

# EPIC ACTIVITY REPORT 2019



EXPLORING MARKETS  
EXPANDING APPLICATIONS  
CONNECTING PEOPLE

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EPIC PRESIDENT

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**W**hat an amazing year it has been. We now have more than 500 members and are on track to become the largest photonics industry association in the world. For several years now, the association has been constantly growing. This year, another 105 additional companies decided to become member and engage in our active network.

**Action and Engagement.** The number of activities organized exceed a whopping 100. The members are truly highly engaged too: 1365 experts and leaders from 771 companies from 51 countries attended 18 technology meetings, 14 webinars and TechWatch events, and 70 networking events and group company visits. The staff has been more active than ever, visiting 190 companies, exploring 45 exhibitions and conferences, and chairing, moderating and presenting at 40 events.

**Leading Industry Association.** Throughout the year, the association shared 10 additional market reports to assist members in market analysis and business expansion. To promote our members, 84 editorials, articles, interviews, webinars, and videos were published putting 117 EPIC members in the spotlight. We continue striving for global collaboration and MoUs were signed with the Virtual Reality & Augmented Reality Association, and with the Ethernet Alliance, bringing our members closer to the end-user community to understand and address their real challenges and pain points.

**Recruitment and Investment.** Addressing critical issues for the industry, we see a huge responsibility towards employment within the photonics sector. This is why we launched the largest photonics employment website with more than 1000 jobs only from our members. Another challenge is access to capital. Since 2015, when we supported the inaugural European Photonics Venture Forum, the association has maintained limited contact with the investment community. As we enter a new era of the association, we will be putting more effort in ensuring that in particular small and medium members of the association can leverage the incredible network made available through the association.

Serving more members requires additional resources, several new staff joined the association and I am proud of the high competence of each team member and the synergy they bring to each other and the association. It is a great honour for me to serve as president of this association, and I trust you too are proud of being EPIC!

Benno Oderkerk, CEO, Avantes

# EPIC – THE ASSOCIATION

EPIC – European Photonics Industry Consortium – is the industry association that promotes the sustainable development of organisations working in the field of photonics.

We foster a vibrant photonics ecosystem by maintaining a strong network and acting as a catalyst and facilitator for technological and commercial advancement.

***“EPIC is an absolutely genius network. Especially for small members to get good contacts, which in my view is absolutely important for start-ups. EPIC is not comparable with other networks, where you must pay a lot and get nearly nothing. So, the idea and the realization is really good.”***

Oliver Prochnow, Managing Director, VALO Innovations



## EPIC is owned by its members and managed by its Board of Directors

Benno Oderkerk, CEO, Avantes (The Netherlands)

Christian Bosshard, Vice President, CSEM (Switzerland)

Jan Meise, CEO, AMS Technologies (Germany)

Martin Schell, Director, Fraunhofer HHI (Germany)

Maurizio Gattiglio, Vice President, Prima Electro, and Chairman & CEO, Convergent Photonics (Italy)

Petteri Uusimaa, Vice President & CTO, Modulight (Finland)

Samuel Bucourt, CEO, Imagine Optic (France)



Board meeting hosted by Convergent Photonics in Torino, Italy



Board meeting hosted by CSEM in Zurich, Switzerland

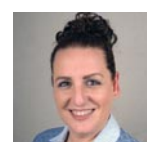
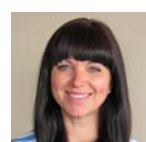
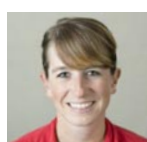




EPIC publishes market and technology reports, organizes technology workshops and B2B roundtables, takes part in advocacy and lobbying, promotes education and training activities, sets standards and roadmaps, hosts pavilions at exhibitions, connects with investors, scouts companies, and helps recruit skilled talent.

## EPIC is supported by a professional team of dedicated employees

Ana Gonzalez, PhD, R&D Manager  
 Anna Feis, MSc, CFO Investment Advisor  
 Auri Ripoll, MSc, Marketing Manager  
 Carlos Lee, MBA, Director General  
 Elena Beletkaia, PhD, Project Leader  
 Francesca Moglia, PhD, Project Leader  
 Helena Jelinkova, Events Manager  
 Jessica van Heck, BEng, Marketing Manager  
 Jose Pozo, PhD, Director of Technology  
 Neringa Noreikienė, MSc, Events Manager  
 Sana Amairi-Pyka, PhD, Project Leader  
 Susette Germer, PhD, Public Relations Manager



***“The relationships enabled by EPIC are real and meaningful, and the market knowledge shared within the group is continuous and relevant. Their smart and enthusiastic leadership team proved their stellar reputation by ensuring that our membership got a fast return on investment; our expectation is that there are many more returns to come. Palomar is proud to be part of their growing legion of inspired members.”***

Rich Hueners, VP of Global Sales, Palomar Technologies



## Membership Fee

Company with annual revenue above EUR 250 million	EUR 10200
Company with annual revenue between EUR 100-250 million	EUR 8160
Company with annual revenue between EUR 50-100 million	EUR 6120
Company with annual revenue between EUR 10-50 million	EUR 4080
Company with annual revenue below EUR 10 million	EUR 2040
Start-up (company less than 5 years)	EUR 510-2040
Technology Research Organization, University	EUR 2040
Cluster, Association	EUR 2040
Regional Development, Government Agency	EUR 2040

# EPIC MEETINGS & EVENTS

EPIC strengthens the connections among its members by creating fora to meet, to discuss challenges and opportunities, and to explore collaboration possibilities. EPIC events are typically by-invitation-only to ensure a relevant audience and highly selective to ensure effective networking. EPIC members drive the agenda and have registration priority at all association events.

1. EPIC Meeting on Automation Tools for Packaging and Testing in Regensburg
2. EPIC Meeting on Distributed Sensing for Oil & Gas Industry in Abu Dhabi
3. EPIC Meeting on Freeform and Precision Optics in Balgach
4. EPIC Meeting on High Power Laser Systems in Almelo
5. EPIC Meeting on Industrial Lasers in Göttingen
6. EPIC Meeting on LIDAR Technologies for Automotive in Eindhoven
7. EPIC Meeting on New Space in Noordwijk
8. EPIC Meeting on OLED R2R in Bregenz
9. EPIC Meeting on Optical Communications in Mainz
10. EPIC Meeting on Photonics for Cancer Diagnostics and Treatment in Amsterdam
11. EPIC Meeting on Quantum Photonics Revolution in Coventry
12. EPIC Meeting on Specialty Optical Fibers in Limoges
13. EPIC Meeting on Structural Health Monitoring in Barcelona
14. EPIC Meeting on VCSELs Technology and Applications in Stuttgart



