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# PHOTONICS IRELAND CONFERENCE 2018

PÁIRC UÍ CHAOIMH, CORK, IRELAND, 3-5 SEPTEMBER

## FULL PROGRAMME

CO-ORGANISED BY





WELCOME TO THE PHOTONICS IRELAND CONFERENCE 2018

ORGANISERS



Dear Colleagues,

It is our great pleasure to welcome you to the Photonics Ireland Conference 2018, jointly organised by Cork Institute of Technology and Maynooth University.

Since 2007, this conference series has served as the premier event for photonics research in Ireland. It brings together researchers across the wide range of topics in which photonics plays an underpinning role, and showcases the breadth of Irish photonics research.

We are delighted to host this year's event in Páirc Uí Chaoimh, Cork. We have a diverse line-up of excellent speakers, posters and exhibitors, providing updates on the latest advances in eleven thematic areas. We also have a half-day Industry & Entrepreneurship session specifically targeting industry-academia collaborations, as well as a student-oriented session organised by the OSA/SPIE Student Chapters.

We would like to thank all those who assisted with the organising of what we hope will be an exciting and stimulating event.



**Conference Co-Chair**

**Dr. William Whelan-Curtin**  
Cork Institute of Technology



**Conference Co-Chair**

**Dr. Bryan Hennelly**  
Maynooth University



**Technical Chair**

**Dr. David Williams**  
Cork Institute of Technology



**Admin Lead**

**Martina Connolly**  
Tyndall National Institute

TECHNICAL COMMITTEES

**PHOTONIC MATERIALS**

- Chair: Prof. David McCloskey (TCD)**
- Prof. Werner Blau (TCD)
- Prof. Deirdre O'Carroll (Rutgers)
- Prof. Paul Eastham (TCD)
- Prof. Peter Parbrook (Tyndall)

**PHOTONIC DEVICES**

- Chair: Dr. Bryan Kelleher (UCC)**
- Dr. Pascal Landais (DCU)
- Prof. John Donegan (TCD)
- Dr. Stephen Hegarty (CIT)
- Brian Corbett (Tyndall)
- Prof. John McInerney (UCC)

**NANOPHOTONICS & PLASMONICS**

- Chair: Prof. Louise Bradley (TCD)**
- Prof. Enda McGlynn (DCU)
- Dr. James Rice (UCD)
- Prof. Dominic Zerulla (UCD)
- Dr. Bob Pollard (QUB)
- Dr. Liam O'Faolain (CIT)

**PHOTONICS INTEGRATION & PACKAGING**

- Co-Chair: Dr. Peter O'Brien (Tyndall)**
- Co-Chair: Dr. Padraic Morrissey (Tyndall)**
- Dr. William Whelan-Curtin (CIT)
- Prof. Frank Peters (UCC/Tyndall)
- Dr. Lee Carroll (Tyndall/SFI)

**LASER-MATERIAL & LASER-PLASMA INTERACTIONS**

- Co-Chair: Dr. Gerard O'Connor (NUIG)**
- Co-Chair: Dr. Donagh O'Mahony (CIT)**

**INDUSTRY & ENTREPRENEURSHIP**

- Organiser: Dr. Liam Lewis (CIT)**

**OPTICAL COMMUNICATIONS & NETWORKS**

- Chair: Dr. Fatima Gunning (Tyndall/UCC)**
- Prof. Liam Barry (DCU)
- Prof. Izabela Naydenova (DIT)
- Prof. Paul Townsend (Tyndall/UCC)
- Prof. Gerald Farrell (DIT)

**IMAGING**

- Chair: Dr. John Healy (UCD)**
- Dr. Sergey Alexandrov (NUIG)
- Dr. Nicholas Devaney (NUIG)
- Prof. Peter Dockery (NUIG)
- Prof. Thomas Naughton (Maynooth)
- Prof. John Sheridan (UCD)
- Dr. Christophe Silien (UL)
- Prof. Brian Vohnsen (UCD)

**BIOPHOTONICS & OPTICAL SENSING**

- Chair: Prof. Hugh Byrne (DIT)**
- Prof. Tia Keyes (DCU)
- Dr. Bryan Hennelly (Maynooth)
- Prof. Martin Leahy (NUIG)
- Prof. Stefan Andersson-Engels (Tyndall)
- Akhil Kallepalli (IEEE)

**QUANTUM OPTICS & QUANTUM TECHNOLOGIES**

- Chair: Prof. Mauro Paternostro (QUB)**
- Dr. Emanuele Pelucchi (Tyndall)
- Dr. Jiri Vala (Maynooth)
- Dr. Andreas Ruschhaupt (UCC)
- Prof. John Gould (TCD)

