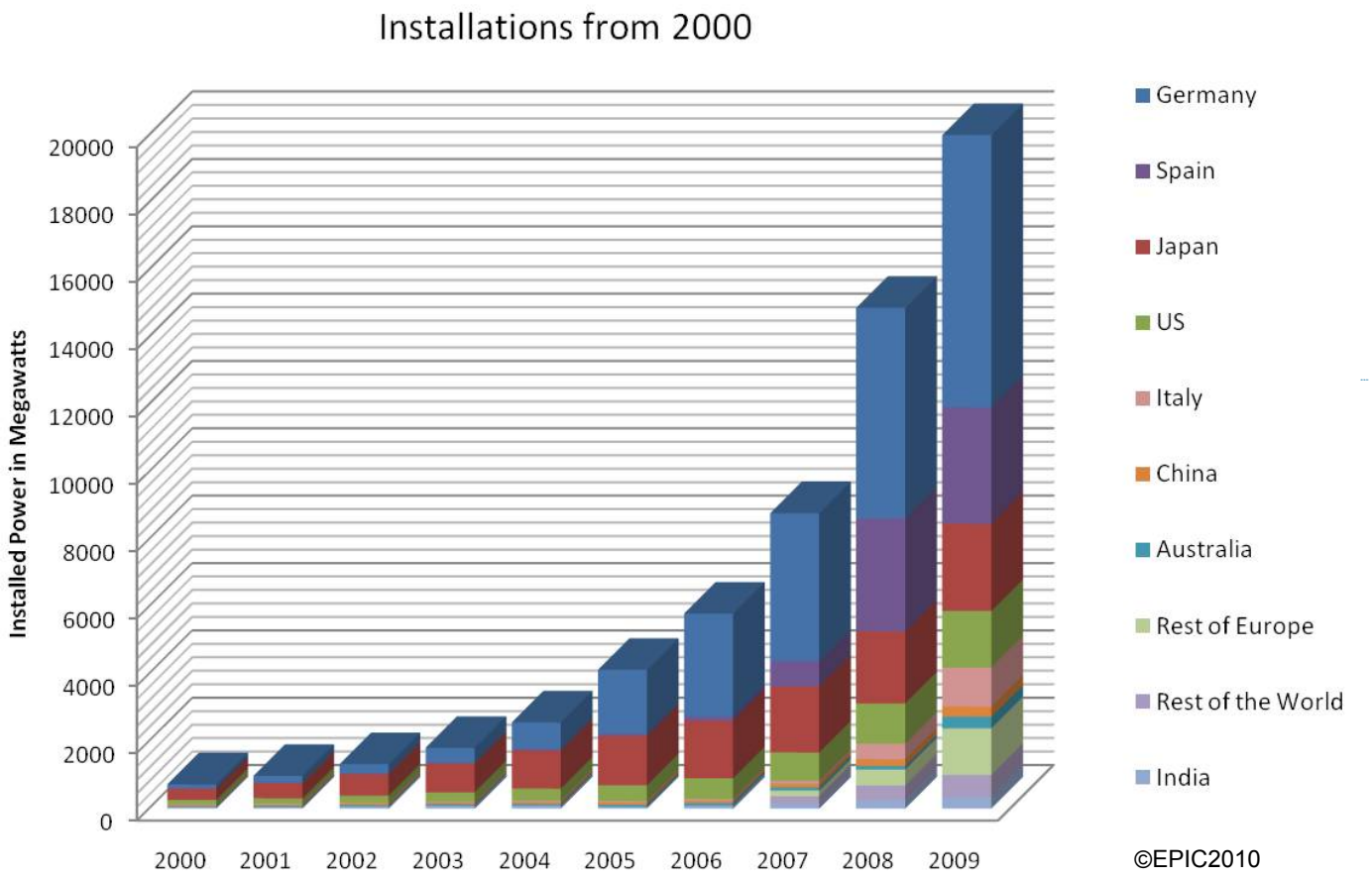
MARKET REPORTS

Report on Photovoltaics

In December 2008, EPIC published and distributed exclusively to EPIC members a Market Report on "**Photovoltaic Energy Generation**" presenting the perspectives for the photovoltaic market worldwide and focusing on Europe as the market leader for PV installations' deployment.

