

7-8 September 2022

EPIC INDUSTRIAL QUANTUM  
PHOTONICS TECHNOLOGY SUMMIT  
at the UNIVERSITY of GLASGOW

Glasgow, United Kingdom

Hosted by



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# CENTRE FOR QUANTUM TECHNOLOGY

The University of Glasgow is an internationally recognised centre of excellence in quantum technology. From fundamental research through to world-changing industrial technologies.

Key centres include QuantIC, the UK Hub for Quantum Enhanced Imaging, pioneering the translation of quantum imaging applications, and the James Watt Nanofabrication Centre, a world-class fully staffed cleanroom equipped with over £30M of specialist machinery. The University of Glasgow continues to lead the quantum revolution for academia and industry through collaborative proposals, including a proposal for a National Institute for Quantum Integration.

We are a driving force in ensuring the UK and our commercial partners are developing new products and services within the quantum supply chain for consumer, healthcare, security, and industrial markets.

[glasgow.ac.uk/quantumtech](https://glasgow.ac.uk/quantumtech)



# EPIC World Industrial Quantum Photonics Technology Summit

7-8 September 2022 – Glasgow, United Kingdom

The EPIC Industrial Quantum Photonics Technology Summit brings together the European quantum industry ecosystem to commercialize upcoming products from the current R&D initiatives. The event gathers experts and leaders from industrial companies worldwide to discuss the second quantum revolution, its applications, and challenges. We will discuss the four primary application areas in which a paradigm shift is expected: quantum communication, quantum imaging, quantum computing and simulation, and quantum sensing and metrology. The target is to engage the audience to explore synergies and business opportunities in a networking-oriented event, with many opportunities to meet the other participants.

## Tuesday, 6 September 2022

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**18:30 Bus transfer from Hilton Garden Inn Glasgow City Centre Hotel**  
(Finnieston Quay, Glasgow, G3 8HN)

**18:40 Bus transfer from voco Grand Central Hotel** (99 Gordon Street, Glasgow, G1 3SF)  
to the Welcoming Reception

**18:40 Meet at Grosvenor Hotel lobby to walk to the Welcoming Reception**

**19:00 – 22:30 Welcoming Reception & Technical Tour @ Advanced Research Centre (ARC)**  
at the University of Glasgow (Advanced Research Center, University of Glasgow, Glasgow, G128QQ)

### Welcoming words:

- **Evelyn Toma**, Director of Strategy for James Watt Nano-Fabrication Centre (JWNC) at the University of Glasgow (UNITED KINGDOM)
- **Carlos Lee**, Director General at EPIC – European Photonics Industry Consortium

**22:30 Bus transfer from Advanced Research Centre (ARC)**  
to voco Grand Central Hotel and Hilton Garden Inn Glasgow City Centre Hotel

**22:30 Walk to Grosvenor Hotel**

## Wednesday, 7 September 2022

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**07:30 Bus transfer from Hilton Garden Inn Glasgow City Centre Hotel**  
(Finnieston Quay, Glasgow, G3 8HN)

**07:45 Bus transfer from voco Grand Central Hotel**  
(99 Gordon Street, Glasgow, G1 3SF) to the Conference venue

**07:40 Meet at Grosvenor Hotel lobby to walk to the Conference venue**

**08:00 – 08:45 Registration & Welcome Coffee @ Advanced Research Centre (ARC)**  
at the University of Glasgow (Advanced Research Center, University of Glasgow, Glasgow, G128QQ)

- 08:45 – 08:50 **Welcoming words by EPIC**
- 08:50 – 09:00 **Welcoming words by Sara Diegoli, Associate Director**  
at the Centre of Quantum Technology and Director at QuantIC (UNITED KINGDOM)

## **SESSION 1 – THE QUANTUM INDUSTRIAL REVOLUTION**

- 09:00 – 09:30 **KEYNOTE: An Overview of the UK National Quantum Technologies Programme**  
Roger McKinlay, Challenge Director Quantum Technologies, Innovate UK (UNITED KINGDOM)
- 09:30 – 09:45 **Bringing Quantum to Industry: Some Illustrative Cases**  
Esperanza Cuenca, Head of Strategy and Outreach, Multiverse Computing (SPAIN)
- 09:45 – 10:00 **Quantum Technologies Markets: the Role of Photonics**  
Eric Mounier, Fellow Analyst, Yole Development (FRANCE)
- 10:00 – 10:15 **Commercialization of Quantum Applications**  
Lloyd McKnight, Head of Quantum Technologies, Fraunhofer UK Research (UNITED KINGDOM)
- 10:15 – 11:00 **Networking coffee break**

## **SESSION 2 – QUANTUM COMMUNICATION AND QKD**

- 11:00 – 11:30 **KEYNOTE: BT's Commercial Quantum Services Metro Network in London**  
Andrew Lord, Senior Manager of Optical Research at BT (UNITED KINGDOM)
- 11:30 – 11:45 **Technology and Trials for Quantum Communications**  
Andrew Shields, Head of Quantum Technology Division at Toshiba Europe (UNITED KINGDOM)
- 11:45 – 12:00 **Bringing QKD from Practical Testbed to the Telecommunications World**  
Tommaso Occhipinti, Co-Founder & CEO at QTI (ITALY)
- 12:00 – 12:15 **Dynamic Quantum Network From Security to Distributed Quantum Computing**  
Reza Nejabati, Head of High Performance Networks Group at University of Bristol (UNITED KINGDOM)
- 12:15 – 12:30 **Jerome Prieur, President & CEO at AUREA Technology (USA)**
- 12:30 – 14:00 **Networking lunch**

## **SESSION 3 – QUANTUM COMPUTING AND ENABLING TECHNOLOGIES**

- 14:00 – 14:30 **KEYNOTE: Path to a Utility Scale Quantum Computer**  
Mark Thompson, Chief Technologist at PsiQuantum (USA)
- 14:30 – 14:45 **Single-photon based Quantum Computing: a Compact NISQ Platform Within Reach**  
Valérian Giesz, Co-founder and CEO, Quandela (FRANCE)
- 14:45 – 15:00 **Photonics as an Enabler for Quantum Computing and Simulation**  
David Lucas, Principal Investigator, the UK National Hub in Quantum Computing and Simulation, University of Oxford (UNITED KINGDOM)
- 15:00 – 15:15 **The challenges of packaging components & PICs for quantum 2.0**  
Andrew Robertson, CTO, BayPhotonics (UNITED KINGDOM)

- 15:15 – 15:30 **Integrated Photonics for Quantum Computing – What Can a Research Foundry Do**  
Rijil Thomas, Scientist at AMO (GERMANY)
- 15:30 – 15:45 **Automated Assembly of Quantum Photonic Systems by Active and Passive Alignment for Ultimate Precision**  
Tobias Bonhoff, Assembly Engineer at Aixemtec (GERMANY)
- 15:45 – 16:00 **Achieving the Fiber Laser Stability at Atom Trap Wavelengths**  
Asger Sellerup Jensen, Market Development Manager, NKT Photonics (DENMARK)
- 16:00 – 16:45 **Networking coffee break**

#### **SESSION 4 – QUANTUM CLOCKS**

- 16:45 – 17:15 **KEYNOTE: The Future of Quantum Clocks**  
Mohsin Haji, Principal Research Scientist at National Physical Laboratory (UNITED KINGDOM)
- 17:15 – 17:30 **VCSEL Considerations for Atomic Clocks**  
Denise Powell, Programme Manager Quantum Technologies at Compound Semiconductor Centre (UNITED KINGDOM)
- 17:30 – 17:45 **Complete, Ultra-Stable Laser System for Sr Optical Lattice Clocks**  
Gabrielle Thomas, Business Development Manager at Menlo Systems (GERMANY)
- 17:45 – 18:00 **Narrow Linewidth Lasers for Quantum Applications**  
Una Marvet, Head of Design Centre at ALTER TECHNOLOGY TÜV NORD UK (UNITED KINGDOM)
- 18:15 – 18:30 **Walk from the University of Glasgow to the Dinner venue**
- 18:30 – 22:15 **Dinner @ Òran Mór restaurant (Top of Byres Road, Glasgow, G12 8QX)**
- 22:15 **Bus transfer from Òran Mór restaurant**  
to voco Grand Central Hotel and Hilton Garden Inn Glasgow City Centre Hotel
- 22:30 **Walk to Grosvenor Hotel**

### **Thursday, 8 September 2022**

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- 08:15 **Bus transfer from Hilton Garden Inn Glasgow City Centre Hotel**  
(Finnieston Quay, Glasgow, G3 8HN)
- 08:30 **Bus transfer from voco Grand Central Hotel (99 Gordon Street, Glasgow, G1 3SF)**  
to the Conference venue
- 08:30 **Meet at Grosvenor Hotel lobby to walk to the Conference venue**
- 08:45 – 09:25 **Welcome Coffee @ Advanced Research Centre (ARC)**  
at the University of Glasgow (Advanced Research Center, University of Glasgow, Glasgow, G128QQ)
- 09:25 – 09:30 **Recap by EPIC**

## **SESSION 5 – QUANTUM SENSING AND IMAGING (PART 1)**

- 09:30 – 10:00 **KEYNOTE: Opportunities and Challenges for Applying Quantum Photonic Technologies in Defence**  
Henry White, Lead Technologist, BAE Systems (UNITED KINGDOM)
- 10:00 – 10:30 **KEYNOTE: Quantum Sensing @ Bosch Start-up – The Journey to a New World**  
Katrin Kobe, CEO Quantum Sensors – BOSCH (GERMANY)
- 10:30 – 10:45 **Industrial Quantum Gravity Sensors**  
Vincent Menoret, Quantum Sensors R&D Program Manager at iXblue Photonics (FRANCE)
- 10:45 – 11:00 **Quantum Sensing for Gravity Cartography**  
Michael Holynski, Associate Professor at University of Birmingham (UNITED KINGDOM)
- 11:00 – 11:45 **Networking coffee break**

## **SESSION 6 – QUANTUM SENSING AND IMAGING (PART 2)**

- 11:45 – 12:15 **KEYNOTE: QuantIC – Developing Quantum Imaging Technologies**  
Miles Padgett, Kelvin Chair of Natural Philosophy, University of Glasgow (UNITED KINGDOM)
- 12:15 – 12:30 **3D Wafer-Stacking for CMOS Single Photon Counting**  
Bruce Rae, Device, Process & Optical Simulation Manager at ST Microelectronics (UNITED KINGDOM)
- 12:30 – 12:45 **Navigating the World with Quantum Magnetometers**  
Devang Naik, Researcher at GLOPhotonics (FRANCE)
- 12:45 – 14:00 **Networking lunch**
- 14:00 – 15:30 **General tour around the University of Glasgow**
- 15:45 **End and bus transfers to Glasgow airport / Central train station**

