

## POSTER SESSION 1

### TUESDAY 19<sup>TH</sup> NOVEMBER

#### POSTER SESSION 1 - TUESDAY 19TH NOVEMBER

Presenters are expected to stand by their posters during lunch and the afternoon coffee break on their allocated day. Please check the programme for exact timings - <https://fitwise.eventsair.com/2024singlephotonworkshop/programme>

Ordered by paper number (numbers may not be consecutive)

Paper No.	Paper Title	Lead Author	
3	An ultrabright single-photon emitter in hexagonal boron nitride with optically-detectable electronic spin	Jian-shun	Tang
4	Estimating the complete CHSH parameter with each entangled photon pair	Ivo Pietro	Degiovanni
5	Plasmonic Hong-Ou-Mandel sensing for measuring refractive index	Seungjin	Yoon
6	Spectral purification of spontaneous parametric down-conversion photons via spatial filtering	Michael	Schlosser
12	Quantum metrology with time-frequency single photon states	Eloi	Descamps
15	Room temperature quantum emitters in Aluminium Nitride epilayers	Anthony	Bennett
17	Deterministic transformation of photon-number states to optical squeezed cat and Gottesman-Kitaev-Preskill states	Matthew	Winnel
18	Population dynamics and quantum efficiency of the germanium-vacancy center in diamond	Justus	Christinck
19	Quantum Reservoir Computing with Linear Optical Networks	Sam	Nerenberg
29	Advancing quantum photonics technologies through optical metrology	Angela	Gamouras
33	We present a student-lab setup using a versatile nonlinear interferometer to explore quantum interference and sensing with undetected photons aiding hands-on understanding of modern quantum optics, mid-IR imaging, and spectroscopy.	Marthe	Zeja
36	Novel Heralded Single-Photon Source Exploiting the Interplay of Quadratic and Cubic Nonlinearities	MAHMOUD	ALMASSRI
37	Quantum enhanced precision metrology for quantum networks	Jabir	M. V

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43	Weak Value Quantum Metrology beyond Weak Interaction	Seung-Yeun	Yoo
44	Dibenzoterrylene embedded within C60 - a new host-guest system for its application in molecular-based single-photon sources	Franziska	Hirt
45	High-Performance Photon-Pair Source Using Two-Photon Polymerized Strip-Loaded Lithium Niobate Waveguide	Muhamed	Sewidan
48	Bright Heralded Single-photon Source with Ideal Purity Based on Silicon Chip via Spontaneous Four Wave Mixing	Qiang	Zeng
50	Enhanced Single-Photon Extraction from GaN via Directly Patterned Circular Bragg Gratings	Keesuk	Hong
55	Purifying quantum-dot light in a coherent frequency interface	Fabrizio	Chiriano
66	Characterization of hexagonal boron nitride quantum emitters in nanoflakes after post-processing treatments	Leonora	Sewidan
69	Combined detector and weak light source in a single device for metrology applications in the infrared wavelength range	Toomas	Kübarsepp
72	High degree of polarization entanglement from AlGaAs-based on-chip photon source without external filtering	Vivienne	Leidel
74	A compact and portable energy-time/time-bin entangled biphoton source for quantum networks	Rong	Xue
84	Characterizing Single-Mode Squeezed Light with Higher-Order Broadband Correlation Functions	Fabian	Schlue

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Paper No.	Paper Title	Lead Author	
97	Effective programming of a photonic processor with a complex interferometric structure for the implementation of desired unitaries	Ilya	Kondratyev
99	Investigating the Feasibility of Interfacing Cryogenic SPDC with a Quantum Dot	Nina Amelie	Lange
101	Generalized Klyshko Method for Characterizing System Detection Efficiency of Entangled Photon Pairs	Michael	Mazurek
104	Fiber splice loss measurements for single photon detector calibrations	Aedan	McFall
106	Electronic Structure and Optical Properties of Nanohole Droplet-Etched (In)GaSb/AlGaSb Quantum Dots for Telecommunication Spectral Range	Maja	Wasiluk
110	Fabrication of Tin vacancy centers in nanodiamonds	Hideaki	Takashima
114	Fiber-pigtailed efficient source of indistinguishable single photons	Nico	Margaria
118	Photon emission by controlled injection of hot electrons across a lateral pn junction	Masaya	Kataoka
122	Four-fold Hong-Ou-Mandel Interference from a Whispering Gallery Mode Resonator	Sheng-Hsuan	Huang
128	On-demand single-photon emitter in the blue-green spectral range for free space communication with an epitaxial nanowire quantum dot	Kuntheak	KHENG
130	Optimal single-photon quantum light spectroscopy	Sourav	Das
131	Electrically driven molecular single photon emitters investigated by Photon Scanning Tunneling Microscopy	Andreas	Reutter