Automation Tools for Packaging & Testing  
Hosted by ASM AMICRA



Distributed Sensing for Oil & Gas Industry  
In conjunction with ADIPEC



Freeform and Precision Optics  
Hosted by WZW Optic



High Power Laser Systems  
Hosted by PBF



Industrial Lasers  
Hosted by Coherent



LIDAR Technologies for Automotive  
Hosted by Anteryon



New Space  
Hosted by European Space Agency



OLED R2R  
In conjunction with LpS



Optical Communications  
Hosted by HUBER+SUHNER Cube Optics



15. EPIC Meeting on Wafer Level Optics in Neuchatel
16. EPIC Meeting on Laser Beam Material Processing Applications in Munich
17. EPIC Meeting on Surface Structuring at Laser World of Photonics in Munich
18. EPIC Delegation to India
19. EPIC Delegation to Israel
20. EPIC Delegation to Singapore
21. EPIC Members TechWatch in Shenzhen
22. EPIC Members TechWatch in Dusseldorf
23. EPIC Members TechWatch in Dornbirn
24. EPIC Members TechWatch in Wetzlar
25. EPIC Members TechWatch with Swissphotonics in San Francisco
26. EPIC Session on How to do business in China in Shenzhen
27. EPIC Webinar on Hyperspectral Imaging
28. EPIC Webinar on Next generation HMDs and the killer app for VR
29. EPIC Webinar on Quantum Technologies
30. EPIC Photonics Quantum Technology Summit in Barcelona
31. EPIC World Photonics Technology Summit in Berlin
32. EPIC 16th Annual General Meeting in Glasgow



Photonics for Cancer Diagnostics & Treatment  
Hosted by NKI



Quantum Technology Revolution  
In conjunction with Photonex



Specialty Optical Fiber  
Hosted by GLOphotonics



Structural Health Monitoring  
In conjunction with Smart City Expo



VCSELs Technology and Applications  
Hosted by Sony



Wafer Level Optics  
Hosted by SUSS MicroOptics



Photonics Quantum Technology Summit  
Hosted by ICFO



World Photonics Technology Summit



16<sup>th</sup> AGM Annual General Meeting



# EPIC NETWORKING EVENTS

EPIC builds a trusted photonics community by creating many networking opportunities among its members, customers and VIPs from the photonics industry. In this way, companies get to know each other better and people build a long-lasting trustful relationship.



Networking Breakfast  
Munich, Germany



Networking Dinner  
Aachen, Germany



Networking Dinner  
Almelo, The Netherlands



Networking Dinner  
Balgach, Switzerland



Networking Dinner  
Berlin, Germany



Networking Dinner  
Glasgow, United Kingdom



Networking Dinner  
Göttingen, Sweden



Networking Dinner  
Jena, Germany



Networking Dinner  
Limoges, France



Networking Dinner  
Singapore



Networking Dinner  
Stuttgart, Germany



Networking Dinner  
Tel Aviv, Israel



Networking Dinner  
Vilnius, Lithuania



Networking Dinner  
Warsaw, Poland



Networking Dinner  
Wetzlar, Germany



Networking Event  
Shenzhen, China



Networking Event  
Singapore



Networking Golf  
San Francisco, USA



Networking Lunch  
Mumbai, India



Networking Reception  
Dublin, Ireland



Networking Reception  
Eindhoven, The Netherlands



Networking Reception  
Glasgow, United Kingdom



Networking Reception  
Mainz, Germany



Networking Reception  
San Diego, USA



Networking Reception  
San Francisco, USA



Networking Reception  
Shanghai, China



Networking Run  
Berlin, Germany



Networking Run  
Glasgow, United Kingdom



Networking Run  
Munich, Germany



Networking Run  
San Francisco, USA



***"The EPIC Photonics Run in Munich was a great experience.  
The networking was very good, the EPIC team did an excellent job.  
I recommend EPIC membership to other players in optics."***

Ralf Leutz, General Manager, Leopil



Company Visit to  
Anteryon



Company Visit to  
ASM AMICRA



Company Visit to  
Broadcom



Company Visit to  
CAPTECH



Company Visit to  
Coherent



Company Visit to  
CST



Company Visit to  
Denselight Semiconductors



Company Visit to  
Fraunhofer HHI



Company Visit to  
Fraunhofer IZM



Company Visit to  
GLOphotonics



Company Visit to  
Helia Photonics



Company Visit to  
HiSense



Company Visit to  
Holo/Or



Company Visit to  
Hour One



Company Visit to  
HUBER+SUHNER



Company Visit to  
Kelvin Nanotechnology



Company Visit to  
LUX Photonics Consortium



Company Visit to  
Meridian Innovation



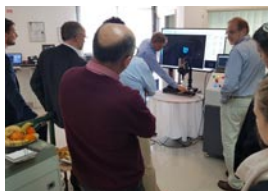
Company Visit to  
Moveon



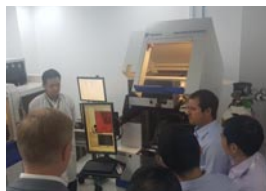
Company Visit to National  
Research Foundation



Company Visit to  
Optocap



Company Visit to  
Optronics Engineering



Company Visit to  
Palomar Technologies



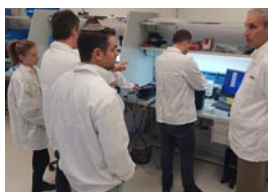
Company Visit to  
PBF



Company Visit to  
PowerPhotonic



Company Visit to  
Sony



Company Visit to  
Spectra-Physics



Company Visit to  
The Photonics Institute



Company Visit to  
UniKLasers



Company Visit to  
WZW-OPTIC



# EPIC ON STAGE

EPIC was invited to moderate panel discussions, chair conferences, open exhibitions, present awards, and speak at 40 events. It was our pleasure to be welcomed on stage at the following events:



3D & Systems Summit  
Dresden, Germany



21<sup>st</sup> International Optoelectronic Exposition  
Shenzhen, China



ADIPEC  
Abu Dhabi, UAE



Autonomous Machines World Conference  
Berlin, Germany



VRARA Networking Dinner  
Barcelona, Spain



BICOP  
London, United Kingdom



ECOC  
Dublin, Ireland



ISA General Assembly  
Shenzhen, China



European Photonics Venture Forum  
Munich, Germany



Opening Presentation at  
Hitachi Directors Meeting in Atami, Japan



The Quantum Industrial Revolution  
Auckland, New Zealand



The Quantum Industrial Revolution  
Christchurch, New Zealand



Clusterkonferenz Optik & Photonik  
Berlin, Germany



ISUPT Conference  
Napa, USA



ePIXfab Summer School  
Pisa, Italy





FOAN  
Sarajevo, Bosnia and Herzegovina



Ghent University  
Ghent, Belgium



Global VR/AR Summit  
Vancouver, Canada



Inside Quantum Technology event  
The Hague, The Netherlands



K4I  
Brussels, Belgium



LED professional Symposium + Expo (LpS)  
Bregenz, Austria



Laser Manufacture News CEO Night  
Shanghai, China



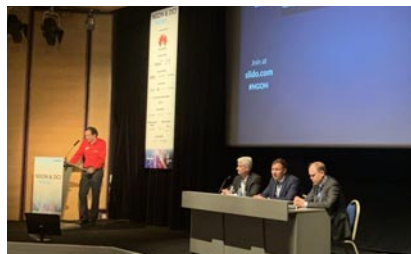
Medica  
Dusseldorf, Germany



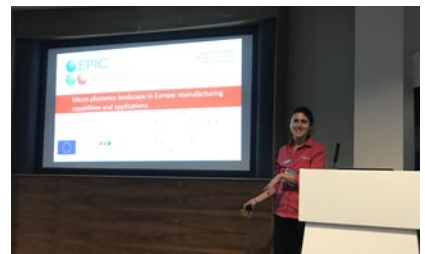
NIL Industrial Day  
Aachen, Germany



OptoSigma  
Paris, France



NGON DCI  
Nice, France



Photonex  
Coventry, United Kingdom



Photonics Exhibition  
Moscow, Russia



PIC International  
Brussels, Belgium



CREOL University Central Florida  
Orlando, USA



Herbsttagung  
Wetzlar, Germany



Summer School  
Tampere, Finland

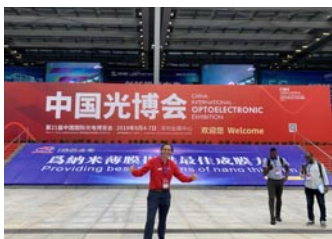


WTMF standards and Roadmap  
Annual Meeting in Berlin, Germany

# EPIC AT INDUSTRY EVENTS

EPIC attends and exhibits at a large number of industry events as we consider these valuable ways to stay connected with the photonics community and learn about the latest industry developments.

1. 15<sup>th</sup> National Conference on Laser Science and Technology in Paris
2. 24<sup>th</sup> IOA International Optoelectronics Association meeting in Glasgow
3. 25<sup>th</sup> SOA Scottish Optoelectronics Association Anniversary Reception in Glasgow
4. ADIPEC in Abu Dhabi
5. AI & Big Data Innovation Summit in Brussels
6. ALAT Laser Industry Golf Laser Cup Competition in Shenzhen
7. Baltic Photonics B2B event in Vilnius
8. Captech Meeting at ONERA in Toulouse
9. China International Optoelectronic Exposition in Shenzhen
10. Chinese Laser Market Seminar in Shanghai
11. Dutch Photonics Event in Delft
12. ECIO Conference in Ghent
13. ECOC in Dublin
14. Freeform Optics Dinner in Neuchatel
15. ILAS in Crewe
16. International Day of Light
17. ISA Executive Members meeting in Shenzhen
18. Laser Market Seminar in San Francisco
19. LASER World Of PHOTONICS in Munich
20. LASER World of PHOTONICS in Shanghai
21. LASER World of PHOTONICS in Mumbai
22. LASERFAIR Exhibition and Global Laser Manufacturing Conference in Shenzhen



CIOE - International Optoelectronic Exhibition, Shenzhen, China



ECIO Conference Ghent, Belgium



ECOC Dublin, Ireland



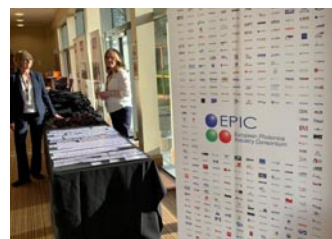
MEDICA Dusseldorf, Germany



MicroNanoConference Amsterdam, The Netherlands



ADIPEC Abu Dhabi, UAE



ILAS - Industrial Laser Symposium Crewe, United Kingdom



Laser World of Photonics Munich, Germany





23. 13<sup>th</sup> National Conference Lasers: Science and Technology in Vilnius
24. MEDICA in Dusseldorf
25. Medtec in Nuremberg
26. MicroNanoConference in Amsterdam
27. MWC in Barcelona
28. NIL Industrial Day in Aachen
29. OASIS7 exhibition in Tel-Aviv
30. OFC in San Diego
31. OIDA Workshop on Manufacturing and Building the Supply Chain for Integrated Photonics in San Diego
32. OptecNet Jahrestagung in Jena
33. Optifab in Rochester
34. OSA/OIDA Executive Meeting at OFC in San Diego
35. Photonex in Coventry
36. Photonics West in San Francisco
37. Photonics21 Annual Meeting in Brussels
38. Photonics21 Board of Stakeholders Meeting in Brussels
39. PIC International in Brussels
40. Quantum Optronics Workshop in Toulouse
41. Smart City in Barcelona
42. SMTConnect in Nuremberg
43. Optics + Optoelectronics in Prague
44. W3+ Fair in Dornbirn
45. W3+ Fair in Wetzlar



Medtec  
Nuremberg, Germany



NIL Industrial Day  
Aachen, Germany



OFC  
San Diego, USA



OptecNet Jahrestagung  
Jena, Germany



Photonex  
Coventry, United Kingdom



Photonics West  
San Francisco, USA



PIC International  
Brussels, Belgium



W3+ Fair  
Wetzlar, Germany

# EPIC ADVOCACY

EPIC believes in photonics and advocates this technology in many ways to support the industry, access information and services and promote the benefits of photonics as an enabling technology.

## Finance and investment

The EPIC Venture and Finance Workgroup is dedicated to the promotion of venture and finance activities among the association's members. EPIC's mission has always been to maximise the business development opportunities of its members through networking, information and partnering. The Venture and Finance Workgroup takes this a step further through a series of focused activities aimed at attracting investors to photonics, promoting trade investment among members, fostering SME development and cooperating with the public funding sector on the continuous improvement of financing conditions for photonics entrepreneurs. In 2019 we participated at the 5<sup>th</sup> European Photonics Venture Forum in Munich. EPIC also maintains a list of investments and M&A.

[www.epic-assoc.com/funding/venture-finance](http://www.epic-assoc.com/funding/venture-finance)  
[www.epic-assoc.com/message-to-investors](http://www.epic-assoc.com/message-to-investors)



EPIC hosts meeting with representatives of the European Investment Bank, European Parliament, European Commission, and the European Commission in-house think tank European Political Strategy Centre.



EPIC chairs session at European Photonics Venture Forum



This year EPIC joined the board of Innorate

INNORATE  
BRINGS  
INNOVATION TO FINANCE  
& FINANCE TO INNOVATION



## Investor videos

This year EPIC continued its range of investor videos. Visit our YouTube channel to learn more from the brilliant minds in our industry:

- Michael Lebby, CEO, Lightwave Logic
- Andreas Umbach, CEO, AUCCEPT
- Steve Frisken, CEO, Cylite

[www.youtube.com/EPICPhotonics](http://www.youtube.com/EPICPhotonics)