## **»» CONTACTS**

**Anna Trachtova**, Marketing Manager, EPIC, mobile: +420 732549615

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

# Participants

Name	Surname	Job Title	Company	Country
Aliki	Athanasiadou	Sales and Marketing Engineer	Single Quantum	The Netherlands
Alison	McLeod	Senior Programme Manager	Technology Scotland	United Kingdom
Andrea	Lovera	CTO	FEMTOprint	Switzerland
Andrew	Weld	Head of Research and Development	QLM Technology	United Kingdom
Andrew	Lord	Senior Manager	BT	United Kingdom
Andrew	Robertson	CTO	BayPhotonics	United Kingdom
Anna	Trachtova	Marketing Manager	EPIC	Czech Republic
Anna	Tchebotareva	Senior Scientist	TNO	The Netherlands
Asger	Jensen	Market Development Manager	NKT Photonics	Denmark
Asger	Jensen	Marketing Development Manager	NKT Photonics	Denmark
Bruce	Rae	Device, Process & Optical Sim. Manager	STMicroelectronics	United Kingdom
Carlos	Lee	Director General	EPIC	Belgium
Charles	Goëller	COO	ICON Photonics	France
Charlotte	Ovenden	Quantum Photonics Engineer	Aegiq	United Kingdom
Chris	Meadows	Director	CSconnected - Cardiff University	United Kingdom
Christopher	Payne-Dwyer	Business Development Manager	QuantIC	United Kingdom
Daniela	Salvoni	Sales Manager	Photon Technology	China
David	Lucas	Principal Investigator	University of Oxford	United Kingdom
Declan	Weldon	Executive Director	University of Glasgow	United Kingdom
Denise	Powell	Programme Manager	Compound Semiconductor Centre	United Kingdom
Devang	Naik	Quantum Technology Expert	GLOphotonics	France
Douglas	Paul	Professor	University of Glasgow	United Kingdom
Eric	Mounier	Fellow Analyst	YOLE INTELLIGENCE	France
Esperanza	Cuenca	Head of Strategy and Outreach	Multiverse Computing	Spain
Evaldas	Pabreza	CEO	Integrated Optics	Lithuania
Evelyn	Toma	Director of Strategy	University of Glasgow	United Kingdom
Faisal	Kamran	Principal Technology Analyst	SONY	United Kingdom
Franziska	Luckert	Associate	Marks & Clerk	United Kingdom
Gabrielle	Thomas	Business Development Manager	Menlo Systems	Germany
Henry	White	Lead Technologist	BAE Systems	United Kingdom
Iwan	Davies	Group Technology Director	IQE	United Kingdom

<b>Name</b>	<b>Surname</b>	<b>Job Title</b>	<b>Company</b>	<b>Country</b>
James	Grieve	Director	Technology Innovation Institute	UAE
Jeremy	Picot - Clemente	Photonics Technologies Manager	EPIC	France
Joel	Louette	Director	Cambridge Isotope Laboratories	USA
John	Lincoln	Chief Executive	UK Photonics Leadership Group	United Kingdom
Kate	Cavanagh	Optical Physicist	Yelo	United Kingdom
Katrin	Kobe	CEO Quantum Sensing	Bosch	Germany
Kevin	McIver	Business Development Manager	QuantIC	United Kingdom
Lee	Crudgington	Sales Engineer	Luceda NV	Belgium
Loyd	McKnight	Head of Quantum Technologies	Fraunhofer UK	United Kingdom
Maksym	Sich	CEO	Aegiq	United Kingdom
Malcolm	Rowntree	Sales Manager	Obducat Technologies	Sweden
Mantas	Butkus	Senior Product Line Manager	Coherent	United Kingdom
Marc	Smillie	Senior Sales Manager	NKT Photonics	United Kingdom
Mark	Thompson	Chief Technologist	PsiQuantum	USA
Matt	Currie	Sales Director	Skylark	United Kingdom
Matthew	Ball	Photonics Group Manager	Lambda Photometrics	United Kingdom
Michael	Street	Principal Associate	Marks & Clerk	United Kingdom
Michael	Holynski	Associate Professor	University of Birmingham	United Kingdom
Miles	Padgett	Kelvin Chair of Natural Philosophy	University of Glasgow	United Kingdom
Mohsin	Haji	Principal Research Scientist	National Physical Laboratory	United Kingdom
Niccolo	Somaschi	Co-Founder and CTO	Quandela	France
Nicholas	Wood	Chief Electro-Optic Technologist	Thales	United Kingdom
Nick	Werstiuk	CEO	Quantum Valley Ideas Lab	Canada
Nicolai	Walter	CEO	Pixel Photonics	Germany
Ollie	Corfield	Senior Physicist	ColdQuanta	United Kingdom
Panagiotis	Vergyris	Sales Manager	Quandela	Italy
Paul	Williams	Technical Sales Specialist	Laser 2000	United Kingdom
Reza	Nejabati	Professor	University of Bristol	United Kingdom
Rijil	Thomas	Scientist	AMO	Germany
Roger	McKinlay	Director	Innovate UK	United Kingdom
Sara	Diegoli	Director	QuantIC	United Kingdom
Scott	Dufferwiel	CTO	Aegiq	United Kingdom



Name	Surname	Job Title	Company	Country
Stephen	Najda	Director	TopGaN Lasers	Poland
Stuart	Dick	Head of Quantum	Department for Transport	United Kingdom
Stuart	Coomber	Head of Sales	Covesion	United Kingdom
Thomas	Bassett	Future Systems Engineer	MBDA UK	United Kingdom
Tobias	Bonhoff	Senior Assembly Engineer	Aixemtec	Germany
Tommaso	Occhipinti	CEO	QTI	Italy
Una	Marvet	Head of Design Centre	Alter Technology	United Kingdom
Valerian	Giesz	Co-founder & CEO	Quandela	France
Vidur	Raj	Research Associate	University of Glasgow	United Kingdom
Vincent	Ménoret	Head of R&D	iXblue	France
Wladick	Hartmann	CTO	Pixel Photonics	Germany
Zohaib	Kahn	European Manager	AUREA Technology	France

# QUANDELA

PHOTONIC QUANTUM COMPUTING SOLUTIONS

## MOSAIQ & ENTROPY

Discrete-Variable Optical Quantum Computers

## eDELIGHT

Scalable Deterministic Quantum Light Source

## PERCEVAL

State-of-the-art Photonic Simulator



# Company descriptions and biographies



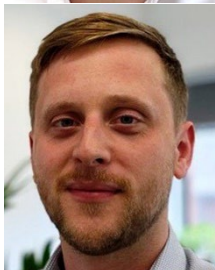
**Aegiq (/ˈiːdʒɪk/, ee-jik)** is accelerating global transition to quantum stage by bringing mass-market applications with most scalable technology. The company is using its pioneering single-photon and integrated quantum optics platform to address the demand for fibre and satellite quantum communications, and drive further research and applications in quantum computing, sensing and metrology. [www.aegiq.com](http://www.aegiq.com)



**Charlotte Ovenden (Quantum Photonics Engineer)** obtained her PhD in Electronic Engineering from the University of Sheffield, where she subsequently worked as a Postdoctoral Research Associate before joining the core R&D team at Aegiq. Charlotte is an expert in quantum dot semiconductor science and applications in quantum photonics.



**Maksym Sich (CEO and Co-Founder)** started as a quantum physicist. He is a serial entrepreneur with a focus on deep tech and 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.



**Scott Dufferwiel (CTO & Co-Founder)** is Co-founder & CTO of Aegiq. Scott attended The University of Sheffield, earning MPhys (Physics and Astrophysics), PhD in Quantum Polaritonics. He started his career as Research Associate with The University of Sheffield, then he served as Senior Research Engineer with AMRC (2017-2019), before becoming the Co-founder & CTO of Aegiq in 2019.



**AIXEMTEC** is a provider of high-precision assembly solutions for optical systems. We focus on the requirements of our customers. For this purpose, we offer machines and components for precision assembly as well as assembly services for optical systems. The combination of both business units is our strength. We are experts on assembly processes and know the challenges of every day production and based on that experience we develop standardized and competitive solutions. Our core competency comprises high-end assembly technology for highest precision in optics. Based on that expertise, we offer a wide spectrum of products and services in order to design and realize competitive production solutions for our customers. AIXEMTEC was founded in 2016 as a spin-off out of the Fraunhofer Institute for Production Technology IPT. AIXEMTEC is exclusive licensee of high-end Fraunhofer assembly technology. We combine our know-how regarding the assembly of optical systems with a customer-oriented business model. This business model allows us to look for the most economic production solution for our customers. [www.aixemtec.com](http://www.aixemtec.com)



**Tobias Bonhoff (Senior Assembly Engineer Laser & Optical Systems)** studied Physics at RWTH Aachen University and received his master's degree in 2014. Afterwards, he worked as research assistant at the Chair for Technology of Optical Systems TOS. He did research in the field of multi-physical simulations of thermal effects in laser optics and obtained his PhD from RWTH Aachen University in 2019. From 2019 till 2022, Tobias worked at Laserline GmbH in the R&D department, where he designed optical systems for high-power diode-lasers and application-specific optics. Since April 2022, Tobias works as Assembly Engineer at Aixemtec in Herzogenrath near Aachen. His tasks are high-precision assembly of compact laser systems and optical systems, among others for quantum applications.

**ALTER**  
TECHNOLOGYGROUP

MEMBER  
of EPIC

**ALTER TECHNOLOGY** is a quality driven company providing procurement, engineering and test services for E.E.E. (Electrical, Electronic and Electromechanical) components and electronic systems, within the space and harsh environment markets, where failure is not an option. ALTER TECHNOLOGY works in many markets including, but not limited to, Aerospace, Security, Transport, Emergency Services, Health & Safety and Automotive. [www.altertechnology.com](http://www.altertechnology.com)



**Una Marvet (Head of Design Centre)** is the Head of Design Centre at Alter Technology UK. She has a PhD in ultrafast spectroscopy and a successful track record in commercialising products for technology markets, with 14 years' experience in Telecommunications as an application engineer and product line manager and 6 years' experience in Aerospace and Defence as a product manager and programme manager.

**AUREA**  
TECHNOLOGY

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**AUREA Technology**, as a leading maker of innovative optical instruments, provides the most advanced single photon avalanche photodiodes (SPAD), photon-pairs source, fast time correlation electronics and ultrafast laser diodes. AUREA Technology works closely with its scientific and industrial customers to meet the technical challenges of today and tomorrow in Quantum Cryptography, biotechnology, nanotechnology, life sciences, bio-medical, and aeronautics industries. [www.aureatechnology.com](http://www.aureatechnology.com)



**Jerome Prieur (President & CEO)** has over 20 years of experience in managing companies growth in photonics, laser and optical fibre communication systems. He co-founded AUREA Technology in 2010. Previously, he was Vice President of sales at VPIsystems, and Director of Sales North America at Photonis and SmartQuantum. Jerome participated to launch five high-tech start-ups in Europe and USA. Jerome received M.Sc. in laser and opto-electronics from Heriot-Watt / St Andrews University and the Sorbonne University Pierre et Marie Curie. He is also graduated from Toulouse Business School and trained at EM Lyon Business School.



**AMO** is a research service provider for nanofabrication with focused research & development, prototyping and contract manufacturing. AMO's mission as a research oriented company is to efficiently close the gap between university research and industrial application. For this purpose, AMO identifies those topics from basic research that seem particularly suitable for industrial implementation and demonstrates these in application-oriented technology. In joint projects and bilateral cooperation, research and development results are transferred to industry for maintenance and creation of jobs. Thus nanotechnology is expected to provide considerable potential for application areas such as information technology, biotechnology and environmental technology. AMO competences are nanofabrication, nanoelectronics, nanophotonics, and biotechnology. Nanostructures can now be manufactured in the size of biomolecules, thereby opening the possibility of highly exact analytical methods and the coupling of technology with the biological world. The key to enter the nanocosm is the production technology for smallest structures. Headed by Prof. Max Lemme, AMO operates a high level 400 m<sup>2</sup> cleanroom. Furthermore, AMO offers a range of services from consulting to prototype development. [www.amo.de](http://www.amo.de)



**Rijil Thomas (Scientist)** is currently a researcher in Nanophotonics group in AMO. He obtained his bachelor's in Electronics & Communication Engineering from National Institute of Technology Calicut (NITC), India and received his Ph.D in Electrical and Electronics Engineering from Nanyang Technological University (NTU), Singapore. After receiving his PhD in 2018, he spent 3 years in industry and worked for Globalfoundries, Singapore developing processes for integrated photonic devices until he joined AMO in 2021. His research interest includes simulation and design of nanophotonic components with a focus on developing platforms for integrated silicon and silicon nitride devices targeted for neuromorphic computing, on-chip light sources, quantum computing, etc.