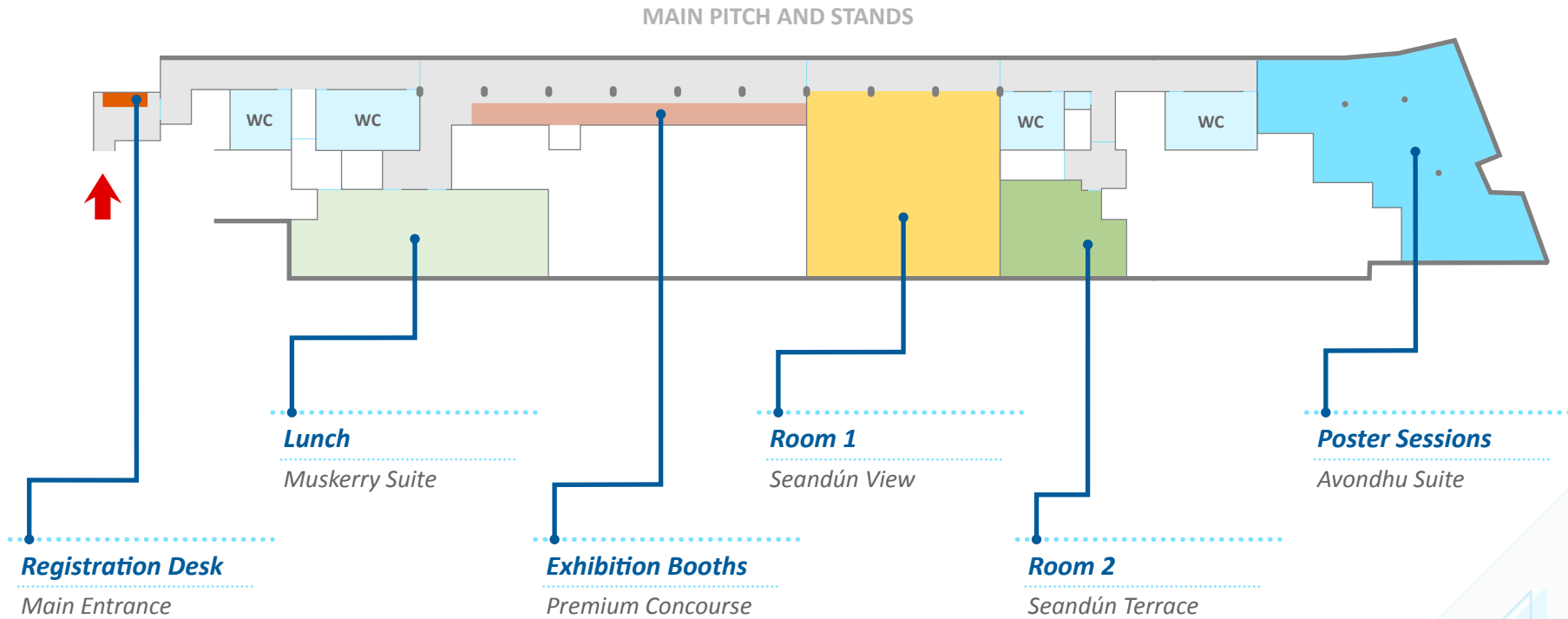
**OSA/SPIE STUDENT CHAPTERS**

- Natalia Canas-Estrada (Tyndall)
- Uday Munivenkatappa (CIT)
- Andrea Pacheco Tobo (Tyndall)
- Brian Murray (Tyndall)
- Kevin Shortiss (Tyndall)



## PÁIRC UÍ CHAOIMH (LEVEL 2, SOUTH STAND)

Enter via the Premium Level entrance on the South Stand, and take the lift to Level 2



