



# EPIC World Photonics Technology Summit

24 January, 2022 | San Francisco, USA

## EPIC World Photonics Technology Summit

The EPIC World Photonics Technology Summit is our highest-level technology meeting. The event gathers experts and leaders from industrial companies around the world to discuss photonics technology developments, applications, and challenges. The presentations are short, followed by a short discussion moderated by Dr. Jose Pozo, EPIC's Director of Technology, renowned for his exceptional ability to engage the audience to explore synergy and business opportunities. The event is very much networking oriented with many opportunities to meet the other participants.

### Sunday 23 January 2022

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19:00 – 22:00 **Welcoming reception @ Press Club**  
Address: 20 Yerba Buena Lane, San Francisco

### Monday 24 January 2022

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07:30 – 08:30 **Networking breakfast @ St. Regis hotel, Gallery Ballroom, level 2**  
Address: 125 Third Street, San Francisco

08:30 – 08:45 **Welcome address by Jose Pozo, CTO, EPIC – European Photonics Industry Consortium (THE NETHERLANDS)**

#### SESSION 1 – THE PHOTONICS REVOLUTION IN SEMICONDUCTOR PHOTONICS

08:45 – 09:05 **High Volume Silicon Photonics for Optical I/O and other Next Generation Applications**  
Robert Blum, General Manager, New Business and Senior Director of Marketing at Intel (USA)

09:05 – 09:25 **Photonic Devices for Coherent Sensing**  
Ergun Canoglu, Senior Director, Sensing and LiDAR at Neophotonics (USA)

09:25 – 09:45 **Voice of the Customer: Working Together**  
Cary Addington, Senior Research and Development Engineer at HP (USA)

09:45 – 10:05 **Blinded By the Light: Resolving the Ambient Light Performance Issue of a ToF Camera**  
Ian Blasch, Senior Director at Jabil Optics (USA)

10:05 – 10:25 **Spectrum-Scan™ LIDAR: Next-generation technology for the future of Autonomous Vehicles**  
Yannick Lize, VP Research & Development at Baraja (USA)

10:30 – 11:15 **Networking coffee break**

#### SESSION 2 – UPCOMING TECHNOLOGICAL CHALLENGES IN OPTICS

11:15 – 11:35 **The Micro-Optics Revolution in Automotive Lighting**  
Reinhard Voelkel, CEO at SUSS MicroOptics (SWITZERLAND)

11:35 – 11:55 **Metasurfaces: Bridging Diffractive and Freeform Optics**  
Reza Khorasaninejad, CEO at LEADOPTIK (USA)

11:55 – 12:15 **Roll-to-roll manufacturing of large-area LED sheets for photonics applications**  
Vladimir Matias, Founder & President at ibeam Materials (USA)

- 12:15 – 12:35 **Optical MEMS Technology at AGM**  
Asif Godil, CEO at AG Microsystems (USA)
- 12:35 – 12:55 **Integrated electro-optical design enablement around Cadence Virtuoso Ecosystem**  
Gilles Lamant, Distinguished Engineer at Cadence (USA)
- 13:00 – 14:00 **Networking lunch**

### **SESSION 3 – THE PHOTONICS REVOLUTION IN LIFE SCIENCE**

- 14:00 – 14:20 **Time-Resolved Flow Cytometry: Expanding the Power of Cell Analysis**  
Giacomo Vacca, President at Kinetic River (USA)
- 14:20 – 14:40 **Design, experiences and opportunities of cloud based medical devices enabling improvement of treatment efficacy by analytics**  
Petteri Uusimaa, CTO at Modulight (FINLAND)
- 14:40 – 15:00 **SMRT Sequencing: Opportunities & Challenges for integrated photonics**  
Annette Grot, Scientific Fellow at PacBio (USA)
- 15:00 – 15:20 **Photonics & Ultrasensitive Gas Analysis**  
Serguei Koulikov, Principal Scientist at Picarro (USA)
- 15:20 – 15:35 **Photonics and the Evolution of Ultrasensitive Gas Analyzers: Past, Present, and Future**  
Jim Scherer, CEO at Aeris Technologies (USA)
- 15:35 – 16:20 **Networking coffee break**

### **SESSION 4 – THE ROLE OF PHOTONICS IN THE FUTURE WORLD**

- 16:20 – 16:40 **On the path to the Metaverse**  
Edgar Auslander, Director, Facebook Reality Labs, Facebook (USA)
- 16:40 – 17:00 **A Window into the Metaverse: The Power of NanoImprint Lithography to achieve a robust Diffractive Lightfield BackLighting (DLB™) for next gen Lightfield displays**  
Sonny Vo, Vice President & Director, NanoFabrication at Leia (USA)
- 17:00 – 17:20 **Electro-Optics MCM Packaging for Quantum Computing**  
Kishor Desai, Senior Packaging Engineer at PsiQuantum (USA)
- 17:20 – 17:40 **Integrating quantum optics and photon sources for fibre and satellite communications**  
Maksym Sich, CEO, Aegiq (UNITED KINGDOM)
- 17:40 – 18:00 **Fusing Lidar and Video at the Lens for More Accurate Computer Vision**  
Ralph Spickermann, Founder & Chief Technology Officer at Oyla (USA)
- 18:00 – 22:00 **Summit dinner @ St. Regis hotel, Sculpture, level 2**

## **» CONTACTS**

**Neringa Noreikiene**, Events Manager, mobile +370 62438991

**Carlos Lee**, Director General, mobile: +32 473300433

# Participants

Name	Surname	Job Title	Company	Country
Andreas	Umbach	CEO	AUCCEPT Consulting	Germany
Annette	Grot	Scientific Fellow	PacBio	USA
Artur	Kęłowski	Technology Development Director	VIGO System	Poland
Asif	Godil	CEO	AG Microsystems	USA
Benjamin	Rudin	CTO	Menhir Photonics	Switzerland
Bradley	Snyder	Principal Engineer	PHIX	The Netherlands
Cary	Addington	Senior R&D Engineer	HP	USA
Christian	Bosshard	Managing Director	Swissphotonics	Switzerland
Claude	Florin	CEO	Fastree3D	Switzerland
Daan	Kersten	CEO	PhotonFirst	The Netherlands
Daniel	McCarthy	Managing Editor	Photonics Media	USA
Dominic	Gallagher	CEO	Photon Design	United Kingdom
Dominique	Lupinski	Chairman	Cristal Laser	France
Edgar	Auslander	Director, Facebook Reality Labs	Facebook	USA
Ergun	Canoglu	Sr. Director, Sensing and Lidar	NeoPhotonics	USA
Eric	Aguilar	CEO	Omnitron Sensors	USA
Gerard	Whoriskey	Technical Director	CoolLED	United Kingdom
Giacomo	Vacca	President	Kinetic River	USA
Gilles	Lamant	Distinguished Engineer	Cadence	USA
Gloria	Hoefler	VP Engineering Research	PacBio	USA
Greg	Bagnoud	Sr. VP Business Development	MPS Microsystems	Switzerland
Hemang	Jani	Senior Researcher	K Sciences	USA
Ian	Reilly	Managing Director	VORTEX OPTICAL COATINGS	United Kingdom
Ian	Blasch	Senior Director	Jabil Optics	USA
James	Scherer	CEO	Aeris Technologies	USA
Jan Hendrik	Peters	Owner	bmbg consult	Germany
Jyrki	Huttunen	President	Oplatek	Finland
Kestutis	Jasiunas	CEO	Ekspla	Lithuania

<b>Name</b>	<b>Surname</b>	<b>Job Title</b>	<b>Company</b>	<b>Country</b>
Kishor	Desai	Sr. Packaging Engineer	PsiQuantum	USA
Kurt	Weingarten	Partner	Tarkas Ventures	Switzerland
Laurent	Fulbert	Deputy Head of Optics and Photonics Division	CEA-Leti	France
Maksym	Sich	CEO	Aegiq	United Kingdom
Martin	Schell	Executive Director	Fraunhofer HHI	Germany
Martynas	Barkauskas	CEO	Light Conversion	Lithuania
Nicolaus	Hettler	CTO	CDA	Germany
Patrick	Leisching	Sr. VP R&D	TOPTICA Photonics	Germany
Patrick	Heissler	Director Business Development	SUSS MicroOptics	Switzerland
Paul	Blair	Head of Technology	PowerPhotonic	United Kingdom
Petteri	Uusimaa	CTO	Modulight	Finland
Radhakrishnan	Rajamanickam	Director Business Development	ALDEL (Aalto)	Finland
Ralph	Spickermann	CTO	Oyla	USA
Reinhard	Voelkel	CEO	SUSS MicroOptics	Switzerland
Reza	Khorasaninejad	CEO	LEADOPTIK	USA
Robert	Blum	General Manager	Intel	USA
Roger	Artigas	President & CTO	Sensofar	Spain
Ronny	Timmreck	CEO	Senorics	Germany
Samuel	Bucourt	CEO	Imagine Optic	France
Seppo	Orsila	Founder & CEO	Modulight	Finland
Serguei	Koulikov	Principal Scientist	Picarro	USA
Sonny	Vo	Vice President	Leia	USA
Stefano	Concezzi	Corporate Vice President	ficonTEC Service	Germany
Theodor	Nielsen	CEO	NIL Technology	Denmark
Thor	Ansbaek	CEO	OCTLIGHT	Denmark
Vladimir	Matias	President	iBeam Materials	USA
Yannick	Lize	VP	R&D Baraja	USA





**AegiQ** is building a new generation of networking and computing with quantum technology. The company is using its pioneering single-photon and integrated quantum optics platform to address the demand for next-gen fibre and satellite quantum communications, as well as drive further research and development in quantum computing and quantum optics using its advanced technology. [www.aegiq.com](http://www.aegiq.com)



**Maksym Sich** is **CEO and Co-Founder** of AegiQ. Having started as a quantum physicist, he is a serial entrepreneur with a focus on deep tech, with experience across different sectors including aerospace and hi-end manufacturing. Max holds a PhD in Physics from the University of Sheffield and a B.Sc. in Economics and Finance from LSE.



