

The 3rd International Conference of Quantum & Nonlinear Nanophotonics (ICQNN)

Nottingham Trent University, Clifton Campus, Nottinghamshire, NG11 8NS

Day 0 28 August, 2024	
14:00 – 23:59	Accommodation Check-in at Leonardo Hotel Nottingham, Station St, Nottingham NG2 3BJ
18:00 – 20:00	Welcome reception at Pavilion NTU
20:00	Dinner at Pavilion Refectory NTU

Supported by





Day 1 | 29 August, 2024, LT3, Teaching and Learning Building

08:45 – 10:30 Session 1 Chair: Mohsen Rahmani

08:45 - Opening, *Mary O'Neill* (Dean, School of Science and Technology)

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09:00

09:00 - Plenary Talk, *Dragomir Neshev*, Director of ARC TMOS, Australia
Title: Smart vision enabled by meta-optics

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09:50

09:50 - *Rupert Oulton*, Imperial College London, UK
Title: A metasurface nonlinear interferometer

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10:10

10:10 – 10:40 - Coffee Break and Networking, LT4, Teaching and Learning Building

10:40 – 12:00 Session 2 Chair: Giancarlo Soavi

10:40 - *Giuseppe Leo*, Paris Cité University, France
Title: Nonlinear generation of orbital angular momentum on a thin films or metasurfaces

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11:00

11:00 - *Davide Rocco*, University of Brescia, Italy
Title: Dielectric platform for nonlinear asymmetric imaging

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11:20

11:20 - *Sina Saravi*, Friedrich Schiller University Jena, Germany
Title: Arrangement-dependent dynamics of photon-pair generation in nonlinear metasurfaces

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11:40

11:40 - *Mohsen Rahmani*, Nottingham Trent University, UK
Title: Engineered meta-surfaces and nanoparticles - building blocks of tomorrow's optical technologies

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12:00

12:00 - 13:30 - Lunch at NTU, LT4

13:30 – 15:10 Session 3 Chair: Anton Desyatnikov

13:30 - *Giancarlo Soavi*, Friedrich Schiller University Jena, Germany
Title: Nonlinear valleytronics in 2d materials

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13:50

13:50 - *Andrey Evlyukhin*, Leibniz University Hannover, Germany
Title: Control of electromagnetic resonances in dielectric metasurfaces due to multipole coupling

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14:10

14:10 - *Pablo Albella*, University of Cantabria, Spain
Title: Chiral biosensing with hybrid metasurfaces: directional SPP emission and nonlinear circular dichroism

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14:30



14:30 - 14:50	<i>Lujun Huang</i> , East China Normal University, China Title: Bound states in the continuum: fundamentals and applications
14:50 - 15:10	<i>Sven Burger</i> , Zuse Institute Berlin, Germany Title: Poles and zeros of optical response functions of metasurfaces
15:10 – 15:40 - Coffee Break and Networking, LT4	
15:40 – 17:20 Session 4 Chair: Cuifeng Ying	
15:40 – 16:00	<i>Miguel Navarro</i> , University of Birmingham, UK Title: Metaphotonics for unprecedented manipulation of light
16:00 - 16:20	<i>Ilya Shadrivov</i> , Australian National University, Australia Title: Large area laser-induced periodic surface structures
16:20 - 16:40	<i>Quanlong Yang</i> , Central South University, China Title: Multiple-bound states in the continuum: towards intense terahertz-matter interaction
16:40 - 17:00	<i>Sang Soon Oh</i> , Cardiff University, UK Title: Symmetry breaking of dynamic topological edge modes in nonlinear Su-Schrieffer-Heeger lattice
17:00 - 17:20	<i>Duk Choi</i> , Australian National University, Australia Title: Fabrication and applications of few layer metasurfaces
17:20 to 17:30: Conference photo in front of Pavilion building.	
19:00 to 22:00: Conference dinner in the city. The bus leaves the campus at 18:30.	