Wifi SSID: PUC Guest



MONDAY, 3<sup>RD</sup> SEPTEMBER 2018

08:00	Registration	
09:00	Welcome (Conference Chairs) [RM.1]	
09:15	OPENING ADDRESS [RM.1]: <b>Dr. Ciarán Seoige</b> (SFI Deputy Director General)	
09:40	PLENARY TALK [RM.1] <b>Prof. Malte Gather</b> (U. St Andrews, UK) "A Laser in a Living Cell - Cellular scale photonics for optical sensing, tracking and manipulation"	
10:25	INTRODUCTION FROM HOSTS [RM.1]: <b>Dr. Barry O'Connor</b> (President, Cork Institute of Technology) <b>Prof. Ray O'Neill</b> (Vice-President for Research & Innovation, Maynooth University) [TBC]	
10:45	Tea/Coffee Break	
11:15	<b>[Session A1: Rm.1] Imaging</b> Session Chair: <b>Dr. John Healy</b> (UCD)	<b>[Session A2: Rm.2] Optical Communications &amp; Networks I</b> Dr. James O'Gorman Memorial Session Session Chair: <b>Prof. Liam Barry</b> (DCU)
11:45	INVITED TALK <b>Prof. Brian W. Pogue</b> (Dartmouth, USA) "Optical Imaging in Medicine: Current Status & Future Needs"	INVITED TALK <b>Dr. Jochen Schröder</b> (Chalmers University, Sweden) "Optical Frequency Combs for Ultra-High Capacity Communications"
12:00	<b>Haroon Zafar</b> (NUI Galway) "Non-invasive intravascular imaging using photoacoustic imaging"	<b>Marco Della-Santa</b> (Tyndall) "PAM4 interleaved detection system for extended power budget in passive optical networks"
12:15	<b>Carlos Reyes</b> (Tyndall) "Linear sweep of a telecoms laser for OCT applications"	<b>Xing Ouyang</b> (Tyndall) "Orthogonal chirp-division multiplexing as an advanced modulation technique for high-speed fiber-optic systems"
12:30	<b>Zhengyuan Tang</b> (Maynooth University) "A review of recent advances in quantitative phase imaging"	<b>Sean Ahearne</b> (Tyndall/UCC) "Software defined control of tunable optical transceivers using NETCONF and YANG"
12:45	<b>James Ryle</b> (UCD) "Accelerated Digital In-Line Holographic Microscopy: Reconstruction using Intel Multicore and Many Integrated-Core CPU"	<b>Colm Browning</b> (DCU) "Investigation of laser source requirements for optical heterodyne millimeter-wave communications"
13:45	Lunch	
14:15	<b>[Session B1: Rm.1] Photonic Devices I</b> Session Chair: <b>Brian Corbett</b> (Tyndall)	<b>[Session B2: Rm.2] Laser-Material &amp; Laser-Plasma Interactions</b> Session Chair: <b>Dr. Gerard O'Connor</b> (NUIG)
14:30	INVITED TALK <b>Dr. Antonio Hurtado</b> (U. Strathclyde, UK) "Transfer printing of semiconductor nanowire lasers"	INVITED TALK <b>Prof. Dermot Brabazon</b> (DCU) "Nanoparticle functionalized laser patterned substrate: innovative route towards low cost biomimetic platforms"
14:45	<b>Kevin Murphy</b> (DIT) "Temperature switchable holographic diffractive diffusers recorded in a photopolymer layer"	<b>Simon Corbett</b> (TCD) "CCD-Thermoreflectance - Improvements And Adoption To Laser Induced Heating"

14:30	<b>Guarav Jain</b> (TCD) "Athermal operation of multi section comb PIC"	<b>Adriana Kelly</b> (NUI Galway) "A Functional Analysis of Nanotopographically Modified Platinum Iridium Electrodes"
14:45	<b>Sharon Butler</b> (CIT) "Direct Frequency Modulation of a Photonic Crystal Laser with Integrated Microheater"	<b>Katarzyna Siewierska</b> (TCD) "Pulsed Laser Deposition Produced Silver Nanoparticle Films As SERS Substrates"
15:00	<b>Kevin Shortiss</b> (UCC/Tyndall) "Integrated optical demultiplexing by injection locking"	
15:15	Tea/Coffee Break	
15:45	<b>[Session C: Rm.1] Biophotonics</b> Sponsored by IEEE UK & Ireland Photonics Chapter Session Chair: <b>Prof. Martin Leahy</b> (NUIG)	
16:15	INVITED TALK <b>Prof. Daniel Razansky</b> (TU Munich & Helmholtz Center Munich, Germany) "Multi-spectral optoacoustic tomography (MSOT) enables imaging of ultrafast biological dynamics and precision clinical diagnostics"	
16:30	<b>Rabah Mouras</b> (UL) "Is there a link between melatonin reduction and biominerals concretions in pineal gland: A Raman study"	
16:45	<b>Xin Fan</b> (Maynooth University) "Opto-digital staining of biological cells by simulated Rheinberg illumination with digital holographic microscopy"	
17:00	<b>Jacqueline Gunther</b> (Tyndall) "Measuring Scattering Matrix for Multi-Pass Phase Conjugation Setup"	
17:15	<b>Junaid Zafar</b> (GCU, Lahore, Pakistan) "Intracoronary optical coherence tomography image analysis for automated plaque characterization using deep learning classifiers"	
18:30	<b>Poster Session I</b> Sponsored by SPIE (Full listing given below)	



