

Photonics Leadership Group Meeting Minutes

Tuesday 6 June 2023, 13:00-15:30,
Rutherford Appleton Lab, STFC and remotely via on Zoom

www.photonicsuk.org

Attendees in person and online:

Ian Alderton, Alrad; Ric Allott, STFC; Yann Amouroux, Optica OSA; Simon Andrews, Fraunhofer UK; David Armstrong, Fraunhofer UK; Karin Burger, SPIE Europe; Max Buttinger, Thales UK; Richard Clark, AMS Technologies; Peter Collins, Laser 2000; Allan Colquhoun, Leonardo; Phil Cornish, CS Connected; Iwan Davies, IQE; Chris Dorman, Coherent Scotland; David Gillett, Laser 2000; Mark Goossens, CS Applications Catapult; Clive Grafton-Reed, Rolls-Royce; Jon Heffernan, University of Sheffield; Simon Hutchinson, AILU; Shahida Imani, Chromacity; Rand Ismaeel, University of Southampton; Louise Jones, Photonics Connected; Stratos Kehayas, GandH; Robert Lamb, Leonardo; John Lincoln, Harlin; Anke Lohmann, Anchored In ; Una Marvet, Alter Technologies; Iain Mauchline, InnovateUK; Owen McGann, GTS; Owen McGann, GTS; Alison McLeod, Technology Scotland; John Nolan, First Mile Networks; Chris Payne-Dwyer, Quantic (Uni of Glasgow); Denise Powell, Compound Semiconductor Centre; Kayleigh Thomson, GandH; Bruce Valentine, Fibercore/ Humanetics; Mike Wale, UCL; Matthew Wasley , KTN; Aidong Xu, Cambridge Consultants

Direct Apologies:

Dom Brady, Fibercore/ Humanetics; Thomas Butcher, STFC; Max Buttinger, Thales UK; Russell Childs, Optoscribe / Intel; Buki Dada, Thorlabs; Paola de Bono, TWI; Daniel Esser, Heriot-Watt University; Glenn George, Bay Photonics; Clive Grafton-Reed, Rolls-Royce; Duncan Hand, Heriot-Watt University; Antony Hurden, Grounded Innovation; Andrew Kearsley, Oxford Lasers Ltd; Christopher Leburn, Chromacity; Carol Monaghan, MP; Mark Naples, Umicore Coating Services; John Parsons , Indigo Consulting; David Payne, University of Southampton; Graham Reed, University of Southampton; Andy Robertson, Bay Photonics; Andy Sellars, CS Applications Catapult

**Post meeting and editorial input in italics*

1) Previous Minutes and welcomes

Those attending their first PLG meeting formally welcomed including.....

Minutes from previous meeting on 9 March were accepted without revision.

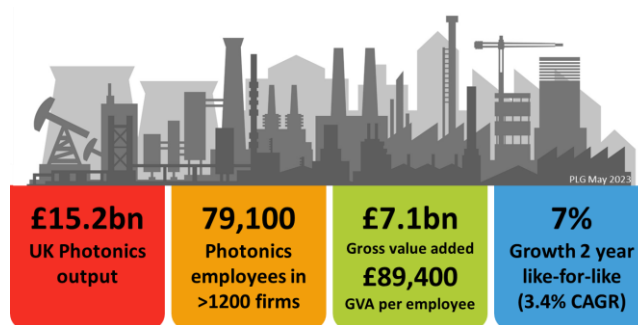
Note previous meeting minutes are accessible at <https://photonicsuk.org/contributors/minutes/> You will need the code "PLGcontribute" to access (case sensitive). The online link to 9 March meeting has been updated and is now functioning.

2) The UK Photonics Landscape 2023

John Lincoln presented the latest statistic on the UK photonics industry update for 2023 from 2022 data.

Highlight include:-

- Revenue growth 7% over two year. Less than previous years but excellent considering this period covers the major impact from Covid-19 and associated supply chain disruptions.
- Significantly photonics has grown whilst ONS data shows most UK manufacturing sectors have declined in the same period.
- Most other UK manufacturing sectors show decline over the same time period from ONS data.
- Higher profit growth of 9% and lower employment growth of 3.2% and only modest wage (employee benefits paid) growth of 1.7%, leading to GVA growth of 6.9%. Indicating a focus on profitability and efficiency in this time. Timing of the data means the inflationary pressures of the last 12 months are unlikely to impact the data.
- Long term ten year growth averages at 4% CAGR down slightly from previous 4.6% and significantly more than general manufacturing growth.
- Photonics now employs more people than aerospace or automotive manufacturing in the UK



- 50% of photonics companies report investing >10% of turnover into R&D (this include photonics and non-photonics investment)
- For the first time analysis of number of companies engaging in Innovate UK projects has been undertaken. 480 companies have been involved in at least 1 Innovate UK project over the last 20 years and the average being 6 projects per company. This includes all types of Innovate projects not just those focused on photonics.
- The regional distribution of photonics outputs and employment remains unchanged.
- The size distribution on revenue generate according to company size remains unchanged. Photonics continues to show a higher concentration of small and medium sized companies than other enabling technology sectors.
- The age profile of photonics companies remains unchanged. The birth rate of new companies in the last 2 years does however show reduction from the long term trend
- Photonics remains a strong exporter with 50% of companies exporting over half their output and 16% exporting almost all their output.