Day 2 | 30 August, 2024, LT3

09:00 – 10:30 Session 1 Chair: Mohsen Rahmani

09:00 – 09:50	Plenary Talk <i>Ian White</i> , Vice Chancellor and President, University of Bath Title: Future communication requirements for quantum & nonlinear nanophotonics
09:50 – 10:40	Plenary Talk <i>Minghui Hong</i> , Kah Kee Chair Professor, Xiamen University, China Title: Microsphere enhanced laser nano-patterning and optical nano-imaging

10:40 – 11:00 - Coffee Break and Networking, LT4

11:00 – 12:20 Session 2 Chair: Ángela Barreda Gómez

11:00 – 11:20	<i>Anton Desyatnikov</i> , Nazarbayev University, Kazakhstan Title: Vortex rings in free-propagating and self-focused laser beams
11:20 – 11:40	<i>Sebastian Andreas Schulz</i> , University of St Andrews, UK Title: Graded index epsilon-near-zero metasurfaces
11:40 – 12:00	<i>Alex Clark</i> , University of Bristol, UK Title: Molecular spectroscopy via coherent and nonlinear interference
12:00 – 12:20	<i>Andrey Miroshnichenko</i> , University of New South Wales, Australia Title: Fano resonances: harnessing Fano resonances in nanophotonics for advanced light manipulation

12:00 - 13:30 - Lunch at NTU, LT4

13:30 – 14:30 Session 3 (open to NTU staff) Chair: Dragomir Neshev

13:30 – 14:30	<i>Rachel Won</i> , Editor of Nature Photonics Title: Publishing in Nature Journals
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14:30 – 15:00 - Coffee Break and Networking, LT4

15:00 – 16:00 Session 4 Chair: Michele Celebrano

15:00 – 15:20	<i>George Gordon</i> , University of Nottingham, UK Title: Meta-fibres: optical fibres with meta-surfaces for hair-thin imaging devices
15:20 – 15:40	<i>Yanhong Wang</i> , North University of China, China Title: Molecular terahertz spectroscopy in aqueous environments enhanced by plasmonic nanostructures



15:40 - 16:00	<i>Cuifeng Ying</i> , Nottingham Trent University, UK Title: Aperture-based plasmonic nanotweezers for monitoring conformational dynamics of single, unmodified proteins
16:00 – 16:30 - Coffee Break and Networking, LT4	
16:30 – 17:50 Session 5 Chair: Costantino De Angelis	
16:30 - 16:50	<i>Ivan Buchvarov</i> , Sofia University, Bulgaria Title: Optical metasurfaces for GHz free space optical communications
16:50- 17:10	<i>Changxu Liu</i> , University of Exeter, UK Title: Tuning non-plasmonic metals optically active
17:10 - 17:30	<i>Javier González-Colsa</i> , University of Cantabria, Spain Title: Asymmetric thermoplasmonic dynamics in Janus nanostructures: the role of interfacial thermal conductance
17:30 - 17:50	<i>Sara Moujdi</i> , Nottingham Trent University, UK Title: Optomechanical tuning metasurfaces via reshaping photosensitive azobenzene-containing polymers
18:30 – 20:00: Posters and reception at LT4 NTU	
20:00 to 22:00: Dinner at Pavilion NTU	



Day 3 | 31 August, 2024, LT3

09:00 – 10:30 Session 1 Chair: Lei Xu

09:00 – 09:50	Plenary Talk, <i>Maria Chekhova</i> , Max Planck Institute for the Science of Light, Erlangen, Germany Title: 'Flat-optics' spontaneous parametric down-conversion
09:50 - 10:10	<i>Costantino De-Angelis</i> , University of Brescia, Italy Title: All-optical computing with nonlinear photonic metasurfaces
10:10 - 10:30	<i>Frank Setzpfandt</i> , Friedrich Schiller University Jena, Germany Title: Generation of non-classical states of light using light-matter interaction on the nanoscale

10:30 – 11:00 - Coffee Break and Networking, LT4

11:00 – 12:00 Session 2 Chair: Giuseppe Leo

11:00 - 11:20	<i>Lan Fu</i> , Australian National University, Australia Title: Semiconductor nanowire array devices and applications
11:20 - 11:40	<i>Michele Celebrano</i> , Polytechnic University of Milan, Italy Title: Free-space interferometric routing of upconverted light by dielectric metasurfaces
11:40 - 12:00	<i>Demos Koutsogeorgis</i> , Nottingham Trent University, UK Title: Laser processing as a platform for fabricating nanoparticles