In March 2009 EPIC published an update on **Solar Photovoltaics** showing consolidated market figures for 2008. With ~ 37 billion euros in sales in 2008, Spain is the largest market with 40% of installations and Germany is the second largest market with 30% of installations.

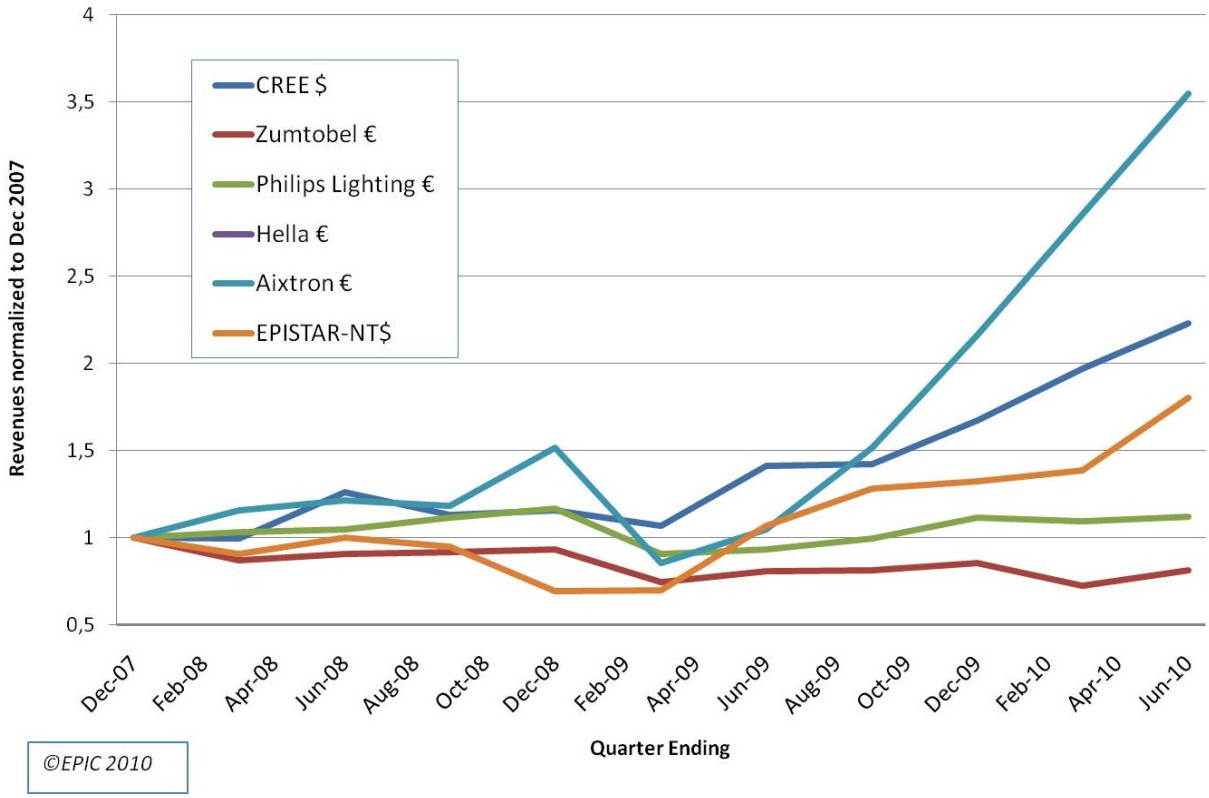
In June 2010, EPIC announced the release of **Report on Photovoltaics: PV Market Overview 2009.** The worldwide sales of photovoltaic panels reached $US 37.2 billion in 2009. During the same period, the electrical generation capacity installed was 7.3 Gigawatts. Our data show that installations grew by 15% compared to 2008, while revenue for the same period remained constant. Europe remains the leader for deployment, accounting for more than 70% of the PV installations worldwide. More than one-half of all the installations world-wide took place in Germany, where individuals rushed to complete installations before the feed-in tariff rates are lowered in 2010.



Installed photovoltaic generation capacity worldwide as of 2009. Germany now accounts for nearly 50% of the total cumulative PV installations in the world. Although China is the leading country for PV manufacture, there are very few PV installations in China at this time.

