Monday 21 October 2019

08:00	Registration opening	
09:00	Welcome	
09:10	Session 1 - Sources I Chair: A. Migdall	**S. Reitzenstein - Deterministically fabricated quantum dot – waveguide systems for on-chip quantum optics**
09:40		A. Fedrizzi - Direct generation of tailored ultrafast entanglement
10:00		S. Haffouz - InAsP quantum dot nanowires for telecom single photon emission
10:20		T. Mueller - Quantum teleportation using highly coherent emission from telecom C-band quantum dots
10:40	Coffee break	
11:10	Session 2 - Applications I Chair: M. Lucamarini	**E. Diamanti - Demonstrating quantum advantage with practical photonic systems**
11:40		F. Xu - Experimental Quantum Switching for Exponentially Superior Quantum Communication Complexity
12:00		D. Cozzolino - Hybrid entanglement distribution through an air-core fiber
12:20		C. Vigliar - High-Dimensional Chip-to-Chip Entanglement Distribution through Multicore Fibres
12:40		J. Chiles - Nanowire Detection of Photons from the Dark Side
13:00	Platinum sponsor presentation	ID Quantique
13:05	Lunch	
14:20	Session 3 - Detectors I Chair: A. Gulinatti	**E. Charbon - Massively parallel, three-dimensional photon counting: a versatile tool for quantum experimentalists and consumers**
14:50		E. Conca - Wide-area fast-gated single-photon detector with integrated TDC for near-infrared spectroscopy applications
15:10		F. Acerbi - Silicon photomultipliers optimized for cryogenic temperatures
15:30		S. Grosse - Single-Photon Detectors based on CSPAD technology
15:50	Coffee break	Sponsored by Excelitas
16:20	Session 4 - Metrology I Chair: E. Diamanti	F. Piacentini - New Frontiers in Quantum Measurement: Protective Measurement, Genetic Quantum Measurement and Robust Weak Measurement
16:40		L. Shalm - Certified Randomness Expansion using a Loophole-Free Bell Test
17:00		C. Chunnilall - Investigations towards transmitting time and QKD signals over the same optical fibre
17:20		M. Lasota - Reliable estimation of the statistics of photons emitted from an unknown source of light
17:40	Transfer to Leonardo campus	
18:30	Welcome reception @ Leonardo campus	
20:30	End	

Tuesday 22 October 2019

09:00	Historical perspective by Sergio Cova	
09:15	Session 5 - Detectors II Chair: H. Zbinden	**B. Korzh - Advances in superconducting nanowire single photon detectors and related applications**
09:45		V. Verma - Kilopixel arrays of superconducting nanowire single-photon detectors
10:05		D.H. Smith - Multiplexed Superconducting Nanowire Single-Photon Detectors on UV-Written Silica Waveguides
10:25		F. Martini - SNSPD readout using the amplitude multiplexing approach
10:45	Coffee break	Sponsored by PicoQuant
11:15	Session 6 - Metrology II (in collaboration with the EURAMET EMN-Q) Chair: C. Chunnilall	S. Pirandola - Fundamental limits of quantum communications
11:35		S. Schwarz - Reconstructing ultrafast energy-time entangled two-photon pulses
11:55		D. Fuster - Development of a plug&play single photon source using electro-optical pumping schemes
12:15		H. Ollivier - Quantum dot based single photon sources: performance reproducibility
12:35	Platinum sponsor presentation	attocube / Quandela
12:40	Lunch	
13:55	Session 7 - Applications II Chair: J. Matthews	**M. Lucamarini - Measurement Device Independent Quantum Cryptography**
14:25		M. Minder - Experimental quantum key distribution beyond the repeaterless secret key capacity
14:45		M. Avesani - Practical Source-Device-Independent Quantum random number generators
15:05		S. Wengerowsky - In-field entanglement distribution over a 96 km and a 192 km submarine optical fibre
15:25		S. Wengerowsky - An entanglement-based wavelength-multiplexed Quantum Communication Network
15:45	Platinum sponsor presentation	MPD / OEC / Quantum Opus / Nireos
15:50	Coffee break	
16:20	Session 8 - Applications III Chair: M. Ghioni	**K. Suhling - Time-correlated single photon counting wide-field Fluorescence Lifetime Imaging Microscopy**
16:50		D. Tabakaev - Entangled two-photon absorption and the quantum advantage in sensing
17:10		A. Ingle - Towards General-Purpose Passive Imaging with Single-Photon Sensors
17:30		D. Lindell - Efficient Confocal Non-Line-of-Sight Imaging
17:50		A. White - Realtime photon-number resolution & Imaging via photon counting
18:10	Poster session I	
19:30	End	