## BAE SYSTEMS

**BAE Systems** provides some of the world's most advanced technology-led defence, aerospace and security solutions and employs a skilled workforce of some 83,400 people in over 40 countries. Working with customers and local partners, BAE Systems develops, engineers, manufactures and supports products and systems to deliver military capability, protect national security and people and keep critical information and infrastructure secure. In the area of sensor systems, BAE Systems integrates and collates information rapidly to give commanders superior situational awareness and targeting solutions. Provide and support major surface ship radar systems and state-of-the-art land-based radars and also have leading capability in meteorological and oceanographic systems. [www.baesystems.com](http://www.baesystems.com)



**Henry White (Lead Technologist: Sensing)** joined the central research centre of British Aerospace in 1983 and has been working in the field of photonics and sensing since then. Current position is as the Lead Technologist: Sensing within the Air Sector of BAE Systems. This role covers a wide range of technologies with emphasis on photonic and RF technologies for harsh environments. Particular areas covered include: EO sensor technologies, novel imaging systems, high power lasers, novel RF antenna developments, fibre optic digital communications, optical wireless communications and quantum sensing systems. This work requires close interaction with university research groups and component suppliers.

**Bay Photonics** provides a packaging service to Photonic and Microelectronic device developers and chip designers. We can help you bring your optoelectronic and PIC designs to a successful product market launch with our often-innovative packaging solutions. Drawing on our vast experience within datacoms, sensors, space and quantum sectors, we will help you design for Manufacture (DFM) and meet other essential requirements such as cost, time to market, performance etc. (DFX). Located at the EPIC centre in Paignton, England, and drawing on the unique history of the area and the Torbay Hi Tech Cluster (<https://epic-centre.co.uk/torbay-hi-tech-cluster/>). Our packaging capabilities include epoxy and eutectic die bonding auto gold and Aluminium ball and wedge wirebonding, optical alignment and hermetic sealing. [www.bayphotonics.com](http://www.bayphotonics.com)



**Andrew Robertson (CTO)** has a PhD in Laser Physics & Nonlinear Optics and a BSc in Laser Physics & Optoelectronics, both from the University of Strathclyde, Glasgow. Andrew has over 25 years of experience in successful commercial technology development & exploitation within photonics. In 2002, he was one of the founders of SIFAM Fibre Optics which was acquired by Gooch & Housego (G&H) in 2007 after 5 years of growth. Andrew held key senior engineering management roles within G&H and was a member of the Senior Management Team, becoming Senior Vice President and latterly focussing on Strategic Mergers and Acquisitions. Since 2020, Andrew has been with Bay Photonics and

as CTO, has led the development of photonics based semiconductor packaging critical for enabling photonic driven Quantum Technology. Bay Photonics are currently supplying packaged SPADs and packaged quantum photonic integrated circuits (Q-PICs) for quantum computing, secure quantum communications, and quantum LIDAR imaging systems.



**The Bosch Group** is a leading global supplier of technology and services. It employs roughly 402,600 associates worldwide (as of December 31, 2021). The company generated sales of 78.7 billion euros in 2021. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility. Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." [www.bosch.com](http://www.bosch.com)



**Katrin Kobe (CEO)** is the CEO of Bosch's Quantum Sensing start-up and holds a PhD in physics. She has nearly 30 years of experience with technology companies. Katrin Kobe worked as a top management consultant at McKinsey and more than 20 years in operational top management positions. She has international experience and was responsible for subsidiaries in Eastern Europe and China. Her industry experience includes plant and mechanical engineering, automotive, sensor technology, medical technology and energy. She is a specialist for product strategies, business model innovations and high-value technology products.



**BT** is one of the world's leading communications services companies. The solutions BT sells are integral to modern life. Company's purpose is as simple as it is ambitious: we connect for good. There are no limits to what people can do when they connect. And as technology changes our world, connections are becoming even more important to everyday life. The connections BT make are helping solve the world's biggest challenges such as the global pandemic, climate change and cyber security. Through the power of technology, company is supporting customers to live, work and play together better. [www.bt.com](http://www.bt.com)



**Andrew Lord (Senior Manager of Optical Research)** is a Senior Manager of Optical Research at BT. Andrew received the B.A. Hons. degree in physics from Oxford University, in 1985. After graduating, he joined BT, where he currently heads optical research including quantum communications. He has published over 100 research papers. He is a Visiting Professor at Essex University and Associate Editor of the Journal of Lightwave Technology.



**Coherent**, founded in 1966, is one of the world's leading providers of lasers and laser-based technology for scientific, commercial and industrial customers. With headquarters in the heart of Silicon Valley, California, and offices spanning the globe, Coherent offers a unique and distinct product portfolio and services for scientific research, instrumentation, microelectronics, material processing and aerospace & defence markets. [www.coherent.com](http://www.coherent.com)



**Mantas Butkus (Senior Product Line Manager)** joined Coherent in 2013 and currently works as a Senior Product Line Manager responsible for continuous wave and tunable wavelength femtosecond laser sources produced in Coherent Scotland. Key business areas for these products include microelectronics market, quantum technologies, biophotonics and fundamental research. Before joining Coherent, he worked as a Knowledge Transfer Partnership associate in University of Dundee. He obtained a BSc in Applied Physics from Vilnius University and his PhD from University of Dundee where he worked on the development of the optically pumped quantum dot-based semiconductor lasers.



**Compound Semiconductor Centre (CSC)** was formed in 2015 as a joint venture between IQE plc and Cardiff University to promote the commercialisation of compound semiconductor R&D activities. The CSC develops innovative new materials for photonic, power and RF technologies that will enable a wide range of new and emerging applications. CSC provides a complete capability chain from world-class research and development through to product and process innovation and has access to large-scale manufacturing platforms via IQEs global facilities. [www.compoundsemiconductorcentre.com](http://www.compoundsemiconductorcentre.com)



**Denise Powell (Programme Manager)** is the Programme Manager for Quantum Technologies at the Compound Semiconductor Centre (CSC) and runs multiple industry-academia quantum technology collaborative projects under the UK National Quantum Technologies Programme, including the open-access UK Foundry for Quantum Photonic Components (QFoundry) project, to upscale the manufacturability of quantum photonic devices. Prior to joining CSC in 2017, Denise held roles across open innovation, process integration, process engineering and product development at IQE, NXP and International Rectifier.



**ColdQuanta** develops systems for a wide range of quantum technologies. This includes both products and services for scientific and industrial applications, such as cold atom experimentation, quantum simulation, quantum information processing, atomic clocks, and gravity and rf sensing. ColdQuanta fabricates complete systems for utilising laser-cooled atoms and quantum degenerate gasses. These systems are based around physics packages that include vacuum cells, magnetic field generation, optical control and delivery, and imaging and analysis. [www.coldquanta.com](http://www.coldquanta.com)



**Ollie Corfield (Senior Physicist)** works on research and development projects at ColdQuanta UK, with the aim of making systems for quantum experimentation more compact, robust, and reliable. These projects include developing an experiment to increase the rate at which BECs can be produced in ColdQuanta systems, and developing miniature vacuum packaging for ion traps. Ollie completed his PhD at Imperial College London in 2021, where he worked with trapped ions in both rf and Penning traps.



**CSconnected** is the collective brand for a growing number of advanced semiconductor related activities in Wales, home to a unique community of academic institutions, prototyping facilities and global, high-volume manufacturing capabilities that collaborate across a range of research and innovation programs. CSconnected is uniquely positioned to develop a global advantage in a sovereign, key enabling technology which will allow Wales and the UK to increase trade globally in critical sectors such as 5G communications, autonomous and electric vehicles, advanced medical devices, consumer electronics and quantum technologies. In 2020, CSconnected received government funding provided through UK Research and Innovation's flagship Strength in Places Fund (SIPF). The 55-month CSconnected SIPF project has a total value of £43million, supported by £25million of UKRI funds. It builds on Wales's regional strengths and integrates research excellence with a unique regional supply chain in compound semiconductor manufacturing. [www.csconnected.com](http://www.csconnected.com)



**Chris Meadows (Director)** started his career in electronics and semiconductors at British Telecom Research Laboratories before joining a new joint venture between BT and US based DuPont in 1986. Chris was part of the founding team at Epitaxial Products International Ltd (EPI) in Cardiff in 1988, which became IQE plc in 1999 following a successful IPO. Chris also holds an MBA and has held a number of senior management positions within the IQE Group before joining Cardiff University as Director of CSconnected representing the world's first compound semiconductor cluster that is rapidly evolving across South Wales and the West of England.



**Covesion** are world leaders in the research, development and manufacture of MgO:PPLN crystals and waveguides for highly efficient, non-linear frequency conversion. With over 20 years' experience in the manufacture of PPLN technologies for the photonics industry, experts at Covesion are well equipped to provide insight and guidance on the design of systems for generating visible and IR light. Covesion's product portfolio includes the widest range off-the-shelf to fully custom solutions for researchers through to product developers and OEM's. [www.covesion.com](http://www.covesion.com)



**Stuart Coomber (Head of Sales)** has a 20 year track record working in the photonics and semiconductor industries. With graduate and PhD degrees from the University of Nottingham, he spent the first 10 years of his career working as a research scientist before joining a global semiconductor company as Technical Sales Director. Stuart joined Covesion in 2021 and is responsible for business development in UK, North America, India, Australasia as well as long term strategic development of our OEM business.



Department  
for Transport

The **Department for Transport (DfT)** is a UK Government department where our vision is focused on 'Connecting People and Places' through a safe, secure, efficient and reliable transport system. Delivering this vision includes the understanding of quantum technologies in transport and how they can contribute to economic growth, reducing environmental impacts and improving transport for the user. [www.dft.gov.uk](http://www.dft.gov.uk)



**Stuart Dick (Head of Quantum Technology)** has worked in the Emerging Technologies team, within DfT, since the team's inception. He has contributed to the understanding of DfT's requirements for telecoms, AI & autonomy, and is now fully focused on quantum. Stuart engages with stakeholders to align DfT's areas of research interest, with that of current developments in R&D, while providing the technical background for policy makers.



**EPIC** is the European industry association that promotes the sustainable development of organisations working in the field of photonics. Our members encompass the entire value chain from LED lighting, PV solar energy, Silicon photonics, Optical components, Lasers, Sensors, Displays, Projectors, Optical fibres, and other photonics-related technologies. We foster a vibrant photonics ecosystem by maintaining a strong network and acting as a catalyst and facilitator for technological and commercial advancement. EPIC works closely with related industries, universities, and public authorities to build a more competitive photonics industrial sector, capable of both economic and technological growth in a highly competitive world-wide marketplace. [www.epic-assoc.com](http://www.epic-assoc.com)





**Anna Trachtova (Marketing Manager)** has studied at the University of Economics in Prague and has been working in B2B marketing for more than ten years. She started her career in companies such as PricewaterhouseCoopers and ManpowerGroup. Before joining EPIC, she had worked as a marketing manager in one of the biggest law firms on the Czech market, where she was responsible for the whole marketing department. She has vast experience and knowledge in digital marketing, organizing events and project management with focus on marketing activities.



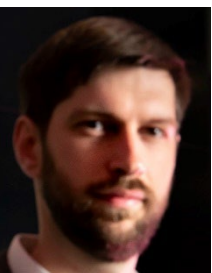
**Carlos Lee (Director General)** brings with him a background in microelectronics which was acquired through several management positions held at the international association SEMI. He has been responsible in Europe for the SEMI International Standards program, managed technical and executive programs, and together with the advisory board advocated for a more competitive semiconductor and photovoltaic manufacturing industry. Carlos has a BBA in Finance and an MBA in Leadership & Change Management from United Business Institutes. He lives with his spouse and three children in Belgium.