**Aeris Technologies** provides next-generation gas analysis instruments for applications in primarily greenhouse gas and pollutant monitoring, with emphasis on natural gas fugitive emissions monitoring. Multiple embodiments of the same breakthrough MIRA gas analyzer platform are offered for indoor and outdoor applications ranging from natural gas leak detection (<1ppb/s C<sub>2</sub>H<sub>6</sub> and CH<sub>4</sub> sensitivity) to GHG and HCHO/ETO monitoring at the ppt accuracy level. MIRA Systems include self-powered fixed monitors (*Pico/Ultra Series*), battery powered handheld systems (*Pico/ Strato Series*), and mobile analysis systems in vehicle and airborne platforms. Aeris offers unmatched performance, size, weight, and power metrics with ppt-ppb sensitivity and accuracy levels for most gases, with versions that are solar powered for autonomous monitoring applications in the field. Aeris is redefining the *state-of-the-art* in gas analysis solutions, providing a paradigm shift for demanding environmental monitoring applications. [www.aerissensors.com](http://www.aerissensors.com)



**Dr. James Scherer (CEO)** received his doctorate in Chemistry from U.C. Berkeley in 1994, with his thesis work on cavity ringdown spectroscopy and its application to the spectroscopy and physics of molecular clusters. Dr. Scherer has 28 years of postgraduate experience in basic and applied research in the areas of physics, physical chemistry, laser spectroscopy, chemical sensing, and gas analysis instrumentation. Dr. Scherer's expertise comprises primarily the invention and commercialization of laser-based chemical analysis techniques, including instrument conception, design, prototyping and ultimately commercial scale manufacturing. Dr. Scherer has co-founded three startups and sold two companies, including Los Gatos Research (ABB acquired) and NovaWave Technologies (Thermo acquired). Dr. Scherer is a world recognized inventor and researcher in the area of laser spectroscopy, including cavity ringdown spectroscopy (CRDS), integrated cavity output spectroscopy (ICOS), ringdown spectral photography (RSP), raman spectroscopy, and non-linear optics techniques including harmonic/difference/sum frequency generation. Dr. Scherer holds numerous patents in the areas of laser spectroscopy and chemical sensing, and has successfully transitioned photonics technologies from the laboratory into global commercial markets.



**AG Microsystems (AGM)** is a leading provider of Optical MEMS products that go into advanced fiber-optic components that are powering the latest in Optical Networks. The company located in Silicon Valley is also exploring new ideas in 3D imaging using structured light projectors and LIDAR. [www.agmicrosystems.com](http://www.agmicrosystems.com)

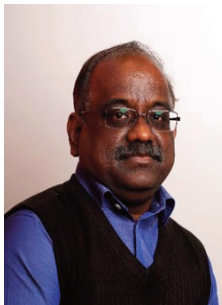


**Asif A Godil** is the **Founder and CEO** of AGM. He got his Ph.D. in Electrical Engineering from Stanford University. Prior to AGM he founded Lightconnect, a venture backed startup, that was acquired by Neophotonics in 2006.

# Aldel



**ALDEL** is an Aalto University and Business Finland funded project engaged in pre-commercialization activities for its disruptive laser technology which will enable new breakthrough application in ultrafast datacentre transceiver applications. [www.aalto.fi/en](http://www.aalto.fi/en)



**Radhakrishnan Rajamanickam (Project Specialist)** is a Business Lead, exploring the global business opportunities in commercializing a research project ALDEL (Aalto University, Finland). The key innovation centered around scalable silicon technology-based erbium and co doped rare earth materials-based laser technology. Lasers based on this technology open new horizons in optical transceiver in datacentre applications. Mr. Radhakrishnan M.Tech, M.Sc. holds dual master's degrees, one in Science and other management has over 28 + years' experience both global B2B and B2C projects and university spin-offs. Expertise includes but not limited business planning, business development,

corporate strategy, operations management, project management, global procurement, logistics and supply chain management, reverse engineering, costing, marketing, and sales. Hands on experience spanning around automotive, consumer electronics, telecom, datacom, instrumentation and medical industry. He is tech savvy and passion towards new technology and always look for the challenging opportunities.



**AUCCEPT** is offering Authentic Coaching and Consulting on Entrepreneurship and Photonics Technologies. AUCCEPT's CEO Andreas Umbach has more than 20 years' experience as founder and CEO of a technology start-up in a global industry. He has been responsible for the active and passive side of international mergers and acquisitions. Andreas actively directed the company's direction in the field of photonic integrated circuits. Now, he is aiming to consult on photonics technologies using his extensive network in this global industry. He is pleased to coach entrepreneurs and give advice on strategic business decisions throughout the lifecycle of the company. Support of the management team and leadership training are offered by direct coaching mandates or in the form of board positions. [www.auccept.com](http://www.auccept.com)



**Andreas Umbach (CEO)** holds a Dipl. Phys. degree from Technical University Berlin. In 1989, he joined the Fraunhofer Heinrich-Hertz-Institut where he worked on the development of Indium-Phosphide based optoelectronic integrates circuits comprising High Electron Mobility Transistors (HEMTs) and high-speed waveguide-integrated photodiodes. In 1998, he and two colleagues founded the company u<sup>2</sup>t Photonics AG as a spin-off from HHI, which became a leading supplier for ultrafast devices for optical fiber communications. As CEO, he led the acquisitions of LKF Advanced Optics GmbH, u<sup>2</sup>t Photonics UK from rfmd and COGO GmbH. In January 2014, he sold u<sup>2</sup>t Photonics AG to Finisar Corp. and served as a Vice President, General Manger and CTO of Finisar Germany GmbH. Andreas is member of the advisory boards of several companies in the field of photonics. He is a senior member of IEEE and served in the technical programme committees of the International Conference on Optical Fiber Communication (OFC), of the European Conference on Optical Communications (ECOC) and of the IEEE Microwave Photonics Conference (MWP).



**Baraja** is building the future of LiDAR to enable the autonomous future. With its revolutionary Spectrum-Scan™ LiDAR technology, Baraja gives leading automotive companies a solid-state system in the fast axis that sets a new benchmark in precision and reliability.

Baraja was founded in 2016 by telecommunications engineers Federico Collarte and Cibby Pulikkaseril, who discovered a way to use the industry's proven photonics technology to solve the problems faced by legacy LiDAR. Baraja is backed by Sequoia, Blackbird Ventures, Hitachi Construction Machinery and Main Sequence. [www.baraja.com](http://www.baraja.com)



**Yannick K. Lize** is **Vice President of Research & Development** at Baraja, developing the next generation of advanced lidar technology and components. Prior to joining Baraja, he was CEO of DigitalLight, a startup developing DSP for lidar systems. Over the last two decades, Dr. Lize had several senior management roles in the optical component industry such as VP of Engineering at Effect Photonics, VP of Product Development at Insigna Technologies, and Director of Product Development at Intel Corporation. At Intel's Silicon Photonics Product Division, he led the team that brought volume manufacturing to Intel's first two Silicon Photonics products.

Prior to Intel, Lize was Director of Engineering Development at JDSU/Lumentum, a publicly listed telecommunications company specializing in optical components.

Dr. Lize holds a PhD in Physics, and a M.Sc. in Engineering Physics from Ecole Polytechnique de Montréal.



**bmbg consult** is an International Management Consultant with a long experience in semiconductor industry R&D, photonics, mask making, EUV ecosystems and infrastructure, product management, product strategy, business development with 30 years of management in different industries from group to division level, management of national and international funding projects, implementation and assessment of excellence systems. The main focus in recent years is on market access for high tech products. [www.bmbg-consult.de](http://www.bmbg-consult.de)



**Jan Hendrik Peters (Owner)** has a background in physics and business administration. He holds degrees in physics from the University of Washington, Seattle (M.S.) and University of Hamburg, Germany (PhD) and an MBA from the Nordakademie in Elmshorn, Germany, in International Management, International Marketing and Business Communication. Based on his management experience in the academic world (particle physics lab DESY) and the semiconductor business sector (AMTC and Carl Zeiss SMT), he started his management consultancy firm in 2017 to support SMEs in strategy development and balanced business management. He is an EFQM advisor, trainer, and assessor, helping companies to develop themselves. His work as an excellence assessor allows him to acquire a deep insight into management methods from organizations all over Europe, from Mexico, through the Near East and China which he transfers to the realm of small and medium enterprises.

