Photonics Ireland 2025
3rd to 5th September 2025
Cork, Ireland

Programme schedule

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Exhibition is open throughout the conference.

Time	Wednesday, 3rd September 2025	
11:30-13:00	**Registration and lunch in hotel restaurant from 12:00**	
13:00-13:30	**Welcome and opening address by conference chairs** Brian Corbett & Paul Townsend, Tyndall National Institute **Location:** Great Island Ballroom 2	
13:30-14:15	**Keynote Lecture** **A New Paradigm for Photonic Integration – Direct Lateral III-V Growth on SOI for lasers and more** Kei May Lau, Hong Kong University of Science and Technology **Location:** Great Island Ballroom 2	
14:15-14:30	**Conference group photo**	
14:30-15:00	**Coffee break**	
15:00-16:15	**Parallel session 1**	
	Photonics materials I **Chair:** Ayse Ozcan Atar, Tyndall National Institute **Location:** Great Island Ballroom 2	**Imaging** **Chair:** Yushi Zheng, University College Dublin **Location:** Great Island Ballroom 3
15:00-15:15	**Invited talk** **Latest advances in photoinitiating systems of photopolymerisable glass and cellulose-based photopolymer for holographic patterning** Tatsiana Mikulchyk, TU Dublin	**Varying the illumination patterns for coherent super-resolution microscopy beyond image scanning microscopy (ISM)** David O'Brien, University of Limerick
15:15-15:30		**Investigation of Extracellular Vesicle-Cell Interactions Through Fluorescence Intensity and Lifetime Imaging** Eden Booth, Royal College of Surgeons in Ireland
15:30-15:45	**Towards an Optical Reconstruction of Crystalline Lenses found in Nature** Conor Flynn, University of Galway	**Modular Real-Time Synthetic Aperture Digital Holographic Microscopy and Optical Diffraction Tomography for Label-Free 3D Imaging** Bryan Hennelly, Maynooth University
15:45-16:00	**Tuneable Structural Colours from Two-Photon Polymerisation of Nanocomposites** Jing Qian, Trinity College Dublin	**Ultrafast coherent Raman with time/spectral compression** Eoghan Collins, University of Limerick
16:00-16:15	**Reflection HOEs Recorded on Photopolymerisable Glass Layers: A Step Towards Holographic Mirrors for AR Technologies** David Ma, TU Dublin	**Using thermal expansion to create an electronically controllable active lens technology** Silas O'Toole, University College Dublin
16:30-17:45	**Panel discussion** ***Is public engagement a principal element of a researcher's role in society?*** **Chair:** Patrick Morrissey, Tyndall National Institute **Panellists:** • Yann Amouroux, Director, Europe at Optica • Katarzyna Komolibus, Senior Researcher, Tyndall National Institute • Brian W. Pogue, Robert A. Pritzker Professor of Biomedical Engineering, Dartmouth College & University of Wisconsin-Madison • Rebecca Graham, Managing Editor, Silicon Republic **Location:** Great Island Ballroom 2	
18:00-20:00	**Poster session I (odd numbers) & Conference Reception** **Location:** Great Island Ballroom 1	

