IPIC
BRINGING PHOTONICS TO LIFE

Taighde Éireann
Research Ireland

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

Preliminary programme schedule

HOST INSTITUTION

Tyndall National Institute
Institiúid Náisiúnta

PARTNER INSTITUTIONS

DCU

MTU
Ollscoil Teicneolaíochta na Mumhan
Munster Technological University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

UNIVERSITY OF LIMERICK
OLLSCOIL LUIMNIGH

Time (Irish Standard Time)	Wednesday, 3rd September 2025	
11:30-13:00	**Registration and light refreshment/lunch**	
13:00-13:30	**Welcome and opening address by conference chairs** Brian Corbett & Paul Townsend, Tyndall National Institute	
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	
14:15-14:30	**Conference group photo**	
14:30-15:00	**Coffee break:** Networking and sponsor exhibitions	
15:00-16:15	**Parallel session 1**	
	Photonics materials I Chair: tbc	**Imaging** Chair: tbc
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** ***Science Beyond the Lab: Communicating to Diverse Audiences*** **Chair:** Patrick Morrissey, Tyndall National Institute Panellists: Yann Amouroux, Director, Europe at Optica Brian W. Pogue, Robert A. Pritzker Professor of Biomedical Engineering Rebecca Graham, Managing Editor, Silicon Republic	
18:00-20:00	**Poster session I (odd numbers)** **& Conference Reception** Networking, sponsor exhibitions	

Time (Irish Standard 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	
10:20-11:35	**Parallel session 2**	
	Photonics in Health Chair: tbc	**Photonics in Quantum** Chair: tbc
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
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: Networking and sponsor exhibitions**	
12:15-13:30	**Parallel session 3**	
	Optical Sensing and Spectroscopy I Chair: tbc	**Photonics Devices I** Chair: tbc
12:15-12:30	**Microfluidic flowmeter based on an interferometric fiber sensor** Zhe Wang, TU Dublin	**Invited talk** **Javier Porte Parera, University of Strathclyde** **tba**
12:30-12:45	**Dual-Cavity Dual-Comb Interferometry with Incoherent Light** Albert A. Ruth, University College Cork	
12:45-13:00	**CMOS platform compatible planner quasi bound state in the continuum metasurface filters for on-chip spectrometers** Ranjeet Kumar, Queen's University Belfast	**A monolithic excitable photonic neuron** Odhran Liston, Tyndall National Institute

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Time (Irish Standard Time)	Thursday, 4th September 2025	
12:15-13:30	**Parallel session 3 (continued)**	
	Optical Sensing and Spectroscopy I Chair: tbc	**Photonics Devices I** Chair: tbc
13:00-13:15	**Design and analysis of bio-inspired holographic structures for sensing applications** Javier Arguelles, TU Dubline	**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 and sponsor exhibitions**	
14:30-15:30	**Industry session** **Speakers tbc**	
15:45-16:15	**Break**	
16:15-17:30	**Parallel session 4**	
	Nanophotonics and Plasmonics I **Chair: tbc**	**Optical communications and networks, Photonics Integration and Packaging** **Chair: tbc**
16:15-16:30	**Spin-insensitive Single-Layer Metasurfaces for Optical Vortex Beam Generation** Ata Ur Rahman Khalid, 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)** Networking, sponsor exhibitions	
19:30-22:00	**Conference dinner**	

Time (Irish Standard 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	
10:20-11:35	**Parallel session 5**	
	Photonics Materials II Chair: tbc	**Optical Sensing and Spectroscopy II** Chair: tbc
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** tbc
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: Networking and sponsor exhibitions**	
12:15-13:30	**Parallel session 6**	
	Photonics Devices II Chair: tbc	**Nanophotonics and plasmonics II** Chair: tbc
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

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Time (Irish Standard Time)	Friday, 5th September 2025	
12:15-13:30	**Parallel session 6 (continued)**	
	Photonics Devices II Chair: tbc	**Nanophotonics and plasmonics II** Chair: tbc
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	**Study of Multi-Wavelength Self-Injection Locking Schemes through Heterogeneously Integrated QD Lasers** 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 poster/talk** **Announcement of host of Photonics Ireland 2027 conference**	
14:00	**Lunch (brown bag) and conference closes** **Conference delegates departure**	

This programme may be subject to change.