**Jeremy Picot-Clemente (Photonics Technologies Program Manager)** is a physicist specializing in optics. After a PhD in Physics/optics and an MBA in Dijon (France), he decided to explore the photonics industry for several years by managing photonics systems integration for various applications and in different companies. At EPIC, Jeremy oversees the development of the optics and micro-optics fields, and all related technologies and applications. He has a strong interest in new technologies involving photonics, such as AR/VR, LiDAR, 3D sensing, and imaging devices.



**Fraunhofer Centre for Applied Photonics**, Glasgow, UK undertakes direct contract R&D for industry and does collaborative research projects with H2020 or InnovateUK type support. The main activities of Fraunhofer CAP include applied research, development, prototyping and small-scale pre-production of photonic and sensor-based technologies. Core competencies are in laser sources and systems (solid-state, semiconductor disk, fibre, OPOs, ultrafast) and sensor and imaging systems. Fraunhofer CAP works in all sectors including energy, lifescience, defence, space and quantum technology. [www.cap.fraunhofer.co.uk](http://www.cap.fraunhofer.co.uk)



**Loyd McKnight (Head of Business Unit, Quantum Technology)** is Head of the Quantum Technologies Business Unit at Fraunhofer Centre for Applied Photonics in Glasgow. He started his career as the Researcher at Fraunhofer Centre for Applied Photonics in 2013, and continued working as Senior Researcher (2017-2019), Theme Leader for Quantum Technologies (2020) before moving to Head of Business Unit position in 2021. Loyd has a broad range of technical expertise including frequency-stabilised lasers, photon sources, integrated optics and quantum systems for sensing and information processing. He leads a number of large national and international research programmes in quantum technologies.

**FEMTOprint SA**, founded in 2013 in Muzzano (Switzerland), is a pioneer and market leader in high-precision, 3D microfabrication of custom-designed glass microdevices. Its activities focus on the Contract Development and Manufacturing of microsystems, from rapid prototyping to pilot and volume production at wafer-level, to serve leading international entities and fast-paving tech companies in biotechnology, life sciences, medical, watchmaking, automotive, aerospace, semiconductors, etc. In addition, with its new subsidiary located in Neuchâtel (Switzerland) the company aims to expand its business in photonics and miniaturized optics. The FEMTOPRINT® microfabrication platform enables indeed truly free-form surface/volume definition, welding, surface treatment, and ablative solutions in glass, thus creating a large variety of unique, three-dimensional microdevices. With a monolithic approach to avoid challenging assembly and alignment steps, it enables the integration of microoptical, micromechanical, and microfluidic functionalities. The company employs 35+ multi-disciplinary professionals and is certified ISO13485:2016 for medical device manufacturing. [www.femtoprint.ch](http://www.femtoprint.ch)



**Andrea Lovera (Chief Technology Officer)** received a BS in Physics Engineering in 2007 and a MS in Micro- and Nanotechnologies for Integrated Systems in 2009. From 2010 to 2014, he worked on a PhD in the Photonics domain at the Nano-photonics and Metrology Laboratory of the EPFL, where he gained experience in laser-matter interaction and nanofabrication and was also involved in the European Project SPEDOC for surface plasmon early detection of heat shock proteins. In 2014, Andrea joined the newly incorporated startup FEMTOprint as Field Engineer and worked on the development of the microfabrication platform and process. Thanks to the significant contribution to mature the technology, he helped the company in adapting the business model and further expanding. From 2016, Andrea is leading the R&D department of FEMTOprint and supervising production and machine development groups. He is currently the project coordinator of two European projects and deeply involved in the definition of the strategic evolution of the company.

**GLOphotonics** is a spin-off of a research group, led by Professor Fetah BENABID, which develops, manufactures and markets gas phased photonic components using proprietary Hollow Core Photonic Crystal Fibers (HC-PCF) technology. The unique features of this innovative fiber technology provide a flexible and cost effective way to shape and transport Ultra Short laser Pulses (USP) with extremely low attenuation and nearly-free temporal and spectral distortion. GLOphotonics product offer include: The Photonic Microcell (PMC), a stand-alone component that consist of a HC-PCF filled with gas and fiber terminations which can be tailored to customer needs. The Beam Delivery System (BDS), a ruggedized and pre-aligned module for high power beam delivery, available for Yb, Nd:Yag lasers and also now for 500 – 700 nm spectral range. [www.glophotonics.fr](http://www.glophotonics.fr)

**Devang Naik (Quantum Tech Expert)** has a rich and diverse background spanning entangled photon quantum cryptography, ultra-cold atoms, quantum degenerate matter, cavity QED and quantum sensing. He started his research career in the field of quantum cryptography using entangled photon pairs, resulting in the first demonstration of the BB92 protocol (Los Alamos National Lab). Later he completed his PhD in the field of degenerate quantum matter, working on quantum vortices using bose-einstein condensates (at the Georgia Institute of Technology, USA) and strongly interacting many-body systems using degenerate fermionic mixtures (University of Innsbruck). He developed novel cooling techniques which have allowed the creation of portable BEC interferometers in Zero-G aerial experiments (University of Bordeaux, France and the University of Florence, Italy) and has worked intensively with BECs in cavity QED experiments (University of Bordeaux). The capabilities of quantum resources for enhanced sensing of not only our world but ourselves has led him to become the head of quantum technologies at GLOphotonics developing the next generation of portable, all-fibered quantum sensors for bio-medical applications.

**Hamamatsu Photonics**, driven by Japanese excellence and market-leading optoelectronic technology, helps our customers visualize, measure, and analyze crucial information. Our mission is to establish photonics as a fundamental source of innovation for all customers. On the forefront of the development of new and existing applications, our advanced and highly sophisticated product range includes sources, detectors and imaging products designed to cover the entire optical spectrum. Present since 1953 across a vast array of industries, such as scientific research, medical, and industrial processes, we leverage added-value services and custom-made photonics solutions to meet our customer's ambitions without compromise. With headquarters in Hamamatsu, Japan, where our manufacturing and research facilities are located, we enjoy a global presence with business offices and associated companies throughout Asia, Europe and North America, and over 5,000 staff worldwide. [www.hamamatsu.com](http://www.hamamatsu.com)



**ICON Photonics** has developed a wafer-level integration platform combining a Silicon Optical bench and a unique on wafer polymer micro-optics technology. This platform is ideal to create custom and reliable optical micro-benches integrating fiber coupling and attaching solutions as well as high-speed electrical interconnects, enabling the next generation connectivity addressing the optical transceiver market and the Quantum photonics markets. [www.icon-photonics.com](http://www.icon-photonics.com)



**Charles Goëller (COO)** holds an engineering (MSc.) degree in photonics from the French Institut d'Optique Graduate School. His main interests are on photonics technologies and entrepreneurship. During his studies, Charles co-developed two start-up projects before joining UWAVE in 2015 as Business Developer. In 2017, he launched the activity on the Italian market and was responsible for the Italian country before he joined ICON Photonics as associate partner, responsible for marketing, business development and operations.



**Integrated Optics** is an ISO 9001:2015 certified high-tech manufacturer of very compact laser sources for spectroscopy, quantum and LiDAR applications. Since 2012 Integrated Optics has developed proprietary optics assembly method, based on robotics and unique software solutions. Its Matchbox® laser series is well established as the most compact laser source for high-end application. Besides the standardized laser configurations in the series, Integrated Optics is offering customizations by integrating various optical layouts in miniature packages, such as beam shapers, sampling probes, filter units, etc. [www.integratedoptics.com](http://www.integratedoptics.com)



**Evaldas Pabrėža (CEO)** received his Bachelor degree in Management of Modern Technologies and Msc in Laser Technologies at Vilnius University. Evaldas started his career as Patent Consultant at METIDA (2006-2008), then he served as Engineer at Timelinks (2009-2010), Sales Architect at Workshop of Photonics (2010-2012), Founder and CEO at IAM consultants (2012-2013), Co-Founder and CTO at "Ato-ID" UAB (2014-2018) and he is CEO of Integrated Optics since 2012.



Innovate  
UK

**Innovate UK:** The Quantum Technologies Challenge in Innovate UK is part of the UK National Quantum Technologies Programme. The Challenge has received £170M of funding from the Industrial Strategy Challenge Fund and has funded over 120 companies and 38 universities and RTOs in 95 collaborative projects since 2018. Innovate UK is the UK's national innovation agency, supporting business-led innovation in all sectors, technologies and UK regions. It is part of UK Research and Innovation. [innovateuk.ukri.org](http://innovateuk.ukri.org)



**Roger McKinlay (Challenge Director: Quantum Technologies)** since 2018 has been leading the Quantum Technologies Challenge in UK Research and Innovation. The QT Challenge funds industry-led collaborative projects and has funded over 90 projects with more than £150M over the past four years. Roger is also the Deputy Chair of the Programme Board for the National Quantum Technologies Programme. Roger is a Chartered Engineer and a past president of the Royal Institute of Navigation. He joined UKRI following a career in the defence and aerospace industries.

**ixblue**



**ixblue** helps photonics engineers all around the world to get the most out of the light by providing high performance, innovative and reliable photonic solutions for high speed communications, fibers-based sensors, space, science, medical, and quantum technologies. From the design to the manufacturing, ixblue masters the complete production chain of specialty fibers, bragg gratings, high speed modulation solutions and micro-optic assemblies. ixblue Quantum Sensors division (formerly Muquans) was the first company to commercialize quantum sensors based on laser cooled atoms. With a portfolio including quantum gravity sensors, atomic clocks, high-precision frequency transfer equipment and turn-key laser systems, ixblue can provide solutions in all fields of quantum technologies. [www.ixblue.com/photonics-space](http://www.ixblue.com/photonics-space)



**Vincent Ménoret (Head of Quantum Inertial Sensors R&D)** received his PhD from Université Paris-Sud in 2012 for his work on cold atom interferometry in parabolic flight campaigns. He then joined Muquans (now part of ixblue) shortly after the company was created and worked on the development of the Absolute Quantum Gravimeter, from the first generation prototype to recent versions dedicated to measurements in field conditions. He also worked on high precision frequency transfer over optical fiber and on several developments of components and subsystems for photonics and quantum technologies. He then led quantum gravimetry and high precision frequency transfer activities at ixblue, and is now program manager for R&D activities related to quantum sensors.



**IQE** uses advanced crystal growth technology - epitaxy - to manufacture and supply bespoke semiconductor wafers: 'epi-wafers' to the major chip manufacturing companies, who utilise these wafers to make the chips which form the key components of virtually all high technology systems. IQE is unique in supplying wafers using all of the leading crystal growth technology platforms – MOCVD, MBE & CVD. IQE's products are found in consumer, communication, computing and industrial applications, including in mobile handsets and wireless infrastructure: Wi-Fi, WiMAX, base stations, GPS, and satellite communications, optical communications & optical storage: CD, DVD, laser optical mouse, laser printers & photocopiers, thermal imagers, leading-edge medical products, barcode, high efficiency LEDs and a variety of advanced silicon based systems. [www.iqep.com](http://www.iqep.com)



**Iwan Davies (Group Technology Director)** obtained a B.Sc. (Hons) in Chemistry from Imperial College, London and a Ph.D. on MOVPE Studies in Compound Semiconductors from the University of Manchester. He is a member of the Royal Society of Chemistry. With over 35 years' experience in MOVPE epitaxial growth of III-V and II-VI semiconductors, he has co-authored over 100 publications covering a very broad range of optoelectronic devices and material systems. Following a period of research and development at Plessey Research (Caswell) Ltd., he has managed the growth and characterization of epi-wafers, plant operations and product engineering at IQE. He is currently IQE plc Group Technology Director, with responsibilities for European Research Project Co-ordination and Group-wide chemical, safety and environmental issues.