Time	Thursday, 4th September 2025	
09:30-10:15	**Keynote Lecture** **Medical Optical Devices Invention & Translation: Surgery & Radiation Therapy** Brian W. Pogue, Dartmouth College & University of Wisconsin-Madison **Location:** Great Island Ballroom 2	
10:20-11:35	**Parallel session 2**	
	Photonics in Health **Chair:** Martin Leahy, University of Galway **Location:** Great Island Ballroom 2	**Photonics in Quantum** **Chair:** Deirdre Kilbane, Walton Institute **Location:** Great Island Ballroom 3
10:20-10:35	**Unravelling the molecular fingerprints of inflammatory bowel disease using Raman spectroscopy** Sumedha Chanda, Tyndall National Institute	**Nanophotonic interfaces for integrated quantum technologies** Hamidreza Siampour, Queen's University Belfast
10:35-10:50	**Advanced Generation of Flexible-Endoscope for Fluorescence Imaging with AI Integration for Early-Detection of Gastrointestinal Cancers** Raed Malallah, University College Dublin	**Photon Pair Generation in Silicon Rib Channel Waveguide with an Integrated Pump Suppression Filter** Muneeb Farooq, MbryonicsLtd, Galway **Presenter:** Omar Mayou, MbryonicsLtd, Galway
10:50-11:05	**Adaptation of nanosensitive optical coherence tomography to monitor corneal burn and treatment response** Eanna Johnston, University of Galway	**Tailoring Phononic Quantum States via Ultrafast Optical Excitation of Solid-State Quantum Emitters** Seán, Ffrench, Trinity College Dublin
11:05-11:20	**Enhancing Quantum Yield of Upconverting Nanoparticles via Pulsed Excitation: Theoretical and Experimental Validation** Louise Frost, Tyndall National Institute	**Site-Controlled GaAs Quantum Dots as a Platform for Photonic Cluster State Generation** Gediminas Juska, Tyndall National Institute
11:20-11:35	**Saliva screening using optofluidic photonic crystal fiber for diagnosing oral potentially malignant disorders** Siddra Maryam, Tyndall National Institute	**Quantum Control via Shortcuts to Adiabaticity** Andreas Ruschhaupt, University College Cork
11:35-12:05	**Coffee break**	
12:15-13:30	**Parallel session 3**	
	Optical Sensing and Spectroscopy I **Chair**: Dean Venables, University College Cork **Location:** Great Island Ballroom 2	**Photonics Devices I** **Chair:** Brian Corbett, Tyndall National Institute **Location:** Great Island Ballroom 3
12:15-12:30	**Microfluidic flowmeter based on an interferometric fiber sensor** Zhe Wang, TU Dublin	**Invited talk** **Photonic Extreme Learning Machines based on Chip-Scale Chaotic Microresonators** Javier Porte Parera, University of Strathclyde
12:30-12:45	**Dual-Cavity Dual-Comb Interferometry with Incoherent Light** Albert A. Ruth, University College Cork	
12:45-13:00	**White Light Transmission Spectroscopy for Rapid Quality Control Imperfection Identification in Nanoimprinted Surface-Enhanced Raman Spectroscopy** Mike Hardy, Smart Nano NI, Queen's University Belfast	**A monolithic excitable photonic neuron** Odhran Liston, Tyndall National Institute

Time	Thursday, 4th September 2025	
12:15-13:30	**Parallel session 3 (continued)**	
	Optical Sensing and Spectroscopy I **Chair**: Dean Venables, University College Cork **Location:** Great Island Ballroom 2	**Photonics Devices I** **Chair:** Brian Corbett, Tyndall National Institute **Location:** Great Island Ballroom 3
13:00-13:15	**Design and analysis of bio-inspired holographic structures for sensing applications** Javier Arguelles, TU Dublin	**Enhancement of frequency comb bandwidth in gain-switched integrated semiconductor lasers via mutual coupling** Diarmuid O'Sullivan, Tyndall National Institute
13:15-13:30	**Pen direct writing of SERS-based paper point-of-care tests for detection of residual antibiotics in milk** Alida Russo, Tyndall National Institute	**Characterisation of a Photonic Integrated Circuit based RF Synthesiser** Liam Lawlor, Dublin City University
13:30-14:30	**Lunch in hotel restaurant**	
14:30-15:30	**Industry session** • **Integrated Plasmonics for Real-Time Bioprocess Analytics,** Antony Murphy, Causeway Sensors • **Photonic Quantum Computing with Deterministic Photon Sources,** Tom Lyons, Aegiq • **Next-Gen ISP Architecture for AI and Multi-Modal Sensing,** Gabriel Costache, FotoNation • **Photonics Enabled Heat Assisted Magnetic Recording,** Martin McCurry, Seagate	
15:45-16:15	**Break**	
16:15-17:30	**Parallel session 4**	
	Nanophotonics and Plasmonics I **Chair:** David McCloskey, Trinity College Dublin **Location:** Great Island Ballroom 2	**Optical communications and networks, Photonics Integration and Packaging** **Chair:** Fatih Atar, Tyndall National Institute **Location:** Great Island Ballroom 3
16:15-16:30	**Plasmonic Nanoantennas for Helicity-Dependant All-Optical Switching** Thomas McCormack, Queen's University Belfast	**A Modular Packaging Approach for the Co-Packaging of Silicon Photonic Devices** Arun Kumar Malik, Tyndall National Institute
16:30-16:45	**Enhanced detection of submonolayer adsorbates via active Joule-assisted surface plasmon resonance** Samuel Kenny, University College Dublin	**Scalable low loss cryogenic packaging of quantum memories in CMOS-foundry processed photonic chips** Robert Bernson, Tyndall National Institute
16:45-17:00	**Strong Exciton–Plasmon Coupling in CdSeS/ZnS Quantum Dot–Gold Nano-Bipyramid Systems** Kseniia Mamaeva, Trinity College Dublin	**ML-based Digital Twin Modelling of Optical Communication Systems** Rishu Raj, Trinity College Dublin
17:00-17:15	**Nonstandard Finite Difference Time Domain Methodology for Optical Propagation in Nonlinear Media** James Cole, Photon Wave Solutions	**Optical Signal Processing Enabling 100 Gbps Transmission with Free-Running Fabry-Perot Lasers** Lakshmi Narayanan Venkatasubramani, Dublin City University
17:15-17:30	**Narrow linewidth surface lattice resonances in plasmonic aluminum nanoantenna arrays** Bhera Ram Tak, Trinity College Dublin	**Energy-Efficient Co-Packaged Optics and High-Bandwidth Photonic Links for Hyperscale Data Centres and AI Clusters** Cleitus Antony, Tyndall National Institute
17:30-19:30	**Poster session II (even numbers) & refreshments** **Location:** Great Island Ballroom 1	
19:30-22:00	**Conference dinner**	