Report on LEDs market 2009

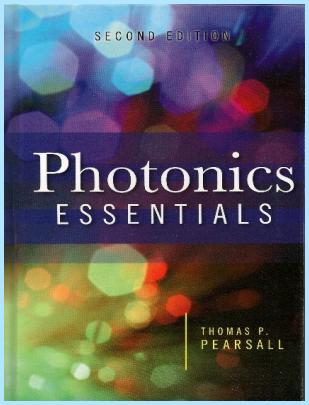
In March 2010, EPIC announced the release of **LEDs: The 2009 Market Review.** The report, which is distributed **exclusively to EPIC members**, tracks the response of the lighting and display industries to one of the most difficult economic crisis in recent years. HB-LED and OLED unit production figures as well as revenues are summarized for major players around the world for the 2-year period of 2008 and 2009.



Revenue performance for selected solid-state lighting companies. Note the impressive progression curve of Aixtron

EPIC Publications 2009

- **"Industry Associations Create Stability during Downturns"**
  Thomas Pearsall is interviewed by Jacqueline Hewitt, Optics and Laser Europe, pg 38, n°171, April 2009
- **"Surviving the Downturn – the European Report"**
  Thomas Pearsall, Laser Focus World, pg 48-58, June 2009.
- **"Europe's Accord Bridges Gap between R&D and Product Launch"**
  Chris Gracie, Thomas Pearsall, Peter Van Daele, Domenico Giannone, Denis Trégoat, Miguel Llera, Stéphane Demiguel, and Sergiusz Patela, Europhotonics, pg 28-32, June-July 2009
- **"The Solar Imperative"**
  Thomas Pearsall, ElectroOptics - Hardtalk, pg 46, June-July 2009
- **"Photonics Essentials / Second Edition"**
  Thomas Pearsall, published by McGraw-Hill Professional (ISBN I9780071629355), 30 November 2009



Cover of
Photonics Essentials

EPIC Conferences, Exhibitions & Meetings

EPIC OLED Summer School: Photonics Europe, Krutyn, Poland 2-8 June 2009

Short courses and lectures were presented on physics, chemistry, modelling, manufacturing, and applications of organic electronics, solar cells and LEDs. In addition to technical courses, there were offerings on leadership training, intellectual property protection and management, and nightly consulting sessions involving students and technology experts.

With 67 students and 18 lecturers the OLED100.eu Summer School 2009 was fully subscribed

Two Business visits to Arab Gulf States:
4 – 9 April 2009 and 26 September - 2 October 2009

EPIC organized for its membership two business trips to the Arab Gulf States. The goal was to discuss and develop specific opportunities that had been previously identified and negotiate cooperation agreements.

EPIC member Richard Kirk (PolyPhotonics) and Tom Pearsall in Dubai

IOA meeting in Gwangju Korea:
11-13 October 2009

The IOA members

During the 14th IOA Annual Meeting 2009, IOA Members discussed a possible collaboration in European Projects.

EPIC members on video:
Berlin, Germany, 6-17 November 2009

In November 2009, EPIC began a program of video presentations of its Members' activities on the Consortium website and also on the net (YouTube http://www.youtube.com/user/EPICphotonics).
The first shooting took place in Berlin. A second session was filmed in the Paris area in June 2010.

EPIC PARTICIPATION IN EUROPEAN PROJECTS

European projects help EPIC to stay up-to-date on technology developments, creating synergies among EPIC members and building a solid revenue base to support operations and growth. We seek to participate in projects where we can bring added value. In 2009 EPIC helped build project teams for successful Call 5 proposals—EPIC members are listed in bold.

LIFT, *Leadership in Fiber Laser Technologies* is an Integrated Project involving 20 partners (including 13 EPIC members) with a budget of 17 million euros. The LIFT project will establish international leadership for Europe in the science, application and production technologies for material processing by fibre lasers through the development of innovative laser sources. The project is coordinated by EPIC Members Fraunhofer IWS (Dresden) and Fraunhofer IOF (Iena). The project started in September 2009.

