

POSTER SESSION 2

WEDNESDAY 20TH NOVEMBER

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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	
7	Polarisation Filtering for Satellite Quantum Key Distribution and its Effectiveness with Latitude and Season	Cameron	Simmons
8	Distribution of Telecom Time-Bin Entangled Photons through a 7.7 km Antiresonant Hollow-Core Fiber	Michael	Antesberger
13	Scaling Photonic Integrated Circuits with Microwave Kinetic Inductance Detectors	Majid	Mohammad
14	Development of Nb based Inductive Superconducting Transition Edge Detector for Quantum Communication	Ling	Hao
16	Widefield time-resolved fluorescence anisotropy imaging (TR-FAIM) using a single photon avalanche diode (SPAD) array	Louis	Obeid Mogridge
21	Simulation and experimental demonstration of Super-Resolution Imaging via Photon Enumeration (S-RIPE)	Ivan A.	Burenkov
22	OptoSkin: A novel touch sensor using single photon time-of-flight within optical waveguides	Martin	Laurenzis
27	Pick and Place Transfer of SNSPDs Fabricated on SiNx Membranes	Max	Littlewood
39	Advantages and limitations of channel multiplexing for discrete-variable quantum key distribution	Mikolaj	Lasota

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41	Impact of the Stoichiometry of MoSi Thin Films for Superconducting Nanowire Single-Photon Detectors	Stefanie	Grotowski
46	Correlation plenoptic imaging at 10 volumetric images per second	Gianlorenzo	Massaro
49	Single-Photon Upconversion Detection with PPLN Waveguides	Ruaridh	Smith
51	Detection performance of the superconducting wide strip photon detector for 2 μm wavelength photons	Masahiro	Yabuno
53	Developing a 20-channel spatially-multiplexed number resolving photon detector	Oliver	Page
54	Entangled photon source for satellite to end-user up-link quantum communication	Thomas	Jaeken
56	Integration of cryogenic on-chip resistors for enhanced readout and modulation precision of quantum detectors and actuators	Kilian	Welz
57	Bayesian Neuromorphic Imaging for Single-Photon LiDAR	Dan	Yao
58	Indium Arsenide Electron Avalanche Photodiodes: Towards Linear Mode Photon Counting	Jo Shien	Ng
59	Fundamental limits of SPAD Lidar imaging using digital twins.	Stirling	Scholes
60	Superconducting Single-Photon Detectors on Lithium Niobate-on-Insulator	Christian	Schmid
62	A high-dimensional imaging system based on an SNSPD spectrometer and computational imaging	Mingzhong	Hu

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Paper No.	Paper Title	Lead Author	
67	Nonlinear response of telecom-wavelength superconducting single-photon detectors	Robert	Keil
68	Improving NbTiN superconducting nanowire single-photon detectors using local helium ion irradiation	Fabian	Wietschorke
70	Radio Frequency Timer of keV Electrons: New Approach for Time Correlated Single Photon Counting	Amur	Margaryan
71	Unbiased random number generation with a superconducting nanostrip photon-number-resolving detector	Pasquale	Ercolano
75	Development of In _{0.53} Ga _{0.47} As-Al _{0.85} Ga _{0.15} As _{0.56} Sb _{0.44} SPAD for 1550 nm detection at 200 K	Jonathan	Taylor-Mew
76	Scalable Quantum Detector Tomography using High-Performance Computing	Timon	Schapeler
77	Massively Multiplexing Superconducting Nanowire Photon-Number-Resolving Detectors	Timon	Schapeler
81	Comparative analysis of optical properties of superconducting refractory metal films for next-generation superconducting nanowire single-photon detectors.	Nidhi	Choudhary
82	Free-running Silicon Single-Photon Avalanche Detectors Integrated in a Photonics Circuit at Room Temperature	Victor	Leong
85	Complementarity of Induced and Stimulated Coherence in Nonlinear Interferometry	Sun Kyung	Lee