Time	Friday, 5th September 2025	
09:30-10:15	**Keynote Lecture** **Micro-LEDs for AR Displays - Current Progress and Future Development Needs** Aaron Lowe, Meta Platforms, Inc **Location**: Great Island Ballroom 2	
10:20-11:35	**Parallel session 5**	
	Photonics Materials II **Chair**: Stefan Schulz, Tyndall National Institute **Location**: Great Island Ballroom 2	**Optical Sensing and Spectroscopy II** **Chair:** Izabela Naydenova, TU Dublin **Location**: Great Island Ballroom 3
10:20-10:35	**Effect of Curing Temperature on the Optical Performance of Holographic Diffusers in Photopolymerizable Glass** Vishwath Rishaban Sakthinathan, TU Dublin	**Invited talk** **Organic semiconductor chemical sensors incorporating functional nanoimprinted layers** Graham Turnbull, University of St Andrews
10:35-10:50	**Direct-gap hexagonal germanium as an emerging photonic material: theory of optical gain and loss** Christopher Broderick, University College Cork	
10:50-11:05	**Towards the multi-scale simulation of the structural, electronic and optical properties of boron containing III-nitrides** Aisling Power, Tyndall National Institute	**Photonic Molecule Refractive Index Sensor with Subwavelength Grating Mirrors** Hadi Badri, Munster Technological University
11:05-11:20	**Toward Red MicroLEDs: First Insights into Boron Alloying in InGaN Quantum Wells** Olivia Shortall, Tyndall National Institute	**Dual Comb Distributed Acoustic Sensing for PON Multi-Branch Monitoring at the Remote Node** Conor Russell, Tyndall National Institute
11:20-11:35	**Unlocking the Potential of InP based Droplet Epitaxy Induced Nanostructures for Telecom wavelength in MOVPE** Swati Mukherjee, Tyndall National Institute	**Photonic-Integration and Miniaturization of Quartz-enhanced Photoacoustic Spectroscopy Sensors** Cian F. Twomey, Munster Technological University
11:35-12:05	**Coffee break**	
12:15-13:30	**Parallel session 6**	
	Photonics Devices II **Chair:** Bryan Kelleher, University College Cork **Location**: Great Island Ballroom 2	**Nanophotonics and plasmonics II** **Chair:** Richard Hobbs, Trinity College Dublin **Location**: Great Island Ballroom 3
12:15-12:30	**Modal Analog Holographic Wavefront Sensors: Advances, Applications and Design Considerations** Kevin Murphy, TU Dublin	**Thermal drift in gold SPR reflectivity: the role of adsorbates and implications for gas sensing** Giulia Di Fazio, University College Dublin
12:30-12:45	**A theoretical study of dissipative Kerr soliton generation in silicon microring resonators at 2 μm** Eoin Russell, Tyndall National Institute	**Plasmonic Nanocavities for Quantum Light Emitters and For Sensing Applications** Khizar Shah, University of Limerick