Wednesday 23 October 2019

09:00	Session 9 - Applications IV Chair: F. Bussieres	**J. Matthews - Integrated Homodyne Detection for Large Scale Silicon Quantum Photonics**
09:30		F. Ceccarelli - Low-power reconfigurable photonic integrated circuits fabricated by femtosecond laser micromachining
09:50		P. Connolly - Multispectral single-photon imaging using high efficiency plasmonic metasurface filters
10:10		S. Olivier - Towards an integrated quantum photonics platform on silicon for secured communications
10:30		J. Renema - Imperfect Gaussian Boson Sampling is Classically Simulable
10:50	Coffee break	Sponsored by ID Quantique
11:20	Session 10 - Metrology III (in collaboration with EMPIR 17FUN06 SIQUST) Chair: S. Kueck	**I. Degiovanni - Light sources characterisation and optical modes reconstruction**
11:50		Y.-L. Mao - Error-Disturbance Trade-off in Sequential Quantum Measurements
12:10		A. Paterova - Infrared metrology with visible light
12:30		K. Laiho - Characterizing heralded single photons from a Bragg-reflection waveguide loss-tolerantly via moment generating function
12:50	Platinum sponsor presentation	PicoQuant
12:55	Lunch	
14:10	Session 11 - Detectors III Chair: A. Tosi	**B. Aull - Large-Format Image Sensors Based on Integration of Custom Geiger-Mode Avalanche Photodiode Arrays with All-Digital CMOS Circuits**
14:40		C.-Y. Park - Room temperature operation of InP/InGaAs single photon avalanche diode
15:00		G. Buller - Planar Geometry Ge-on-Si Single-Photon Avalanche Diode Detectors for the Short-Wave Infrared
15:20		G. Acconcia - Fully integrated electronics for high-performance and high-speed acquisition with Single Photon Avalanche Diodes
15:40		M. Salomoni - Future perspective of SiPM technology
16:00	Coffee break	
16:30	Session 12 - Sources II Chair: C. Toninelli	C.A. Solanas - Scalable interfacing of quantum photonic platforms: solid-state single-photon sources and reconfigurable photonic circuits
16:50		T. Heindel - Single-Photon QKD using Engineered Solid-State Quantum-Light Sources
17:10		S.D. Tchernij - Electrical control of Nitrogen – Vacancy centers in diamond
17:30		S. Ecker - Overcoming noise in entanglement distribution through high-dimensional encoding
17:50	Transfer to Castello Sforzesco	
18:30	Guided tours of Castello Sforzesco	
20:00	Dinner at Castello Sforzesco	
23:00	End	