**Laser 2000 (UK)**, based in Cambridge, UK, is the UK's leading value-added reseller in Photonics and Fibre Optic Networks. We also offer suppliers entry to the US market through our US arm, AVR Optics (Rochester, NY). Our team of 45 staff, most with a PhD or Masters in physical/life sciences or networks, and several with international C-Suite experience, take a consultative approach to understand customers' needs and provide solutions. Our highly active field sales team & product managers bring deep market penetration of academic, industrial, and life sciences research; industrial production sensing & monitoring; and fibre optic operators & infrastructure. Our local inventory holding delivers high levels of customer service. We are experienced in taking business from start-up to OEM volume, handling subcontract processing, parts packaging & presentation to meet lean flow, high volume automated manufacturing requirements, e.g. for photonics based point of care diagnostics. We support diversity, staff well-being and schools encouraging careers in STEM. [www.laser2000.co.uk](http://www.laser2000.co.uk)



**Paul Williams (Field Sales Engineer)** joined Laser 2000 in July 2013. He is currently part of the Photonics team, and leads the focus on quantum applications and markets. Paul is also product manager for the Zaber motion control range. Paul completed his PhD in Ultra-Low temperature physics at Lancaster University, where he also obtained his MPhys. He studied the energy properties of quantum turbulence in superfluid Helium-3B. His work was carried out at temperatures below 100 microkelvin.



**Lambda Photometrics**, founded in 1977, is a leading UK distributor of scientific equipment used for characterization measurement and analysis; largely focusing on the application of optical/photronics technology to solve customer needs in industry, government and academia. We represent many well-known international companies in the UK market and provide a consultative solution based service to our customers. Lambda has an extensive track-record of involvement in many areas, and here are a few examples of products and companies represented:

- Lasers & accessories (Lasos, Xiton, Menhir, Conoptics, IntraAction, Huaris, IR Viewers, NoIR)
- Optical tables and vibration isolation solutions (TMC)
- Fibre optic test (Luna, Apex, OptoTest, Sumix, Tempo)
- Optical metrology including interferometry (Zygo, CI-Systems, Phasics, Essent, Savvy, Dioptic, Opto-Alignment)
- Instrumentation (SRS, Rigol, Pico, EverBeing, Tabor, YIC)
- Machine vision (Sensors Unlimited, Baumer, Ximea, Megaspeed, Navitar, Schott, NorPix, Computar)
- Electron Microscopy (EMCrafts, Fischione, Luxor)

[www.lambdaphoto.co.uk](http://www.lambdaphoto.co.uk)



**Matthew Ball (Photonics & Instrumentation Group Manager)** received a BSc in Applied Physics with Electronics from the University of Salford in 1990. Joining Lambda Photometrics in 1999 as a sales and applications engineer, Matthew has developed extensive experience and knowledge of photonics, lasers, fibre optics, optical metrology, imaging, and instrumentation solution provision, working closely with a global array of manufacturers. Prior to Lambda, he was a Research Scientist at Pilkington PLC for 6 years followed by 3 years as Process Development Manager at Cranfield Precision; specialising in on-line architectural glass optical coatings, and diamond turning / nano-grinding research & process development for precision optics.



**Luceda Photonics** enable photonic IC designers to enjoy the same power as electronic IC designers. We automate and integrate the complete photonic design flow. Our Python-based platform enables design teams to easily share and reuse their photonic design IP using a standard language. We leverage more than 50 years of photonic experience to help our customers create manufacturable designs. Our design products bundle our expertise to enable our customers to quickly achieve their first tape-out and get their design right the first time. [www.lucedaphotonics.com](http://www.lucedaphotonics.com)



**Lee Crudgington (Sales Engineer)** is currently working as a Sales Engineer at Luceda Photonics, after completing an internship and further Masters study in International Business, Economics and Management at KU Leuven University, Belgium. Prior to this, Lee held a position as postdoctoral research fellow in the Silicon Photonics Group at the University of Southampton, having completed his PhD in photovoltaic technologies in 2015. Beforehand, Lee completed a master's degree in microelectronic systems design after working as a digital hardware engineer in the UK defence sector since 2007.

**Marks & Clerk** is an international, outward looking intellectual property firm. We work in partnership with an array of businesses all over the world, providing them with people whose legal, technical and commercial expertise exactly meet their needs. Across our 15 offices in the UK, the EU, Canada and Asia we have over 300 specialists, including Patent Attorneys/Agents, Trade Mark Attorneys and lawyers who are dedicated to offering our clients a seamless service. Our Glasgow office has particular strength in mechanical engineering, electronics and energy (renewables and oil and gas), and has a thriving domestic and international life sciences (pharmaceuticals and biotechnology) practice. From patentability opinions and drafting to infringement and opposition advice, the office can provide specialist and tailored intellectual property services to support businesses of all shapes and sizes. [www.marks-clerk.com](http://www.marks-clerk.com)



**Franziska Luckert (Chartered (UK) and European Patent Attorney)** joined Marks & Clerk in 2012 and is a Chartered (UK) and European Patent Attorney. She works in a broad range of technical fields, including physics, electronics and computer-related inventions, and specialises in semiconductor and optical technologies. She has gained significant experience in various patent matters, including the preparation, filing and prosecution of mechanical, automotive, electronic, software and physics patent applications in the UK and internationally. She also has particular experience in securing patent protection in India. Franziska has a Diploma in physics from the Technical University Berlin where she researched the MOCVD growth of submonolayer quantum dots. She also holds a BSc (Hons) and a PhD from the University of Strathclyde where her PhD research focused on the optical spectroscopy of chalcopyrite semiconductors.



**Michael Street (Chartered (UK) and European Patent Attorney)** joined the patent profession in 2006 but before that, he jointly founded a start-up company to develop optical switching devices for optical communication systems. Previously, he enjoyed a successful career as a Senior Device Development Engineer with responsibility for developing planar lightwave circuit devices for optical communications, and as a post-doctoral Research Assistant working on high-speed semiconductor lasers. Mike's extensive patent experience includes securing patent protection in the UK, Europe, the US and many other territories covering technologies ranging from photonics, lasers, optical sensors and imaging systems, computers, electronics and software across a range of sectors including medical devices, communications, defence, and energy. Mike holds a MEng in Electrical & Electronic Engineering, and a PhD in semiconductor integrated optics.



**MBDA** is a multi-national group with 10,500 employees working together across France, Germany, Italy, Spain and the United Kingdom. It is a joint venture of the 3 European leaders in aerospace and defence: Airbus (37.5%), BAE Systems (37.5%) and Leonardo (25%). MBDA is a missiles and missile systems world-class leader. It offers a comprehensive product range incorporating today's most advanced technologies. Furthermore, it is the only European group capable of designing and producing missiles and missile systems to meet the whole range of current and future needs of the three armed forces (land, sea and air). MBDA is involved in research, development, design and manufacture of missile and weapon systems including, but not limited to, the design and development of novel, emerging and supporting technologies. MBDA values both its strong historical culture of "internal" innovation, and that which is developed "externally" by its current and future potential partners ranging from large industrial companies and research institutions to SMEs and academia, as well as our essential partners in the innovative process, our customers. [www.mbda-systems.com](http://www.mbda-systems.com)



**Thomas Bassett (Future Systems Engineer)** is Future System Engineer at MBDA. His primary focus is the exploration and accelerated exploitation of novel technologies that are relevant to MBDA future products and capabilities. His interest in quantum technology spans timing, sensing, imaging, communication and computing and welcome new engagement and opportunities for collaboration.



**Menlo Systems** is a leading developer and global supplier of instrumentation for precision metrology on the highest level. Based in Martinsried near Munich, Menlo Systems is known for its Nobel Prize winning optical frequency comb technology. Their main product lines are optical frequency combs, solutions for time and frequency distribution, ultrastable lasers, terahertz systems, and femtosecond lasers. Menlo Systems deliver state-of-the-art products to customers from industry and academia worldwide. To push the limits of the measurable, Menlo Systems work closely with selected customers and develop new solutions for laser-based precision measurements. [www.menlosystems.com](http://www.menlosystems.com)



**Gabrielle Thomas (Business Development Manager)** is a Business Development Manager for Menlo Systems. She has a PhD in Laser Physics, a MSc in Optics and Photonics, and a BSc in Physics, all from Imperial College London. Since the award of her PhD in 2012, she has worked in both academia and industry, in fields spanning quantum technology, remote sensing, and biophotonics. She joined Menlo Systems in February 2022, and helps to support the company's mission to deliver state-of-the-art photonics instrumentation to customers and partners globally.



**Multiverse Computing** is a quantum and quantum-inspired software company. It prepares algorithms and additional complementary software that work for real-sized problems in finance, energy, manufacturing, logistics and space. Some solutions work in quantum computers, some in classical (traditional) computers and some others combine both. The best algorithms are included in Singularity, a product from Multiverse that anybody without quantum education can use (even from Excel!). Multiverse Computing is the largest quantum software company in EU (employees, capitalization). It is headquartered in San Sebastian (Spain),



with offices in Toronto, Paris and Munich. It has 50 employees, 40% PhD, 30% women. Multiverse Computing successfully raised €10M in 2021, and in addition EIC Horizon Europe (EC) agreed to put €12.M more. Multiverse Computing has partnerships with most quantum manufacturers. Multiverse Computing filed 22 patents filed in 2021; 24/yr more in 2022. Multiverse Computing total contract value was €6.8M just in 2021. [www.multiversecomputing.com](http://www.multiversecomputing.com)



**Esperanza Cuenca-Gómez (Head of Strategy and Outreach)** is Head of Strategy and Outreach at Multiverse Computing. She is a digital transformation enthusiast with more than 10 years of experience in consumer finance and banking, and more than 5 years in strategy and operations consulting. Quantum mechanics has always fascinated Esperanza, so she decided to study and research in quantum computing and communications. As an engineer, Esperanza sees applied science and engineering as ways to build new technologies, solve problems, and contribute to society. Esperanza also serves as Head of Change Navigation at the Quantum Strategy Institute.



**National Physical Laboratory (NPL)** is the UK's National Measurement Institute and is a world-leading centre of excellence in developing and applying the most accurate measurement standards, science and technology available. For more than a century, NPL has developed and maintained the nation's primary measurement standards. These standards underpin an infrastructure of traceability throughout the UK and the world that ensures accuracy and consistency of measurement. NPL ensures that cutting-edge measurement science and technology have a positive impact in the real world. NPL delivers world-leading measurement solutions that are critical to commercial research and development, and support business success across the UK and the globe. Good measurement improves productivity and quality; it underpins consumer confidence and trade, and is vital to innovation. We undertake research and share our expertise with government, business and society to help enhance economic performance and the quality of life. NPL employs over 500 scientists, based in south-west London, in a laboratory, which is amongst the world's most extensive and sophisticated measurement science buildings. NPL is operated by NPL Management Ltd, a wholly-owned company of the Department for Business, Energy & Industrial Strategy (BEIS). [www.npl.co.uk](http://www.npl.co.uk)



**Mohsin Haji (Principal Research Scientist)** is a principal research scientist in the Time and Frequency department. He obtained a BEng honours degree from City University London in 2007 and a PhD from the University of Glasgow in 2012. He then worked as a production and test engineer at a semiconductor laser diode manufacturing company before joining NPL in 2014. He has authored and co-authored over 60 peer-reviewed publications and reviews articles for several IEEE and OSA journal publications. Mohsin leads NPL's activities on developing compact atomic clocks and his team are currently working on the production of state-of-the-art miniature atomic clock systems along with several industrial partners in the UK. He has extensive experience in establishing new supply chains of critical components for quantum technologies and systems. His fields of interest include compact atomic clock systems, semiconductor laser diodes and servo systems (e.g. for gas/molecular detection), optoelectronic oscillators, RF systems design, and transceiver systems for telecoms/datacoms.

