

Photonics Leadership Group Meeting Minutes

Monday 4 March 2024, 14:00-16:00,

Remotely on Teams

PHOTONICS
LEADERSHIP GROUP

www.photonicsuk.org

Attendees online, for whole or part:

Ian Alderton, Alrad; Yann Amouroux, Optica OSA; Gemma Bale, Aria; Dom Brady, Fibercore/ Humanetics; Karin Burger, SPIE Europe; Rohin Burney-O'Dowd, Department for Business & Trade; Peter Collins, Laser 2000; Allan Colquhoun, Leonardo; Iwan Davies, IQE; Chris Dorman, Coherent Scotland; Sandra Dressler, Edmund Optics; Andrew Ellis, University of Aston; Daniel Esser, Heriot-Watt University; David Gillett, Laser 2000; Mark Goossens, CS Applications Catapult; Jon Heffernan, University of Sheffield; Tom Hopkins, UK Space Agency; Shahida Imani, independent; Rand Ismaeel, University of Southampton; Steven Jones, Cadfem UK; Stratos Kehayas, GandH; John Lincoln, Harlin; Callum Littlejohn, University of Southampton; David MacLellan, AILU; Iain Mauchline, InnovateUK; Owen McGann, GTS; Alison McLeod, Technology Scotland; Cillian McPolin, Digital Catapult; Wyn Meredith, Compound Semiconductor Centre; Graham Reed, University of Southampton; Andy Robertson, Bay Photonics; Rob Scudamore, TWI; Kayleigh Thomson, GandH; Sergei Turitsyn, University of Aston; Malcolm Varnham, Trumpf UK; Mike Wale, UCL; Philip White, Department for Business & Trade; Aidong Xu, Cambridge Consultants

Direct Apologies: Ric Allott, STFC; Caroline Gray, OptiC, Glyndŵr University; Benet Hanley, Enigma People Solutions; Antony Hurden, Grounded Innovation; Anke Lohmann, Anchored In ; Wayne Loschi, EPIC (Torbay); Kevin Mackrodt, Novanta; Chris Payne-Dwyer, Quantic (Uni of Glasgow); Andy Sellars, CS Applications Catapult; Matthew Wasley, KTN

**Post meeting and editorial input in italics*

1) Previous Minutes and welcomes

Those attending their first PLG meeting formally welcomed, including Gemma Base of Aria.

Minutes from previous meeting on 26 October June were accepted without revision.

Note previous meeting minutes are accessible at <https://photonicsuk.org/contributors/minutes/>. You will need the code "PLGcontribute" to access (case sensitive).

2) Aria introduction, Dr Gemma Bale

Dr Gemma Bale, Programme Director for Aria, provided detailed updated of Aria's Mission and activities. Noted that the intention is to focus on people and adventurous/ high risk research with longer term principally societal impact. Full overview of their selected opportunity spaces is available at <https://www.aria.org.uk/what-were-working-on/>. Gemma is co-programme director for the "Scoping our planet: a new lens on climate science" space along with Sarah Bohndiek. The opportunity summary specifically mention photonics (optics)

"The opportunity – Current Earth system measurements have serious gaps that lead to uncertainties in weather forecasting and climate predictions. By harnessing the power of optics we can fill these gaps, equipping society to respond confidently to the climate crisis."

Photonics was noted as relevant to many of the opter spaces including "interfacing with the human brain", "programmable plants", "managing our climate" and "nature computes better". A notable number of programme directors have a background in photonics.

Programme directors are current consulting community to generate a **programme thesis** that will broadly outline what they expect to fund and how. Examples of these in some areas are available at <https://www.aria.org.uk/what-were-working-on/>. Noted that Aria aims to not be prescriptions on the TRL level of the work they fund.

Action JRL> Introduction to the Future Photonics Leaders group

3) Global photonics marketplace and trends, John Lincoln & SPIE

John Lincoln presented the latest statistics on the size of the global photonics industry compiled by SPIE and first released at the Global Business Forum at Photonics West.