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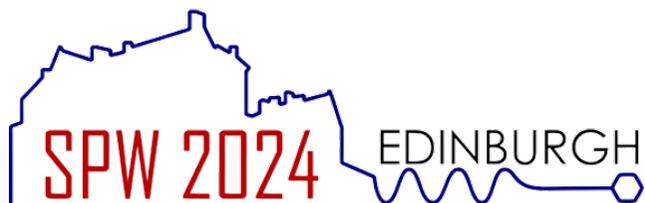
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Paper No.	Paper Title	Lead Author	
88	Gating SNSPDs with a Cryogenic Photodiode	Frederik	Thiele
89	Tuning Disorder in NbTiN Thin Films Grown via Plasma-enhanced ALD for Mid-IR Superconducting Nanowire Single-Photon Detectors	Ciaran	Lennon
90	High-Rate Photon Number Resolved Detection with Transition-Edge Sensors Enabled by Machine Learning	Zhengkao	Li
91	Interference effects in free-space silicon single-photon avalanche diodes	Luke	Arabskyj
92	Cryogenic RF multiplexer for scalable readout of Superconducting Nanowire Single Photon Detectors	Ravi	Pradip
93	Quantum Random Number Generator Based on On-Off-Keying Encoding	Hamid	Tebyanian
94	Nearly dead time free ultra-high throughput single photon detection	Verena	Leopold
95	Micro transfer printable SNSPDs for versatile applications in quantum photonic platforms	Linus	Kraemer
96	Preventing Detector Blinding Attacks in Quantum Key Distribution with Waveguide-Integrated Superconducting Nanowire Single-Photon Detectors	Connor Alexander	Graham-Scott
100	Quantum Resolution- Optimized Cryogenic Observatory for Dark matter Incident at Low Energy (QROCODILE)	Noah	Brugger



Single Photon Workshop 2024 - Scotland, UK

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Paper No.	Paper Title	Lead Author	
102	Analog Josephson Circuits for On-Chip Processing of Superconducting-Nanowire Single-Photon Detection Events	Bryce	Primavera
105	Current state of SNSPD arrays for deep space optical communication	Emma	Wollman
107	Niobium nanostrips as a model for SNSPD	Sebastian	Raupach
108	Detecting hyperentangled biphotons in frequency and polarization with delay-line-anode single-photon imager	Ozora	Iso
109	Advances in fabrication technologies for InGaAs/InP single-photon avalanche diodes	Andreas	Wörl
113	Single-Molecule FLIM of Plasmonic and Dielectric Nanostructures with a SPAD-Array	Valentina	Krachmalnicoff
116	High-speed SNSPDs for clock-rate scaling in quantum networks	Boris	Korzh
119	Observing 98% system detection efficiency at 1550 nm in a fibre-coupled Au/Ti - transition-edge sensor	Sebastian	Raupach
120	Heralded distributed noiseless linear amplification for entanglement distillation	Farzad	Ghafari
124	Towards atomically thin single photon detection	Lucio	Zugliani
125	Entangled second harmonic generation for nonlinear imaging	Ivi	Afxenti
127	Verifying energy-time entanglement via nonlocal dispersion cancellation	Heebong	Seo

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Paper No.	Paper Title	Lead Author	
132	Laser Induced Relaxation Oscillations and Detector Tomography in NbTiN nanobridge SNSPDs	Frederik Bert	Baalbergen
133	Computational techniques for NLOS systems towards practical scenarios	Riccardo	Romanelli
134	Digital Cryogenic Readout for Superconducting Nanowire Arrays	Gregor	Taylor
136	Time-resolved single photon counting Raman spectroscopy with SPAD arrays	Caitlin	Tye
140	Clinical translation of a time-resolved single-photon imaging system for safe placement of feeding tubes	András	Kufcsák
145	A 512 × 12 linear SPAD sensor with continuous counting and 32-channel high-speed readout	Pouyan	Keshavarzian
147	A fast 28-pixel parallel SNSPD with high photon number efficiencies	Towsif	Taher
150	Dependence of Intrinsic Photon Number Resolution on Kinetic Inductance in Waveguide-Integrated Superconducting Nanowire Single-Photon Detectors	Roland	Jaha
156	Superconducting signal processor with high-speed operation for superconducting nanostrip photon detectors	Shigeyuki	Miyajima
157	Generalized Photon Chopping Model of Photon Number Resolving Single Photon Detectors	Samantha	Davis

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Paper No.	Paper Title	Lead Author	
158	Quantum retrodiction of single photon emission rates from nanoscale light emitters in random and dense environments	Richard	Lane
164	From front-side to back-side illumination of InGaAs/InP SPADs for photon detection efficiency enhancement	Simona	Sorrentino
166	Extending the quantum tomography of a quasi-photon-number-resolving detector	Ted	Santana
168	Harnessing two-photon interference and single-photons for Fluorescence lifetime sensing.	Raul	Alvarez Mendoza
171	Photonic crystal enhancement of Ge-on-Si single photon avalanche diodes	Charlie	Smith
172	Development of optical transition-edge sensors with improved detection rate	Mauro	Rajteri
173	Responsivity Calibration of a Waveguide-Integrated Photodetector: Reducing Uncertainties using Directional Couplers on a Photonic Circuit	Victor	Leong
174	SPADs for time-domain diffuse optical tomography	Ifechi	Ejidike
175	Imaging SNSPD arrays with micro-lens photon coupling	Dmitry	Morozov
178	High-Resolution and High-Speed 256x256 Flash LiDAR SPAD Imager with Background Rejection and Flexible Event Detection Strategies in 110nm CIS planar technology	Enrico	Manuzzato
179	SPAD-based Detection System for DNA and Protein Sequencing through Ultra-Fast Raman Spectroscopy	Veronica	Storari