## cadence<sup>®</sup>

**Cadence Design Systems** enables electronic systems and semiconductor companies to create the innovative end products that are transforming the way people live, work, and play. Cadence's software, hardware, and semiconductor IP are used by customers to deliver products to market faster—from semiconductors to printed circuit boards to whole systems. The company's System Design Enablement strategy helps customers develop differentiated products in mobile, consumer, cloud datacenter, automotive, aerospace, IoT, industrial, and other market segments. Cadence is listed as one of FORTUNE Magazine's 100 Best Companies to Work For. Learn how Cadence has teamed with Lumerical Solutions and PhoeniX Software to develop an integrated electronic/photonics design automation (EPDA) environment. [www.cadence.com](http://www.cadence.com)



**Gilles Lamant (Distinguished Engineer).**



**CEA-Leti** is an applied-research Institute located in Grenoble-France and specialized in micro and nano technologies. The 'Optic and Photonic Division' develops technologies in the field of lighting, display, sensing, imaging and communications. It is integrated over the whole development cycle (Design, Fabrication and Tests), from the material (Si, Ge, III-V, II-VI) to devices and circuit fabrication (100mm/200mm/300mm fab), packaging and test. In addition to Leti's 1,700 employees, there are more than 250 students involved in research activities, which makes Leti a mainspring of innovation expertise. Leti's portfolio of 3000 families of patents helps strengthen the competitiveness of its industrial partners. [www.leti.fr](http://www.leti.fr)



**Laurent Fulbert (Deputy Head of Optics and Photonics Division)** received an engineering degree from the Ecole Centrale de Paris, in 1989. He has been working at CEA-Leti, a major European technological research institute in microelectronics and microtechnologies, since 1990. From 1998 to 2004, he was manager of the Optoelectronics Devices Laboratory, dealing with solid-state lasers, crystal growth, integrated optics, optoelectronics packaging and optical microsystems. From 2004 to 2014, he was photonics programs manager at CEA-LETI, in charge of business development and collaborative projects in the field of integrated photonics, nanophotonics, sensors and lasers. Since 2014, he has been Deputy Head of Optics and Photonics division, in charge of Strategy and Programs Management. Between 2014 and 2021, he was also managing director of III-V Lab, a joint R&D laboratory between Nokia, Thales and CEA.



**CDA** is a mid-size German contract manufacturing company specializing in customized micro-optics design and production, as well as navigation data duplication on flash memory. Over 25 years of experience in polymer wafer-level manufacturing, CDA has achieved a reputation for flexible and scalable production. Global customers are mainly from consumer electronics, automotive and industrial automation. Our mission is our passion - We inspire & manufacture value! [www.cda.de](http://www.cda.de)



**Nicolaus Hettler (CTO)** studied mechanical engineering at the University of Karlsruhe and in parallel economics at the University of Hagen. The PHD he completed at the University of Stuttgart in the field of Electronics. His business career he started in an international plastic and rubber product manufacturing company where he ultimately joined the Board of Directors. Further experience he gathered in similar positions in Automotive Tier 2 and Industry component manufacturing enterprises. In 2005, Nicolaus joined CDA and established two new business units of which one deals with polymer micro-optics on wafer level.

**CoolLED** designs and manufactures cutting edge LED Illumination Systems for life science, materials science and clinical applications using the latest LED technology. Since introducing the first commercially available LED Illumination System in 2006, we have led the way in transforming fluorescence microscopy and transmitted illumination. Now we are a fast-growing company with a vast product range and technical expertise to support diverse applications requiring bright, stable and homogenous illumination. We collaborate with many organisations across Europe, support the European Light Microscopy Initiative, and are members of Euro-Biolmaging. [www.cooled.com](http://www.cooled.com)



**Gerard Whoriskey (Technical Director)** graduated from Glasgow Caledonian University with BEng(Hons) in Electronic Engineering. He then embarked on an R&D based project through a KTP programme involving a partnership between CIL Ltd and the University of Southampton ORC department. During this project Gerry investigated what could be achieved with LED technology and optics and helped conceive and develop the first CoolLED products. He has been with CoolLED ever since, working with the latest technology to develop exciting new LED based products for demanding applications.



**Cristal Laser** is a French-based company specialized in the manufacture of high quality nonlinear optical crystals such as LBO, RTP Q-switches, KTP and KTA. Those are used either for frequency conversions (SHG, THG, OPO) or for electro-optic applications (Q-switching or pulsepicking). With more than 30 years of expertise, Cristal laser boasts a 2400m<sup>2</sup> manufacturing facility with top level crystal growth stations and cutting and polishing machines as well as high-end testing equipment (Zygo interferometers, AFM, spectrophotometer, laser test setups...). Cristal laser currently supplies the main world players in the laser industry and is also involved several European research and space projects (ELI programs, Curiosity and Perseverance Mars rovers, Aeolus...). [www.cristal-laser.com](http://www.cristal-laser.com)



**Dominique Lupinski (CEO & President)** founded Cristal Laser in 1990, which is today the only European non-linear crystal growth company. He's graduated from ENSMM engineer school and also holds an MBA. During his 30-year career at Cristal Laser, he's managed more than 40 research projects with ESA, Otan, Eurostar, DGA, CNES... Besides, he is president of the board of Engineer school ENSGSI (Nancy) and has also participated in R&D funding committee.

**EKSPLA** - Innovative manufacturer of solid state and fiber lasers, systems and components from custom system to small OEM series. In-house R&D team and more than 25 years' experience ensures operative design, manufacturing and customization of the new products. For OEM customers who need reliable lasers equipment delivered on time Ekspla provide optimized/tailored solutions for specific requirements that enables to make customers' product unique. Unlike of the shelf manufacturers, EKSPLA provide close partnership, collaboration and our commitment that will help to create value to your customers. [www.ekspla.com](http://www.ekspla.com)

Main products:

- Ultrafast fiber and DPSS lasers for industrial applications
- Solid-state lasers, laser systems and accessories for R&D applications
- Tunable wavelength systems
- Laser spectroscopy systems (SFG, THz, CARS)
- High intensity OPCPA laser systems



**Kestutis Jasiunas (CEO)** is one of the founders and the present chief executive of Ekspla. Having graduated from Vilnius University in 1982, he started his working career as a research fellow at the Institute of Physics in Vilnius. With years passing, his activities gradually and consistently shifted from hands-on laser science towards laser design and commercialization and towards strategic management later.

**Fraunhofer Heinrich Hertz Institute** does research on communications since more than 90 years. Nowadays, about every second bit transported in the internet touches HHI InP technology on its way to the receiver. With a strong focus on InP, we also develop polymer waveguide based hybrid integration and silicon photonics. While our expertise is strongest in high performance (100Gbit/sec and above) data- and telecom and in Photonic Integrated Circuits for Quantum Cryptography, we have strongly increasing activities in sensor systems, e.g. based on terahertz technology. We regularly offer multiproject wafers in InP. Our partners have the choice to do the design themselves and just use us as a foundry or to get both design and chips from a single source. [www.hhi.fraunhofer.de](http://www.hhi.fraunhofer.de)



**Martin Schell (Executive Director)** studied physics at the RWTH Aachen University and took his Ph.D. in 1993 at the Technical University of Berlin. Following a one-year research post at the University of Tokyo, Martin Schell worked from 1995 to 2000 as a management consultant for high tech and energy at the Boston Consulting Group. Before he joined Fraunhofer HHI as head of the Photonic Components department in 2005, he was head of production at Infineon Fiber Optic Technologies. Since 2012, he is professor for optical and optoelectronic Integration at Technical University Berlin. Since 2014, Martin Schell leads Fraunhofer HHI together with Thomas Wiegand. **From 2015 to 2021, Martin**

**Schell was member of the EPIC Board of Directors**, and from 2019 to 2021 member of the Jenoptik Science Advisory Board. He is head of the board of OpTecBB, a network of 100 photonic companies and institutions in Berlin and Brandenburg.



**HP** creates technology that makes life better for everyone, everywhere — every person, every organization, and every community around the globe. This motivates us — inspires us — to do what we do. To make what we make. To invent, and to reinvent. To engineer experiences that amaze. We won't stop pushing ahead, because you won't stop pushing ahead. You're reinventing how you work. How you play. How you live. With our technology, you'll reinvent your world. [www.hp.com](http://www.hp.com)



**Cary Addington (Senior R&D Engineer)** at HP Inc since 1996. Helped resolve design and process integration challenges for multiple generations of Thermal Ink Jet printheads for consumer and commercial applications. Oversees laser-based processing for production and leads multiple laser labs that are used to develop applications that range from feasibility studies to prototyping and high-volume production for internal design and program teams that has also generated multiple patents. Prior to HP, held multiple positions developing and servicing multi-kW lasers in the automotive, nuclear and industrial markets over a four-year period.



**Imagine Optic** is a provider of Shack-Hartmann wavefront sensing hardware and software, adaptive optics technologies and professional services in applied optics. We work with scientists and industrials in domains including pure science, high power laser, quantum, industrial quality control, space and defense, semiconductors and many others. From X-EUV to SWIR and MWIR, through the visible light spectrum, we develop, manufacture, distribute and support a very large range of wavefront measurement and correction technologies. From increasing resolution in bioimaging applications to improving beam shape and propagation, we have the hardware and software to meet customer needs. We bring on the market in 2022 the Optical Engineer Companion, a versatile and evolving optical metrology system. [www.imagine-optic.com](http://www.imagine-optic.com)



**Samuel Bucourt (CEO)** graduated from Institut d'Optique Graduate School and from HEC. He founded Imagine Optic in 1996 and Imagine Eyes in 2003. Both companies are offering instrumentation based on wavefront sensing and adaptive optics for academic, industrial and medical purposes. He is also the co-founder of Axiom Optics in 2009, a US company providing complex optical solution based on European technologies. He is the co-author of a few patents and scientific articles. He is an expert in metrology as he started his career by developing a 3D probe based on conoscopic holography (Le Conoscope). Samuel is also the VP of Photonics France, President of Alphanov and member of the board of Directors of EPIC.





