

Activity Report 2013



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FOREWORD

The past year has been a year of great achievements for EPIC. We celebrated our 10 year anniversary and could not have done it in a better way than by excelling in every activity area we embarked upon. I would like to take this opportunity to commend EPIC on its achievements in being the voice of the industry, reaching out to both the industry and policy makers, continuing its work on EU funded projects and of course on the publications and industry events that the Association has organised. In addition, the year has been marked by a major growth in membership of the Association, allowing us to deliver even stronger benefits to a wider audience.

I hope that once you have had a chance to glance through this outline of the work carried out by EPIC in the past year that you join me in recognising that our sector is being powerfully represented by your Industry Association at both a European and a Global level.

A handwritten signature in blue ink, reading 'Drew Nelson'.

Drew Nelson, EPIC President

INTRODUCTION



As EPIC celebrated its 10th anniversary it was encouraging to see that our industry combines ingenuity and creativity to further technology advancement and creates applications that are addressing our world's most critical societal challenges. EPIC's 148 member build on the richness and diversity of the industry; through fostering openness to explore collaboration opportunities. At the various EPIC events it is evident that a strong interlink and partnership among the companies exists. The collaboration that can be seen takes a great many forms: you collaborate on EU funded project proposals, you provide input in the development of market reports, you take part in commercial trade missions- all in all you make our industry a lively and very active community!

EPIC is an ever-growing community representing the Photonics sector in all its variations and it was pleasing to review not only the work that was done by our Association so that we can present this report to you but also to see that our sector's importance is recognised in many countries around the world e.g. France's President François Hollande visited the laser manufacturer Amplitude Systèmes and in the UK Business Secretary Vince Cable visited RoFin-Sinar and SPI.

Enjoy this snapshot of the activities of EPIC in 2013.

A handwritten signature in blue ink that reads "Carlos Lee".

Carlos Lee, Director General

EPIC – European Photonics Industry Consortium
carlos.lee@epic-assoc.com



EPIC – ADVOCACY INITIATIVES

EPIC OUTREACH

- EPIC president Drew Nelson appointed photonics technology representative on European Commission Key Enabling Technologies High Level Group
- EPIC submitted, together with other associations, an answer focused on GaAs and InP, to the survey “The potential impact on industrial competitiveness of restrictions on certain CMR 1A and 1B substances in articles”
- EPIC organized 2 meetings with European Commission DG Research and DG Climate Change
- EPIC Phoenix Award recognizing entrepreneurship presented to Advanced Fibreoptic Engineering Ltd



Briefing prior to visit to the European Commission

*European Commission at EPIC 10th anniversary:
Thomas Skordas, Photonics Head of Unit and Anne
Glover, Chief Scientific Advisor to the President of the
European Commission*

*Nick Martin, CEO from
AFE receives inaugural
EPIC Phoenix Award*



*Anne Matsuura from OSA
presents appreciation at
the occasion of the 10th
Anniversary of EPIC*



*Drew Nelson represents EPIC at
the European Commission Key
Enabling Technologies
High Level Group*

EPIC "ADOPT A CLASSROOM" INITIATIVE

We launched EPIC "Adopt a Classroom" and distributed education training kits to schools in Europe and around the world. The program will excite each year an additional 10.000 children on the science of light.

www.laserclassroom.com/EPIC

The "Light, Lasers and Optics" educational kits are sponsored by companies 195 EUR and made available at no cost to teachers. The overarching goal is to support and foster a generation of students who are motivated and prepared to become the engineers and technical professionals needed to allow companies in Europe to remain creative and competitive. The project is possible thanks to the support received from sponsors.

- **Gold Sponsors** (10 kits): AFE (Advanced Fibreoptic Engineering), FLIR, Jenoptik.
- **Silver Sponsors** (5 kits): ESP KTN, Fraunhofer Centre for Applied Photonics, FRT (Fries Research & Technology), SWISSPHOTONICS.
- **Bronze Sponsors** (3 kits): Laser Optics (International Trade Fair and Congress for Optical Technologies and Microsystems), Novald, Vertilas (2 kits): ALPHA Route des Lasers, Ibakh, IDEX Optics & Photonics, Time-Bandwidth Products (1 kit): Aston University, Eolite Systems, Facoltà di Ingegneria - DIIES, Haute Ecole ARC, Innolume, Jordan Valley Semiconductors, Laytec, Modulight, Nanovation, Nextrom, Onefive, Photonics BW, VLC Photonics.