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180	Mode-selective low-noise up-conversion of telecom light with a quantum pulse gate	Ankita	Khanda
184	Fast, 900–940-nm detection with NbN Superconducting Nanowire Single-Photon Detectors integrated on CMOS-compatible Si ₃ N ₄ waveguides made on 200-mm diameter wafers.	Joël	Bleuse
187	Ultra-fast Correlation Imaging and further improvements	Giuseppe	Lerario
191	Measuring the effects of hotspot thermal relaxation on the smallest and largest possible self-recovering SNSPDs in any given materials and cryogenics platform	Dileep	Reddy
192	Revisiting single-photon detection in the framework of Bohmian mechanics: characterization of light-matter interaction through weak values	Juan José	Seoane-Martínez
200	DCR reduction via laser annealing on proton-irradiated InGaAs/InP SPADs for space applications	Lorenzo	Finazzi
203	Linearity and scalability of photon counting: Toward accurate multiparameter photonic sensing	Miroslav	Jezek
204	SiPM Sensor and New ?endencies in LIDAR for Autonomous Vehicles	Valeri	Saveliev
205	In-Situ Beam Divergence Measurement in an SNSPD Vertical Stack	Daniel	Sorensen
206	Toward monolithically integrated CMOS and superconducting electronic systems	Jeff	Chiles

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218	Quantum methods for gas sensing	Arthur	Cardoso
220	Single flux quantum readout of superconducting nanowire single-photon detectors for mid-infrared applications	Benedikt	Hampel
221	Arrays of the Optical Transition Edge Sensor for Scalable Approaches	Takahiro	Kikuchi
223	A custom SPAD in 110 nm CIS technology with increased NIR response	Luca	Parmesan
227	Integrated SNSPDs for in-line quantum light detection.	Filippo	Martinelli
229	Investigation of the wavelength dependent polarization sensitivity of superconducting nanowires	Daniel	Kuznesof
230	Investigating quantum defects in InGaAs SPAD detectors to reduce their afterpulsing probability	Anthony	Vaquero-stainer
234	Advanced FPGA-Based TCSPC and Time Tagging Electronics with 1 ps Resolution for High-Speed Fluorescence Lifetime Imaging and Quantum Optics Applications	Florian	Weigert
236	Detector optimization for few photon quantum states	John	Jeffers
239	Calibration of Single-Photon Detectors Directly against a Primary Standard	Mikhail	Korpusenko
252	Optimization of the Fabrication Process of Superconducting Nanowire Single Photon Detector using Niobium Nitride	Beomgyu	Choi
255	Single Photon Event Driven 3D Imaging (SPEDI)	Matthias	Aquilina

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265	Characterization of a Single Photon Counter Module and its integrated Single-photon avalanche diode (SPAD)	Kirsten	Schuh
266	Ghost Imaging with a Displaced Thermal Source	Arran	Sykes
269	Structured light based dark-field microscopy for resonance fluorescence of solid-state quantum emitters	Sachin	Pradhan
274	Highly Sensitive InGaAs/AlGaAsSb Avalanche Photodiodes for 1550 nm Photon-Counting Applications	David	Price
276	Spectrograph readout using Superconducting Nanowire SinglePhoton detectors (SNSPDs)	Stephane	Cohen
280	Recent advances in high duty cycle SPAD arrays: Cameras to enable remote sensing with Quantum Ghost Imaging	Carsten	Pitsch
285	Experimental quantum holography with single photons	Denis	Abramovic
290	The development of planar InGaAs/InAlAs avalanche photodiodes	Xin	Yi
292	Decoding Life's Secrets: The Dynamic Power of Video-Rate and Quantitative FLIM	Hauke	Studier
294	Evaluation of a short-wave infrared single-photon rangefinder under high noise background conditions	Jorge	Garcia-Armenta
303	TCAD Simulations of Dark Current in GmAPDs	Caroline	Tally



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307	Study of punchthrough in Ge-on-Si Single-Photon Avalanche Diode Detectors	Dave	Muir
308	High-Resolution Fluorescence Lifetime Imaging Microscopy on a Budget	Lewis	Wilson
309	Cavity-Enhanced Mid-IR Spectroscopy with Undetected Photons for Microplastics Analysis	Atta Ur Rehman	Sherwani
	Hong-Ou-Mandel interference between two photons of vastly different colour	Helen M	Chrzanowski
	Toward heralded distribution of polarization entanglement		Marcellino