International Workshop on PCSELs & PECS-XIV 2025

Agenda for Monday, 10th November:

08:00-08:30 **Registration (Grosvenor hotel) & Welcome Coffee**

08:30-09:00 **Welcome Remarks**

09:00-10.30 **Session 1 (Chair: Prof Thomas Krauss) – PECS-XIV**

Prof Marko Lončar, Harvard University (Invited)
High Performance Thin Film Lithium Niobate (TFLN) Photonics

Prof Philippe Lalanne, CNRS-IOGS-Univ Bordeaux (Invited)
Electromagnetic resonators: revisiting the Coupled Mode Theory

Prof Dario Gerace, Università degli Studi di Pavia
Polariton condensation and emerging supersolidity in photonic crystal waveguides

Dr Daniel Muis, Delft University of Technology & AMOLF
Large-Area Optical Field Enhancement Using Landau Levels in Synthetically Strained Photonic Crystals

10:30-11:00 **Coffee Break**

11:00-12:30 **Session 2 (Chair: Dr Adam McKenzie) – PCSEL**

Prof Kent Choquette, University of Illinois, Urbana-Champaign, Japan (Invited)
Photonic crystal implementation for mode control in semiconductor lasers

Dr Yoshitaka Kurosaka, Hamamatsu Photonics, Taiwan (Invited)
Progress on scale-invariant Berkeley Surface Emitting Laser (BerkSEL)

Prof Boubacar Kante, University of California, Berkeley
A patterned light source based on PCSEL technologies

Mr Tong Xu, Chinese Academy of Sciences
Room-temperature electrically injected GaN-based photonic-crystal surface-emitting lasers

12:30-13:00 **Lunch**

13:00-15:00 **Session 3 (Chair: Prof Thomas Krauss)- PECS-XIV**

Prof Eli Yablonovitch, UCLA/University of California, Berkeley (Plenary)
What I Wish I Had Known, as I Searched for the First 3d Photonic Bandgap

Prof Marin Soljacic, MIT (Plenary)
Certain intersections of AI and Photonics

15:00-17:00 **Coffee Break & Poster Session**

17:00-18:00 **Keynote Session – Joint (Chair: Prof Richard Hogg)**

Prof Susumu Noda, Kyoto University
Progress of Photonic-Crystal Surface-Emitting

18:30 **Transportation to Clydeside Distillery (Welcome Reception)**

University of Glasgow | Aston University Birmingham UK | AIPT Aston Institute of Photonic Technologies | University of York

Agenda for Tuesday, 11th November (Parallel Sessions):

09:00-10:30 Session 4 (Chair: Dr Richard Taylor)- PCSEL

Prof Richard Hogg, Aston University (Invited)
Accelerating PCSEL Development

Mr Mei Emoto, Stanley Electric (Invited)
Progress in GaN-based photonic-crystal surface-emitting

Dr Kazuyoshi Hirose, Hamamatsu Photonics
Micro pattern projection from PCSEL-based on-chip pattern projector.

Ms Erin Raftery, University of Illinois, Urbana-Champaign
Photopumped buried dielectric topological-cavity surface-emitting lasers inP

09:00-10:30 Session 5 (Chair: Prof Willem Vos)- PECS-XIV

Prof Lucio Andreani, University of Pavia, (Invited)
Bound states in the continuum empowering chiral optical response in dielectric and metallic photonic crystals.

Dr Kazuhiro Kuruma, University of Tokyo (Invited)
Engineering photons and phonons in diamond for defect center

Dr Yue (Christina) Wang, Univeristy of York (Invited)
Photonic Crystals in Van der Waals Landscapes

Dr Augusto Martins, Univeristy of York
Robust photonic resonances in flat bands

Dr Shuma Ito, Keio University
Observation of high-Q flatband modes in twist-stacked moiré photonic crystals

10:30-11:00 Coffee Break

11:00-12:30 Session 6 (Chair: Dr Scott Watson)- PCSEL

Prof Chao Peng, Peking University (Invited)
Collective oscillations in photonic crystal surface emitting laser

Dr Samir Rihani, Huawei Technologies R&D (Invited)
High-Efficiency PCSELs for Next-Generation Photonic Communication

Prof Weidong Zhou, University of Texas at Arlington
Coherence in passively coupled coherent PCSEL arrays

Mr Matthew Robinson, University of Glasgow
Breaking symmetry in triangular lattice PCSELs: coupled wave theory analysis

11:00-12:30 Session 7 (Chair: Prof Thomas Krauss)- PECS-XIV

Prof Toshihiko Baba, Yokohama National University (Invited)
Photonic Crystal Slow-Light Modulator Toward Co-Packaged Optics

Prof Wei Li, Chinese Academy of Sciences (Invited)
Spatial and frequency dispersion engineering for optical information detection and processing