**TUESDAY, 4<sup>TH</sup> SEPTEMBER 2018**

08:30	Registration	
09:00	<b>PLENARY TALK [Rm.1]</b> <b>Prof. Miles Padgett (U. Glasgow, UK)</b> "How many pixels does your camera have? Ours has only one!"	
09:55	<b>[Session D1: Rm.1] Nanophotonics &amp; Plasmonics</b> Sponsored by Institute of Physics in Ireland Session Chair: Prof. Louise Bradley (TCD)	
	<b>INVITED TALK</b> <b>Prof. Jesper Mørk (TU Denmark)</b> "Photonic Crystal Fano lasers and Fano switches"	
10:30	<b>David McCloskey (TCD)</b> "Mechanism of Large Optical Nonlinearity in Gold Nanoparticle Films"	
10:45	Tea/Coffee Break	
11:15	<b>[Session D1 Cont'd]</b>	<b>[Session D2: Rm.2] Quantum Optics &amp; Quantum Technologies</b> Session Chair: Dr. Emanuele Pelucchi (Tyndall)
11:30	<b>Victor Kotlyar (Samara NRU, Russia)</b> "Spiral meta-lens for sharp focusing of laser light"	<b>INVITED TALK</b> <b>Prof. Dr. Wolfgang Langbein (Cardiff University, UK)</b> "Coherent exciton dynamics in colloidal quantum dots"
11:45	<b>Naveen Balla (Aix-Marseille U., France)</b> "Polarization resolved nonlinear optical microscopy of 2D materials"	<b>Petr Klenovsky (Masaryk U., Czech Rep.)</b> "Effects of second order piezoelectricity on built-in dipole and excitonic structure of strain-tuned InGaAs/GaAs QDs"
12:00	<b>Stephen Cunningham (TCD)</b> "VO <sub>2</sub> as a phase change material for tunable plasmonic structures"	<b>Simone Varo (Tyndall)</b> "Site-Controlled Pyramidal Dots: From Quantum Light To Quantum Devices"
12:15	<b>Juan Morales (CIT)</b> "Emission Dynamics in Nanowire/Nanopillar Lasers Grown on Si"	<b>Andreas Ruschhaupt (UCC)</b> "Quantum Control with Shortcuts to Adiabaticity"
12:30	<b>Simone Iadanza (CIT)</b> "Silicon Nitride 1D-Photonic Crystal Cavity for Optical Sensing in the Near-Infrared Spectrum in Air and Liquid"	<b>Shumithira Gandan (CIT/Tyndall)</b> "Carrier dynamics of InGaAsN: H/GaAs site-controlled quantum dots for single photon sources"
12:45	<b>Gaozhong Wang (TCD)</b> "Slow-Saturable Absorption of Few-Layer MoSe <sub>2</sub> "	
12:45	Lunch	
13:45	<b>[Session E: Rm.1] Photonic Devices II</b> Session Chair: Dr. Bryan Kelleher (UCC)	
14:15	<b>INVITED TALK</b> <b>Prof. Andrea Fiore (TU Eindhoven, Netherlands)</b> "When a photon is born – Controlling radiative emission in semiconductors"	