The Consortium includes: **Fraunhofer IWS, Fraunhofer IOF,** Germany; **EPIC,** France; **Oclaro,** Switzerland; **Eolite Systems,** France; **Quantel,** France; **Time-Bandwidth Products,** Switzerland; **Gooch & Housego,** UK; Rofin Sinar Laser, Germany; Tampere University of Technology, Finland; **3S Photonics**, France; **Politecnico di Torino,** Italy; **University of Swansea,** UK; **SPI Laser,** UK; Dilas Diodenlaser, Germany; **Perfos,** France; NKT / Crystal Fibre, Denmark; Optoskand, Sweden; **IxFibre,** France; Raicol Crystals, Israel; Corelase, Finland.

Website: www.lift-project.eu

EuroPIC, *European manufacturing platform for Photonic Integrated Circuits* aims to effect a fundamental change in the way applications based on photonic integrated circuits (PICs) are designed and manufactured in Europe. The key development is to facilitate access by small companies (SMEs) to development and manufacturing of photonic microsystems in the form of advanced but very cost-effective PICs.
The project started in September 2009.

The Consortium includes: *Project Coordinator:* COBRA, TU Eindhoven (TU/e), Netherlands; Willow Photonics, UK; **Oclaro**,UK; PhoeniX Software, Netherlands; **CIP Technologies,** UK; BB Photonics, Netherlands; **Alcatel-Thales III-V Lab,** France; **Genexis,** Netherlands; Photon Design, UK; Filarete, Italy; University of Cambridge, UK; FiberSensing, Portugal; Baas B.V., Netherlands; **Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institute,** Germany; **MiPlaza, Philips Research,** Netherlands; VanderHoekPhotonics, Netherlands; **EPIC,** France.

Website: www.europic.org/

EPIC is part of **OLED100.eu,** an integrated research project which brings together a consortium of experts from leading industry and academic organizations to accelerate the development of organic light-emitting diode (OLED) technologies in Europe. The project receives €12.5 million funding by the European Community's Seventh Framework Programme to form the technological basis for efficient OLED applications for the general lighting industry in Europe. Targets set by the project include achieving 100 lumens per watt power efficiency, more than 100,000 'lifetime hours', a unit area of 100cm by 100cm and costs of €100 per square meter or less.

Partners in the OLED100.eu consortium are: Bartenbach LichtLabor Austria; **EPIC,** France; Evonik Degussa, Germany; Fraunhofer Institute for Photonic Microsystems, Germany; Microsharp Corporation, UK; Novaled, Germany; Océ Technologies, The Netherlands; OSRAM OS, Germany; **Philips Technologie, Business Center OLED Lighting,** Germany; **Philips Technologie Forschungslaboratorien,** Germany; Physikalisch-Technische Bundesanstalt, Germany; Saint-Gobain Recherche, France; Siemens, Germany; Technische Universität Dresden, Institut für Angewandte Photophysik, Germany; Universiteit Gent, Belgium.

The European Commission's ICT for Energy Efficiency (ICT4EE) has granted its Best ICT4EE Award to the OLED100.eu project. OLED100.eu has received the First Place Award for its ICT contribution by showing that adoption of OLED lighting can lead to substantial improvements in energy efficiency and for its efforts to educate the public and disseminate the OLED (organic LED) lighting vision.

Website: www.oled100.eu

ACCORD: the Advanced Components Cooperation for Optoelectronics Research and Development undertaken in September 2006, continued in 2009. ACCORD's purpose is to purchase at marginal cost pre-competitive photonic devices from innovative European companies and put them in the hands of European researchers and students, in order to facilitate the transfer of device evaluation results to potential end-users, assisting companies to access new markets and new applications.

The ACCORD Consortium partners are: **IBBT, Ghent University**, Belgium; **EPIC**, France; **Multitel,** Belgium; **Haute Ecole ARC**, Switzerland; **Wroclaw University of Technol**ogy, Poland; **Sagem Défense Sécurité**, France; Scottish Optoelectronics Association, United Kingdom; **Perfos**, France.

Website: www.ist-accord.org

The ACCORD project terminated end of April 2010. A newly-funded FP-7 European project called NEXPRESSO aims to extend these objectives. It started on 1 June 2010 and will end on 31 May 2013.

Website: http://www.nexpresso.eu/

NEW MEMBERS 2009/2010

In 2009 / 2010 EPIC welcomed **12 new members**

Genexis

Genexis is a trendsetting European company focused on the development, manufacturing and marketing of active equipment dedicated to fiber-to-the-home (FTTH) networks. The company is located in Eindhoven, The Netherlands.