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Paper No.	Paper Title	Lead Author	
135	A Compact Receiver for Decoy-State Polarization-Encoded BB84 QKD Based on a CMOS-SPAD Chip	Michael	Steinberger
137	Photon-number-resolved characterization of single-photon source	Jeongwan	Jin
138	Heralded Single Photons at Telecom Wavelengths from a AlGaAs-Bragg Reflection Waveguide	Akriti	Raj
139	PaQS: The Paderborn Quantum Sampler	Michael	Stefszky
141	Circular Bragg resonators integrated with nanowire quantum dots for emission rate enhancement	David	Northeast
142	Quantum-classical dualism in single photon light emission by hexagonal boron nitride flakes	Valeri	Kovalev
143	Novel source of polarization-entangled photon pairs for satellite-mediated quantum communication	Sarah	McCarthy
144	Generation, detection and characterization of ultralow energy light	Valeri	Kovalev
146	Quantum Key Distribution at High Secret Key Rates with Hybrid Photonic Integrated Circuits	Julius	Römer
149	Integrated Microring Resonators for Robust Quantum Networks	Mingsong	Wu
151	Challenges and opportunities in single photon detector metrology	Sonia	Buckley
152	Cavity-Enhanced On-Demand Spin-Wave Solid State Quantum Memory	Soeren	Wengerowsky
154	Phonon impact on a single CdSe quantum dot from cryogenic to room-temperature	Francis	Granger
159	Towards interfacing quantum states from an airborne WGMR with Yb ions in a ground-based ion trap	Thomas	Dirmeier

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160	Resonantly driven DBATT molecules under pulsed excitation	Maximilian	Luka
162	Experimental Quantum Strong Coin Flipping using a Deterministic Single-Photon Source	Tobias	Heindel
163	Effective characterization of multi-photon interference via distinguishability partitions	Emilio	Annoni
165	Photolithographically-positioned spin-photon interfaces for large-scale silicon integration	Vivekanand	Tiwari
167	Proposal for Recommended Measurement Practices for Single-Photon Detector Efficiency	Sonia	Buckley
169	Quantum network-ready indistinguishable single photon source	Nijil	Lal
176	Purcell-Enhanced Single Photons at Telecom Wavelengths from a Quantum Dot in a Photonic Crystal Cavity	Catherine	Phillips
177	Telecom Quantum Dots as single photon emitters	Beatrice	Costa
188	Building a High NA Optical System to Efficiently Collect Single Photons	Subhabrata	Ghosh
190	Optical Stabilization of Carbon Defects in hBN	Pablo	Tieben
194	Wavelength-conversion technology based on thermal-waveguide	In-Ho	Bae
196	Highly linear optical photodetector for single photon and attenuated laser sources in CW and pulsed regime	Meelis-Mait	Sildoja
198	Chirped Laser Driving of Solid-State Quantum Emitters	Kimberley	Hall
211	A Robust and Compact Telescope for Ground-to-Ground Free Space Quantum Key Distribution	Manpreet	Kaur
215	Experimental Device-Independent Certification of a 4-qubit GHZ State	Nicolas	LAURENT-PUIG

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217	Generating non-classical light states at 3rd telecommunication window with InAs/InP quantum dots grown by molecular beam epitaxy	Anna	Musial
222	Single Photon Integrated Quantum Dot Source with Optical vs Electrical Drive	Mark	Prusten
224	On-demand storage and retrieval of single photons from InGaAs quantum dots in a room temperature atomic quantum memory	Benjamin	Maaß
228	Controlling the rate of single-photon emission from colloidal cadmium selenide quantum dots using a medium of different dielectric constant	Manojkumar	Vishwakarma
231	Experimental demonstration of Einstein–Podolsky–Rosen steering in high-speed telecommunication system with detection loophole closed	Qiang	Zeng
233	Enhancements to quantum communication performance utilising a prototype photonic lantern and multiplexed single-photon detection	Harikumar	Chandrasekharan
235	High efficiency photon pair generation from an ultra-silicon-rich nitride (USRN) Bragg grating chip	Jinyi	Du
240	Developing SQUID based Quantum Sensors and Microwave Resonators for Quantum Optomechanics	Ling	Hao
241	A Low-SWaP GHz Quantum Random Number Generator for Satellite Quantum Key Distribution	Oliver	Crampton
242	Waveguide transmitter for polarization-based quantum key distribution	Chithrabhanu	Perumangatt
244	A Multiplexed Programmable Quantum Photonic Network	Annameng	Ma