Highlights:-

- Global Photonics market reached \$368 billion in 2022, up over 20% from 2020
 - Photonics components, exemplified by those exhibiting at photonics events globally
- 7.3% 10 year revenue CAGR. More than double global GDP growth over same period
 - Large variation in growth between region – Asia strong, US weaker, based on HQ location
 - Impact of ever strengthening dollar significant more than inflation in last decade.
- Revenue growth exceeding jobs growth (5.4%) indicating continued productivity growth
- High medium and low forecasts of 2024 growth of 8.9%, 2.9% and -2.5% respectively
- \$2.4 trillion global photonics enabled products (i.e systems) market = 12% of global GDP
 - Biomedical seeing strong growth in invitro diagnostics post Covid
 - Aerospace saw some decline 2021-2023
 - Semicon equipment, declined 2021-2023, as impact of global semicon stimulus yet to work way through supply chain. Big bounce expected by 2025. Potential additional / surplus global capacity likely to be game changing for integrated photonics
- With increasing ubiquitousness of photonics industry growth increasingly linked to wider economy. IMF reporting large divergence in individual country growth potentially requiring more geographic dynamic approach in company strategies.
- ~50% global countries hold elections in 2024. Whilst elections will generate many headline actualy policy normally unchanged in run up to and post-election therefore business environment should be fairly stable in 2024.

Full details of all figures are in the [Optics and Photonics Global Business Report](#) and [online summary](#). Additional future insights available from [PLG presentation given at Global Business Forum](#).

4) UK Semiconductor strategy update

Semiconductor Infrastructure final report delivered to DSIT in December. Report now being digested by gov, earliest policy impact could be in March 6 budget. Although major spending interventions esp in physical infrastructure, pending next spending review, likely post UK 2024 election.

- Principle recommendation remain as disseminated by IFM in November i.e support for design, Compound semi, packaging and higher node silicon.
- Expect on going flow of support from programmes from Innovate and EPSRC. Most recent being announcement on [semicon IKC's](#) (below) and [semicon skills projects](#)

5) International Photonics Mission feedback & opportunities

Photonics and the PLG have been extensively represented in recent DBT sponsored trade missions, including

- **South Korea**

Shahida Imani and Jon Heffernan both joined South Korean [GEM scoping mission](#) overlapping with photonics west. Strong meetings with principal South Korea semicon companies. Interest in collaboration with the UK esp on design front and in optical/photonics domain. Local supply chain noted as very self-sufficient and heavily focused on supporting main domestic players who in turn very focus on memory and digital electronics

A funding call to support bi-lateral collaboration is expected to open Feb / March 2024

- **Photonics West**

DBT provided the most comprehensive support for UK companies at Photonics West ever seen with multiple events and support. Support provided for delegation of 42 representatives of over 25 companies/organisations. Survey response from delegates very positive.

Overall atmosphere at Photonics West buoyant, with over 22,000 visitors 1601 exhibitors and strong support for the AR/VR and Quantum West satellite events.

Actions all PW attendees> please feedback impact of the DBT support to Rohin Burney-O'Dowd / Phillip White essential to ensure support in future years.

- **Taiwan**

Following on from last year a additional GBIP mission to Taiwan is planned for 2024 - [Global Business Innovation Programme: Semiconductors, Taiwan - Innovate UK Business Connect \(ktn-uk.org\)](#)

- **Horizon Europe (Photonics21, Phorwards21)**

UK has complete re-association with Horizon Europe. PLG relaunch at Royal Society, notable for senior Eu and UK ministerial engagement. Innovate supporting an active program of regional meetings to get UK companies back in HEU projects starting in [Birmingham on 13 March](#).

Those interested in HEU projects are strongly recommended to attend the [Photonics21 annual meeting](#) 14-15 March in Brussels, an ideal opportunity to network with potential consortia partners. The focus of this years meeting will be highlighting funding programmes outside the core photonics program.

Iwan Davies was return to the P21 Board of stakeholders in the autumn election. There are now at least 6 representative from the UK on the BoS.