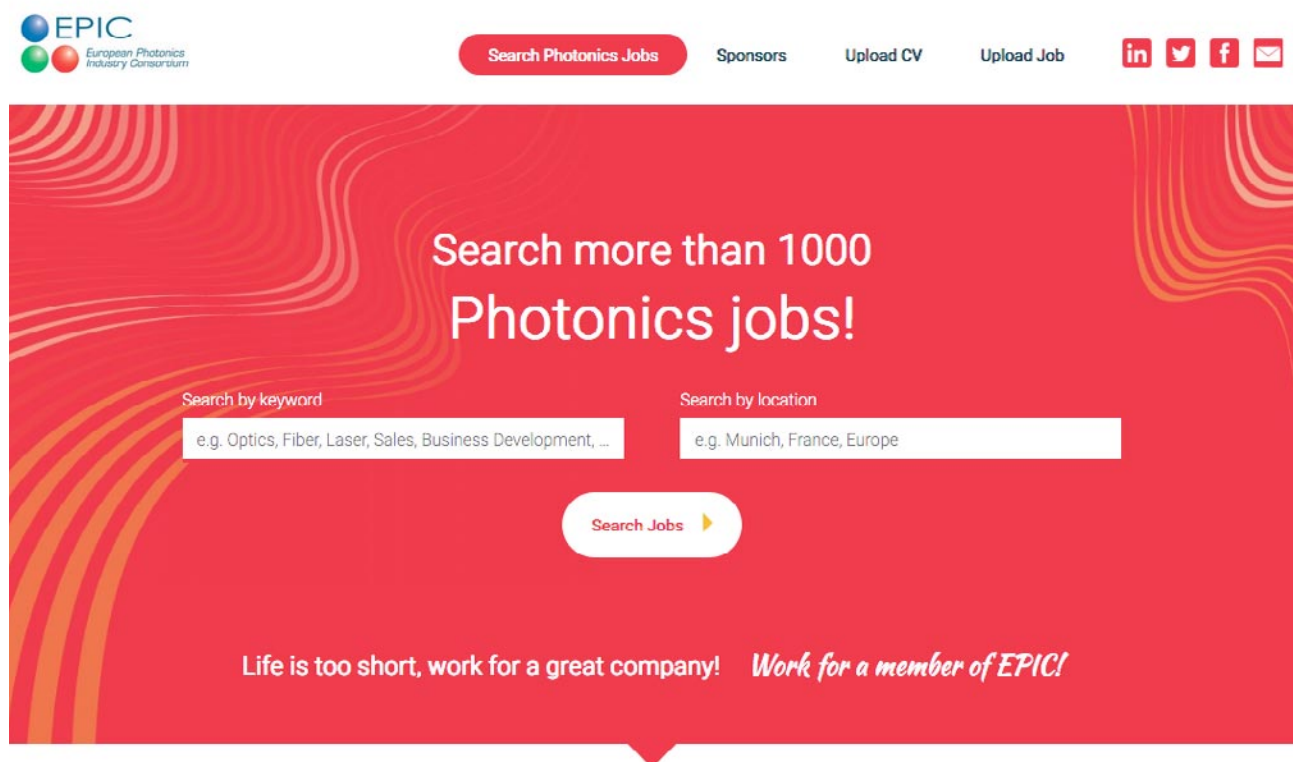


EPIC knows the photonics market is still booming as we see a growing rate in job opportunities. To support our members in finding qualified talent, EPIC launched a completely new jobs in photonics website.

### The biggest jobs in photonics website

EPIC has 525 members across 33 countries, collectively they have more than 1150 open positions. But the positions do not only need to be filled individually, at industry level we need to ensure there is sufficient qualified talent, otherwise candidates will be jumping from company to company, salaries will increase, and the overall problem is not being solved. EPIC members EO, Profound Resources, Insight Technology Search, TMC, and Orion Engineering are partners committed to attract talent from other fields, retain talent in the photonics industry, and motivate potential candidates to join our exciting community. If you are hiring, contact an EPIC partner. [www.epic-assoc.com/jobs](http://www.epic-assoc.com/jobs)

**[www.jobs-in-photonics.com](http://www.jobs-in-photonics.com)**



***“As a member of EPIC, it’s been very useful for us to be able to tap into EPIC’s network. Most recently, thanks to EPIC’s extensive network of photonics contacts across Europe, we’ve been able to hire a key person for our organization.”***

Armin Luft, Founder, Laser2000

# EPIC IN THE MEDIA

EPIC has appeared more than 60 times in editorials, articles, interviews, webinars, podcasts, published in partnership with leading media partners including Electro Optics, EuroPhotonics, Novuslight, Photonics Views and Photoniques. 93 EPIC members were put in the spotlight, putting forward their products and companies.

**1. A light touch**

Published in Medical Device Developments Magazine. Mentioned members: RiverD International, art photonics, Fraunhofer IOF, and Delta Optical Thin Film

**2. Automation Tools for Packaging and Testing: Guidelines for the manufacturing of the next generation of photonic-based products**

Published in Photonics Views. Mentioned members: SMART Photonics, Ligentec, Fraunhofer HHI, imec, Nanoscribe, SUSS MicroOptics, Cordon Electronics, AEMtec, Aerotech, Aifotec, Aixemtec, ASM AMICRA, Bay Photonics, Brolis Semiconductors, Zeiss, Corning, CSEM, DELO, Effect Photonics, EVG, Exalos, ficonTEC, Finetech, Horiba, ICON Photonics, IHB Consulting & Trading, Jenoptik, LioniX International, Luna, Luz Wavelabs, Optoscribe, Palomar Technologies, Philips Innovation Services, Phix, PI, Sabic, Tampere University, Technobis, Teem Photonics, TU Eindhoven, Tyndall National Institute, University of Southampton, Vanguard Automation, VTT and Yelo

**3. Building blocks for customized biosensors for point of care diagnosis**

Published in PIC Magazine. Mentioned members: imec, Zemax, Fraunhofer HHI, SMART Photonics, CEA-Leti and LioniX International, Synopsys, Photon Design, VPI Photonics, Luceda, Bright Photonics, Eblana Photonics, KIT, Tyndall National Institute, ficonTEC, CSEM and Cordon Electronics

**4. European Photonics Industry: State of the market**

Published in Novus Light. Mentioned members: SUSS MicroOptics, NIL Technology, Vanguard Photonics, Fluence, Nyfors, GLOphotonics, Delta Optical Thin Film, Palomar Technologies, Aixemtec, Touchless Automation, ficonTEC, Tyndall National Institute

**5. Low-Light Cameras, Gas Detectors Boost Space Applications**

Published in EuroPhotonics. Mentioned members: European Space Agency, IRnova, VIGO System, Fraunhofer IAF, Fraunhofer IPMS, Sofradir, Beamagine and NKI (Netherlands Cancer Institute)

**6. Quantum Photonics – Steps Towards new Technologies Commercialization**

Published in Photonics Views. Mentioned members: Kelvin Nanotechnology, Quantic, VLC Photonics, Ligentec, Quandela, UniKLasers, Fraunhofer UK Research Institute and Birmingham University

**7. The Industrial Camera Modules Market: Market review and forecast**

Published in Photonics Views. Mentioned members: Yole Développement, LG, Fastree 3D, Bosch, EVG, Schott, ASE Group, Mentor and Huawei

**8. VCSEL Technology in the Data Communication Industry**

Published in Photonics Views. Mentioned members: Finisar, Osram Opto Semiconductors, TRUMPF, Vertilas, Politecnico di Milano, CTTC, TU Eindhoven, ETRI, VTT, VLC Photonics and Effect Photonics