Translation

The following EPIC members and organizations volunteered translation into various languages:

- **Catalan:** La Universitat Politecnica de Catalunya-BarcelonaTech (UPC), L'Associacion Europea de Nanofotonica.
- **Finnish:** Photonics Finland, Tampereen LUMATE-keskuksen.
- **French:** IDIL Fibres Optiques, Haute Ecole Arc.
- **German:** Fraunhofer IWS, TSB Technologiestiftung Berlin.
- **Italian:** Istituto Salesiano Don Bosco (Verona), Scuola Superiore Sant'Anna-Istituto TeCIP.
- **Spanish:** IMB-CNM-Instituto de Microelectronica de Barcelona, Instituto de Educacion Secundaria Ramiro de Maeztu.
- **Swedish:** Chalmers.
- **United Kingdom:** English is the original version.



Children around the world discover photonics thanks to the "EPIC Adopt A Classroom" laser training kit. EPIC animates Photonics workshop at Greenlight4Girls

EPIC SPEAKS-UP FOR THE INDUSTRY

Throughout the year EPIC made sure to spread the word about the industry at 10 different events around the world, namely:

- **BRUSSELS** (conference moderator): Nanotechnologies as the key to value creation.
- **SHANGHAI** (conference keynote): Laser World of Photonics China “Europe Focuses on Key Enabling Technologies - Opportunities for the Global Photonics Community”.
- **CARTAGENA** (Spain): Leveraging Europe’s Ecosystem to the Benefit of Photonic Start-Ups and SMEs.
- **TAMPERE** (Finland): 7th International Summer School “New Frontiers in Optical Technologies”.
- **BERLIN** (Germany): Handlungsfeldkonferenz Optik für Kommunikation und Sensorik – Fasertechnologie.
- **MUNICH** (Germany): Biophotonics session at Laser World of Photonics.
- **DUBLIN** (Ireland): EuroNanoForum on “European perspective- how do we keep industrial production + R&D in Europe in the photonics and electronics industry?”.
- **RIGA** (Latvia): Photonics and Quantum Technologies for Smart Specialization in Latvia and Baltic Countries.
- **LEIDEN** (The Netherlands): PhotonicsNL event.
- **BURGDORF** (Switzerland): Photonics in Europe - From Science to Market "Exploiting R&D results to innovate in Photonics".

EXTERNAL REPRESENTATION

EPIC also made sure to be present at the following events of relevance to its members:

- 1st Innovation Network workshop Substitution Critical Raw Materials
- Advanced Manufacturing for Clean Production
- ASPICE meeting (Cluster Collaboration)
- Briefing European Commission Mission for Growth to Russia
- European Defence Agency CapTech3 meeting
- European Commission Key Enabling Technologies High Level Group
- European Industrial Policy: A Partnership for Growth
- IMEC Technology Forum
- Photonics technologies for oncology
- OPTRO committee meeting on Defence and Security
- Photonics21 annual and working group meetings
- Printed Electronics Europe
- Safeguarding Defence Technologies
- SEMI Brussels Forum
- Smart Specialisation for Micro and Nano-electronics as a Key Enabling Technology
- Open Days - Integrating Key Enabling Technologies in your Smart Specialisation Strategy



EPIC hosts 18th meeting of International Optoelectronics Association with participants from Europe, USA, Canada, Taiwan, Japan, Korea.

Since the creation of the association, one of EPIC's key areas of activity has been to produce both market and event reports of interest to the membership and to the Photonics arena at large. A library of all EPIC reports published is available on the EPIC extranet.