**NKT Photonics** is the leading supplier of high-performance fiber lasers, fiber optic sensing systems, and photonic crystal fibers. Our main markets are Medical & Life Science, Industrial, Aerospace & Defense, and Quantum & Nano Technology. Our products include ultrafast lasers, supercontinuum white light lasers, low noise fiber lasers, and a wide range of specialty fibers. We have lasers in space and deep under the oceans and our products run in both clean rooms and on oil rigs at sea. We seed the world's largest laser fusion experiment, power hundreds of the most advanced microscopes on the globe, and enable the quantum computers of tomorrow. We aim to make a difference in the world, and we are involved in projects that will transform the way we live through life-science, renewable energy, and the basic understanding of the Universe. With over twenty years of expertise, IP and experience, NKT Photonics strives to continually be the market leader in everything we do. NKT Photonics has its headquarters in Denmark with sales and service worldwide. NKT Photonics is wholly owned by NKT A/S. [www.nktphotonics.com](http://www.nktphotonics.com)



**Asger Jensen (Market Development Manager)** has his PhD from DTU Fotonik in nonlinear optics in integrated photonics, where he developed photonic devices for linear and nonlinear optical signal processing. He joined NKT photonics in 2016, working with sales and strategic marketing. Today Asger is the market development manager and Head of Quantum at NKT Photonics. In addition to his role at NKT Photonics, Asger is the chairman of the Danish Optical Society since 2018.



**Marc Smillie (Senior Sales Manager)** holds an Engineering Doctorate (Eng.D) in lasers and optics from the University of Strathclyde, having previously studied for a Masters in Physics. Marc's Eng.D project, which was based at Thales in Glasgow, involved investigating passively Q-switched lasers for military applications, as part of the electro-optics R&D group. He has over 10 years' experience in the photonics industry and recently has been involved in more customer facing roles in technical sales and marketing. Marc joined NKT Photonics in 2022 to manage sales in the UK.



**Obducat** is the world-leading supplier of lithography solutions enabling advanced micro- and nano-patterning of surfaces. Obducat develops and delivers innovative products and technologies focused on processes used in production and replication of advanced micro- and nanostructures. Obducat supplies its customers with process equipment as well as process know-how applied in both highvolume production and R&D. Obducat's products and services are aimed at costumers within various fields such as LED-, biomedical-, display-, MEMS-, semiconductor- and solar cell industries. [www.obducat.com](http://www.obducat.com)



**Malcolm Rowntree (Sales Manager)** is a Sales Manager at Obducat Technologies. He has more than 5 years' experience in Sales, Marketing and Business Development in the Semiconductor/Photonics arena focusing on the UK, USA, India and Australia. Prior to his Sales Manager role, he has over 25 years Process Engineering/R&D/Process Integration experience in the semiconductor and opto-electronics industry with the following companies: Plessey, Philips, Nortel Networks in Canada and Bookham/Oclaro.

**Pixel Photonics** builds scalable, high-performance single-photon detectors based on superconducting nanowires integrated with nanophotonic waveguides. With their unique technology, PIXEL Photonics combines single-photon detection and integrated photonics, allowing for a higher integration level and paving the way for novel quantum applications. Unlike other approaches, their technology is inherently scalable and satisfies the requirements of quantum optics applications. PIXEL Photonics delivers highly parallelized, efficient and ultra-fast single-photon detection that drives research in many areas from imaging to quantum cryptography. As part of the QuNet+RECONNAITRE and the QSAMIS project, PIXEL Photonics is developing low complexity, highly efficient turn-key quantum receiver systems for high-speed QKD. [www.pixelphotonics.com](http://www.pixelphotonics.com)



**Nicolai Walter (Co-Founder and CEO)** has a Master’s degree from the Karlsruhe Institute of Technology (KIT), where he was working with Romain Danneau on Graphene Based Hybrid Structures for Light Sensing Applications. After his Master Thesis, Nicolai moved to Muenster, where during his PhD time with Prof. Wolfram Pernice he was instrumental in developing waveguide integrated SNSPDs. Taking the leading role very early, he was the driving force behind the founding of Pixel Photonics in 2020. During his work as a PhD student, Nicolai was also directly involved in the creation of the Muenster Nanofabrication Facility (MNF), a sophisticated and modern cleanroom network for nanofabrication in the heart of Muenster.



**Wladick Hartmann (Co-Founder and CTO)** received his PhD from the University of Muenster in 2020 on the topic of “On-Chip Integrated Broadband Spectrometers Based on Tailored Disorder” with Prof. Wolfram Pernice. During the course of his PhD, Wladick was directly involved in developing the technology, which he and his co-founders are leveraging now at Pixel Photonics. Prior to his PhD, Wladick was already working as a Master student on superconducting nanowire single-photon detectors with Wolfram Pernice at KIT, where he was instrumental in the development of this technology. Together with his colleagues he co-founded Pixel Photonics in 2020.



**Photon Technology (PHOTEC)** was established in 2016 by senior researchers of Shanghai Institute of Microsystem and Information Technology. The company business is focused on the industrialization and distribution of Superconducting Nanowire Single Photon Detectors (SNSPD) and their peripheral technologies. As the core product of PHOTEC, SNSPD has reached the world-class performance index, has been widely applied in quantum information, quantum photonics, quantum key distribution, remote sensing and so on. [www.cnphotec.com](http://www.cnphotec.com)



**Daniela Salvoni (Sales Manager)** is the Sales Manager at Photon Technology. During the PhD in Physics at the University of Naples Federico II, she worked on the fabrication and characterization of Superconducting Nanowires Single Photon Detectors (SNSPD) focusing on different materials and geometries to optimize the detection in the IR. She specialized on Lidar applications, collaborating with the company Advanced Lidar Applications and the Beijing Institute of Telemetry (BRIT). After one year of post doc, she joined the company Photon Technology, providing SNSPDs systems with excellent performances.

# PHOTONICS

LEADERSHIP GROUP

**The Photonics Leadership Group** represents the £14.5bn UK Photonics industry disseminating input from industry, government, support agencies, innovators and users to nudge policy, industry and research into mutual beneficial directions. Promoting and connecting the photonics eco-system, the PLG ensures UK industry can leverage best practice and align with policy and market trends. Founded in 1999, the PLG takes input from over 100 senior industry representatives and supports the All-Party Parliamentary Group on Photonics and Quantum for UK politicians. The PLG maintains the directory of UK photonics and quantum organisations, quantifies the size of the industry and regularly inputs to government consultations. [www.photonicsuk.org](http://www.photonicsuk.org)



**John Lincoln (Chief Executive)** is Chief Executive of the Photonics Leadership Group, provides industrial liaison for the Future Photonics Hub at Southampton and Sheffield University, is a coach for the European Innovation Council supporting SMEs across Europe and sits on multiple advisory boards. He has over 30 years' experience in the laser and optics industry in engineering, product and business development. He has run his own business development consultancy, Harlin Ltd, since 2006 helping SMEs, Universities, VCs and governments to identify growth opportunities. John regularly presents on the future opportunities for photonics and has pioneered the process for sizing the enabling technology industries, including photonics, acoustics and fluids dynamics.

## Ψ PsiQuantum

**PsiQuantum** is a company that is building a general-purpose silicon photonic quantum computer. PsiQuantum is building a means to solve impossible problems and is engaged in partnerships and licensing of technology through PsiQuantum licensing services, to deliver the quantum capabilities required to drive advances in climate, healthcare, finance, energy, agriculture, transportation, communications, and beyond. [www.psiquantum.com](http://www.psiquantum.com)



**Mark Thompson (Chief Technologist)** serves as Chief Technologist at PsiQuantum. He has over twenty years of experience in photonic and quantum technologies. He holds a Ph.D. in electrical engineering from the University of Cambridge and he founded and served as director of and was Director of the Bristol Quantum Engineering Centre for Doctoral Training (QECDT), the Bristol Quantum Technology Enterprise Center (QuTEC), and QETlabs.



**QTI** is the first Italian quantum key distribution (QKD) company, providing industrial grade systems and products for quantum networks. It is a young Italian start-up founded in October 2020 that engineers, develops, and produces reconfigurable QKD systems for telecom operators and private/government/defence market sectors. The company offers fully made in Italy products and solutions, designed, and developed with proprietary skills and expertise using a strategic European supply chain. Part of QTI shares is owned by Telsy S.p.A., part of the TIM (Telecom Italia) Group. [www.qticompany.com](http://www.qticompany.com)



**Tommaso Occhipinti (CEO)** is CEO of QTI, the Quantum Telecommunication company in Italy. He started his career (2002) in the academic research field of quantum astronomy and quantum communications (PhD in Telecommunication Engineering, Padova University). In the following years, he started his business career founding innovative start-ups and, in 2020, he was among QTI co-founders. As QTI CEO, he is also taking care of the Italian and international development of the market collaborating with the business developers of TIM, Telsy and Sparkle companies. He participates to national and international congresses, conferences and institutional events in order to spread the use of QKD in all the strategic market segments and institutions.



**QLM Technology** is at the forefront of optical gas detection technologies, developing lidar-based imager systems to aid tackling climate change. QLM imagers utilize quantum technology in the form of single-photon sensitive detectors, combined with spectroscopic laser measurements to detect, image and quantify fugitive gas emissions, including methane and carbon-dioxide. Greenhouse gas leak detection technology is a critical part of the journey towards net zero emissions, ensuring that emissions reductions are honored. QLM was founded as a spin out company from the University of Bristol and has successfully commercialized quantum detection technology through the development of their Tunable Diode LIDAR systems. QLM's sensitive gas leak detection technology is compact, low power and can be permanently deployed for 24/7 emissions monitoring. QLM offers complete solutions with automated detection and reporting of accurately quantitative leak data alerts. [www.qlmtec.com](http://www.qlmtec.com)



**Andrew Weld (Head of Research and Development)** has over 20 years' expertise in developing optical systems from theoretical concepts through to commercially viable products. He read Physics at Durham University, graduating in 2002 and then specialised in optical sensing research, obtaining a PhD from the Optoelectronics Research Centre, Southampton University, in 2007. He then worked in industry for several successful start-up companies, working in various fields of optical sensing including nanoparticle sizing, materials characterisation, fibre optics and distributed acoustic sensing. He has vast experience in product development, along with numerical simulation and data analysis. Andrew manages QLM's Research and Development programmes.



**QuantIC** is the UK Quantum Technology Hub in Quantum Enhanced Imaging and brings together more than 120 full time researchers from the Universities of Glasgow, Bristol, Edinburgh, Exeter, Heriot-Watt, Imperial College London, Southampton and Strathclyde and over 30 industry partners in a collaborative venture to revolutionise imaging across industrial, scientific and consumer markets. Our vision is to pioneer a family of multidimensional cameras operating across a range of wavelengths, time- scales, length-scales, creating a new industrial landscape for imaging systems and their applications in the UK. Collaboration with industry is central to the acceleration of the commercialisation of the quantum imaging technology uptake. [www.quantific.ac.uk](http://www.quantific.ac.uk)



**Christopher Payne-Dwyer (Business Development Manager)** is a Business Development Manager within QuantIC, the UK's quantum imaging hub and part of the UK National Quantum Technology Programme. With a background in technical innovation for engineering and physics-based sectors, Chris is a driving force for forging collaborative funding projects, and strategic partnerships between academia, government, and private industries. He is responsible for promoting the UK's quantum communities, providing them with the best opportunities to generate novel ideas, commercialise new technologies, and develop the next generation of skills.