The statistic were prepared under a Innovate UK contract to provide an update on the UK photonics Landscape. The full report submitted to Innovate UK in April ran to over 20,000 words including extensive description of photonics impact in topical areas from semicon to space. The PLG acknowledged and are grateful to this support from Innovate.

An online version of the presentation of the core data will be made available through the PLG Youtube channel in early July.

A summary of the key data will be included in an update to the UK Photonics 2023: The Hidden Economy. This will be published on 26 of June for the opening of Laser Munich. Hardcopies will be available at the show, where the PLG will have a presence courtesy of Anchored-In (booth b2.130). Many thanks to Anke Lohmann.

Queries were raised on whether any data is available or considered regarding:-

- acquisitions and/or spin out
 - not presently but noted deal flow data is available from Bauhurst, and could be included in future analysis
- changes seen in regional distribution caused by companies shifting location of photonics activity
 - Location changes for companies with single operating locations are picked up, but changes in regional distribution for multisite companies are unlikely to be captured. Where known the photonics revenue is attribute to the site(s) where photonics activity is know to occur.

Thanks were provided to John L for preparing the data.

3) UK Semiconductor strategy update

The [UK semiconductor strategy](#) has now been formally published, with outline funding of £1billion and funding of £250m over next two year.

A key part of the strategy is the commitment to support infrastructure investment informed by the [Semiconductor infrastructure feasibility study](#) currently underway in which the PLG is one of the consortium delivery partners. The study is nearing the end of the initial data gathering phase.

- The core **user needs** survey remains open for stragglers. Analysis has already started and any final responses should be submitted urgently https://cambridge.eu.qualtrics.com/jfe/form/SV_0wHmwhFEIgECl1A.
- An existing facilities and capability survey is open at https://cambridge.eu.qualtrics.com/jfe/form/SV_ePpAg3dJ2fMHc9w . Closing shortly those engaged in the UK semiconductor supply chain from industry or with research capability are encouraged to submit details of their current capability.
- There will be a series of workshops in July to clarify details from the survey. Registration for these is open at https://cambridge.eu.qualtrics.com/jfe/form/SV_5nI4eQLIRjXHpBQ starting with a face

to face workshop in Sheffield on 14 July. Those interested in both using, supplying or defining future UK semiconductor infrastructure are strongly advised to participate.

- *Note these workshops will be split according to four theme areas of silicon, design tools packaging and compound semi. Those with interests in multiple areas may wish to consider how they can leverage personnel and or the combo of in-person and online workshops to participate in multiple threads.*
- Support has been requested on grouping the compound semiconductor materials into families that can be supported with common infrastructure. Thanks to Iwan Davis and Jon Heffernan for their support in this.

DSIT have emphasised that there are no predefined conclusions on what will be invested in or where. The core objective of the infrastructure project is to gather evidence on the demand for different types of infrastructure in the UK, the potential impact (economics, resilience and national security) and the business models for intervention to provide a common evidence base to inform decisions making.

In parallel a number of additional semiconductor initiatives are underway or upcoming including

- Expression of interest call from EPSRC for an IKC (Innovation knowledge centre) in Semiconductor
- Innovate UK programs for semiconductor training programs (recently closed)
- [Semiconductor manufacturing scale-up programme open in 4 December](#)
- International trade missions to Semicon West and Taiwan (19 July).
- Additional support for the UK Semiconductor industry to be announced in the Autumn was highlighted in the semiconductor strategy.

4) Photonics and Quantum APPG

Renewal of the photonics and quantum APPG was confirmed at an AGM on 9 May 2023.



- Chair: Carol Monaghan, MP Glasgow North West
- Officers: Ruth Jones, MP Newport West
Anthony Mangnall, MP Totnes
Stephen Metcalfe, MP Basildon and East Thurrock
The Rt Hon. Baroness Pauline Neville-Jones.
Margaret Ferrier, MP Rutherglen and Hamilton West

APPGs MPs and Lords expressed interest in

- Semiconductor Strategy with meeting on Monday, 10th July from 16:00 hrs and feature two – three speakers as well as a Q&A session for MPs and the relevant industry.
- Further meetings should focus on the Role of photonics in :
 - Space (Position-Navigation-Timing via space)
 - Quantum (Find out what the barriers are that industry encounters)
- Noted that APPG MPs should also be invited to the Quantum Showcase on 2 Nov
- Healthcare
- Defence (work with the APPG Armed Forces).
- A formal invitation to attend the SPIE Photonex 24-26 October will be issued to the APPG.
- Interest has been expressed in another Westminster photonics showcase is to be held in 2024.
- The regular newsletter to APPG members will be restarting after the summer recess, please send items of interest to KARIN@SPIEEUROPE.ORG.