NEW MARKET REPORTS PUBLISHED IN 2013

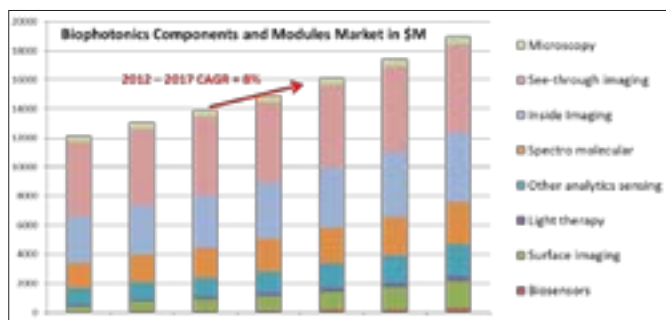
- *Biophotonics Technologies and Market Report* "Life Sciences & Healthcare Applications are Driving Biophotonics Market Growth". This report provides extensive market data in \$M from 2011-2017, at different levels: from the total biophotonics-related market and the biophotonics system market to the biophotonics components and modules market.
- *The LED Fabs Database* gives a complete vision of the worldwide LED players with products, positioning on the value chain and production capacity. In a user-friendly Excel format, it allows search and statistics for customer's identification, market and technology analysis. It includes data on: GaN LED Manufacturers, InGaAlP LED Manufacturers, LED Packagers.
- *Photonic Ecosystem Study*, database in spreadsheet format, and map of 5000 companies active in the field of photonics in Europe: companies manufacturer of equipment/material, software/engineering & consultancy, reseller/distributor, academia & research organizations, clusters, and other actors in the photonics ecosystem.
- *Database of 40 clusters and associations in Europe*, available as a spreadsheet, provides a resource at a regional and national level for companies.

EVENT REPORTS

Originally initiated by the founder of EPIC Dr. Thomas Pearsall in 2003, these short conference reports are written with emphasis on exploring technical and business opportunities for the members of EPIC. In the past 12 months the following reports were published:

- Photonic Integrated Circuits 2013 in Rueschlikon, Switzerland (Bert Offrein, IBM)
- Biophotonics Workshop 2013 in Maastricht, The Netherlands (Jacques Cochard, TEMATYS)
- Strategies in Light Europe 2013 in Munich, Germany (Calogero Sciascia, SAES)
- MicroTAS 2013 in Freiburg, Germany (Andreu Llobera, CNM CSIC)
- LED Symposium 2013 in Bregenz, Austria (Heinz Seyringer, Zumtobel)
- OFC 2013 in Anaheim, USA (Ronald Broeke, Bright Photonics)
- Light Fair International 2013 in Philadelphia, USA (Alessio Corazza, SAES Getters)
- Smart Lighting 2013 in Frankfurt, Germany (Goncal Badenes, ICFO)
- Photonics West 2013 in San Francisco, USA (Arnaud Zoubir, ALPhANOV)

Types of Photonic Systems	Sensing & imaging systems	Communication systems	Screens, displays, projections, ...	LED, OLED, lamp systems	Photovoltaic systems	Laser & production systems
Photonic Functions	Acquiring information	Transmitting information	Delivering information	Light providing	Energy providing	Manufacturing
European Production (Billion €)	26,9	7,2	3,5	12,5	4,3	9,4
Examples						



"I take pride in being a member of the Board of Directors of EPIC as I consider the association to be a premier player in every way"

Heinz Seyringer,
Head of Research Collaborations,
Zumtobel Group

EPIC IN THE MEDIA

EPIC also managed to raise awareness through its presence in various media outlets. The following is a sample of the most prominent coverage in the past 12 months.

- Interview with International Innovation Research Media
- Interview with Novus Light
- EPIC covered in article "Optikbranche im Aufwind - das Cluster Optik & Mikrosystemtechnik Berlin-Brandenburg"
- Article in Optik & Photonik "Die Biophotonik bereitet sich darauf vor, Massenmärkte zu erschließen 2013"
- Article in Bodo's Power "Do U LinkedIn?"
- Article in European Energy Innovation "Smart Lighting: Energy Efficient Streetlights with Comfort"
- Article in European Energy Innovation "Photonics Technologies Driving Renewable Energy"
- Article in BioOptics World "Four Segments of Biophotonics Market Growth"
- Article in Optical Interconnects "European industry, are we ready!"
- Editorial in Optik & Photonik "Looking Ahead - 10th anniversary of the European Photonics Industry Consortium"
- Editorial in Electro Optics
- Editorial in Optik & Photonik
- Editorial in OptoIndex "Information is critical in emerging industries"

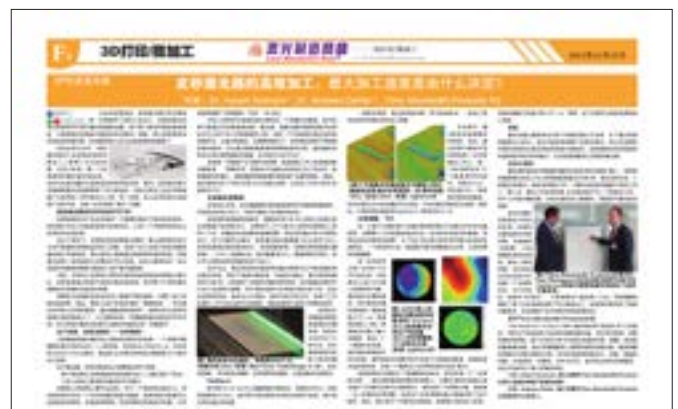
"I particularly appreciate the work that EPIC does with the EU, as this means that the industry gets a much closer insight into the thought process and influence areas of interest to our company"