**Kevin McIver (Business Development Manager)** joined QuantIC in July 2017 and is responsible for the overall business development for the Hub. He has a background in Physics forming part of his Bachelors degree and taught the subject in the secondary education sector. Kevin is an experienced stakeholder relationship specialist having worked across a number of sectors, both public and private, with a focus on collaboration between industry and academia. He has explicit experience of working on local and international collaborative partnerships with multiple stakeholders with a proven track record in business development. In his role at QuantIC, Kevin supports the commercialisation of the Hub technology and long-term sustainability, including the pipeline of spinouts.



**Sara Diegoli (Director)** is the Director QuantIC, the UK's Centre of excellence for research, development and innovation in quantum enhanced imaging. Established in 2014, the QuantIC brings together the Universities of Glasgow, Bristol, Edinburgh, Heriot-Watt, Imperial College London, Southampton and Strathclyde with more than 40 industry partners. QuantIC is one of four Quantum Technology Hubs established by the UK government in 2014 to accelerate translation of quantum science into industrial innovation. In addition to QuantIC, Sara has been working on a broader range of strategic research and innovation initiatives for the University of Glasgow, leading several high-profile projects including the establishment of the Centre for Quantum Technology at the University of Glasgow. Sara has a background in science and engineering and has worked for over 10 years at the interface between university and industry.

## QUANDELA



**QUANDELA** is a startup founded in 2017 in the region of Paris – Saclay that commercializes efficient quantum light sources. Based on a disruptive technology developed in the Centre for Nanoscience and Nanotechnology (CNRS – Univ. Paris Sud), these sources are building blocks for the development of quantum technologies (from computers to networks). Quandela is one of the first worldwide providers of efficient components to the actors of the second quantum revolution. [www.quandela.com](http://www.quandela.com)



**Niccolo Somaschi (Co-Founder and CTO)** graduated from the University Milano-Bicocca (Italy) in 2009 and he received his PhD degree from the University of Southampton (UK) in 2013. He then moved to France to work as post-doctorate researcher in the field of quantum photonics at the Centre of Nanoscience and Nanotechnology, a research laboratory part of the national research institute CNRS. During these years, he contributed to the developments of solid-state single-photon sources, bringing the performance of such devices to the current international state-of-the-art. Following this work, in 2017 he co-founded Quandela, a company providing the most efficient commercial sources of quantum light for quantum applications: quantum computing, quantum communication, quantum metrology & sensing.



**Panagiotis Vergyris (Quantum Photonic Hardware Sales Manager)** features strong technical expertise and academic background in quantum technologies & applications, optics, lasers and single-photon sources & detection schemes. Before joining Quandela, he worked as the Quantum technologies Program manager at the European Photonic Industry Consortium, sustaining a vibrant network with more than 800 corporate members active in photonics and supporting them in strengthening their position in the supply chain. Previously, he worked for more than ten years at international companies in the photonics technology sector. Panagiotis holds a PhD in quantum photonics from the University Cote D' Azur, France, an MSc in Applied Mathematics and Physics from the National Technical University of Athens, Greece and an MSc in Microsystems Nanodevices from Greece and the Netherlands.



**Valérian Giesz (Co-Founder & CEO)** graduated from Institut d'Optique Graduate School in 2012 and received a PhD in Quantum Optics in 2015. During his PhD, Valérian participated to the last technical developments of the single photon sources that are the flagship of Quandela. Prior to the creation of Quandela, he followed entrepreneurship classes at HEC Paris in 2017.



**Quantum Valley Ideas Lab** is a specialised advanced technology research centre with a focus on the commercialisation of quantum technologies. We bridge the gap between academic labs and industry to accelerate the research and development of the most promising quantum technologies as the basis for exciting new products and businesses. [www.qvideaslab.ca](http://www.qvideaslab.ca)



**Nick Werstiuk (CEO)** is the Chief Executive Officer of Quantum Valley Ideas Lab. Prior to joining Ideas Lab in 2020, Nick was Director of AI Offerings at IBM Cognitive Systems. His career in enterprise technology spans more than 30 years, having spent the first 10 years of his career in telecom network infrastructure, holding a range of Product Management, Marketing, and Engineering positions at Bell Canada. Mr. Werstiuk subsequently drove early-stage product commercialization and customer adoption of new products at several software companies, including Platform Computing, divine Inc, eAssist Global Solutions, and Delano Technology Corp.

**Single Quantum** was established as the first European company manufacturing and commercializing superconducting single photon detectors. By sharing this ground-breaking technology, we aim to create a better future! Our multi-channel detection system has already been chosen by more than 150 academic and industrial labs all over the world to perform complex optical measurements. The unique combination of unparalleled detection efficiency and time resolution is what makes our superconducting detectors the ideal choice for quantum communication, cryptography, infrared fluorescence spectroscopy, laser ranging and many other applications. [www.singlequantum.com](http://www.singlequantum.com)



**Alik Athanasiadou (Sales and Marketing Engineer)** recently joined Single Quantum to support the company's fast growth and sales. She graduated from the Aristotle University of Thessaloniki with a BSc in Physics with a major in Solid State Physics. As a part of the sales team, Alik communicates with scientists and engineers to meet their technical requirements and needs by delivering advanced superconducting detectors.

# SONY

**Sony** manufactures audio, video, communications, and information technology products for the global consumer and professional markets. With its music, pictures, games and online businesses Sony is uniquely positioned to become a leading personal broadband network company in the 21st century. Our Technology is where innovations and future generations of products are being developed to meet the requirements and needs of the worldwide markets and customers. [www.sony.com](http://www.sony.com)



**Faisal Kamran (Principal Technology Analyst)** is a cross-disciplinary technologist, helping build strategic cooperation, commercial engagements and evaluates technologies from start-ups to R&D groups. He mentors in start-up acceleration programs and runs a podcast while actively engaging in various technologies from quantum computing to cell-analysis and in between. He was awarded his PhD in Biophotonics from the Technical University of Denmark in 2014 for his interdisciplinary project to successfully deliver two new technology applications for the pharmaceutical and dairy industries, and authored seven publications. Faisal also holds an MSc in Optical Design from Imperial College London and an MSc in Mechatronics from Warsaw University of Technology. Prior to joining Sony, he was senior product manager at Optoscribe and before that, he managed the design and technology scoping for next generation Transceivers as Physical Design Manager at OCLARO. Faisal also worked as Opto-mechanical Design Engineer at OPTOCAP.



**STMicroelectronics** is an integrated device manufacturer, that works with more than 200,000 customers and thousands of partners to design and build products, solutions, and ecosystems that address their challenges and opportunities, and the need to support a more sustainable world. Our technologies enable smarter mobility, more efficient power and energy management, and the wide-scale deployment of the Internet of Things and connectivity. ST is committed to becoming carbon neutral by 2027. ST maintains a strong commitment to innovation, with approximately 8,400 people working in R&D and spending about 13.5% of its revenue in R&D in 2021. Among the industry's global technology leaders, ST owns and continuously refreshes a substantial patent library (~18,000 patents; and ~550 new patent filings in 2021). ST delivers specialized and differentiated imaging solutions for a variety of applications, leveraging extensive expertise in optical modules and image sensors and a continuously expanding portfolio of proprietary technologies. We provide access to advanced Imaging technologies through our CMOS Image Sensor (CIS) foundry services. [www.st.com](http://www.st.com)



**Bruce Rae (Device, Process & Optical Simulation Manager)** is a Senior Member of Technical Staff at STMicroelectronics, Imaging Division, Edinburgh UK and he is manager of the Device, Process and Optical Simulation Group. In this role, he works closely with the silicon, process, module and system R&D teams to support the development of ST's pixel and technology roadmap and specification, while supporting development of advanced simulation techniques. He also works with external collaborators on advanced R&D projects. He has extensive experience in the development of image and depth sensors and single photon counting systems. Bruce received the MEng and Ph.D. degrees in Electrical and Electronic Engineering from The University of Edinburgh, UK, in 2005 and 2009 respectively. He is a member of the Technical Program Committee and European Regional Chair for IEEE ISSCC 2023.



**Technology Scotland** is the representative body for the Enabling Technology Sector in Scotland. Through our networks, we support a vibrant community of industrial and academic organisations who are developing technologies to deliver product advancements in markets from healthcare and communications to manufacturing and mobility. Technology Scotland delivers clear business value to members, providing a catalyst for growth and supporting the community through networking, collaboration, lobbying and thought leadership. [www.technologyscotland.scot](http://www.technologyscotland.scot)



**Alison McLeod (Senior Programme Manager)** has 20 years of experience working in academic, industrial and consultancy roles. After achieving her PhD in Photonics from the University of St. Andrews, she worked as a Research Associate before leaving academia and joining industry in the role of technical sales/account manager in the health physics and photonics sectors. Alison then moved to a role dedicated to project management and proposal writing for EU funded projects, gaining extensive experience across a wide variety of research topics. Alison is Technology Scotland's Senior Programme Manager for Photonics. She is responsible for the Photonics Scotland network: connecting members with the support they need, fostering cross-collaboration, representing the interests of the sector to Government as well as planning and running specific events and activities for the Photonics Scotland network.

The **Technology Innovation Institute (TII)** is the leading global research center dedicated to pushing the frontiers of knowledge. The Technology Innovation Institute is part of the Abu Dhabi Government's Advanced Technology Research Council (ATRC), which oversees technology research in the emirate. [www.tii.ae](http://www.tii.ae)



**James Grieve (Director Quantum Communications)** is the Director of Quantum Communications at The Technology Innovation Institute. Before joining TII, James spent seven years at Singapore's Center for Quantum Technologies, where he remains a Visiting Research Associate Professor. At CQT, he led a team developing polymer waveguide platforms for quantum photonic applications. His previous research topics have included entangled photon sources, single photon detector systems and a stint working on fiber-based quantum key distribution systems as part of a collaboration with Singapore Telecommunications (Singtel). James completed his PhD at the University of Bristol in the United Kingdom in 2012, with research focused on optically trapped nanotools. James is broadly interested in the behaviour of light, weak or strong, and especially in nano- and micro-scale systems.

## THALES

**Thales R&T-France** is the main multidisciplinary research unit of the Thales group, one of the major world players in aerospace, space, defence, and security. Through its internal activities and scientific links with industries and universities, either in France or internationally, Thales R&T is participating in the preparation of Thales industrial future in strategic R&D fields. One of the missions of Thales-Fr is to ease the transfer of technology, from academic R&D concept to industrial market. Thales R&T is well equipped for this research with state-of-the-art 1700 m<sup>2</sup> clean-room facilities and 13000 m<sup>2</sup> laboratory facilities. [www.thalesgroup.com](http://www.thalesgroup.com)



**Nicholas Wood (Chief Electro-Optics Technologist)** is currently Chief Electro-Optics Technologist at Thales. Previously he was Electro-optic technologist and Survivability team leader at QinetiQ Farnborough and before that Principal Scientist at DERA Portsdown West, Research Fellow in the Department of Aeronautics and Astronautics University of Southampton and Research Assistant, Physics Department, Swansea University.