Intel is best known for our processors, but we do so much more. We are makers, catalysts and inventors. We innovate at the boundaries of technology to make amazing experiences possible for business, society, and every person on Earth. With more than 100,000 employees in 63 countries and customers in over 120, Intel's products and services create the foundation for limitless invention. Our innovations are bringing sight, touch, depth-perception and the ability to communicate to devices, objects and spaces to make them smart and connected. We harness the capability of the cloud and the Internet of Things to disrupt industries while solving global challenges. We lead on important matters of policy, diversity, inclusion, education and sustainability. Intel has transformed to a company which now also powers the majority of the world's data centers, connecting hundreds of millions of mobile and Internet of Things devices, and helping to secure and protect enterprise and government IT systems. Our manufacturing advantage, fueled by our pursuit of Moore's Law, lets us continuously push the limits of performance and create experiences which can be made possible. [www.intel.com](http://www.intel.com)



**Robert Blum (Director of Strategic Marketing and Business Development)** works for Intel's Silicon Photonics Product Division. Prior to joining Intel, Robert was Director of Strategic Marketing at Oclaro Inc., and held various Director level roles for Oclaro's DWDM and consumer laser portfolio. Before joining Oclaro, Robert was Product Line Manager for optical transmission components at JDS Uniphase Corporation and held various engineering and marketing management roles at Gemfire Corporation, all in California. Robert worked at Deutsche Telekom's research labs in Germany as part of his master's thesis at TU Darmstadt

and holds a doctorate degree in Physics from TUHH in Hamburg. He has also studied and done research at Ecole Polytechnique Fédérale in Lausanne, Switzerland, and at Stanford University, California.



**Edgar Auslander (Director, Head of Strategic Partnerships and Intelligence, Facebook Reality Labs (Meta Reality Labs))** has more than 30 years of experience in venture capital, M&A, product management, and general management at startups and Fortune 100 companies such as Facebook, Qualcomm and Intel. He is Director, Head of Facebook Reality Labs Strategic Partnerships, focusing on VR, AR, and wearables, new hardware and software technologies. He initiated and drove the partnership with EssilorLuxottica and redefined Facebook AR roadmap. He is the Founder of Menlo Business Partners, a consulting firm helping companies grow or exit, is at the Board of Advisors of several startups, one of

which he helped sell to Google, and was at the Board of a public company. A former Faculty Member at Stanford University and at EDHEC business school, he started his career while studying for his MBA by licensing inventions from Columbia University Telecommunications Research Center.

Edgar Auslander has held several executive positions at Qualcomm, Intel, ST-Ericsson, Audience (a company he helped sell to Knowles), Texas Instruments, VantagePoint Venture Partners, and IXI-Mobile. Notably, he was one of the founders of Texas Instruments' Wireless Business Unit (\$0 to \$5B/yr) and served as its General Manager, Worldwide Strategy and Corporate Development. He also served as SVP Marketing at IXI Mobile Inc., a Silicon Valley start-up that pioneered wearables and services similar to Instagram in 2001. A Senior Member of IEEE, Mr. Auslander is co-author of "The Applications of Programmable DSPs in Mobile Communications" (Wiley). He published numerous business and technical articles, and has spoken at industry conferences worldwide. He holds an MBA from Columbia University, and an MEng from Cornell University. [about.facebook.com/meta](http://about.facebook.com/meta)



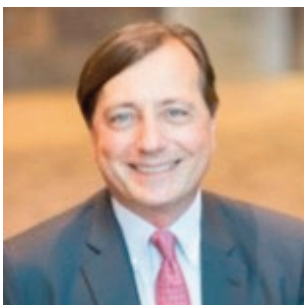
**Fastree3D** is a flash LiDAR company. Their imagers for 3D sensing contribute to pedestrian detection for automotive, collision avoidance for AGVs, and machine vision. Their unique LiDAR solution combines single-photon sensitive detectors, ultrafast lasers in a robust flash configuration, all done in a consumer electronic technology (CMOS). The employed system on a chip solution (SoC) offers per-pixel reliability measure (Quality of result), multiple flexible outputs (distance, intensity, speed and motion), at a minimized processing power (ASIC), all in a single camera-module. Fastree3D is a fabless semiconductor company based in Switzerland, started as EPFL and TU-Delft spin-off. [www.fastree3d.com](http://www.fastree3d.com)



**Claude Florin (CEO)** is the founder and chief executive officer of Fastree3D developing laser ranging sensors for automotive safety and autonomous vehicles. The technology is based on arrays of single photon avalanche photo diodes (SPADs) fully integrated in CMOS system on chips up to QQVGA resolution. VCSEL arrays in NIR allow operations in pulsed Flash LiDAR mode. Claude Florin has been a co-founder of 3 startups and managed investments in over 12 early-stage ventures. His previous industry career lead to successful product launches based on video processing, image compression and embedded signal processing.



**ficonTEC** provides automated micro-assembly and testing solutions for the photonics industry. These solutions are realized as cutting-edge, semi- or fully-automated production systems, regardless of the device material and of the specific application the device is targeting. Our modular system architecture is additionally scalable, so that exploratory, proof-of-process assembly as well as high-volume assembly and test requirements are addressable – and anything in between. [www.ficontec.com](http://www.ficontec.com)



**Stefano Concezzi (Corporate Vice President).**



**iBeam Materials** was founded in 2011 in Santa Fe, NM, USA, as a novel materials R&D company. iBeam has demonstrated a technology for deposition of high-quality epitaxial GaN materials and devices on flexible metal foils. Currently iBeam is developing a roll-to-roll process for manufacturing of these devices in large areas. iBeam Materials seeks to transform the worlds of Lighting and Displays with revolutionary products based on novel large-area sheets of integrated LEDs and GaN devices. [www.ibeammaterials.com](http://www.ibeammaterials.com)



**Vladimir Matias** is the **Founder and President** of iBeam. Having attained his Physics degrees from Caltech (BS) and Stanford (PhD), he has over 25 years of experience with advanced thin film technology, both within the commercial sector and in government R&D supporting the development of commercial technologies. He is the world leader in the development of the ion-beam alignment process and associated technologies, with about 150 technical papers and over two dozen related patents. Vladimir and his team were also recognized by two national R&D 100 awards (2003 and 2010). He has extensive experience in applied R&D and in what it takes to bring new materials to market.



**Jabil Optics Germany**, a subsidiary of Jabil Inc., Florida, is a leading provider of Optical design services and manufacturing services for augmented, mixed, and virtual reality, advanced camera systems, and 3D sensing (LiDAR, ToF, Stereo). We offer in-depth knowledge of optical systems and technologies integrated into a broad optoelectronics ecosystem, allowing for one-stop solutions, from innovative design all the way through precision mass production. In an international team, Jabil Optics Germany develops innovative customized opto-electronic modules for new generation products in Consumer Lifestyle, Automotive and Industrial, supporting the overall Jabil strategic vision to be the most technologically advanced and most trusted manufacturing solutions provider. [www.jabil.com/optics](http://www.jabil.com/optics)



**Ian Blasch (Senior Director)**. For over 25 years Ian has spent his career at the intersection of technology, finance, and innovation as an engineer, investment banker, corporate venture capitalist, and entrepreneur. Prior to leading Jabil Optics' R&D initiatives, Ian founded Micron Technology's Open Innovation Group, held senior management positions at several deep technology startups, executed financial transactions as an investment banker, and was a Captain in the United States Air Force.

Ian holds an MBA/MSE from Stanford University and a Bachelor of Science in Mechanical Engineering from MIT. Based on his academic and undergraduate research work at MIT, Ian was awarded a prestigious Marshall Fellowship to study for an MSc in Mechanical Engineering at Cranfield University.



**Kinetic River Corp. (KRC)** is a biophotonics design and product development company focused on flow cytometry. With 14 issued and 14 pending patents, KRC is a leading developer of novel analytical technology, including time-resolved flow cytometry—a proprietary platform that allows richer and more powerful cell analysis. Custom instrumentation designed and built by KRC has been installed at the U.S. National Cancer Institute, University of California Davis, New Mexico State University, Italy's National Research Council, and Scandinavia. Since 2017, KRC has been awarded four competitive SBIR grants from the U.S. National Institutes of Health, totaling about \$2.2M to date, to help develop innovative flow cytometry technologies. KRC also provides engineering consulting services to companies large and small in fields from photonics to semiconductor equipment to life sciences. [www.kineticriver.com](http://www.kineticriver.com)



**Giacomo Vacca (President)** earned physics degrees from Harvard University (BA/MA) and from Stanford University (PhD). For his dissertation, with Nobel Prize winner Bob Laughlin, he developed a novel ultrafast light scattering technique. He has generated extensive intellectual property (103 patent applications, 64 issued to date) and has managed groups, budgets, programs, and IP portfolios. At Abbott Labs, he invented and developed Laser Rastering, a radically innovative concept in flow cytometry that boosted cell analysis rate by a factor of 30. A Senior Member of SPIE and of Optica and past Abbott Research Fellow, he received several awards for innovation. He founded Kinetic River Corp. in 2010 and runs it to this day; in 2013 he cofounded

BeamWise, a developer of optical system design software. Since 2015 he has also provided expert witness services in patent validity, infringement, and trade secret litigation cases.