Prof Satoshi Iwamoto, University of Tokyo (Invited)
Semiconductor-based Topological Photonic Crystal Waveguides

Elise Burns, University of Strathclyde
Integration of Silicon Photonic Crystal Cavities on Multi-Core Optical Fibre

Dr Dominic Hallett, University of Sheffield
Independently tunable emitters chirally coupled to a chiral photonic crystal waveguide

12:30-14:00 Lunch

14:00-15:30 Session 8 (Chair: Dr Adam McKenzie) – PCSEL

Dr Takuya Inoue, Kyoto University (Invited)
Dynamic control of photonic-crystal surface-emitting lasers toward satellite communications

Dr Yuhki Itoh, Sumitomo Electric (Invited)
Progress in High-power InP-based Double-lattice PCSELs

Prof Leon Shterengas, Stony Brook University
Progress in development of the GaSb-based PCSELs

Mr Zongliang Li, Chinese Academy of Sciences
Non-Hermitian Dirac theory of topological-cavity surface-emitting laser

14:00-15:30 Session 9 (Chair: Prof Toshihiko Baba)- PECS-XIV

Prof Thomas Krauss, Univeristy of York (Invited)
Optofluidic and electrophotonic tunable resonances

Dr Masashi Miyata, Device Technology Labs, NTT (Invited)
High-sensitivity Multi-color Imaging Based on Meta-optics

Prof Willem Vos, University of Twente (Invited)
Realizing the Anderson localization transition for light in 3D, here is attempt nr. 57-d

Prof Romuald Houdré, EPFL
Optical trapping in a photonic crystal hollow cavity for discrimination and status assessment of bacteria and bacteriophages viruses in the context of phage or antibiotics therapies

Dr Fabio Aldo Kraft, Kiel University
Liposome Sensing with Photonic Crystal Slabs: A Proxy for Extracellular Vesicle Detection

15:30-17:00 Coffee Break & Poster Session

18:30-10:00 Dinner at Oran Mor

Agenda for Wednesday, 12th November:

09:00-10:30 Session 10 (Chair: Prof Richard Hogg) – PCSEL

Prof Cunzhu Tong, Chinese Academy of Sciences
Triple-lattice photonic crystal surface emitting lasers

Dr Ivo Tanghe, Ghent University
PCSELs over the entire visible spectrum based on colloidal nanocrystals

Dr David Moodie, Huawei Technologies R&D
PCSELs at telecommunications wavelength using a heterolattice design

Dr Mindaugas Radziunas, Weierstrass Institute
Dynamic simulations of single-mode lasing in large emission area all-semiconductor PCSELs

Prof Hans-Peter Wagner, University of Cincinnati
Compact InP nanowire photonic crystal surface emitting lasers

Prof Ulrich Schwartz, TU Chemnitz
Far-fields of deep-UV PCSEL with shallow and deep-etched photonic crystal

11:00-12:30 Session 11 (Chair: Prof Satoshi Iwamoto)- PECS-XIV

Dr Dawn Tan, Singapore University of Technology and Design (Invited)
Bragg soliton dynamics on a CMOS chip

Prof Masaya Notomi, Institute of Science Tokyo & NTT Inc. (Invited)
Non-Hermitian Chirality and Singularity with Complex Photonic Crystals and Complex Perturbation

Prof Ling Lu, Chinese Academy of Sciences (Invited)
Photonic application of topological physics: in memory of John Joannopoulos (1947-2025)

Dr Kaiwen Ji, Université Bordeaux
Photonic Crystal Coupled Nanolasers at Lasing Exceptional Points for Chiral Light Emission

Davide Monopoli, Munster Technological University
Hybrid laser emission via a RSOA die coupled to an integrated side-coupled Fabry-Perot

12:30-14:00 Lunch

14:00-15:30 Session 12 (Chair: Mr Joe Gannicliffe)- PCSEL

Industry roundtable session led by a panel of PCSEL manufacturers, integrators, and end users, facilitating audience discussion on the potential for, and challenges of, PCSEL commercialisation.

15:30-17:00 Coffee Break

14:00-15:30 Session 13 (Chair: Dr Christina Wang)- PECS-XIV

Prof Shanhui Fan, Stanford University (Invited)
Photonic band physics: generation of light bullet, and non-Abelian lattice gauge field

Prof Ren-Min Ma, Peking University (Invited)
Singular Dispersion Equation: Breaking the Diffraction Limit in Dielectrics

Dr Jonathan Dietz, IonQ (Invited)
A scalable photonic quantum interconnect platform

Prof Kyoko Kitamura, Tohoku University (Invited)
Optical Pathways in Distorted Photonic Crystals

15:30-16:00 Closing Remarks