**9. Beyond 400 Gigabit Ethernet**

Published in Novus Light

**10. Brillouin to Revolutionize the Distributed Sensing Market**

Published in Photonics Views

## CEO Video Interviews

Michael Lebby, CEO, Lightwave Logic  
 Andreas Umbach, CEO, AUCCEPT  
 Steve Frisken, CEO, Cylite

## C-Level Media Interviews

Andre Richter, CEO, VPIphotonics  
 Christian Neumeyr, CEO, Vertilas  
 Damian Gardiner, CEO, Optomel  
 David Robinson, CEO, Arden Photonics  
 Dirk Schumann, CTO, Eagleyard Photonics  
 Fetah Benabid, CTO, GLOphotonics  
 Ibrahim Abdulhalim, CEO, PhotonicSys  
 Jean François Vinchant, CEO, SED-ATI Fibres Optiques  
 Johan Feenstra, CEO, SMART Photonics  
 Markus Nicht, CEO, Innolas Solutions  
 Max Lemme, CEO, AMO  
 Michael Lebby, CEO, Lightwave Logic  
 Pascual Muñoz, Founder CEO, VLC Photonics  
 Paul Ryckaert, CEO, Xenics  
 Remco Nieuwland, CTO, Somni Solutions  
 Remigijus Šliupas, CEO, OPTOMAN  
 Roy McBride, CEO, Power Photonic  
 Ruth Houbertz, CEO, Multiphoton Optics  
 Sven Kiontke, CEO, asphericon  
 Tapio Kallonen, CEO, SPECIM  
 Thomas Zettler, CEO, LayTec  
 Torsten Vahrenkamp, CEO, ficonTEC  
 Vicente Calvo, CEO, Comptek Solutions  
 Xiaojun Li, CEO, Shanghai Feibo Laser Technologies

## Media Partners

# Electro Optics

euro  
PHOTONICS

Medical  
Device

NOVUS LIGHT TECHNOLOGIES TODAY  
 NEWS AND ANALYSIS FROM THE WORLD OF LIGHT

PhotonicsViews  
 OPTICS • PHOTONICS • LASER TECHNOLOGY

Photoniques  
 LA LUMIÈRE ET SES APPLICATIONS

PICMagazine





# EUROPEAN PROJECTS

EPIC is member of the Photonics21 Board of Stakeholder, regularly attends the meetings, and is involved in key projects as dissemination and exploitation partner.

- |   |  |
|---|--|
| 1. EPIC is part of <b>JePPIX Pilot Line</b> | <a href="http://www.jeppix.eu">www.jeppix.eu</a>                   |
| 2. EPIC is part of <b>LAMpAS</b>            | <a href="http://www.lampas.eu">www.lampas.eu</a>                   |
| 3. EPIC is part of <b>MIRPHAB</b>           | <a href="http://www.mirphab.eu">www.mirphab.eu</a>                 |
| 4. EPIC is part of <b>MedPhab</b>           | <a href="http://www.medphab.eu">www.medphab.eu</a>                 |
| 5. EPIC is part of <b>MULTIPLE</b>          | <a href="http://www.multipleproject.eu">www.multipleproject.eu</a> |
| 6. EPIC is part of <b>PASSION</b>           | <a href="http://www.passion.eu">www.passion.eu</a>                 |
| 7. EPIC is part of <b>PHABULOU</b> s        | <a href="http://www.phabulous.eu">www.phabulous.eu</a>             |
| 8. EPIC is part of <b>PICS4ALL</b>          | <a href="http://www.pics4all.jeppix.eu">www.pics4all.jeppix.eu</a> |
| 9. EPIC is part of <b>PIXAPP</b>            | <a href="http://www.pixapp.eu">www.pixapp.eu</a>                   |
| 10. EPIC is part of <b>PULSe</b>            | <a href="http://www.pulse-h2020.eu">www.pulse-h2020.eu</a>         |
| 11. EPIC is part of <b>TERABOARD</b>        | <a href="http://www.teraboard.eu">www.teraboard.eu</a>             |

Funded by:



JePPIX sponsor of the EPIC Meeting on New Space in Noordwijk



LAMPAS progress meeting in Zaragoza



MIRPHAB review meeting in Brussels



MedPhab kick-off Meeting in Brussels



MULTIPLE kick-off Meeting in Vigo



PHABULOU's kick-off Meeting in Neuchâtel



PASSION sponsor of the EPC Meeting on Wafer Level Optics in Neuchâtel



PICS4all exhibiting at PIC International in Brussels



PIXAPP progress meeting in Cork



PULSe exhibiting at Smart City in Barcelona

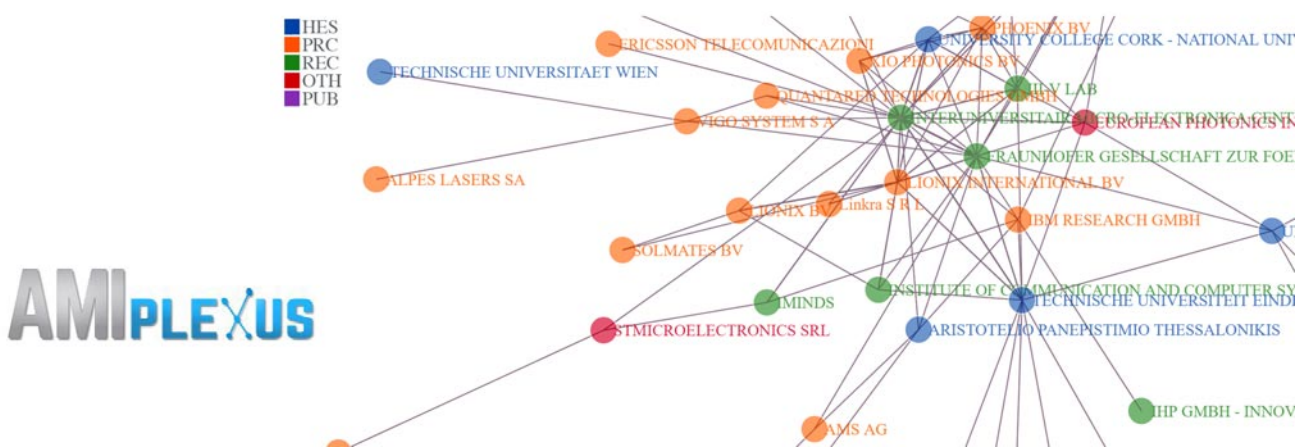


TERABOARD presentation at PIC International in Brussels

EPIC helps you to identify partners in EU funded projects. As an EPIC member, you will get full access to AMIPLEXUS.

Search for new technologies and observe your competitors! AMIPLEXUS is a useful practical on-line search tool for helping you identify partners in EU funded projects. See what projects your suppliers, customers and competitors are involved in and who are their other partners. See which technologies are in the companies pipelines. You can search by keywords, and refine search results to specific countries, companies, etc... EPIC has acquired a license that allows all employees of all EPIC member companies to freely access.