EPIC contact is Gerlas van den Hoven, CEO
Email: g.vdhoven@genexis.nl

Gooch & Housego

Gooch & Housego is a manufacturer of precision optical components based upon a number of key enabling technologies: Fibre Optics, Single Crystal Growth Precision Optics, Optical Coatings, Acousto-Optics, RF Electronics, Electro-Optics.
Formed from leading established companies in these complementary technologies, Gooch & Housego is a leading supplier of critical components to the world's major optical and laser system manufacturers.

EPIC contact is Andrew Robertson,
VP Business & Technology Development
Email: arobertson@goochandhousego.com

iXFiber

iXFiber is a leading independent manufacturer of active and passive specialty optical fibers and components based on Bragg grating technology, and sub-assemblies, located in Lannion, France. An important product line is based on the design and manufacture of specialty fibers for optical gyroscope navigation systems.

EPIC contact is Benoît Cadier, CEO
Email: benoit.cadier@ixfiber.com

Multiwave Photonics

Multiwave Photonics is located in Moreira da Maia, near Porto, Portugal, and is specialized in next generation pulsed fiber lasers. Multiwave also offers other innovative optical sources based on fiber-optic technologies, as well as product design, product development and engineering services aimed at developing and selling cost-effective and reliable products and solutions.

EPIC contact is Jose R. Salcedo, CEO
Email: jsalcedo@multiwavephotonics.com

Multitel

Multitel is an information technology centre of excellence located in Mons, Belgium. Its expertise covers speech and signal processing (voice synthesis and recognition, etc.), photonics (optical amplification, fibre lasers, etc.), image processing (video surveillance, etc.) and networking activities (voice over Internet protocol, traffic simulation, protocol emulation, etc.).

EPIC contact is Domenico Giannone,
Head of Photonics Department
Email: domenico.giannone@multitel.be

Onefive Photonics

Onefive Photonics is a leading developer and manufacturer of ultrafast and single-frequency lasers, located in Zürich, Switzerland. Onefive has a strong expertise in building custom laser systems for the OEM and R&D laser market.

EPIC contact is Lukas Krainer, CEO
Email: lukas.krainer@onefive.com

Quebec Photonic Network

The Quebec Photonic Network is a non-profit organisation whose mandate is to contribute to the advancement of photonics by serving as an information hub and providing its members with networking services.

EPIC contact is Michel Têtu, President and CEO
Email: michel.tetu@photoniquequebec.ca

Silitec

Silitec Fibers is located close to Neuchatel, Switzerland. Its activities are optical fibers production, research & development, consulting, planning and training.

EPIC contact is Etienne Friedrich, Business Development Manager
Email: etienne.friedrich@silitec.ch

TNO

TNO (Netherlands organisation for applied scientific research. in Dutch: Toegepast Natuurwetenschappelijk Onderzoek) joined EPIC on January 1, 2010. TNO is an independent research organization whose expertise and research contribute to the competitiveness of companies and organisations.

EPIC contact is Maarten Bijl, Science and Industry, Materials Technology
Email: maarten.bijl@tno.nl

Tridonic

Tridonic, based in Austria, is a technology leader in the development and manufacturing of energy efficient LED light sources. With a long established expertise in the highest quality white light products and optical systems, Tridonic supplies LED components, LED modules and LED light engines to the general lighting market. Tridonic is a company of the Zumtobel Group, one of the few global players in the lighting industry and a European market leader in professional lighting.

EPIC contact is Stéphane Vasse, Responsible for Business Intelligence
Email: stephane.vasse@ledonlighting.com

University of Sheffield

Semiconductor Materials & Devices of the University of Sheffield in the UK has a long-standing reputation for international class work on semiconductor materials and electronic and opto-electronic devices. The SMD group, together with the EPSRC National Centre (NC) for III-V Technologies forms the leading academic presence in III-V semiconductor work in the UK.

EPIC contact is Prof. Kristian Groom, Research Fellow at the Electronic & Electrical Engineering Department
Email: K.M.Groom@shef.ac.uk

PolyPhotonix

PolyPhotonix is a OLED-lighting company, based in Sedgefield UK, focusing on display technologies and the manufacturing of OLED panels with high yields and low-cost..
At the end of 2009, PolyPhotonix unveiled its LED dress, designed by Gareth Pugh. This is made possible thanks to flexible LED lighting panels alongside low-cost long-life solar cells.