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245	Programmable Generalized Measurements for Photonic Time-Bins using Complex media	Dylan	Danese
246	Generation and manipulation of two-photon Gottesman-Kitaev-Preskill states produced by SPDC	Astghik	Saharyan
250	Vacuum Rabi splitting with a single quantum dot on a dielectric waveguide at room temperature	Xingsheng	Xu
251	Decreasing critical detection efficiency via parallelized Bell tests	Daniel Ricardo	Sabogal Perez
253	Quantum-secure distributed sensing	Russell	Brooks
256	Multiplexing Indistinguishable Quantum Emitters using Multi-Plane Optical Circuits	Suraj	Goel
257	Silicon Vacancies in Silicon Carbide for Quantum Sensing	Shivani	Bisht
258	Scalable generation and detection of on-demand W-state in nanophotonic circuit.	Govind	Krishna
259	Polarization-encoded quantum key distribution with room-temperature telecom single-photon emitter	Xingjian	Zhang
261	A temperature-insensitive source of highly nondegenerate polarization-entangled photon pairs based on Noncritical Birefringent Phasematched spontaneous parametric downconversion in single-domain KTiOPO <sub>4</sub>	Jia Boon	Chin
262	The impact of detector dead time on photon correlation	Rachel Nicole	Clark
263	24-mode universal photonic processor in a femtosecond laser writing platform	Francesco	Ceccarelli

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264	Optimization of Circular Bragg Grating Resonators for Quantum Dot Single-Photon Sources in the Telecom C-Band	Yorick	Reum
267	Compressive Tomography of Unstructured High-Dimensional Photonic Entanglement	Will	Mccutcheon
270	Cryogenic Feedforward of a Quantum State	Frederik	Thiele
272	A QKD-oriented tuning toolbox for photon number statistics with semiconductor quantum dots	Dario	Fioretto
275	Towards a high efficiency integrated gradient echo quantum memory	Finley	Giles-Book
277	Practical Twin-Field Quantum Key Distribution in Telecom Networks	Robert	Woodward
278	OPS-SAT Versatile Optical Laboratory for Telecommunications mission	Taylor	Shields
279	Scalable registration of single colour centres in solid immersion lenses by femtosecond laser writing	Alexander	Jones
282	Controlling Multiple Quantum Dots using Structured Light	Mehul	Malik
283	Imaging High-Dimensional Bell Violations via Two-Photon Multi-Slit Interference	Kiki	Dekkers
284	Next-Generation Room-Temperature Single-Photon LEDs with GaSb/GaAs Quantum Rings	Gizem	Acar
288	Compact operation of a pigtailed single photon source and superconducting single photon detectors	Nicolas	Maring
291	Cooperative photon emission between multiple indistinguishable quantum dots	Sheena	Shaji
295	Compact source of high-efficiency polarization entanglement	Michael	Grayson



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299	Decoy state quantum key distribution with a bright telecom wavelength quantum dot single-photon source	Frederik	Brooke Barnes
301	A design framework for Quantum Pulse Gates in Thin-Film Lithium Niobate	Alejandra	Alarcón
304	Investigations of PrYVO for its applications as a large bandwidth telecom quantum memory platform	Sean	Keenan
305	Entangled-photon Sources for Satellite-based Quantum Key Distribution	Faris	Redza
306	Towards a broad-band quantum memory in the telecom band using rare-earth doped crystals	Meysam	Setodeh Kheirabady
310	Charaterization of suitable excitation parameters for GaN defect single-photon emitters	Nilesh	Dalla
311	On-demand Single-photon Generation using Resonant Excitation of Quantum Dots embedded in Nanowires	Edith	Yeung