**TNO** is an independent Dutch organisation for applied scientific research with over 3600 professionals. Research themes include: Healthy Living, Industrial Innovation, Defence/Safety/Security, Energy, Transport and Mobility, Built Environment, Information Society. [www.tno.nl](http://www.tno.nl)



**Anna Tchegotareva (Senior Scientist)** joined TNO in 2011. Her focus is on applied research and development projects in non-linear and quantum optics, and integrated quantum photonics. This includes quantum frequency conversion and frequency multiplexing for quantum repeaters, and on-chip devices for quantum communication and sensing. She holds a PhD in Experimental Physics from Université de Montréal (QC, Canada). Anna is the recipient of the prestigious Fonds FCAR (QC, Canada) and NWO-Veni (Netherlands) postdoctoral scholarships. Before joining TNO, she has worked as a postdoctoral fellow at the AMOLF Institute (Amsterdam NL) on semiconductor nanocrystals, optical microcavities

and plasmonics, and afterwards at Leiden University on single-particle and single-molecule pump-probe spectroscopy.

**TopGaN** is the European pioneer in the development of Gallium Nitride technologies. First in the world to demonstrate defect free GaN crystals, second in Europe to construct nitride laser diodes. TopGaN is focusing on high power laser diodes and nitride diode arrays for illumination, medicine and printing applications. [www.topganlasers.com](http://www.topganlasers.com)



**Stephen Najda (Director)** is the Vice President Business Development & Sales and Technical Director at TopGaN, graduated with a PhD in semiconductor physics from St. Andrews University. Experienced high-tech start-up entrepreneur with a strong track record of product development and manufacturing excellence of photonic components and optical laser systems.

## TOSHIBA

**Toshiba Corporation** leads a global group of companies that combines knowledge and capabilities from over 140 years of experience in a wide range of businesses — from energy and social infrastructure to electronic devices — with world-class capabilities in information processing, digital and AI technologies. These distinctive strengths position Toshiba to become one of the world's leading cyber-physical-system technology companies. Guided by the Basic Commitment of the Toshiba Group, "Committed to People, Committed to the Future", Toshiba contributes to society's positive development with services and solutions that lead to a better world. [www.toshiba.eu](http://www.toshiba.eu)



**Andrew Shields (Head of Quantum Technology Division)** leads R&D and business development in Toshiba Europe on quantum technologies. He has published over 500 research papers and patents in the field of quantum devices and systems. He was a co-founder of the Industry Specification Group for QKD of ETSI, and served as Chair for several years. He serves on the management team of the EU OpenQKD project and leads the AQUaSeC project developing next generation quantum communication technology.

**UnikLasers** is a UK-based expert in CW Single Frequency DPSS lasers with a focus on mid to high output power. UnikLasers designs & manufactures single frequency lasers in a wide range of wavelengths for holography (red, green & blue), high precision metrology, Brillouin imaging, Raman spectroscopy, confocal microscopy, semiconductor quality inspection and other high precision applications. Lasers have excellent parameters and are particularly suited for applications that require high wavelength and output power stability. UnikLasers is an active player on the Quantum Technologies market. The Company has a growing range of Single Frequency DPSS lasers for Quantum applications, particularly for Commercial Optical Lattice clocks and Quantum Gravitometer, such as 780.24, 698.4 and 689.4nm lasers. [www.uniklasers.com](http://www.uniklasers.com)



**The University of Bristol** is a red brick Russell Group research university in Bristol. The University is organised into six academic faculties composed of multiple schools and departments running over 200 undergraduate courses, largely in the Tyndalls Park area of the city. Among alumni and faculty, the university counts 9 Nobel laureates. [www.bristol.ac.uk](http://www.bristol.ac.uk)



**Reza Nejabati (Professor)** is currently a chair professor of intelligent networks and head of the High-Performance Network Group in the Department of Electrical and Electronic Engineering in the University of Bristol. He is also a visiting professor and Cisco chair in the Cisco centre for Intent Based Networking in the Curtin University, Australia. He has established successful research activities in “Autonomous and Intent Based Networks,” as well as “Quantum Networks.” His research received the prestigious IEEE Charles Kao Award in 2016 and has done important contributions in 5G, Smart City, Quantum Communication, and Future Internet Experimentation. Building on his research, he co-founded a successful start-up company (Zeetta Networks).



**The University of Birmingham** is a leading global university. We are the original ‘redbrick’ University, part of the prestigious Russell Group; our thriving student population enjoys a wide range of courses, and exceptional campus and research facilities. The 10 Nobel Laureates we count among our staff and alumni have contributed to some of science’s greatest discoveries, including in recent times the Higgs Boson and Gravitational Waves. Our research provides innovative solutions to the challenges we face in our city, our region and across the globe. [www.birmingham.ac.uk](http://www.birmingham.ac.uk)



**Michael Holynski (Professor)** is a Professor of Atom Interferometry in the Cold Atoms research group, part of the Midlands Ultracold Atom Research Centre, and the UK National Quantum Technology Hub in Sensors and Metrology. He leads the Atom Interferometry group, where he focuses on gravity gradient sensors and their use within applications. This includes developing gradiometers for use in the field and pushing to create more compact and deployable devices, while also investigating approaches to improve their sensitivity. Michael is active in enabling the translation and commercialisation of quantum technology, and leads a portfolio of collaborative projects with industry ranging from component development to system level realisation of industrial sensor prototypes and engagement with end users.



**The University of Glasgow** leads world class programmes across a broad range of optical and photonics research and technology. These span quantum optics and the fabrication of integrated photonic devices, to image processing and data recovery. Key centres include QuantIC, one of the UK’s four Quantum Technology Hubs, pioneering the translation of quantum techniques to imaging applications and the James Watt Nanofabrication Centre, a world-class, fully staffed cleanroom equipped with over £30M of tools. Across the full range of activities, we work with dozens of companies to develop new products and services within consumer, healthcare, security and industrial markets. [www.gla.ac.uk/quantumtech](http://www.gla.ac.uk/quantumtech)



**Declan Weldon (Executive Director of Innovation, Enterprise and Economic Development)** has PhD in Chemistry from Trinity College, Dublin, and holds a Diploma in Company Direction from the Institute of Directors. Declan joined the University of Glasgow in November 2021, following 4 years at Trinity College Dublin where he led the combined functions of Industry Engagement, Technology Transfer, Campus Companies and Academic Consultancy.



**Douglas Paul (Royal Academy of Engineering Chair in Emerging Technologies and Head of Semiconductor Device Group)** studied physics at the University of Cambridge before moving to the University of Glasgow. He was the first Director of the James Watt Nanofabrication Centre at Glasgow before winning an EPSRC Established Quantum Technology Fellowship. In 2020 he was awarded a Royal Academy of Engineering Chair in Emerging Technologies on chip-based quantum navigation. He is a Fellow of the Royal Society of Edinburgh, the Institute of Physics (IoP), a senior member of the IEEE and won the IoP's President's Medal in 2014. He has led a range of international technology roadmaps including the Technology Roadmap for European Nanoelectronics and the EC Strategic Research Agenda for Sustainable ICT. He is a partner in 3 of the UK Quantum Technology Hubs and 10 Innovate UK industrial quantum projects since 2014. His present funded research includes Ge on Si SPADs, silicon nitride photonic integrated circuits combined with MEMS for atomic systems, Ge on Si mid-infrared photonic integrated circuits, MEMS gravimeters and Si nanowire sensors.



**Evelyn Toma (Director of Strategy for James Watt Nano-Fabrication Centre (JWNC))** received her Bachelor of Science in Microelectronics at The University of Edinburgh. She began her career in the semiconductor industry in with Motorola, latterly progressing to run the company's European Business Unit responsible for the design and supply of products for industrial and consumer sectors. Then she worked as managing Director of Eureka Solutions and became the Board Member of CENSIS. In April 2019, Evelyn joined the University of Glasgow.



**Miles Padgett (Royal Society Research Professor)** is a Royal Society Research Professor and also holds the Kelvin Chair of Natural Philosophy at the University of Glasgow. His research team covers all things optical, from the basic ways in which light behaves as it pushes and twists the world around us, to the application of new optical techniques in imaging and sensing. They are currently using the classical and quantum properties of light to explore: the laws of quantum physics in accelerating frames, microscopes that see through noise, shaped light that overcomes diffraction-limited resolution and endoscopes the width of a human hair. He is a Fellow both of the Royal Society of Edinburgh and the Royal Society (the UK's national academy), in addition to various subject specific societies. He has won various national and international prizes (see below) including, in 2019, the Rumford Medal of the Royal Society and in 2021 the Quantum Electronics and Optics Prize of the European Physical Society. Since 2019 he has been identified by Web of Science as a globally highly-cited researcher. Miles is currently the Principal Investigator of QuantIC, the UK's Centre of excellence for research, development and innovation in quantum enhanced imaging, bringing together eight Universities with more than 40 industry partners.



**Vidur Raj (Research Associate)** completed his Ph.D. followed by a 2-year postdoc at the Australian National University in the group of Prof. Chennupati Jagadish. At ANU, he reported the world's first self-powered single photon detector and the world's highest filling ratio nanowire array for the growth of a highly interconnected neural network. He is currently a postdoctoral research associate working on "Superconducting single photon detectors" at the University of Glasgow. Vidur has published more than 20 research articles in top journals, 15 of which are as the lead author. He has also published several co-author publications and presented at conferences and seminars worldwide. Additionally, he has acted as an invited reviewer for more than fifteen journals and has given invited talks at

reputed universities, including the University of Tokyo, the National University of Singapore, Amity University, and one OSA student chapter talk at IIITDM, Jabalpur. Vidur's research interests range from nanoscale III-V optoelectronics to neuroscience to superconducting devices for quantum computing and communications.



**University of Oxford** is ranked number one in the world in the 2021 Times Higher Education World Rankings. We are at the forefront of the full range of academic disciplines, including medical sciences; mathematical, physical and life sciences; humanities; and social sciences. As the oldest university in the English-speaking world, we have long traditions of scholarship, but we are also forward-looking, creative and cutting-edge. Oxford is one of Europe's most entrepreneurial universities: we rank first in the UK for university spin-outs, with more than 130 companies created to date. We are also recognised as leaders in support for social enterprise. [www.ox.ac.uk](http://www.ox.ac.uk)



**David Lucas (Professor)** is an experimental atomic physicist at the University of Oxford, working in the field of trapped-ion quantum computing. Previously he worked on cold atoms in optical lattices, and precision measurements for tests of fundamental physics.



**Yole Développement (Yole)** has grown to become a group of companies providing marketing, technology and strategy consulting, corporate finance services, reverse engineering and costing services and well as IP and patent analysis. With a strong focus on emerging applications using silicon and/or micro manufacturing, Yole Group of Companies has expanded to include more than 80 collaborators worldwide covering MEMS and image sensors, Compound Semiconductors, RF Electronics, Solid-state lighting, Displays, Software, Optoelectronics, Microfluidics & Medical, Advanced Packaging, Manufacturing, Nanomaterials, Power Electronics, Batteries & Energy Management and Memory. Yole, along with its partners System Plus Consulting, PISEO, Knowmade and Blumorpho, support industrial companies, investors and R&D organizations worldwide to help them understand markets and follow technology trends to grow their business. [www.yole.fr](http://www.yole.fr)



**Eric Mounier (Fellow Analyst)** has almost 20 years of experience in MEMS, Sensors and Photonics applications, markets, and technology analyses and provides deep industry insight into current and future trends. As a Fellow Analyst in MEMS & Photonics Technology & Market, in the Photonics, Sensing & Display division, he is a daily contributor to the development of MEMS and Photonics activities at Yole Développement (Yole), with a large collection of market and technology reports as well as multiple custom consulting projects: business strategy, identification of investments or acquisition targets, due diligences (buy/sell side), market and technology analysis, cost modelling, technology scouting, etc. Previously, Eric Mounier held R&D and Marketing positions at CEA Leti (France). He has spoken in numerous international conferences and has authored or co-authored more than 100 papers. Eric has a Semiconductor Engineering Degree and a Ph.-D in Optoelectronics from the National Polytechnic Institute of Grenoble (France).



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