EPIC contact is Richard Kirk, CEO
richard@polyphotonix.com

LIST OF EPIC MEMBERS

Aifotec Fiberoptics
Photonic components manufacturing

Aixtron
Thin-Film Deposition Equipment

ALSI
Laser Separation and Dicing

Alphanov
Lasers, Photonics Applications,
Laser micromachining

Cambridge Display Technology
Optoelectronic Polymer Technology

CEA-LETI
Microphotonics Technology Development

CEIT
Education and Research

Centre for Nanophotonics FOM
Nanophotonic Technologies

Chalmers University of Technology
Education and Research

CIP Centre for Integrated Photonics
Optoelectronic Components

DLR - German Aerospace Center
Project Funding and Management

Dow-Corning
Photonics Materials & Custom Services

Edmund Optics
Passive Optical Components

Eolite Systems
Fiber Laser

Ericsson
Microelectronics

ESKO Graphics
Graphics Reproduction and Display

Exalos
Superluminescent Diodes

FiconTEC
Advanced Packaging & Test Equipment for Photonics

France Telecom R&D
Telecommunications

Fraunhofer Institute for Applied Optics and Engineering
Precision Optical Coatings

Fraunhofer Institute for Laser Technology
Laser Sources and Applications

Fraunhofer Institute for Material and Beam Technology
Laser Materials and Surface Processing

Fraunhofer Institute for Reliability and Microintegration
Photonics Packaging

Fraunhofer Institute for Telecommunications
Heinrich Hertz Institute
Technology for Communications

Genexis
Equipment for FTTH Networks

Gooch & Housego
Precision optical components & sub-assemblies

Haute Ecole ARC Ingénierie
Education and Research

Horiba Jobin Yvon
Optical Spectroscopy

ICFO – Institut de Ciencies Fotoniques
Education and Research

Imagine Optic
Sensing equipment & adaptive optics

IMB-CNM (Microelectronics Institute of Barcelona, CSIC)
Education and Research

Innolume
Quantum-dot Lasers

INSA-Lyon
Education and Research

INTEC Department of Information Technology
Education and Research

IQE
Epitaxial Thin Film Fabrication

Istituto Superiore Mario Boella / Politecnico di Torino
Education and Research

iXFiber
Specialty Optical Fibers & Components

Kista Photonics Research Center
Microphotonics Technologies

Laser Diagnostic Instruments
Lasers

Merge Optics
Compact Photonic Modules

MiPlaza
Optoelectronic Device Fabrication

Multitel
Fibre based Components

Multiwave Photonics
Pulsed Fiber Lasers

Oclaro
Optical Communications Components

Onefive
OEM Laser Modules

ONERA
Aerospace Laboratory

Opticsvalley
Photonics Industry Development

Optical Research Centre Finland
Photonics Industry Development

OptoGaN
Solid-State Lighting

Perfos
Specialty Optical Fiber Technologies

Philips Lighting
Solid-State Lighting

PicoGiga International
Solid-State Lighting

PolyPhotonix
OLED Lighting Solutions

Quantel
Solid-State Lasers

Quebec Photonic Network
Photonics Industry Development

Robert Bosch GmbH
Electronics

SAES Getters
Photonics Components and Materials

Sagem Défense Sécurité
Defence, Space and Aeronautics

Scuola Superiore Sant'Anna
Eduction & Research

Sharp Laboratories Europe
Optical Imaging

Silitec Fibers
Optical Fibers

SPI Lasers
Fibre Lasers

Swisslaser
Industrial Association

3S Photonics
Optical Communications Components

Technical University Berlin
Education and Research

Time-Bandwidth Products
Laser Sources and Applications

TNO
Netherlands Organisation for Applied Scientific Research

Tridonic
High-performance LED Light Sources

Umicore
Germanium Substrates Thermal Imaging Optics

University of Naples "Federico II"
Education and Research

University of Sheffield
Education and Research

University of Swansea
Education and Research

u^2t Photonics
Optical Communications Components

UPS^2
Ultra Precision & Structured Surfaces

Vigo System
Sensors

VI Systems
Optoelectronic Devices

Wrocław University of Technology
Education and Research

Yenista
Fiber optic solutions

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