12:00 - 13:30 - Lunch at NTU, LT4

13:30 – 15:00 - NTU Lab Tour

15:00 – 16:20 Session 3 Chair: Pablo Albella

15:00 - 15:20	<i>Ángela Barreda Gómez</i> , Universidad Carlos III de Madrid, Spain Title: Excitation and tuning of quasi-BIC modes in all dielectric metasurfaces
15:20 - 15:40	<i>Carsten Rockstuhl</i> , Karlsruhe Institute of Technology, Germany Title: Spatiotemporal metasurfaces and metamaterials
15:40 - 16:00	<i>Luca Carletti</i> , University of Brescia Title: Intrinsic nonlinear geometric phase of second-harmonic generation process from films and metasurfaces of zincblende crystals
16:00 - 16:20	<i>Anton Bykov</i> , King's College London and London Centre for Nanotechnology Title: Harnessing hot carrier dynamics: mesoscopic gold and tuneable nonlinear metasurfaces



16:20 – 16:50 - Coffee Break and Networking, LT4	
16:50 – 18:10 Session 4	Chair: Sara Moujdi
16:50 - 17:10	<i>Hoe Tan</i> , Australian National University, Australia Title: Droplet epitaxy of InGaAs quantum dots on InP nanowires for single photon sources
17:10 - 17:30	<i>Mitchell Kenney</i> , University of Nottingham, UK Title: Visible doublet metalenses using optimised methods
17:30 - 17:50	<i>Nathan Coste</i> , University of Technology Sydney, Australia Title: Near-coherent quantum emitters in hexagonal boron nitride with discrete polarization axes
17:50 - 18:10	<i>Lei Xu</i> , Nottingham Trent University, UK Title: Infrared imaging with silicon nanostructures and metasurfaces
18:30 – 20:00: Posters and reception at LT4 NTU	
20:00 to 22:00: Dinner at Pavilion NTU	

Day 4 01 September, 2024
Before 9:00 – Check out and breakfast
9:00 – 12:30 City tour George Green's Windmill – Inventor of Green's functions and Robin Hood Castle * The bus leaves from NTU Clifton Campus at 9:30
12:30 - 13:30 - Lunch at LT4 NTU



Poster presenters

Arman Yousefi, Nottingham Trent University, UK

Title: Single-molecule analysis of ferritin conformational dynamics and kinetics using plasmonic nanotweezers

Ze Zheng, Nottingham Trent University, UK

Title: Broadband infrared imaging governed by guided-mode resonance in dielectric metasurfaces

Saaman Zargarbashi, Nottingham Trent University, UK

Title: Monitoring conformational dynamics of intrinsically disordered proteins using plasmonic nanotweezers

Mahya Assadi, Nottingham Trent University, UK

Title: Single molecule analysis of ferritin disassembly using solid-state nanopores

Gabriel Sanderson, Nottingham Trent University, UK

Title: Infrared imaging with nonlinear silicon resonator governed by high-Q quasi-BIC states

Mohammadhossein Momtazpour, Nottingham Trent University, UK

Title: Nanofabrication of complex and chiral flat optics via multi-exposure laser interference lithography

Amin Zamani, Nottingham Trent University, UK

Title: High-efficiency opto-electrical tuning of sb2s3 phase-change metasurfaces

Surena Fatemi, University of Saarland, Germany

Title: Quantum photonics using color centers in a diamond membrane coupled to a photonic structure

Anindita Das, University of St Andrews, UK

Title: Investigation of a hybrid plasmonic–graded enz metasurface

Kyle Netherwood, Cardiff University, UK

Title: Exceptional points in perturbed dielectric spheres

Ziwei Yang, Australian National University, Australia

Title: All-optical tunable metasurfaces in linear and nonlinear based on liquid crystals

Luyao Wang, Australian National University, Australia

Title: Reversible thermal tuning of high-q quasi-BIC lithium niobate metasurfaces