MPs, expressed significant interest in getting more questions and queries on topical issues from industry. It was noted they cannot raise issues if they are not aware of them. PLG members are encouraged to feed questions direct to either their MP and or to members of the APPG.

- Ideally questions these should be synced to parliamentary timetable for departmental questions. We are currently investigating the best method to understand this timetable and communicate it to the PLG members.

David Gillet noted recent successful visit of their local MP to their facility. A number of PLG members have found their MPs responsive to requests for such visits and are encouraged to continue to engage their MPs on such a basis.

5) Photonics 21

The Photonics21 AGM 26-27 April launched the new photonics [Strategic Research and Innovation Agenda](#) setting the direction for EU photonics funding.

The AGM also saw the launch of joint white paper with EPoSS on [integrated photonics](#) and its role and relevance to the European Chips act and semiconductor industry / interventions

Deputy Director General Thomas Skordas, an old friend of photonics highlighted the opportunities for photonics within the EU semiconductor funding/ chips joint undertaking in the key note at the AGM. Much of the focus of the meeting was on how to leverage semicon opportunities. A number of presentations noted concerns that Europe was moving much slower than the US in rolling out interventions. It was emphasised that one it principle interventions was changes in the state aid rules allowing national governments to provide more direct support for the semiconductor industry.

- Phorwards21 is the next CSA which support operation of Photonics21. This includes modest support for national networks in photonics to input into P21 and collaborate. The PLG will be included as full partner in the latest CSA submission. Support from the Mat Wasley in transferring this role previously undertaken by KTN was acknowledge and a reflection of the increasing status of the PLG.

6) External Impacts on Photonics - roundtable

- **Export licenses:** A number of PLG members noted that increase scrutiny and delays in obtaining export licenses both in the UK and EU. Within the EU any components / parts / contracts involving quantum devices are seeing delays of many months.
- **DSIT Grant applications:** Members report last minutes changes in the rules for DSIT grant applications, in particular impact the allowable funding ratios between partners.
- **UKCA marking:** concerns remain around UKCA marking and the implementation timetable
- **Supply chain:** delays and bottlenecks reported as mostly going away
- **Interest in AI and machine learning:** driving strong demand in specific areas around semicon

7) Future Photonics Leaders

- Looking at under taking a survey on the skills demand and ED&I
 - Noted EPSRC have an open call focusing on ED&I which the Future leaders group may consider
 - Excellent to see both co-chairs Kayleigh Thomson, GandH, (industrial co-chair) and Rand Ismaeel, University of Southampton (Academic co-chair) of the future photonics leaders group in person at a PLG meeting

8) Updates from communities and programs

a) AILU (Dave M)

- [AILU Workshop – Laser Cleaning](#), 20 September 2023
- Application of AI in laser processing November

b) Photonics Scotland (Alison M)

- [Photonics Scotland online survey is open](#) – please complete if based in Scotland
- [Quantum Vision](#) paper launched
- Technology Scotland Annual Dinner will be in December
- ECOC Glasgow 1-5 October 2023. .

c) Photonics Connected

- MOU has been signed between Welsh government and Innovate UK. Impact yet to emerge
- [Wales Tech week](#). 16-18 October 2023.

d) **UKIVA (Ian A)**

- UK Machine Vision conference 21-21 June 23 at the CBS arena Coventry and joined by new Automation exhibition. <https://www.machinevisionconference.co.uk/>

e) **UK Quantum**

New person joining team shortly aiming to increase activity level

f) **Laser Munich, World of Photonics**

PLG will have a presence in the exhibition booth and UK pavilion booth b2.130 courtesy of Anchored Inn

Informal PLG dinner Tuesday 27 June at Zum Dürnbräu Munich anyone available welcome to join.

Optica OSA reception Sunday 25 June 7:30. PLG members welcome

SPIE Executive reception Hofbräuhaus, Munich Thursday 29 June 18-21:00. PLG members welcome.

g) **UK Semi meeting 12-13 July**

Will include Photonics Hub industry12 July. Heterogeneous Integration workshop. Materials for Quantum discussion. Followed by the Semiconductor infrastructure workshop on Friday 14 July.

9) Next PLG Meeting

Next face-to-face meeting @ Photonex 24-26 October, most likely on 24 Oct TBC

10) AOB

John Collier provided an introduction to the central Laser facility and new Extreme Photonics Application Centre (EPAC). The following tours provided inspirational view of current central laser facilities and the exciting new developments at EPAC whose fit out is well underway.

Great many thanks to STFC, the central Laser Facility and Ric Allott for hosting and providing lunch