**K Sciences** is an advanced research engineering firm bringing new innovations to various markets. Our committed goal is to create, develop and provide advanced optical sensors and unconventional measurement solutions for a wide range of applications. [k-sciences.com](http://k-sciences.com)



**Hemang Jani, PhD (Senior Researcher)** joined K Sciences GP LLC in 2020 immediately after he graduated with his Ph.D. degree in Optical Science and Engineering in the Precision Ultrafast Light Sciences (PULS) group at the University of Alabama in Huntsville (UAH), Alabama, USA. During his 2-year tenure at K Sciences, he has recently demonstrated a Fiber Optics recession and temperature sensor for NASA's re-entry vehicle for Earth and outer planet missions. Apart from that, he has also successfully completed an Optical Systems Engineering project for Microfluidics based Antibiotic Susceptibility testing for a biotechnology company based in Huntsville. Currently, he is involved in research

and development of K Sciences Non-invasive Glucose sensor. The sensor is based on the optical polarization properties of glucose. During his PhD research, he has designed and assembled complex, compact few-cycle pump-probe systems. The resulting pump-probe system offers both high temporal resolution and broad spectral coverage. The approach is based on a few-cycle femtosecond laser and an ultra-broadband pump-probe system. The latter is the key innovation as it allows the pulse width and the spectrum of the laser to be preserved throughout the beam paths and eventually delivered onto the sample. The result is a simple (oscillator only), compact (small footprint) pump-probe system that can make time-domain and spectral-domain measurements simultaneously.





**LEADOPTIK (Precision via Metavision)** is a venture-backed startup based in Milpitas, California. We are building a miniature Lidar system for the surgical device. Our sub-millimeter imaging platform empowers minimally invasive surgery with 3D navigation capability which can also provide pathology grade imaging in real-time. Our imaging platform is based on metasurfaces where we shrink optic  $>1000\times$  while achieving the highest achievable image resolution (diffraction limit) at a fraction of the cost of conventional optics. [www.leadoptik.com](http://www.leadoptik.com)



**Reza Khorasaninejad (CEO/Founder of LEADOPTIK, Ph.D.)** was the former CTO/Co-founder at BRELYON Inc. and former Research Scientist at Harvard, where he invented the first efficient meta-lens across the visible range published as the cover of [Science Magazine](#) and was selected as “Top Ten Breakthrough of the Year” by Science Magazine. Meta-lens work was selected by both the [World Economic Forum](#) and [Scientific American](#) as one of the “Top Ten Emerging Technologies” of the Year 2019. Reza has more than 110 scientific publications and holds more than 25 patents. He has delivered more than 15 invited talks including [TEDx](#) and Keynote

speeches in major international conferences.

## Leia Inc.

**Leia Inc** is an experience platform offering 3D Lightfield products and software applications that challenge the limits of what can be created and shown on a display screen. Leading brands in the automotive, education, gaming, hospitality, medical, and retail industries are embracing Lightfield as the de facto medium to connect with their consumers and re-define their marketplaces. Leia’s disruptive, award winning, and world’s first Lightfield tablet, the Lume Pad, is an all-in-one Android 10-powered tablet that can run 3D Lightfield apps, games, photos, and video. Depth, texture, and light makes content spring to life, creating a more immersive and sensory experience. Leia combines nanotechnology, and AI to build the future of experiences. [www.leiainc.com](http://www.leiainc.com)



**Sonny Vo** received his undergraduate degree at UCLA specializing in low temperature experimental physics and a Ph.D in Applied Physics from Stanford University in semiconductor lasers, micro & nano fabrication, and photonics under Professor James S. Harris. Subsequently, he became a Post-Doctoral research fellow at HP Laboratory in Palo Alto, California where he was involved in numerous projects essential to the future of optical communication, quantum computing and the next generation LCD displays. One of the fundamental element that enables this future is a directional backlight for efficient in-coupling of light. Led by his mentor, Dr. David Fattal, this work was featured on the cover of Nature in March 2013

for its groundbreaking glasses-free 3D display technology: laying the groundworks for the Silicon Valley startup company, Leia Inc. Presently, Sonny is the Vice President and Director of the advance R&D, Micro&Nanotechnology Laboratory of Leia Inc.

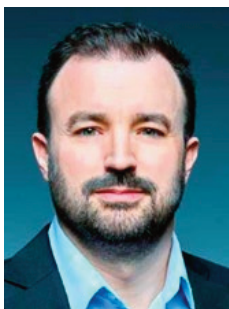


**Light Conversion** is the world leading manufacturer of femtosecond lasers PHAROS and CARBIDE as well as wavelength tunable ultrafast light sources based on TOPAS and ORPHEUS series of optical parametric amplifiers (OPA). Light Conversion is a privately-owned company with >250 employees. Company has its roots in Laser Research Center of Vilnius University. Femtosecond lasers from Light Conversion are broadly used for scientific and industrial applications with more than 10 years history of their usage in 24/7 manufacturing. With over 4000 various systems installed worldwide, Light Conversion has established itself as a reliable and innovative producer of ultrafast optical devices. [www.lightcon.com](http://www.lightcon.com)



**Martynas Barkauskas (CEO)** is CEO of Light Conversion, a leading femtosecond laser manufacturer located in Vilnius, Lithuania. Previously, Martynas held different positions within the company working at femtosecond laser development, managing world-wide service activities, and serving as head of sales. He holds a degree in laser physics from Vrije Universiteit Amsterdam, the Netherlands, and PhD in ultrafast spectroscopy from Vilnius University, Lithuania.

**Menhir Photonics** is a worldwide supplier of ultrafast lasers (picosecond and femtosecond lasers) and related photonics solutions. We focus on industrial quality by emphasizing the reliability and robustness of our products. This allows our ultrafast lasers to be used in all conditions, from laboratory setups to space applications. Thanks to innovative technology and design, the lasers offer extremely low phase noise and timing jitter at record high pulse repetition rates, making them the right choice for numerous applications including timing & synchronization, microwave generation, and applications in telecommunication such as quantum key distribution or photonic analog to digital conversion. [www.menhir-photonics.com](http://www.menhir-photonics.com)



**Benjamin Rudin (CTO)** holds a Master (2004) and a PhD (2010) in physics from ETH Zurich, conducted in the group of Prof. Ursula Keller. With 15 years of experience in the field ultrafast lasers including many years in industry, Benjamin is at the heart of the products development at Menhir Photonics, where he brings a high-level of technical and management expertise. He is in charge of the design and supervision of Menhir Photonics' products, as well as bringing state-of-the-art innovations in the company.

**Modulight** is an ISO9001, ISO14001 and ISO13485 certified company focusing on design, development and manufacturing of laser diodes and laser systems. Modulight lasers are deployed mainly in medical, industrial, security/defense and display/projection markets. The company provides components and turnkey laser systems with wavelengths range between 405 nm and 1650 nm and power levels up to 100 W along with design and implementation of sub-system level laser integration including cooling, drivers and mechanical design. The products are offered from bare and mounted laser chips to packaged and fibre-coupled lasers and complete turnkey laser systems. The Company has in-house laser diode production facilities and headquarters in Tampere, Finland and a fully owned subsidiary Modulight USA, Inc., based in San Jose CA. [www.modulight.com](http://www.modulight.com)



**Petteri Uusimaa (Founder and CTO)** holds a PhD in semiconductor physics from Tampere University of Technology. Prior to joining Modulight, he held numerous manager positions in international research projects in which he managed relations to international funding companies as well as was the principal scientist in the programs. Since 1997, Dr. Uusimaa has been managing semiconductor sales to multinational companies and acted as a President & CEO of Modulight until 2019 when he took the position of Chief Technology Officer. Dr. Uusimaa has been a member of Modulight board since incorporating the company in 2000.



**Seppo Orsila (Chairman and CEO)** has 20 years of experience in international business in semiconductor, personalized medicine and telecommunication. Prior to re-joining Modulight he served in various roles most recently CFO of Nokia accessories business unit. Mr. Orsila has MBA from Helsinki School of Economics and Master of Science in semiconductor physics from Tampere University of Technology.

**MPS Microsystems** develops and manufactures high precision, high-performance electro-mechanical microsystems. Managing the miniaturisation and integration of functions in small spaces, MPS Microsystems provides solutions that meet specific customer requirements. MPS product family includes among others “short strokes, high frequency lens focus mechanisms” based either on flexure elements or linear actuators; “compact zoom mechanisms” used for laser guidance or stereoscopic surgical cameras; “particle free laser focusing systems” suitable for laser cutting or other laser machining technologies. MPS Microsystems also offers a standard range of mechanical components, such as linear bearings and ball screws. Located in Bienne, Switzerland, in a modern and well-equipped facility MPS Microsystems offers its 220 employees an exceptional working environment and provides customers with unique capabilities that are perfectly suited to the requirements of the optics & photonics industry. [www.mpsag.com](http://www.mpsag.com)



**Grégoire Bagnoud (Director Business Development)** has a master’s degree in mechanical engineering from the technical university (ETH) in Zurich, Switzerland. He joined MPS Microsystems six years ago and has been in charge with the development of the product and service portfolio to address better the needs of the optics & photonics and medical markets in Europe and USA. Before joining MPS Microsystems, he has had management roles in sales, marketing and innovation for fifteen years in different companies supplying drug delivery devices to the pharmaceutical industry.

## NeoPhotonics

**NeoPhotonics** is a leading developer and manufacturer of ultra-pure light lasers and optoelectronic products that transmit, receive and switch the highest speed over distance digital optical signals for Cloud and hyper-scale data center internet content provider and telecom networks. This is key to continuing to manage the explosive data traffic growth in Cloud and hyper-scale data centers. [www.neophotonics.com](http://www.neophotonics.com)



**Ergun Canoglu (Senior Director of Sensing and Lidar)** leads photonic device and module development for sensor applications at NeoPhotonics. Currently his development activities are focused on InP and silicon photonic devices for chip-scale coherent sensors. Prior to NeoPhotonics, Ergun had technology development roles in Santur (Acquired by NeoPhotonics), Matisse Networks, LuxN (acquired by Sorrento and Zhong) and CoreTek (acquired by Nortel). He was instrumental in early tunable laser development at CoreTek and led optical networking teams in LuxN and Matisse Networks for high-bandwidth agile optical metro/access networks.