Hans van den Vlekkert
CEO, LioniX

EPIC MEMBERS IN THE MEDIA

More important than creating media coverage for the association, EPIC facilitated media coverage for various of the member companies throughout the last year.

- Onefive, EOLITE Systems, Tematys, Oxxius, Modulight, Rofin Sinar quoted in "Laser Focus World 2013: Laser markets, trends, analysis"
- LEDON in European Energy Innovation "Energy Efficient Lighting: Organic Light Emitting Diodes"
- Nanovation in Laser Focus World "Zinc oxide moves further into the ultraviolet"
- Suss MicroOptics in Laser Focus World "Wafer-Scale Micro-Optics Fulfills Promise"
- TU Eindhoven, Smart Photonics, Fraunhofer HHI, Oclaro in Photonics.com "Standardized Process Could Revolutionize Photonic Integration"
- Alphanov in Photonics Spectra "Lasers Produce Bio-Inspired Surface Functions"
- Time-Bandwidth Products in China Laser Manufacture News



EPIC moderates press conference "Photonics Industry in the UK"

EPIC – PIVOTAL ROLE IN THE PHOTONICS COMMUNITY

OUTREACH VISITS

EPIC is committed to get to know its members and the actors of the photonics industry. In 2013, the Director General visited personally 48 companies across 10 countries to get an in-depth knowledge of its member and evaluate industry opportunities and priorities. Company visits were carried out to:

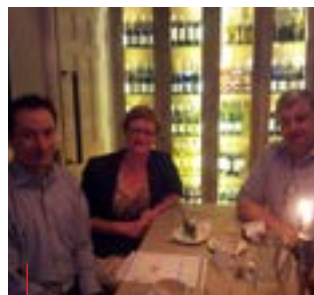
- AFE (United Kingdom)
- ALSI (The Netherlands)
- Altechna (Lithuania)
- Association Aéronautique Astronautique de France
- Avantes (The Netherlands)
- Bochum University (Germany)
- BOD Group (Lithuania)
- Center for Physical Sciences and Technology (Lithuania)
- Eksma Optics (Lithuania)
- Ekspla (Lithuania)
- ELAS (Lithuania)
- ESP KTN (United Kingdom)
- Euripides (France)
- Evana (Lithuania)
- Exalos (Switzerland)
- Fraunhofer ILT (Germany)
- IBM (Switzerland)
- Imagine Optic (France)
- Imec (Belgium)
- Institut d'Optique Graduate School (France)
- Intune Networks (Ireland)
- Light Conversion (Lithuania)
- LioniX (The Netherlands)
- LMDC (France)
- Modulight (Finland)
- Multitel (Belgium)
- Nanofoot (Finland)
- Novation (France)
- Next Scan Technologies (The Netherlands)
- Okmetic (Finland)
- Onera (France)
- Picosun (Finland)
- Pie Photonics (Ireland)
- Rofin (United Kingdom)
- Smart Fibres (United Kingdom)
- Smart Photonics (The Netherlands)
- SPI Lasers (United Kingdom)
- Spinverse (Finland)
- SQS (Czech Republic)
- Suss MicroOptics (Switzerland)
- TE Connectivity (The Netherlands)
- Tematys (France)
- Teravil (Lithuania)
- Thales (France, United Kingdom)
- Technical University of Tampere ORC (Finland)
- University of Latvia
- Workshop of Photonics (Lithuania)
- Z-Light (Latvia)



Nanovation CEO Ferechteh H. Teherani showcases new 4" wafer production system



Suss MicroOptics CEO Reinhard Voelkel shows a micro-optical light homogenizer used in the MO Exposure Optics illumination system



Anke Lohmann, Director of Photonics and Steve Welch, Director at ESP KTN in United Kingdom



Christian Velez, CEO, Exalos in Switzerland

PRESENCE AT TRADE SHOWS

Apart from on-site visits EPIC was also present at trade shows:

- CS International, organised by Compound Semiconductor, in Frankfurt
- ECOC, the leading European fibreoptic forum, in London
- EU PVSEC, European Photovoltaic Solar Energy Conference and Exhibition, in Paris
- ILAS, International Laser Applications Symposium, in Nottingham
- Laser World of Photonics in Munich
- OSA Advanced Solid-State Lasers in Paris
- Photonex UK in Coventry
- Photonics West, co-exhibiting with Photonics Bretagne, in San Francisco



Promoting the strengths of the European photonics industry and EPIC members

STRENGTHENING THE COMMUNITY

EPIC also took an active role in strengthening the Photonics community by creating fora for the industry to meet, discuss challenges and opportunities, and explore collaboration opportunities. These EPIC events are typically on invitation to ensure a relevant audience, and restricted in size to ensure effective networking. EPIC members drive the agenda and have registration priority at all Association events.

- EPIC AGM Annual General Assembly. 94 executive-level attendees.
- EPIC B2B Roundtable on "Photonics Technologies for Aerospace, Security, and Defence", hosted by THALES in Glasgow. The purpose of the EPIC B2B ASD Roundtable was to facilitate the exchange of requirements and capabilities between system suppliers of the photonics industry and Aerospace, Security and Defence technology integrators with particular focus on the capability areas of information and protection.
- EPIC Biophotonics workshop "Unmet Health Care Needs as opportunities for Photonics Technologies", hosted by the Maastricht UMC+ hospital. The workshop addressed Electronics & Optics for Point-of-Care Devices for Chronic and Infectious Diseases, and Photonics Components for Medical Imaging & Microscopy.
- EPIC PIC workshop "Meet or eat? Collaboration and/or Competition in Photonic Integrated Circuit?", hosted by IBM, in Rüschlikon. More than 80 participants, mostly from industry, discussed in a frank and an open-minded environment the challenges in integrated photonics.
- EPIC sponsored Silicon Photonics workshop Tuscany-Europe 2020: New Frontiers of Silicon Photonics
- EPIC LED Lighting workshop, in conjunction with Strategies in Light, in Munich, showcased EPIC members' competences.



Photonics Technologies for Aerospace, Security, and Defence at THALES in Glasgow

“Companies don’t make business, people make business and then engage their companies. EPIC plays an efficient role in connecting experts along the value chain.”

Torsten Vahrenkamp, CEO, ficonTEC

- EPIC Pavilions in UK, India, USA features co-exhibitors: Hyperion Development, ixFiber, LaserPoint, Light-Trans, Prima Electro, Westland International, ...
- EPIC hosted the 18th meeting of the International Optoelectronics Association, the market data from USA, Canada, Japan, Taiwan, Korea is available to the members of EPIC.
- EPIC 10th Anniversary. The EPIC anniversary was celebrated through a rich combination of activities; bringing together the focus on public policy as well as the European photonics community cohesion. Meetings with the European Commission, an EU Funding session, the presentation of the EPIC Phoenix Award, and the two panel discussions on technology and business made-up the core of the event. The occasion concluded with a festive and entertaining dinner which provided an additional networking opportunity in a convivial environment. 160 delegates from 26 countries attended the occasion, including executives from industry and representatives from public authorities. EPIC was also recognized by OSA for its sustained effort in promoting the photonics industry in Europe for a decade.



EPIC technology workshop at IBM in Rüschlikon

EPIC Biophotonics workshop includes a visit of the Maastricht hospital



EPIC – MEMBERSHIP DEVELOPMENT

In the past year EPIC was pleased to welcome an exceptional additional 47 companies to its membership:

- Advanced Fibreoptic Engineering (Fibreoptic)
- ALPHA Route des Lasers (French cluster)
- Alter Technology TÜV Nord (Testing)
- AMO (Nanofabrication)
- art photonics (Lasers)
- ASE Optics (Optical engineering)
- Australian National University
- Bright Photonics (Design house for Photonic Integrated Circuits)
- Caliopa (Optical transceivers)
- Center for Physical Sciences & Technology (Research institute)
- Fotonika LV (Latvia cluster)
- Hamamatsu (Components)
- Heraeus Noblelight (IR & UV LED)
- HiSilicon (Semiconductor)
- Huawei (Electronics)
- IBAKH (Engineering consultancy)
- IDIL (Fibres optics system & components)
- IHP (Silicon photonics research)
- IKO Science (Sensors)
- IMT (Precision on glass)
- Institut d'Optique Graduate School
- Laser World of Photonics (Exhibition)
- Laytec (In-situ optical metrology)
- LMDC (Laser & medical devices)
- Nanovation (Materials)
- Next Scan Technologies (Laser material processing)
- NOVAE (Femtosecond lasers)
- OPI Photonics (High power laser systems)
- OpTecBB (Cluster Optec-Berlin-Brandenburg)
- Phoenix (Design and software)
- Pie Photonics (Optical measurement)
- PNO Consultants (Innovation and funding consultancy)
- Powerlase (Lasers)
- SAFC (Chemicals and materials)
- SMART Photonics (III-V foundry service)
- STMicroelectronics (Semiconductors)
- TechnoSpark Nanocenter (Russia technopark)
- Tematys (Consulting)
- Thorn (Lighting)
- Tridonic (Lighting)
- Tyndall (Research organization)
- Umicore (Materials)
- University College London (Department of Electronic & Electrical Engineering)
- University of Nottingham
- UPC-CD6 (Innovation centre in Barcelona area)
- VTT (Technical research centre)
- WJA Electron (e-beam technology)
- Yelo (Test equipment)

EPIC SPONSORS

EPIC would like to thank the following organizations for sponsoring EPIC events and reports in 2013.



IDENTIFYING FUNDING OPPORTUNITIES FOR OUR MEMBERS

- EPIC EU Funding meeting information day and brokerage: 1 October (France), 15 October (United Kingdom), 29 October (France), 13 December (Belgium).
- Through the Photonics Research Funding in Europe group that EPIC manages on LinkedIn, EPIC members have access to a unique channel of 780 registered individuals.
- The EPIC membership directory, which includes the description of each member as well as their experience in European projects, has been downloaded 537 times.
- Participation at Photonics21 meetings and Brokerage events to identify opportunities and relay opportunities to potential EPIC members as project partners.

EU PROJECTS WHERE EPIC IS INVOLVED



- **LIFT** - Leadership In Fibre Laser Technology, is a collaborative, large-scale integrated project funded by the NMP Directorate in FP7. This 16 million EUR project will expand the limits of advanced materials processing applications through a new generation of high-brilliance fibre-based lasers.



- **NEXPRESSO**, the "Network for EXchange and PRototype Evaluation of photonicS components and Optical systems" is funded in FP7. The consortium purchases at marginal cost pre-competitive photonic devices from innovative companies and puts them in the hands of researchers at no net cost to the university or to the company that provides the devices.



- **Eco-LaserFact** (ECO-efficient LASER technology for FACTories of the future), funded under EU Interreg IVB NWE framework, has the objective to facilitate the transfer of know-how to SMEs for improved eco-friendly and cost effective laser based processes.

WHAT IS EPIC?

EPIC is the industry association that promotes the sustainable development of organisations working in the field of photonics in Europe. We foster a vibrant photonics ecosystem by maintaining a strong network and acting as a catalyst and facilitator for technological and commercial advancement. EPIC publishes market and technology reports, organizes technical workshops and B2B roundtables, coordinates EU funding proposals, advocacy and lobbying, education and training activities, standards and roadmaps, pavilions at exhibitions.

BOARD OF DIRECTORS

- Andy Carter, Chief Scientist, Oclaro (United Kingdom)
- Bruno Mourey, Vice President Optics and photonics, CEA LETI (France)
- Drew Nelson, President & CEO, IQE (United Kingdom)
- Hans-Joachim Grallert, Director, Fraunhofer HHI (Germany)
- Heinz Seyringer, Head of Research Collaborations, Zumtobel Lighting (Austria)
- Kurt Weingarten, Founder and CEO, Time-Bandwidth Products (Switzerland)
- Maurizio Zuffada, Director Advanced R&D, STMicroelectronics (Italy)

Not yet member of EPIC? Join today and be part of a dynamic community eager to explore technology and business collaborations and partnerships.

ANNUAL MEMBERSHIP FEE

- Company with annual revenue over EUR 100 million: EUR 6000
- Company with annual revenue between EUR 10-100 million: EUR 4000
- Company with annual revenue under EUR 10 million: EUR 2000
- Start-up (company less than 2 years): EUR 500
- University and Research Institute: EUR 2000
- Association and Cluster: EUR 2000
- Other: EUR 1000

EPIC MEMBERS





photonic revolution!



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