14:15	<b>Haroon Asghar (UCC/Tyndall)</b> "Stabilization of self-mode-locked QDash lasers using simultaneous continuous-wave (CW) optical-injection and optical feedback"	
14:30	<b>Prajwal Lakshmiyasimha (DCU)</b> "Expansion and phase correlation of a wavelength tunable gain switched optical frequency comb"	
14:45	<b>Michael Dillane (UCC/Tyndall)</b> "The Neuromorphic Dynamics Of Quantum Dot Lasers Under Optical Injection"	
15:00	<b>Benjamin Lingnau (TU Berlin, Germany)</b> "Ultrafast Gain Recovery and Strong Nonlinear Phase Response of Submonolayer Quantum-Dots"	
15:15	Tea/Coffee Break	
15:45	<b>[Session F1: Rm.1] Photonic Materials</b> Session Chair: Prof. David McCloskey (TCD)	<b>[Session F2: Rm.2] Optical Communications &amp; Networks II</b> Session Chair: Dr. Fatima Gunning (Tyndall)
16:15	<b>INVITED TALK</b> <b>Prof. Isabelle Ledoux-Rak (ENS Paris-Saclay, France)</b> "Optofluidic polymer-based optical microresonators for a rapid, specific, highly sensitive detection of chemical and biochemical species"	<b>INVITED TALK</b> <b>Dr. Elias Giacomidis (DCU)</b> "Fuzzy-logic based machine learning for high-speed optical networks of the future"
16:30	<b>William Abbott (TCD)</b> "A Comparison of Ti Adhesion Layers for Thermoplasmonic Applications"	<b>Giuseppe Talli (Tyndall)</b> "Coherent Transmission in Metro-scale PON Using SOAs"
16:45	<b>Martyn Pemble (UCC/Tyndall)</b> "Large Area Colloidal Photonic Crystals For Light Trapping In Flexible Organic Photovoltaic Modules Applied Using A Roll-To-Roll Langmuir-Blodgett Method Applications"	<b>Niamh Kavanagh (Tyndall)</b> "Injection locking at 2 μm"
17:00	<b>Saroj Kanta Patra (Tyndall/UCC)</b> "Theoretical And Experimental Analysis Of Carrier Localization Effects In GaN/AlGaN QWs"	<b>Meysam Khanghah (Tyndall)</b> "A new PAM4 Clock and Data Recovery Circuit for Short Reach Optical Interconnects"
17:15	<b>Muhammad Irfan (DIT)</b> "Investigation of temperature response of photonic structures recorded in polymer and nanocomposites for holographic sensors/indicators"	<b>Derek Cassidy (UCD)</b> "Creation and ethernet test analysis of SWW with the use of 850nm and 1300nm"
18:30	<b>Poster Session II</b> Sponsored by SPIE (Full listing given below)	
19:30	<b>Conference Dinner</b> Haulbowline Naval Base, Ringaskiddy	
22:00		



WEDNESDAY, 5<sup>TH</sup> SEPTEMBER 2018

08:00	Registration
09:00	<p><b>[Session G: Rm.1] Industry &amp; Entrepreneurship</b>          Sponsored by CIT Centre for Advanced Photonics &amp; Process Analysis (CAPPA)          Session Chair: Dr. Liam Lewis (CIT)</p> <p><b>Opening Address</b>  <b>Gearoid Mooney</b> (Enterprise Ireland)</p> <p><b>PLENARY TALK</b>  <b>Dr. Joost van Kerkhof</b> (COO, Lionix International, Netherlands)          "Silicon Nitride (TriPleX™) Photonic Integrated Circuits: from design to volume production"</p> <p><b>INVITED TALK</b>  <b>Dr. Sonia Ramirez</b> (Technology Innovation Portfolio Manager, Johnson &amp; Johnson)</p>
10:05	Tea/Coffee Break
10:55	<p><b>INVITED TALK</b>  <b>Prof. John T. Sheridan</b> (University College Dublin / Equilume Ltd)          "Commercialisation and Industry Engagement: Optical Engineering"</p> <p><b>INVITED TALK</b>  <b>Dr. Pascal Doguet</b> (Co-founder, Synergia Medical, Belgium)          "When neurostimulation and Photonics meet: a short story of an excellent collaboration"</p> <p><b>INVITED TALK</b>  <b>Hillary Cronin</b> (Operations Manager, Metabolomic Diagnostics Ltd / H2020 Evaluator)</p>
11:15	<p><b>Industry Panel Session</b></p>
12:00	Lunch
12:45	<p><b>INVITED TALK</b>  <b>Dr. Andrew Brown</b> (Senior Director, Global Business Development, SPIE)          "SPIE Photonics Industry Update"</p>
13:45	
14:05	