Ergun has also received DoD and NIH grants for laser and optical sensing applications. Ergun holds BSEE from Yildiz Technical University, MSc and PhD from University of Southern California with focus on photonic devices.



**NIL Technology** (NILT), founded in 2006, is an optical solutions company designing, developing, and manufacturing optical elements and components using high-precision nanoscale features. The company is backed by several industry-independent investors: Jolt Capital, NGP Capital, Swisscanto, Vaekstfonden, and the European Innovation Council (EIC). NILT creates competitive advantages with flat optics in optical applications for 3D sensing, consumer electronics, machine vision, autonomous vehicles, telecommunication, and AR/VR/MR displays; all solutions made by diffractive optical elements (DOE) and metalenses/meta optical elements (MOE). NILT is based in Denmark and has offices in Switzerland, Sweden, and the US. Visit us at [www.nilt.com](http://www.nilt.com)



**Theodor Nielsen, CEO, Founder**, NIL Technology ApS. Mr. Nielsen holds an engineering masters degree from The Technical University of Denmark (DTU) where he has specialized in nanotechnology. Mr. Nielsen has worked with nanoimprint lithography since 2003 where he as part of his studies took part in pioneering the nanoimprint activities in Denmark. Mr. Nielsen is one of the founders of NIL Technology where he has held the position as CEO since 2006, and since 2019 he has been leading the transformation of NIL Technology from being a technology company to become a leading company of modern optical solutions, using diffractive and meta optical elements, to be used in consumer electronics, automotive and AR/VR, among others.



**OCTLIGHT** is a Danish laser company founded in 2014. Based on extensive research at Technical University of Denmark, OCTLIGHT is the first in the world to develop and start production of the world's fastest VCSEL Swept Source for OCT scanners for eye diagnostics. [www.octlight.com](http://www.octlight.com)



**Thor Ansbæk (CEO)** has a Masters in Engineering from The Technical University of Denmark. He also holds a Ph.d. in semiconductor lasers (VCSELs) for medical diagnosis. Has attracted funding from Eurostars and EIC to develop the technology and build a world-class team of Ph.D. engineers, leading consultants, a professional board of directors and an advisory board.



**Omnitron** is pushing the frontier in silicon process leveraging proven manufacturable steps to achieve an order of magnitude improvement in MEMS device performance. We believe the LiDAR market would greatly benefit from the technology we are developing and see large growth opportunities in the development of new technologies with our IP. We have just started and are in negotiation with foundries, automotive suppliers and robotics companies for our technology. We are looking for the right investor that both understands investments in frontier technology and our target customers. We are raising \$2M to prove out our principle claims. To date, we've received \$250k to date with another \$250k committed and seeking the right partnership to lead our round and help us develop our technology stack. [www.omnitronsensors.com](http://www.omnitronsensors.com)



**Eric Aguilar (CEO)** has a technical degree (Cal Poly/USC) and started his career by building sensors for drones at US Navy research labs. These sensors were fundamental to unlock autonomous flight and further advance drone capabilities. During his time at the Navy, he joined a company that was working on commercializing a sensor that his team worked on. That led to a startup "Lumedyne" that built a motion sensor that was later acquired by Google for \$85M. Eric then transitioned to developing autonomous systems. He was the avionics lead at Google[x] Project Wing and enabled autonomous flight for their commercial delivery drones. He then worked for Elon Musk on the sensor

integration efforts for Model 3 that allowed for autopilot. And was most recently at Argo AI (self-driving company funded by Ford and VW) and lead the sensor integration efforts for their fleet of robo-taxis. Eric is now a CEO and co-founder of Omnitron Sensors. Omnitron is creating a MEMS-based component for LiDARs to be used as the "eyes" of self-driving cars, drones, and other autonomous vehicle systems. Omnitron is in discussions with leading automotive suppliers and robotics companies to engage in partnerships.



**Oplatek** is the leading North-European solution provider in the field of photonics with over 35 years of experience. We are specialized in design and manufacturing specialty optical fibers and capillaries, molded glass components, thin film coatings, precision mechanics, and optical assemblies for various industries. By combining our fields of expertise, we can offer our customers a full chain of service from design to serial manufacturing. We can solve your photonics challenges! [www.oplatek.com](http://www.oplatek.com)



**Jyrki Huttunen (CEO)** has a Master of Science (Tech) degree from Technical University of Helsinki (1986) and an eMBA degree from University of Kuopio (2002). He has worked in various managing positions for SME's mainly in Finland, and briefly in the USA. He has also co-founded two companies. Since 2008, he has been co-owner and CEO of Oplatek Group Oy.





**Oyla** is a Silicon Valley California based startup company with worldwide customers. Oyla's core product is a very affordable 3D camera that inherently fuses LiDAR and high definition video at the hardware level via a single receive lens. This enables more accurate AI-driven computer vision to 50 meter range, even in low light conditions. Applications include perimeter security, crowd dynamics and statistics, railroad platform safety, pedestrian/vehicular traffic monitoring, robotics navigation, scene change detection. [www.oyla.ai](http://www.oyla.ai)



**Ralph Spickermann (Co-Founder and CTO)** is the CTO of Oyla. Before Co-Founding Oyla in 2017, he was at Lockheed Martin Space Systems for 16 years, where he was named a Senior Technical Fellow. At Lockheed Martin he held research and engineering management and corporate development positions, focusing on free space optical communications and coherent modulation techniques for long haul fiber optic communications. He holds Ph.D. in Opto-Electronics Engineering from the University of California at Santa Barbara (1996) and a B.S. in Electrical Engineering and Computer Science from the University of California at Berkeley (1986).



**Pacific Biosciences** of California, Inc. is empowering life scientists with highly accurate sequencing platforms. The company's innovative instruments are based on Single Molecule, Real-Time (SMRT<sup>®</sup>) Sequencing technology, which delivers a comprehensive view of genomes, transcriptomes, and epigenomes, enabling access to the full spectrum of genetic variation in any organism. Cited in thousands of peer-reviewed publications, PacBio<sup>®</sup> sequencing systems are in use by scientists around the world to drive discovery in human biomedical research, plant and animal sciences, and microbiology. For more information, please visit [www.pacb.com](http://www.pacb.com) and follow [@PacBio](https://twitter.com/PacBio). PacBio products are provided for Research Use Only. Not for use in diagnostic procedures.



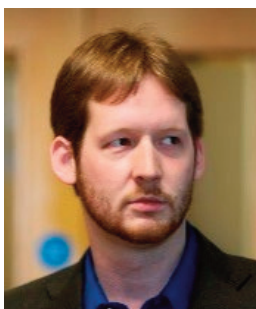
**Dr. Annette Grot** is currently **Scientific Fellow** at Pacific Biosciences, where she is responsible for developing optoelectronic circuits for DNA sequencing. She received her Ph.D. from Caltech in Electrical Engineering. Before joining Pacific Biosciences, Annette led research teams at HP and Agilent on various nanoscale photonics projects, and later drove product development of advanced optical sensors for consumer applications at Avago Technologies.



**Dr. Gloria E. Hoefler** holds Ph.D. M.S. and B.S. degrees in Electrical Engineering from the University of Illinois at Urbana-Champaign worked at 3M, HP's Optoelectronic Division, LumiLeds Lighting, Agilent Technologies, Corning and Infinera in various functional roles spanning R&D as well as high-volume manufacturing of semiconductor materials, optoelectronic devices and photonic integration platforms. She is an Optica (formerly OSA) and SPIE Fellow and serves as Associate Editor of IEEE Transactions on Semiconductor Manufacturing. Currently, she is **VP Engineering Research** at Pacific Biosciences at the Menlo Park headquarters.



**PHIX** offers assembly services and contract manufacturing for photonic integrated circuits (PICs) and MEMS. We build optoelectronic modules based on all major PIC technology platforms, including Indium Phosphide, Silicon Photonics, Silicon Nitride, and Planar Lightwave Circuit. We specialize in chip-to-chip hybrid integration, coupling to fiber arrays, and interfacing of DC and RF electrical signals. By offering our knowledge already at the chip design stage, we ensure ease of scale-up for volume manufacturing. PHIX provides a one-stop shop for PIC and MEMS assembly, from design to volume production. We have a state-of-the-art production facility located at the High Tech Factory in Enschede, the Netherlands, supporting the global industrial development of PIC and MEMS enabled modules. [www.phix.com](http://www.phix.com)



**Bradley Snyder (Principal Engineer)** is responsible for the identification and industrialization of advanced photonics and electronics packaging technologies at PHIX. After completing his doctoral studies at the Tyndall National Institute in Cork, Ireland, he worked as a Sr. R&D Engineer with imec in Leuven, Belgium from 2013 to 2018, and from 2018 to early 2020 in a stealth-mode Silicon Valley photonic quantum computing startup. In both roles, he applied his expertise and experience to addressing challenges of photonics packaging for systems ranging from compact data communications to large-scale, extreme-environment supercomputing with an emphasis on manufacturable solutions.

He is author or co-author of over 20 publications in the field of photonics.