[www.amiplexus.eu](http://www.amiplexus.eu)

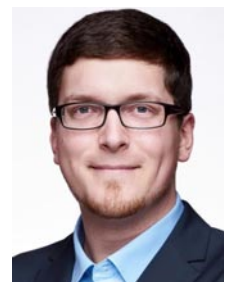


## EPIC is active in several committees

1. **CESA** – Committee member of Conference on Automotive Electronics
2. **ECIO** – Committee member of European Conference on Integrated Optics
3. **EDA** – European Defence Agency CapTech Member of EOST Electro-Optical Sensors Technologies
4. **EPVF** – Jury member of the European Photonics Venture Forum
5. **ESTC** – Committee member of European System Integration Technology Conference
6. **FOAN** – Committee member of Fiber Optics in Access Networks
7. **OPTRO** – Committee member of International Symposium on Optronics in Defence and Security
8. **SCREEN** – Supporter of Solutions for Critical Raw Materials - a European Expert Network

***“The EPIC Meeting on VCSELs Technology and Applications was my first EPIC event and it was a stunning experience! I have never witnessed such a motivating and inspiring networking event before. I have made many promising new contacts about VCSEL technology to boost our optoelectronics business! Especially our expertise in reliability testing and eye safety measurements will be useful for the VCSEL community.”***

Björn Hoffmann, Manager Optoelectronics & Innovation, RoodMicrotec





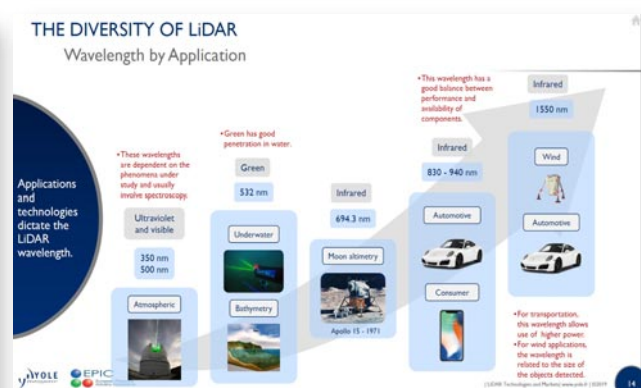
# MARKET REPORTS

Every employee of a company member of EPIC has free access to the EPIC library on the extranet. The extranet is simple to use and you can conveniently download hundreds of technology presentations and numerous market reports.

- 2019 Blue Laser Diode Market Report
- 2019 Fiber Optics Market Report
- 2019 Infrared Sensors Market Report
- 2019 Medical Sensors Market Report
- 2019 Two Photon Laser Scanning Confocal Microscope Market Report
- 2019 InP Wafer and Epiwafer Market Photonics and RF Market Report
- 2019 Silicon Photonics and Photonic Integrated Circuits Market Report
- 2019 Status of Camera Module Industry Focus on Wafer Level Optics Market Report
- 2019 Smart Glass Market Report
- 2019 Semiconductor Process Control Equipment Market Report

***“The market reports provided by EPIC are a great resource to me and my colleagues. It provides us with valuable information on technology trends and market forecasts.”***

John O'Carroll, Director of Technical Development, Optical Communications, Eblana Photonics



### COMPARISON OF DIFFERENT PIC PLATFORMS

Nowadays, optical components are built employing many kinds of materials, each with its respective merits and drawbacks, including element semiconductors (Si and Ge-related), compound semiconductors (InP and GaAs-based), dielectrics (SiO<sub>2</sub> and SiNx-related), polymers and nonlinear crystal materials (e.g. LiNbO<sub>3</sub>). The material properties of different material systems place them into desirable, but discrete functionality regimes.

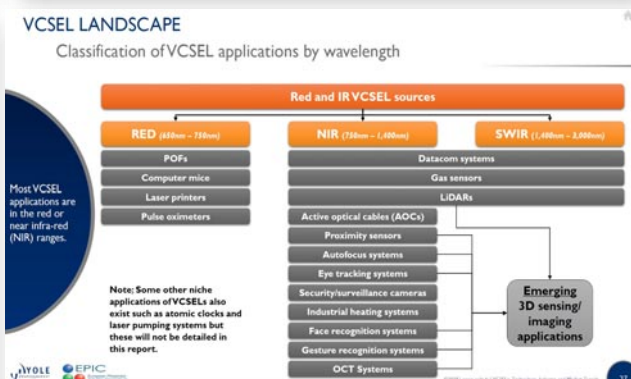
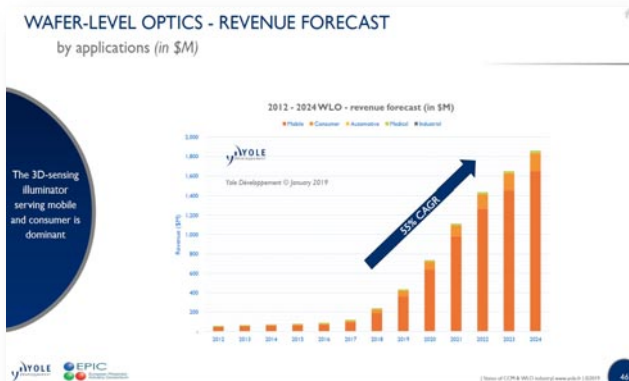
There are two major platforms: InP and SiPh.

Building Block	InP	SiPh
Passive components	++	++
Polarization components	++	++
Lasers	+++	Hybrid
Phase modulators	+++	++
Electro-absorption modulators	+++	++
Switches	++	++
Optical amplifiers	+++	Hybrid
Detectors	+++	++
INOCs	++	++
COFs	++	++

Notes for InP: Wavelength limited to 1.3 µm to 1.7 µm; Higher cost in large volume production; Complex Epi.

Notes for SiPh: Best for silicon-based integration; Good for silicon-based integration; Good for silicon-based integration; Good for silicon-based integration.

- 2018 3D Imaging and Sensing Market Report
- 2018 Fiber Laser Market Report
- 2018 Photonic Integrated Circuit Market Report
- 2018 High Speed Ethernet Optics Market Report
- 2018 Laser Technology Market Report – Global Forecast to 2024
- 2018 Silicon Photonics Market Report – Global Forecast to 2023
- 2018 Ultrafast Lasers Technologies and Global Market Report
- 2018 VCSEL Technology Industry and Market Trends and Report
- 2018 Worldwide Laser Market Review and Forecast
- 2017 Integrated Optical Devices Market Report
- 2017 Mega Datacenter Optics Market Report
- 2017 IR LEDs and VCSELs – Technology, Applications and Industry Trends Report
- 2017 3D Imaging and Sensing Market Report
- 2017 Glass Substrate in the Semiconductor Field Market Report
- 2017 Embedded Image and Vision Processing Market Report
- 2017 Camera Module Industry Market and Technology Trends Report
- 2017 LIDAR Applications and Markets Report
- 2017 Laser Technologies in the Semiconductor Field Market Report