	<p><b>[Session H1: Rm.1] Student Chapters Session</b>          Session Chair: Brian Murray (Tyndall)</p> <p>Session organised by Irish OSA/SPIE Student Chapters</p> <p><b>"Professional Development: career paths after the PhD"</b></p> <p>Speakers/Panel Members:  <b>Prof. William Scanlon</b> (CEO, Tyndall)  <b>Dr. Andrew Brown</b> (SPIE)  <b>Dr. Jelena Pesic</b> (Nokia Bell Labs, France)  <b>Dr. Michael McAuliffe</b> (CIT)  <b>Dr. Maria Kotlyar</b> (CIT)  <b>Dr. Brian Kelly</b> (Eblana Photonics)</p>	<p><b>[Session H2: Rm.2] Optical Sensing &amp; Spectroscopy</b>          Session Chair: Akhil Kallepalli (IEEE)</p> <p><b>INVITED TALK</b>  <b>Prof. Dr. Bernhard Lendl</b> (TU Wien, Austria)          "New analytical sensing schemes for gases and liquids enabled by advanced mid-IR laser technology"</p> <p><b>Abi Thampi</b> (U. Auckland, New Zealand)          "Integrated optical sensors to predict meat quality"</p> <p><b>Kevin O'Dwyer</b> (Maynooth University)          "Analysis of microparticles in unconstrained microfluidics via multimodal CARS"</p> <p><b>Valentyn Maidannyk</b> (Teagasc Moorepark)          "Nanodiamonds as a tracer in spray drying technology of high protein liquids"</p> <p><b>Kamil Gradkowski</b> (Tyndall)          "From pluggable freespace connectors to consumable photonic sensors"</p>
14:05		
14:35		
14:50		
15:05		
15:20		
15:35	Tea/Coffee Break	
	<p><b>[Session J1: Rm.1] Photonics Integration &amp; Packaging</b>          Sponsored by PIXAPP EU Pilot Line          Session Chair: Dr. Peter O'Brien (Tyndall)</p> <p><b>INVITED TALK</b>  <b>Dr. Peter Ossieur</b> (IMEC / Ghent University)          "Design and integration of high-speed electronics for photonic integrated circuits"</p> <p><b>Muhammad Billah</b> (KIT, Germany)          "3D Additive Nanofabrication for Photonic Integration and Packaging"</p> <p><b>Muhammad Umar Khan</b> (IMEC / Ghent University)          "The MORPHIC Project: Enabling large scale programmable photonic circuits using MEMS"</p> <p><b>Ruggero Loi</b> (Tyndall)          "Transfer printable InP Lasers for Si photonics"</p> <p><b>Padraic Morrissey</b> (Tyndall)          "PIXAPP - The World's First Open-Access Pilot Line for Photonic Packaging &amp; Integration"</p>	<p><b>[Session J2: Rm.2] Novel Photonic Technologies</b>          Session Chair: Dr. Bryan Hennelly (Maynooth University)</p> <p><b>INVITED TALK</b>  <b>Dr. Jonathan Ward</b> (OIST, Okinawa, Japan)          "Enhanced Nanoparticle Detection with Quasi-Droplet Modes"</p> <p><b>Joshua Robertson</b> (U. Strathclyde, UK)          "Generation of electrically-controlled photonic spiking regimes in vertical-cavity surface-emitting lasers"</p> <p><b>Dzianis Saladukha</b> (CIT/Tyndall)          "Germanium band structure under in-plane biaxial tensile strain"</p> <p><b>Suzanne Martin</b> (DIT)          "Stacked holographic optical elements for solar concentration"</p> <p><b>Sergey Alexandrov</b> (NUI Galway)          "Novel method for depth resolved imaging of structural alterations based on optical coherence tomography"</p>
16:00		
16:30		
16:45		
17:00		
17:15		
17:30	Conference Close (Chairs)	
17:45		

MONDAY, 3<sup>RD</sup> SEPTEMBER 2018 (17:15 – 18:30, AVONDHU SUITE)