The PLG is a partner in the Phorwards21 EU support action alongside many photonics clusters from across Europe, supported by the Eu guarantee scheme, providing additional links to European colleagues. Kick-off meetings have now taken place.

- **Additional bi / multi laterals** highlighted by Innovate
- [UK - Germany Bilateral: Collaborative R&D Round 3](#)
- [UK – Switzerland Bilateral: Collaborative R&D Round 2](#)
- [Eureka Quantum collaborative R&D Multilateral 2024](#)

6) External events impacting photonics industry

Ramifications noted as likely from customer (rumoured to be Apple) [cancelation of a major micro LED project at Osram](#) for which they had constructed a ~ \$billion 8" line in Malaysia. The UK have been significant innovators in the micro LED space. Appear to indicate a preference for OLED solutions ofr smart devices.

Following the completion and award of the latest of centres for doctoral training, recruitment will start in fall 2024. Significant competition for quality graduates to join programmes is expected.

7) Updates from communities and programs

- **Future Photonics Leaders committee update**

Inputs into the [Future leaders current survey](#) welcomed and encourage – please encourage your early career professionals and research to complete.

The future leader group will also be seeking additional people to join committee shortly

- **AILU**
- Webinar 14 March on [hand held laser welding](#). First of set of three meetings on latest hand held laser applications.
- Exhibiting at MACH 2024, UK manufacturing event @ NEC 15-19 April
- [AGM 15 May](#) with Micro machining workshop on 16 May @ Trumpf Luton
- Early careers group meeting 5 June
- Ilas 2025 Early diary hold for 26-27 March 2025

Discussion on whether the rapid developments in hand held laser materials processing and associated wide impact could be raised with APPG as an area for regulation concern/ need for consistency in safety

Noted TWI are running joint industry project on developments in hand held laser welding contact paola.debono@twi.co.uk for more info.

- **Photonics Scotland**
- Frist meeting of the future photonics and quantum skills group well attended by industry, gov and education providers. Working to ensure long term skills supply
- Photonics Scotland working with Scottish Trade international on trade show and mission support

Field Code Changed

- Joint meeting 13 Mar with NPL on the commercialisation of QT technology
- **Photonics Connected**
- Working on revised long term strategy. Inputs from Welsch community welcome
- **UK Quantum**
- AGM due 12 March 20234
- Draft manifesto call for more supply quantum supply chain support especially I photonics and semicon.
- **UKIVA**
- PPMA Group of Associations which includes UKIVA rebranding/reorganising to [Automate UK](#).
- [UKIVA conference and exhibition](#) 18-19 June at Coventry buldign Aread
- **SPIE**
- [Photonics Europe](#) expanded program with 1000 exhibitors in Strasbourg 7-11 April, including industrial/marketplace/ funding program open to exhibit visitors.
- [Sensors and Imaging](#) featuring SPIE Remote Sensing SPIE Security + Defence conferences in Edinburgh 16-19 December. Also featuring industrial/marketplace/ funding program open, with both Eu and UK funding and program day. Work in hand to secure snr MOD plenary.
- **C-PiC**
- One of two major EPSRC and Innovate supported Innovation Knowledge Centres has been awarded to the Cornerstone, silicon photonics foundry at Uni Southampton with collaborators across UK, including Glasgow Uni. Officially starting 1 April. Discounts for silicon photonics and associated device fab will be available to academics and for the first year industry. £2m has been allocated to support collaborative projects with industry. NATO Photonics Integrated Circuit meeting,
- Dresden 21-22 October 2024, Graham Reed organising. [Details in flyer](#) . Note registration link not yet up.

8) Next meeting and AOB

Next Meeting due in June. Offers for physical location welcome. Suggestion made to defer physical meeting to September and hold alongside SPIE sensors and Imaging in Edinburgh

Subscription and membership. Thanks offers to those that have pmade a contribution for 2024. Others are reminded to make their contribution to keep the PLG operation. Quotes can be converted in invoice via Karin or John.

9) Close 16:04