## **PHOTONICS** spectra

Since 1967, **Photonics Spectra** magazine has defined the science and industry of photonics, providing both technical and practical information for every aspect of the global industry and promoting an international dialogue among the engineers, scientists and end users who develop, commercialize and buy photonics products. [www.photonics.com/Photonics\\_Spectra/p5](http://www.photonics.com/Photonics_Spectra/p5)



**Daniel McCarthy (Senior Editor)** manages editorial content and production for Photonics Spectra magazine. An award-winning writer and editor, he has communicated the progress and practical value of advanced technologies for over two decades.



**Photon Design** was started in 1992 in Oxford UK to provide professional quality software to the photonics industry. Since that time, it has introduced many innovations to photonics modelling, and now provides World-leading tools for the modelling of active and passive photonics components and circuits. Photon Design products are now in use in 30+ countries, 100s of research labs and contributed to 1000s of leading research publications, helping to develop the next generation of datacom components and innovations in micro and nano-optics. We are also able to provide custom solutions based on our standard products and our experts with decades of simulation experience are available for consulting. [www.photond.com](http://www.photond.com)



**Dominic Gallagher (CEO)** received a BA and PhD from the University of Cambridge in 1984 and 1987, respectively. Afterwards, he spent two years at the Fraunhofer IAF in Germany, working on high speed laser diodes and grating devices. In 1992, he returned to the UK to found Photon Design. He is currently CEO of Photon Design - a company developing photonics software for both passive and active photonics which is used in over 30 countries around the World.



Since 2006, **PhotonFirst** is unlocking the power of the photon to measure temperature, strain, pressure, acceleration and shape. Having a clear view on the performance of materials, structures and systems is key to making critical decisions in everything from aircraft to spacecraft, from power stations to data storage, from automotive batteries to cardiovascular procedures. When the application is critical, the accuracy of sensing and reporting is paramount. That's why it is our ambition to become the global innovation leader in integrated photonics sensing and OEM's partner of choice for advanced applications. What makes us different? A unique combination of factors that not only help us lead in innovation, but help us to think together in solutions. It's a pioneering attitude that has been instilled in the company from its inception. The ability to think out of the box, step out of mainstream ideas and be truly creative with technology has been in our genes from day one. Combine this with a great team and in-house PIC design, module development, application engineering and a full packaging foundry and you immediately understand why our customers love to work with us. We measure the world. [www.photonfirst.com](http://www.photonfirst.com)



**Daan A.J. Kersten**, with Master degrees in mechanical engineering from TU Delft and business administration from Erasmus University's Rotterdam School of Business combined with Stanford University Graduate School of Business's Executive Program for Growing Companies, Daan has created a solid basis for building deeptech scale-ups. After having co-founded industrial metal additive manufacturing equipment OEM Additive Industries, Daan is now **CEO** of PhotonFirst, expanding rapidly to a global player. In 2022 PhotonFirst is building a regional headquarters in North America to accelerate its growth.

# PICARRO

**Picarro** is a leading provider of solutions to measure greenhouse gas concentrations, trace gases and stable isotopes across many scientific applications, along with the energy and utilities markets. Picarro’s industrial solutions range from mobile leak detection technology for utilities companies to trace gas analysis for semiconductor fabrication and pharmaceuticals isolators. [www.picarro.com](http://www.picarro.com)

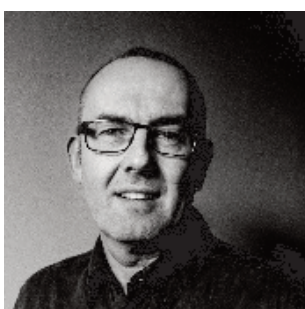


**Serguei Koulikov (Principal Scientist)**

2021-Present	Principal Scientist, Picarro
2017 - 2021	Senior Scientist, Picarro
2011 – 2017	Senior Scientist, LI-COR Biosciences
2007 – 2010	Senior Scientist, Skymoon R&D
2000 – 2007	Engineer, Picarro
1997 - 2000	Postdoctoral Research Associate, University of Illinois
1995 – 1997	Postdoctoral Research Associate, University of California
1984 – 1995	Scientist, Institute for Spectroscopy Russian Academy of Sciences
1992	Ph.D. Physics, Institute for Spectroscopy Russian Academy of Sciences
1984	M.S. Physics, Moscow Institute of Physics and Technology



**PowerPhotonic** designs, manufactures & validates beam shaping and image enhancing optics for the most demanding applications in Industrial Laser Material Processing (Additive Manufacturing, Cutting and Welding & Marking); in Ophthalmology and microscopy-based Imaging; in Directed Energy and in Laser projection displays. PowerPhotonic uses proprietary freeform processes that have been developed over 15 years, and is now an established leading manufacturer of precision, high power optical components. [www.powerphotonic.com](http://www.powerphotonic.com)



**Paul Blair (Head of Technology)** leads the company’s activities in the acquisition of new transformational technology, creating IP internally or externally acquiring capabilities through funded development programmes or acquisition activities. Paul graduated in Physics at the University of Manchester and earned his PhD from Heriot-Watt University in Edinburgh in 1996. After graduation Paul held a number of senior roles in the telecommunications and optical components industry, and had been involved with a number of successful high technology start-ups before joining PowerPhotonic.

Powered by breakthroughs in silicon photonics and quantum architecture, **PsiQuantum** is on course to build the world's first commercially useful quantum computer to solve some of the world's most important challenges. PsiQuantum believes silicon photonics is the only way to achieve the necessary scale required for error correction and deliver a fault-tolerant, general-purpose quantum computer. With quantum chips now being manufactured in a world-leading semiconductor fab, PsiQuantum is uniquely positioned to deliver quantum capabilities that will drive advances in climate, healthcare, finance, energy, agriculture, transportation, communications, and beyond. To learn more, visit [www.psiquantum.com](http://www.psiquantum.com).



**Kishor Desai (Sr. Packaging Engineer)** is an experienced IC Packaging Technologist with 40 years of experience in designing, developing and qualifying IC Packaging Interconnect Technologies for the product spanning from Main frame computers, Networking and Storage products and high-speed Transceivers used in Datacenters.

Kishor is with Psi Quantum since 2019. Prior to joining Psi Quantum, he worked at Silicon Photonics based startups companies including Elenion Technologies, Aurrion, Lightwire/Cisco and industry's leading ASIC companies such as LSI Logic and IBM.

Kishor graduated with MS in Material Science from Stevens Institute of Technology, Hoboken, NJ. He holds 59 IC packaging related patents including interconnect technologies and material used in BGA, Flip Chip and Multi-Chip Module. He is a member of SPIE, IMPA and IEEE.



**SENRORICS** is a start-up originating from the University of Technology Dresden commercializing an optical sensor solution for near-infrared (NIR) spectroscopy based on organic electronics. This proprietary technology allows small, robust, wavelength selective and fully customizable detectors enabling NIR-spectroscopy on a chip level. Thus, SENORICS can deliver unique solutions for a multitude of measurement and detection problems in industrial applications. Examples are determining ingredients or compositions of raw materials, consumables or end products in the food, chemistry, packaging or automotive industry and many other branches. Moreover, SENORICS technology is enabling the design of new small and mobile mass market devices for consumers including NIR-spectroscopy chips for smartphones. [www.senorics.com](http://www.senorics.com)



**Ronny Timmreck (CEO)** received his diploma degree in physics from the University of Technology Dresden, Germany and his PhD for a work on organic solar cells in the group of Prof. Karl Leo renowned for the organic electronics start-ups Novaled and Heliatek. Ronny founded his first start-up at the age of 23 and developed this company to a leader in its branch. In 2016, he took the lead in the start-up project SENORICS. He has been CEO of SENORICS since the company's foundation in 2017.



**Sensofar** is a multi-national company whose mission is to develop, manufacture and commercialize high-end metrology tools. R&D is an additional goal of the company with more than 20% turnover investment. We have been combining the new product lines with some value-added improvements based on our comprehensive knowledge of the optical metrology field and by working very closely with research centres and universities across Europe. We also provide consultancy within the field of metrology, and pursues a philosophy of guaranteeing advanced techniques, high quality and customer services. The Sensofar Group headquarters is located in Barcelona, Spain, with more than 50 employees and a yearly turnover exceeding 10 M€. The Group is represented in over 30 countries through a global network of partners and has its own offices in Asia, Germany, and the United States.  
[www.sensofar.com](http://www.sensofar.com)



**Roger Artigas (President & CTO)** was born in Terrassa in 1973. He won the title of Physics Science from the Universitat Autònoma de Barcelona in 1997 and a Ph.D. in Physics, specialty of optical engineering, from the Universitat Politècnica de Catalunya in 2001. He has been working since 1997 to the present at the Centre for Sensors, Instruments and Systems Development (CD6) as optical engineer researcher. In 2001 he founded the company Sensofar Tech SL. From 2005 to the present, he is part of the TG WG16 committee of the ISO25178 standard which is applied in the field of equipment developed in Sensofar. Currently, he holds the position of President at Sensofar Tech SL.