- P01 **Ananthachar, Adarsh** (CIT/Manipal, India): Optical characterisation of photonic crystal cavities by resonant scattering
- P02 **Arangath, Anand** (NUIG): Measurement of the SNR and sensitivity vs reference lens position for multiple reference optical coherence tomography
- P03 **Barton, Sinead** (Maynooth): Signal to noise ratio of Raman spectra of biological samples
- P04 **Brennan, Grace** (UL): Magnetic Field-Directed-Assembly of Plasmonic, Superparamagnetic Nanoparticles for Enhanced Cancer Therapy
- P05 **Cassidy, Derek** (UCD): Optical characterization of photo-polymer material using 532nm and investigation into future use at 850nm and 1300nm
- P06 **Chullipalliyalil, Krishnakumar** (CIT): Lab prototype of portable deep UV instrument for pharmaceutical cleaning validation
- P07 **Das, Nandan** (NUIG): Development of spectroscopic polarization sensitive optical coherence tomography to quantify sub-micron scale tissue anisotropy
- P08 **Devarapu, Chinna** (CIT/Tyndall): Detection of pathogens in water using a Raman probe
- P09 **Dey, Rajib** (NUIG): Design, optimization and characterization of the sample arm of the high resolution OCT system
- P10 **Duignan, Christopher** (UCD): High Speed High Resolution Digital Image Motion Estimation
- P11 **Hamm, James** (Maynooth): Noisy computation in optical neural networks with modern features
- P12 **Mahzar, Mohsin** (UCC): A Flexure Motion Stage for Light Beam Control
- P13 **Harikrishnan, Surya** (Manipal, India): Application of laser spectroscopy for archaeological analysis
- P14 **James, Soorya** (NUIG): Characterization of gold nanostars and utilizing it as a contrast agent for tracking stem cell therapy using Multispectral Optoacoustic Tomography (MSOT)
- P15 **Kho, Kiang Wei** (DCU): Membrane-Therapeutic-Molecule Interactions Studied Using Engineered Plasmonic Fields
- P16 **Lal, Cerine** (NUIG): Nanosensitive optical coherence tomography to probe structural changes within the cornea
- P17 **Lehtimäki, Taina** (Maynooth): Using traditional glass plate holograms to study visual perception of future digital holographic displays
- P18 **Liu, Dongyue** (Maynooth): Investigation of wavenumber calibration for Raman spectroscopy using a polymer standard
- P19 **Lu, Huihui** (Tyndall): Simple and convenient determination of optical properties of tissue-like phantoms using diffuse reflectance and transmittance spectroscopy
- P20 **Markham, Sarah** (UL): Optical Characterisation of MIR Imaging Fiber
- P21 **Martin, Eamonn** (DCU): Phase correlated gain switched laser based dual comb photonic sensor interrogator
- P22 **Mavrikis, Kostas** (Heraklion, Greece): Development of a multiparametric label-free imaging system for the early diagnosis of neurodegenerative disorders through the ocular cavity
- P23 **McAuley, Ryan** (NUIG): Background Subtraction vs Highpass Filtering in Phase Sensitive Optical Coherence Tomography
- P24 **Munivenkatappa, Uday** (CIT/Tyndall): Grey soliton laser
- P25 **Murugan, Madhumidha** (CIT/Tyndall): Real-time detection of nitrates in water using compact Raman probe based spectroscopy system
- P26 **Nanadath Shibu, Sini** (CIT/Tyndall): Nanodiamonds enhanced Raman-microfluidics system for the characterization of milk proteins
- P27 **Nanadath Shibu, Sini** (CIT/Tyndall): Influence of nitrogen implantation on optical emission dynamics in CVD diamonds
- P28 **Nogueira, Marcelo** (Tyndall/UCC): Wide-band diffuse reflectance spectroscopy for determination of optical properties and chromophore concentrations of mice highly vascularized organs
- P29 **Nogueira, Marcelo** (Tyndall/UCC): Teaching and learning in biophotonics: how to cross the bridge between educators and students?
- P30 **Pacheco, Andrea** (Tyndall): Near Infrared Light Propagation Modelling of Infant Thorax with Different Light Source – Detector Configurations
- P31 **Pacheco, Andrea** (Tyndall): Neonate chest phantom with realistic geometry and tissue optical properties
- P32 **Pitkäaho, Tomi** (Maynooth): Detecting the presence of a transparent object in the field of view in off-axis digital holograms
- P33 **Pitkäaho, Tomi** (Maynooth): Digital hologram classification with hand-crafted feature augmented convolutional neural network
- P34 **Reilly, Kevin** (UCD): Terahertz Imaging & Applications
- P35 **Streeter, Samuel** (Dartmouth, USA): Exploring texture analysis methods for high spatial frequency structured light imagery of tumour tissue
- P36 **Yang, Lin** (PTB, Berlin, Germany): Spatially-enhanced data analysis method for time-resolved NIRS to determine tissue optical properties
- P37 **Yu, Qin** (Maynooth): Calculating the diffraction pattern at the focal point of a lens
- P38 **Zhang, Lingfei** (Maynooth): Security Analysis Of The First Phase Mask In Double Random Phase Encryption

TUESDAY, 4<sup>TH</sup> SEPTEMBER 2018 (17:15 – 18:30, AVONDHU SUITE)