Time	Friday, 5th September 2025	
12:15-13:30	**Parallel session 6 (continued)**	
	Photonics Devices II **Chair**: Bryan Kelleher, University College Cork **Location**: Great Island Ballroom 2	**Nanophotonics and plasmonics II** **Chair**: Richard Hobbs, Trinity College Dublin **Location**: Great Island Ballroom 3
12:45-13:00	**Wavelength Demultiplexers Based on Self-Imaging in Optical Lattices with Non-Uniform Waveguide Lengths** Mirjana Stojanovic, University of Belgrade	**Plasmonic Electronically Addressable super-Resolution (PEAR): Development of a Novel Super-Resolution Technique** Conor O'Donnell, University College Dublin
13:00-13:15	**Photon–Photon Resonance Enhanced MQW O-Band Laser: Analytical Modelling and Preliminary Experimental Results** Diego Dominguez Castillejo, Tyndall National Institute	**Entanglement Possibilities at Elevated Temperatures using Plasmonic Near-Field Excitation of Color Centers** Frank Bello, Trinity College Dublin
13:15-13:30	**Development of GaN Micro-Pyramids and Platelets with High Uniformity for micro-LED applications** Changhao Li, Tyndall National Institute	**Emission Control in Quasi-Bound States in the Continuum and Monolayer WS_2/Si_3N_4 Hybrid Metasurfaces** Yongliang Zhang, Trinity College Dublin
13:40-14:00	**Prize for best student prize sponsored by Optica** **Announcement of host of Photonics Ireland 2027 conference** **Location:** Great Island Ballroom 2	
14:00	**Lunch in hotel restaurant** **Conference closes** **Conference delegates departure**	

This programme may be subject to change.
Programme version 01/09/2025 - final.

Conference location

The conference is taking place at Radisson Blu Hotel, Little Island

Address:
Ditchley House - Little Island
Little Island Business Park,
Cork, Ireland

Where are the sessions taking place?

- **Main room - Great Island Ballroom 2:** All plenary sessions - Keynote lectures, panel discussion, industry session, parallel sessions (check programme for details on parallel sessions), and conference dinner
- **Exhibitor area - Great Island Ballroom 1:** Conference exhibition, poster sessions, coffee breaks, conference reception
- **Breakout room - Great Island Ballroom 3:** Parallel sessions (check programme for details on parallel sessions)
- **Hotel restaurant:** Lunch on all three days

All rooms are adjacent to each other.

Organisers

The conference is organised by IPIC, the Research Ireland Centre for photonics.

IPIC

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Conference programme committee

We couldn't have held this conference without the incredible support of our programme committee.

Conference co-chairs	**Photonic Materials** Lead: Peter Parbrook, University College Cork
• Brian Corbett, Tyndall National Institute • Paul Townsend, Tyndall National Institute	Members: • Zhi Li, Tyndall National Institute • Ayse Ozcan Atar, Tyndall National Institute • John Donegan, Trinity College Dublin
Photonic Devices Lead: Bryan Kelleher, University College Cork	**Photonics in Quantum** Lead: Deirdre Kilbane, Walton Institute
Members: • Ayse Ozcan Atar, Tyndall National Institute • Frank Peters, University College Cork • Brian Corbett, Tyndall National Institute • Pascal Landais, Dublin City University • Zhi Li, Tyndall National Institute	Members: • Emanuele Pelucchi, Tyndall National Institute • Ortwin Hess, Trinity College Dublin • Jiri Vala, Maynooth University • Paul Eastham, Trinity College Dublin • Andreas Ruschhaupt, University College Cork • Stefan Schulz, Tyndall National Institute
Optical Sensing & Spectroscopy Lead: William Whelan Curtin, Munster Technological University	**Photonic Integration, Packaging & Optical Communications** Leads: Brian Corbett, Tyndall National Institute Cleitus Antony, Tyndall National Institute
Members: • Patricia Scully, University of Galway • Andy Ruth, University College Cork • Dean Venables, University College Cork • Michael McAuliffe, Munster Technological University • Aidan Meade, Technological University Dublin • Izabela Naydenova, Technological University Dublin • Fatima Gunning, Tyndall National Institute	Members: • Conor Russell, Tyndall National Institute • Frank Peters, University College Cork • Fatih Atar, Tyndall National Institute
Photonics in Health Lead: Martin Leahy, University of Galway	**Imaging** Lead: John Healy, University College Dublin
Members: • Sanathana Konugolu, Tyndall National Institute • Tia Keys, Dublin City University • Fiona Lyng, Technological University Dublin • Alan Ryder, University of Galway	Members: • Brian Vohnsen, University College Dublin • Thomas Naughton, Maynooth University • Yue Wang, University College Dublin
Nanophotonics & Plasmonics Lead: David McCloskey, Trinity College Dublin	**Photonics for Energy and the Environment & High Power Lasers** Lead: Donagh O'Mahony, Munster Technological University
Members: • Dominic Zerulla, University College Dublin • Fumin Huang, Queen's University Belfast • Louise Bradley, Trinity College Dublin • Richard Hobbs, Trinity College Dublin	Members: • Brian Corbett, Tyndall National Institute