**SUSS MicroOptics** manufactures high-quality refractive and diffractive micro-optics on 200mm wafers for applications in automotive, photolithography, fiber optics, silicon photonics and more. Our production facilities in Neuchatel, Switzerland, exemplify excellence and our new volume production line imprints micro-optics for automotive lighting. Suss MicroOptics is ISO 9001:2015 and IATF 16949:2016 certified and is a subsidiary of SUSS MicroTec SE. [www.suss.ch](http://www.suss.ch)



**Reinhard Voelkel (CEO)** received his Diploma in Physics in 1989 and his PhD in 1994 from the University of Erlangen-Nuernberg, Germany, where he worked at the Applied Optics Institute (Prof. Adolf W. Lohmann, Prof. Johannes Schwider) on holographic optical elements for optical interconnects and backplanes. After his PhD, he joined the Institute of Microtechnology (Prof. René Dandliker, Prof. Hans Peter Herzig) at the University of Neuchatel, Switzerland, working on micro-optics for biosensors, optical interconnects, photolithography systems, miniaturized imaging, and camera systems. Reinhard Voelkel is co-founder and CEO of SUSS MicroOptics SA, a leading supplier of micro-optical components and systems located in Neuchâtel, Switzerland. He is a member of the German Optical Society (DGaO), the Swiss Optical Society (SSOM), the European Optical Society (EOS), the Optical Society of America (OSA), Sand Hill Angels, and SPIE Fellow.



**Patrick Heißler (Director Business Development)** did his Ph.D. work at the Max Planck Institute of Quantum Optics and the LMU Munich on relativistic laser plasma interaction. For 15 years, he is working on the interaction of light with matter and the design and manufacturing of optical components. After several positions in industry, scaling new businesses, bringing new products to market and making innovations commercially successful, he is now director Business Development at SUSS MicroOptics.

**Swissphotonics** is an association with the goal to support the innovation forces by bringing academic and industrial partners together in the field of photonics. Towards this goal we organize workshops and we are networked on Swiss and international level and we provide access to this network for our members. [www.swissphotonics.net](http://www.swissphotonics.net)



**Christian Bosshard (Managing Director)** received his degree in Physics (1986) and his doctorate (1991, Silver medal award) from ETH. From 2001-2021 he was working at CSEM, first as Section Head and then as Vice President and Head Photonics. Since 2013 he is Managing Director of Swissphotonics. Christian is a Fellow of Optica, Board Member of EPIC, and Member of the Board of the University of Basel.



Tarkas catalyzes start-ups in technology and photonics. [www.tarkas.net](http://www.tarkas.net)



**Kurt Weingarten (General Partner)** received his Ph.D. in electrical engineering at Stanford University developing an ultrafast measurement tool for high-speed integrated circuits using picosecond lasers. After Stanford, Kurt worked at Lightwave Electronics from 1988 to 1993, pioneering one of the first commercial diode-pumped picosecond lasers. He then founded Time-Bandwidth Products in Zurich in the mid-1990s to develop simple, robust ultrafast lasers for scientific and industrial applications. Kurt founded venture-backed telecom start-up GigaTera in 2000 to develop an ultrafast laser for soliton transmission systems.

Time-Bandwidth acquired GigaTera in 2003. The following decade saw the emergence and development of ultrafast lasers as a new tool for laser micromachining, where Time-Bandwidth played a leading role in the laser technology and product development. Lumentum (then JDSU) acquired TBP in January 2014 to further accelerate the adoption of these products into the growing mainstream industrial market for ultrafast lasers.



**TOPTICA Photonics AG** develops and manufactures high-end laser systems for more than 20 years. The portfolio includes diode lasers, ultrafast fiber lasers, terahertz systems and frequency combs. The laser systems are used for demanding scientific and industrial applications in biophotonics, industrial metrology and quantum technology. TOPTICA is renowned for providing the widest wavelength coverage of lasers on the market, providing high-power lasers even at exotic wavelengths: 190 nm - 0.1 THz (corresponding to 3 mm). The total revenue for 2022 is expected to more than 100 M€.

[www.toptica.com](http://www.toptica.com)



**Patrick Leisching (Senior Vice President R&D)** is currently working as Senior Vice President R&D at TOPTICA's headquarter in Munich (Germany) managing an R&D team of more than 100 highly qualified engineers and researchers developing TOPTICA's advanced laser systems. He joined TOPTICA in 2010 after a long career in both industry and scientific environment. For more than 10 years, Patrick worked in the telecommunication division of Siemens and later at Nokia Siemens Network in various positions as researcher, head of R&D department, head of portfolio and product management for hard- and software of optical transmission equipment. Patrick began his scientific career at the Technical

University in Munich (Germany) in the field of ultrashort pulse physics. After that, he received his PhD from the RWTH Aachen (Germany) working at the electrical engineering department on pulsed terahertz sources and their applications. His first postdoc position took him to Paris to the Ecole Polytechnique (France) investigating semi magnetic semiconductors, after which he went to work on fiber laser system development at the Max Born Institute in Berlin. He currently holds more than 20 patents and is author or co-author of more than 100 publications.

**VIGO Photonics** supplies a wide range of products for the semiconductor market. Our core business group incorporates a complete production line of infrared detectors and modules.

We backed our infrared technology with decades of manufacturing experience and successfully positioned ourselves as one of the leading companies on the market. VIGO delivers off the shelf, OEM and non-standard solutions, which allow our customers to develop products dedicated to their applications. The company's second business group, a III-V epi-foundry, provides materials for the photonics and microelectronics industry. We focus on establishing long-term and close technological collaborations to provide top-performing and cost-effective products.

VIGO Photonics is a product brand for 3 branches of the company: **VIGO System S.A.** in Poland, VIGO Photonics Corp. In the USA and VIGO Photonics Taiwan. As a result, the activities are managed centrally by our headquarters. Ultimately, the name of the Polish headquarters will also change. [www.vigo.com.pl](http://www.vigo.com.pl)



**Artur Kęblowski (Technology Development Director)** has 14 years of experience in research, manufacturing and engineering of infrared detectors based on MCT and antimonide. He received M.Sc. degree in automation and robotics from the Faculty of Production Engineering, Warsaw University of Technology, in 2008. In the same year he started work in VIGO System as a epitaxy engineer. Artur worked in several responsible positions at VIGO. Since November 2019, he has been Technology Development Director.



**Vortex Optical Coatings** are in the middle of the UK in Hinckley near Leicester, also the home of Triumph Motorcycles. The company was founded in 2008 by an experienced team in the optical industry. It designs and manufactures optical coatings and filters for scientific instruments. A particular area of expertise is infra-red filters for applications such as gas detection and industrial process monitoring. The company also has a 'rapid prototype shop' where it can design and manufacture brand new filters in consultation with its customers in as little as 2 weeks. State of the Art deposition technologies are used in production. The company also manufactures a range of infra-red Linear Variable Filters (LVF), there is a great deal of current development to make this a full-scale affordable technology that works for customers. [www.vortexopticalcoatings.co.uk](http://www.vortexopticalcoatings.co.uk)



**Ian Reilly (Founder and Technology Director)** holds a BSc in Physics from Nottingham University, UK. He has expertise in the design and manufacture of optical coatings using a number of different deposition technologies. Before starting Vortex, Ian worked for Pilkington Glass Ltd, Vinten Electro-Optics, Coherent Inc and CVI Infra-Red Optics, during his career he has gained valuable experience taking ideas from development to successful full-scale production, often within limited budgets. He believes this is a very exciting time to be involved in the photonics industry which has a key role to play in solving many of the world's current challenges.

**Xenics** is a pioneer of path-breaking infrared technology with a proven track record of more than twenty years. Xenics designs, manufactures and markets infrared detectors, cores and cameras of best-in-class image quality to support innovative R&D, industrial automation, machine vision, process control and high-end security applications. The company offers a complete portfolio of line-scan and 2-D area-scan products for the VisNIR, SWIR, MWIR and LWIR ranges. A vertically integrated company with advanced production facilities and in-house know-how on detector, systems and software development, Xenics delivers state-of-the-art imaging solutions as well as specifically targeted and optimized custom designs. Xenics is headquartered in Leuven, Belgium, and has offices in Belgium, USA and Singapore. The company has a total workforce of approximately 70 FTE's and annual sales exceeding €15 million. Striving on continuous innovation of its products, Xenics has considerable skills available related to detector material, mask design, processing know-how, Read-Out Integrated Circuit (ROIC) design, chip assembly know-how and camera design. [www.xenics.com](http://www.xenics.com)



**Paul Ryckaert (CEO)** obtained an engineering degree at Ghent and Manchester University and business management degrees in Belgium. Paul began his career in 1993 as a Test Engineer for Ford. He then moved to Siemens, first as a Project Engineer/ Manager for mobile phone connectors and then as a Project Manager with all-round responsibility for the Mobile Phone business. In 1999, he joined Tyco Electronics as a business manager and later became Director of Engineering & Product Management for Communications, Computer and Consumer Electronics for Europe, the Middle East and Africa. After 7 years in the connector industry, Paul was ready for a new challenge and in 2003, he moved to Barco, as director of their LED Product Management division. In 2006, he became VP of Barco's Media Business Unit in China with responsibility for developing, producing and marketing giant LED screens for sports stadiums and outdoor advertising. While he had gained invaluable experience and knowledge as a manager in large companies, Paul wanted to be involved more in the entrepreneurial side of things and in his early forties he decided to join Team Industries, a sheet metal company, as a co shareholder and co-CEO. With this move, he became responsible for overseeing production, engineering, purchasing and quality in locations in Belgium, Slovakia and Romania. After four years, Paul was approached by Xenics, a leading provider of advanced infrared imagers and cameras, who were looking for some new blood and new visions to move the company forward. By this time, Paul was also looking for a new challenge and in 2016, he joined the company as CEO.

Besides this, Paul is an active member of the Board of different companies with the intention to share his experience with other managers and entrepreneurs.



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EPIC 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 publishes market and technology reports, organizes technical workshops and B2B roundtables, engages in advocacy and lobbying, education and training activities, standards and roadmaps, pavilions at exhibitions.

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