Thursday 24 October 2019

09:00	Session 13 - Sources III Chair: T. Gerrits	**C. Toninelli - Single-molecule based single photon sources**
09:30		R. Schofield - Nanophotonic waveguide coupling to organic molecules in micro-capillaries
09:50		H. Abudayyeh - Quantum light manipulation: A path towards efficient pure room-temperature single photon sources
10:10		H. Wang - Single photons for quantum technologies
10:30		G. Solomon - Filter-free single-photon emission in an integrated cavity-waveguide device
10:50	Coffee break	Sponsored by attocube / Quandela
11:20	Session 14 - Applications V Chair: S. W. Nam	**K. Srinivasan - Quantum source and frequency conversion technologies based on integrated nanophotonics**
11:50		J. Adcock - Programmable mutliphoton graph states on a silicon chip
12:10		G. Kavuri - Towards a loophole-free Bell experiment on a tabletop
12:30		Z.-H. Xiang - Network Integration of Quantum Dot Device and Entanglement in Cambridge Fiber Network
12:50	Platinum sponsor presentation	Excelitas
12:55	Lunch	
14:10	Session 15 - Detectors IV Chair: I. Rech	**S. W. Nam - From dark matter detection to artificial intelligence: applications of superconducting nanowire single photon detectors**
14:40		M. Perrenoud - High detection rate and high efficiency with parallel SNSPDs
15:00		S. Buckley - Progress in superconducting optoelectronic networks for neuromorphic computing
15:20		T. Takumi - Time-resolved measurement of a single-photon wave packet with an optical Kerr effect
15:40		E. Fossum - Quanta Image Sensor Progress Review
16:00	Coffee break	
16:30	Session 16 - Applications VI Chair: F. Zappa	**S. Verghese - Self-driving cars and lidar**
17:00		G. Musarra - Single-photon, single-pixel intelligent Lidar
17:20		A. Maccarone - Three dimensional imaging of dynamic underwater scenes using single photon detection
17:40		R. Tobin - Depth imaging through obscurants using single photon detection in the short-wave infrared
18:00		M. Laurenzis - Computational imaging with SPADs at SWIR wavelengths
18:20	Poster session II	
19:40	End	

Friday 25 October 2019

09:00	Session 17 - Detectors V Chair: F. Villa	**J. Rothman - Reaching for GHz single photon detection rates with HgCdTe APD detectors**
09:30		L. Gasparini - CMOS-SPAD arrays for Quantum Imaging Applications
09:50		M. Zarghami - A Novel Approach to High Dynamic Range Imaging with CMOS-SPADs
10:10		G. Jegannathan - Current-assisted single photon avalanche diode(CASPAD) in 350 nm CMOS
10:30		G. Tortarolo - Towards Single-Photon Microscopy: Exploiting Extra Spatio-Temporal Information Provided by SPAD Array Detectors in Laser Scanning Microscopy
10:50	Coffee break	Sponsored by MPD / OEC / Quantum Opus / Nireos
11:20	Session 18 - Sources IV Chair: F. Piacentini	**P. Michler - Quantum dots at telecom wavelengths for single- and entangled photon sources**
11:50		S. Francesconi - Engineering two-photon wavefunction and exchange statistics in a semiconductor chip
12:10		C. P. Lualdi - High-Efficiency Time-Multiplexed Single-Photon Source
12:30		C. Marvinney - Toward control of the quantum state of hBN single-photon emitters
12:50		J. Grim - Three-Quantum-Dot Superradiance in a Photonic Crystal Waveguide Enabled by Scalable Strain Tuning
13:10	Lunch	
14:15	Session 19 - Applications VII Chair: I. Degiovanni	**Q. Zhang - Single photon technology in Long Distance Quantum Communication**
14:45		F. Xu - Experimental quantum repeater without quantum memory
15:05		A. Scriminich - Hong-Ou-Mandel interference of polarization qubits stored in independent room-temperature quantum memories
15:25		S. Grandi - Towards long distance entanglement between a photon and a solid-state quantum memory
15:45		M. F. Askarani - Entanglement and non-locality between disparate solid-state quantum memories mediated by photons
16:05	Concluding remarks	
16:15	Farewell coffee	
16:45	End	

Notes:
Bold = invited talk, 30 min
Regular = contributed talk, 20 min
EMPIR 17FUN06 SIQUST: https://www.siqust.eu/
EURAMET EMN-Q: https://www.euramet.org/european-metrology-networks/quantum-technologies/