- P01 **Alexander, Justin** (Tyndall/UCC): Integrated dual optical frequency comb source
- P02 **Arkani, Reza** (Tyndall/UCC): Theory And Design Of Metamorphic Quantum Well Light Emitting Diodes Operating At Mid-Infrared Wavelengths
- P03 **Arpaçay, Pinar** (TCD): Ultrafast Charge Transfer Interaction Between Nanocarbon Materials and Porphyrins
- P04 **Brandonisio, Nicola** (Tyndall): Analysis of burst-mode forward error correction in passive optical networks with EDFA optical transients
- P05 **Browne, Jack** (Tyndall): Comparison of the Electrical and Optical Characteristics of Bulk Junction and Quantum Well Mesa Red LEDs
- P06 **Canas-Estrada, Natalia** (Tyndall): Estimating Y-branch splitting ratios of IQ modulators
- P07 **Das, Sarita** (UCC/Tyndall): Impact Of Band Mixing On Tunneling Currents In Dilute Bismide Avalanche Photodiodes
- P08 **Dowdall, Thomas** (UCC): Fast and Robust Quantum Control Based on Pauli Blocking
- P09 **Dowdall, Thomas** (UCC): Trapping and cooling particles using a moving atom diode and an atomic mirror
- P10 **Dubois, Fabien** (Tyndall/UCC): A Multimode Approach To Modelling Mutually Coupled Lasers In Photonic Integrated Circuits
- P11 **Duggan, Shane** (UCC/Tyndall): InP-AlGaInAs Waveguides Monolithically Integrated by Vertical Coupling
- P12 **Dunne, Michael** (Tyndall/UCC): Theory of the electronic structure of direct-gap  $\text{Ge}_{1-x}(\text{C},\text{Sn})_x$  group-IV alloys
- P13 **Gandan, Shumithira** (CIT/Tyndall): Optical properties of Type-II GaSb/GaAs quantum rings
- P14 **Gleeson, Matthew** (UL): Nonlinear Optical Properties Of Glycine Microcrystal Polymorphs
- P15 **González, Alfonso** (UCC/Tyndall): Observation Of Relaxation Oscillations In Vertical-External-Cavity Surface-Emitting Lasers
- P16 **Izadi, Ida** (Tyndall/UCC): Optical Polarization properties of InGaN/GaN LED structures with slanted sidewalls
- P17 **Kaur, Amandeep** (Tyndall): Analogue Pre-filtering Using WSS for Spectral Efficient Transmitters
- P18 **Keshri, Sanjay** (DIT): Stacked Holographic Optical Elements for a White LED
- P19 **Kotlyar, Margarita** (Image Processing Systems Institute, Russia): Photonic component for fast rotation of a two-lobe laser beam
- P20 **Lin, Yi** (DCU): SOA-based wavelength conversion of a coherent optical 64-QAM signal
- P21 **Magan, John** (TCD): Optimizing precursor composition for high performing perovskite solar cells under ambient conditions
- P22 **Malallah, Ra'ed** (UCD): Self-propagating of net-waveguides in a dry AA/PVA photopolymer media
- P23 **McCarthy, Michael** (DCU): Modulation Formats for NGPON Using Generalised Partial Response Signalling Pulse Shaping
- P24 **McKenna, Robert** (TCD): Optimisation Of High Order Surface Gratings For Semiconductor Lasers
- P25 **Mura, Enrica** (Tyndall): Morphology and optical emission properties of novel InP and InP/InGaAs self-assembled nanostructures
- P26 **Murray, Brian** (Tyndall): Bias and doping optimisation of lumped silicon-photonics PAM4/PAM8 Mach-Zehnder modulators
- P27 **Pampili, Pietro** (Tyndall/UCC): Optimization of Silicon-doped Aluminium Gallium Nitride materials for UV-LED Applications
- P28 **Passoni, Marco** (U. Pavia, Italy): Vertical integration of SOI and III-V semiconductors by use of of grating-couplers
- P29 **Pemble, Martyn** (UCC/Tyndall): Large Area Flexible Colloidal Photonic Crystal Film Stickers For Light Trapping Applications
- P30 **Perrott, Alison** (UCC/Tyndall): Coupled Lasers on a Photonic Integrated Circuit
- P31 **Russell, Eoin** (Tyndall): Development of Thulium Doped Fibre Amplifier for the 2 $\mu\text{m}$  Waveband
- P32 **Seifkar, Masoud** (Tyndall/UCC): Two mutually identical delay-coupled semiconductor lasers in photonic integrated circuits
- P33 **Sheehan, Robert** (CIT/Tyndall): Data Transmission Using Silicon Photonic Integrated Circuit Comprising DFB Laser, EAM And SOA
- P34 **Singaravelu, Praveen** (CIT): A CMOS compatible 3D photonic platform based on vertical integration using spot size converters
- P35 **Verbishchuk, Yuliya** (Tyndall/UCC): Incorporating software defined controls for legacy equipment in optical networks
- P36 **Whitty, Chris** (UCC): Shortcuts to Adiabaticity for Transport Quantum Logic Gates
- P37 **Yang, Hua** (Tyndall): High speed electro-absorption modulator at 1550nm
- P38 **Zagaglia, Luca** (Tyndall): Comparing Laser Hybrid-Integration Direct Fibre-Coupling on Si-PICs





## EXHIBITORS

The following companies will have exhibition booths at the conference:



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