# PARTNERSHIPS

1. 3<sup>rd</sup> Int. Trends in Lighting Forum & Show | TiL
2. 8<sup>th</sup> International Work Shop on Fiber Optics in Access Networks
3. AIMEN Laser XV Workshop on Materials Processing with Laser Technology
4. Autonomous Machines World
5. Baltic Photonics | B2B Event
6. Diagnostics-4-Future CONFERENCE
7. European Conference on Interventional Oncology | ECIO
8. European Conference on Optical Communication | ECOC
9. Embedded VISION Europe
10. European Symposium on Ultrafast Laser driven Biophotonics | ESULaB
11. IEEE British and Irish Conference on Optics and Photonics | BICOP
12. Image Sensors Europe
13. Inside Quantum Technology EUROPE
14. International Conference on Nanoimprint and Nanoprint Technologies | NNT
15. International MicroNanoConference
16. International Symposium on Ultrafast Photonic Technologies | ISUPT
17. LASER World of PHOTONICS
18. Next Generation Optical Networking | NGON & DCI World
19. NanoImprint Lithography Industrial Day | NIL Industrial Day
20. Paris Space Week
21. Photonex
22. Photonics World of Lasers And Optics
23. PIC International Conference
24. SEMI 3D & Systems Summit
25. Special Symposium on Silicon Photonics of the Future | SSPhF
26. Tech Tour 2019 European Photonics Venture Forum
27. The 6<sup>th</sup> Industrial Laser Application Symposium
28. Topical Meeting on Diffractive Optics
29. VR/AR GLOBAL SUMMIT
30. W3+ Fair/Convention
31. Wetzlar Network Event Computational Imaging

*"I made so many exiting contacts that my company realized about the value of becoming a member of the association. I would like to thank the EPIC team for their support and looking forward to becoming a new EPIC member in 2020."*

Johannes Wolf, Segment Manager Laser, Schulz-Electronic



## » PARTNERSHIPS & MEMORANDUM OF UNDERSTANDING

1. **AILU** – Association of Laser Industrial Users
2. **AIM Photonics** – American Institute for Manufacturing Integrated Photonics
3. **CECIMO** – European Association of the Machine Tool Industries
4. **COBO** – Consortium for On-Board Optics
5. **Commonwealth of Independent States Laser Association**
6. **CSA** – China SSL Association
7. **DIGITALEUROPE**
8. **Ethernet Alliance**
9. **FTTH Council Europe** – Fiber To The Home
10. **GDLIA** – Guangdong Laser Industry Association
11. **Greenlight for Girls**
12. **IAESI** – Israel Association of Electronics & Software Industries
13. **IOA** – International Optoelectronics Association
14. **Joint Forces for Solar**
15. **LightingEurope**
16. **LUX Consortium in Singapore**
17. **Nanophotonics Europe Association**
18. **OES** – Organic Electronics Saxony
19. **PETRA** – Photonics Electronics Technology Research Association
20. **SEAFOM** – Fiber Optic Monitoring Group
21. **SEMI** – Semiconductor Equipment and Materials International
22. **The Association for Vertical Farming**
23. **VR/AR in Berlin**
24. **VR/AR Summit in Vancouver**
25. **Wuhan Laser Industry Association**

### EPIC signed three more partnerships



VR/AR in Berlin



Ethernet Alliance



VR/AR Summit in Vancouver



# OUTREACH

EPIC actively builds a global network of decision-makers and experts. By interacting with the industry, we learn about the latest technology developments, understand manufacturing challenges and explore business and collaboration opportunities for our members.

In 2019 we were welcomed by 190 companies around the world:



3SP Technologies



4isp



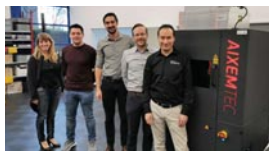
Aconity3D



AEPONYX



Airbus



AIXEMTEC



AIXTRON



Alpes Lasers



Altechna



Amphos



Ampliconyx



ASM AMICRA



Avantes



Beamagine



Brolis



Bruker



BSH



Chiral Photonics



CI Systems



Cisco



CMC



CNRC



Coherent in Gottingen



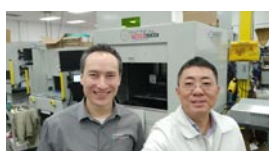
Coherent in Gilching



Coherent in Tampere



Comptek Solutions



Control Laser



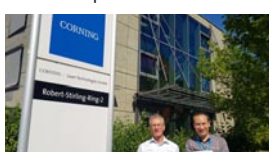
Convergent Photonics



Coractive



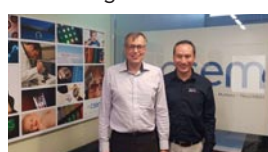
Cordon Electronic



Corning



CREOL



CSEM



CST



Delphi Laser



DenseLight



Dodd-Walls Centre



DUMA Optonics



Eksma Optics



Electrolux





Emberion



Exalos



FB Photonics



Fluence



Fraunhofer HHI



Fraunhofer ILT



Fraunhofer IPT



Fraunhofer IZM



Fraunhofer UK



Gasera



Ghent University - NB Photonics



GLOphotonics



Greentropism



Han's Laser



Helia Photonics



Hero Laser



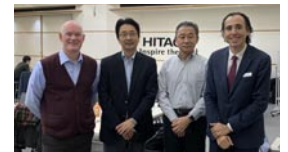
Hexagon



HiLase



Hisense



Hitachi



Holo/Or



Holoxica



Horiba



HTW Chur



Huawei Zurich



HUBER+SUHNER Cube Optics



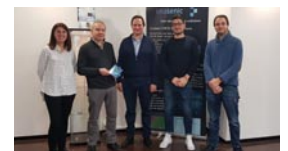
ICFO



ICN2



IDLab - Ghent University



Imasenic



Inframet



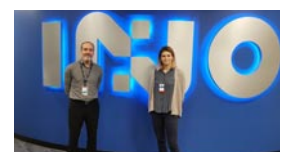
Inkron



Innolas Solutions



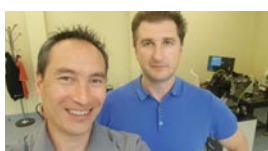
Innolite



INO



InPhotech



Integrated Fiber Optics



INTENGENT



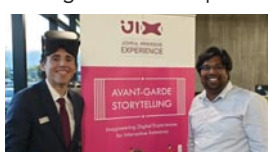
ITF



ITME



JABIL Optics



Jix



JOLT Capital



Juniper



Kelvin Nanotechnology



Keysight



Ladimo



LAMBDA-X



LASEA

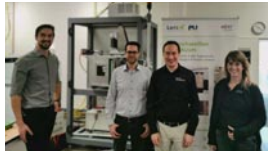


Laser 2000





Laser Components



LaVa-X



Leica



LEUKOS



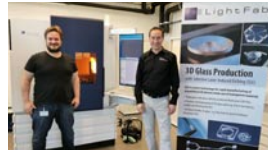
Lidaris



Ligentec



Light Conversion



LightFab



LightPath



LightTrans



Lumerical



Lumibird



Mabri Vision



Marel



Mellanox Technologies



Mentor Graphics



Meridian



Microrelleus



Mikrocentrum



Modulight



Morphotonics



Moveon



Multicore Photonics



Multiphoton



Nanocomp



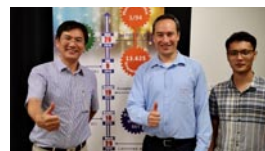
Nanofoot



Nanoscribe



National Research Foundation



National University of Singapore



Nüvü Camêras



NTT



NTU



Ocean Optics



ONERA



OPI Photonics



Optatek



Optech



Optigrate



Optimax



Optitec



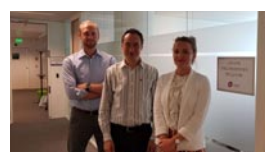
Opticap



OptoSigma



ORAFOL Fresnel Optics



Orion Engineering



Palomar



PBF



Philips Innovation Services



PhotonEtc

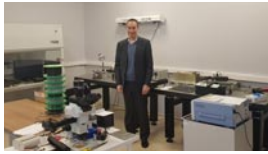


Photonics Finland



PicoLAS





Polarus



Politecnico di Torino



PowerPhotonic



PRC Laser



Prima Electro



Prima Power



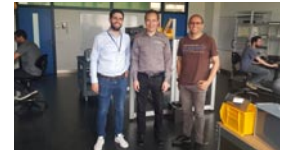
Pulsar Photonics



QPO



Quantum Light Instruments



Quside



SCHOTT Primoceler



SCIL Nanoimprint Solutions



Sensofar



Snelloptics



Solaris Optics



Solid Laser



son-x



Southern Photonics



SPECIM



Spectra Physics



SUSS MicroOptics



SUSS MicroTec



Synopsys



Systematic Paris-Region



Tampere University



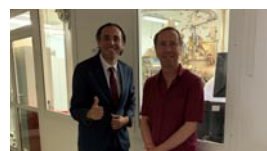
Technospark



TEGEMA



TeraXion



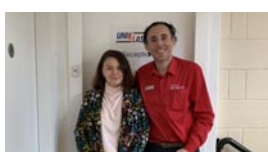
TopGaN



TU Dresden



Tyndall



UniKLasers



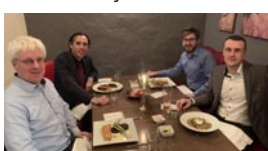
Universitat de Barcelona



University of Glasgow



UPC



Vanguard Photonics



Vertilas



Vexlum



VI Systems



via optic



Vigo System



Vigo Ventures



Visionix



VTT Espoo



VTT Oulu



Warsaw University of Technology



Wielandts UPMT



Workshop of Photonics



WZW Optics



Xenics

# EPIC MEMBERS

This year we welcomed our 500<sup>th</sup> member which was celebrated with a special award. Welcome Dispelix to the most exciting photonics industry association in the world! EPIC now represents over 500 companies across 33 countries.







# EPIC MEMBERS

**LASER**  
World of  
**PHOTONICS**

**LASERPOINT**  
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**LIGHT TEC**

**15**  
LIGHTCOUNTING

**LightPath**  
... and more

**LIGHTTRANS**

**LIGHTWAVESS**

**limbak**

**LIMO**  
A Focuslight Company

**Lionix**  
INTERNATIONAL

**LOPTEC**  
light is our profession

**LISALaser**  
PRODUCTS

**Lithoglas**  
Think glass!

**LITHUANIAN LASER ASSOCIATION**

**LUCEDA**  
PHOTONICS

**LUGER RESEARCH**  
Institute for Innovation in Technology

**LUMENTUM**

**lumerical**

**LUMIBIRD**  
NEXT GENERATION LASERS

**Lumics**

**LUVOS LASER**

**LUNA**

**LUXO**

**LUX IEC**

**luzwavelabs**

**Lyncée tec**

**LYNRED**  
BY SOPRADIO & ULIS

**M**  
SQUARED

**MBDA**  
MISSILE BUSINESS

**mitrogen**

**Menhir**  
Photonics

**Menlor**  
A Siemens Business

**Messe Stuttgart**  
Key to markets

**Messe Berlin**

**Messe München**  
International

**MicroCircuit**  
Laboratories

**microrelleus**

**mikrocentrum**  
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**MIRAEX**

**Mitutoyo**  
**RCE**  
Whitney Research Center Europe

**modulight**

**monocrom**

**morphonics**

**Mountain Photonics**

**Mouro Labs**

**mpos MICROSYSTEMS**

**MPSI**  
TECHNOLOGIES

**Multiphoton**  
Optics

**Multitel**  
INNOVATION CENTRE

**mwtech**

**NANOFOOT**  
NANOTECHNOLOGY

**nanoplus**

**nano scribe**

**nanophotonics**

**neomonitors**

**NETHERLANDS CANCER INSTITUTE**  
NCDI VAN OUDERKERK

**next scan**  
technology

**NIL TECHNOLOGY**

**nit**

**NIT**  
New Infrared  
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**NKT** Photonics  
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**nLIGHT**

**NORCE**

**NorthLab**  
PHOTONICS

**NOVAE**  
GEM the gemstone of the technology

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**NYFORS**

**NYNOMIC**  
THE PHOTONICS GROUP

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**Ocean Insight**

**OCLARO**

**OCTLIGHT**

**ofs**  
A Furukawa Company

**Ophir**

**OPIPHOTONICS**

**oplatek**  
Inspired by optics

**OptecBB**

**OPTICS BALZERS**

**OPTICS**

**OPTIMAX**

**Optitec**

**Optiwave**

**OPTOGAMA**

**OPTOMAN**  
IBS WEBO

**optomel**

**optonet**  
Precision Research Strategic

**OptoRes**

**OptoSigma**

**OPTOSCRIBE**

**OPTOSKAND**

**OQMENTED**

**Optoelectronics Research Centre**  
Tampere University

**orion**  
engineering

**OSRAM**

**outsight**

**OXFORD INSTRUMENTS**

**Oxxius**

**PakPIC**

**PALOMAR**

**PBF**  
SFC ENERGY GROUP

**Pegasus**

**PHILIPS**  
Innovation Services

**phix**

**Photonics**

**Photon Design**

**Photonics HUB**

**PI**

**PhotonDelta**  
Innovation in Photonics

**Photonics.fi**

**NANYANG TECHNOLOGICAL UNIVERSITY**

**PhotonicsNL**

**PhotonX Networks**

**PHOTONICS**  
SISTEM

**富泰科技**  
PHOTONTECH

**PI**

**PICadvanced**

**Pilot**  
PHOTONICS

**PILOT 3D**

**PISEO**  
photonics innovation services

**PLASMA THERM**

**Plasma-Therm**

**PLX**  
INNOVATIVE OPTICAL SYSTEMS





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*Be part of it!*



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FLICKR	<a href="http://www.flickr.com/photos/epic-photonics/sets">www.flickr.com/photos/epic-photonics/sets</a>
E-MAIL	<a href="mailto:info@epic-assoc.com">info@epic-assoc.com</a>

**[www.epic-assoc.com](http://www.epic-assoc.com)**