

**SPW 2007**  
**SINGLE-PHOTON WORKSHOP 2007**  
 25th-28th September 2007  
 INRIM - Istituto Nazionale di Ricerca Metrologica  
 Torino (ITALY)

**Timetable**

Last Update 24/9/2007

<b>25/9/2007</b>			
<b>13.00-14.45</b>		<b>Welcome Cocktail sponsored by VERICOLD</b>	
<b>14.45-15.00</b>	Bava E.	INRIM	Welcome
<b>Session 1 Chairman: Migdall A.</b>			
<b>15.00-15.25</b>	Schell S.	Imperial College London	Opening Talk
<b>15.25-15.50</b>	Kitaygorsky J.	Quantum Transport, TU Delft	Superconducting single photon detectors for quantum optics
<b>15.50-16.10</b>	Beveratos A.	LPN-CNRS	Towards A Single Photon Source At Telecom Wavelength Based On Inas/Inp Quantum Dots
<b>16.10-16.30</b>	Huebel H.	Universitaet Wien	Detector Deficiencies For Entanglement Based QKD
<b>16.30-17.00</b>		<b>Coffee Break sponsored by PICOQUANT</b>	
<b>Session 2 Chairman: Barbieri C.</b>			
<b>17.00-17.25</b>	Ribordy G.	Id Quantique	<i>Title not yet available</i>
<b>17.25-17.45</b>	Warburton R. E.	Heriot-Watt University	InGaAs/InP Single-Photon Avalanche Diodes – Device Performance and Afterpulsing Analysis
<b>17.45-18.05</b>	Ghioni M.	Politecnico di Milano	Resonant-Cavity-Enhanced Single Photon Avalanche Diodes
<b>18.05-18.25</b>	Guang Wu	East China Normal University, Shanghai	Near infrared single-photon detector based on avalanche photodiode and frequency up-conversion

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**Session 3** *Chairman: Andreoni A.*

9.00-9.25	Mataloni P.	University of Rome "La Sapienza"	Experimental production of high fidelity two photon polarization qutrits and ququarts
9.25-9.50	Banaszek K.	Nicolaus Copernicus University	Protecting an optical qubit against photon loss
9.50-10.10	Krivitsky L.	INRIM	Generation of different Bell states within the SPDC phase-matching bandwidth
10.10-10.30	Coldenstrodt-Ronge H. B.	Clarendon Laboratory, University of Oxford	Experimental joint photon-number measurements and quantum measurement tomography
10.30-10.50	Barbieri M.	University of Queensland	Factoring numbers with quantum entanglement

10.50-11.20 **Coffee Break sponsored by PI - PHYSIC INSTRUMENTE**

**Session 4** *Chairman: Cheung J.*

11.20-11.45	Barbieri C.	University of Padova	Aqueye, A Single-Photon Photometer For Astronomy
11.45-12.05	Rochas A.	id Quantique SA	1064nm photon counting receiver combining an InGaAsP/InP avalanche photodiode and a CMOS integrated pulser
12.05-12.25	Krainak M. A.	NASA	Near-infrared single-photon-counting detectors for free-space laser receivers
12.25-12.45	Zappa F.	Politecnico di Milano	Silicon Single Photon Avalanche Diode With 25 Ps Resolution At 1.55 $\mu\text{m}$

12.45-14.30 **Lunch sponsored by ID QUANTIQUE**

**Session 5** *Chairman: Mataloni P.*

14.30-14.55	Andreoni A.	University of Insubria at Como	Time-Resolved Laser Investigations In Bio-Medicine Exploiting Features Of TCSPC
14.55-15.20	Kulik S.	Moscow State University	Two-Photon And Two-Mode States And Their Application For Studying Quasi-Periodical Crystals
15.20-15.40	Chuckravanen D.	Dublin Institute of Technology	Depth Measurement using a Time-Of-Flight method based on Time-Correlated Single Photon Counting
15.40-16.00	Trojek P.	Max-Planck-Institut für Quantenoptik	Efficient source of polarization-entangled photon pairs at non-degenerate wavelengths

16.00-16.30 **Coffee Break sponsored by LOT ORIEL**

**Session 6** *SINPHONIA Chairman: Zbinden H.*

16.30-16.55	Nam S. W.	NIST	Progress On Using Superconducting Optical Detectors
16.55-17.20	Sergienko A.	Boston University	Precise Optical Measurement in the Infrared with Superconducting Single-Photon Detectors (SSPD)
17.20-17.45	Kerman A. J.	Massachusetts Institute of Technology	Towards Large Arrays Of Superconducting Nanowire Single-Photon Detectors
17.45-18.05	Feautrier P.	Laboratoire d'AstrOphysique de Grenoble	Compact spectrometer using SSPD for innovative astronomical applications
18.05-18.25	Bitauld D.	Ecole Polytechnique Fédérale de Lausanne	Photon number resolving detection with NbN superconducting nanowires
18.25-18.45	Ejrnaes M.	Istituto di Cibernetica "E. Caianiello" CNR	Ultra Fast And Large Signal Amplitude Superconducting Single Photon Detectors

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**Session 7** *SINPHONIA* **Chairman: Nam S. W.**

9.00-9.25	Goltsman G.	Moscow State Pedagogical University	Ultrafast Superconducting Single-Photon Detector
9.25-9.50	Berggren K.	Massachusetts Institute of Technology	Achieving Photon-Number-Resolution Using Multi-Element Superconducting Nanowire Single Photon Detectors
9.50-10.15	Stevens M. J.	NIST	Infrared wavelength-dependent optical characterization of NbN nanowire superconducting single-photon detectors
10.15-10.35	Marsili F.	Ecole Polytechnique Fédérale de Lausanne	NbN nanowire superconducting single photon detectors fabricated on MgO substrates
10.35-10.55	Villegier J.-C.	CEA-Grenoble, DRFMC/SPSMS	Recent progress on elaboration and characterization of NbN SSPD at CEA

**10.50-11.20** **Coffee Break**

**Session 8** **Chairman: Rajteri M.**

11.20-11.45	Cova S.	Polytechnic of Milan	Single-Photon Avalanche Diodes For Quantum Key Distribution
11.45-12.10	Polyakov S.	NIST	Actively Multiplexed Detector Systems For Higher Photon Counting Rates
12.10-12.30	Dimler S. J.	University of Sheffield	Capacitive quenching for dark count characterisation of single photon avalanche photodiodes
12.30-12.50	Farr W.	Jet Propulsion Laboratory	Photon counting detectors with negative avalanche feedback for photon starved optical communications

**12.50-14.40** **Lunch sponsored by CRISEL INSTRUMENTS**

**Session 9** **Chairman: Kulik S.**

14.40-15.05	Migdall A.	NIST	Quantum tomography of a bright, polarization-entangled photon-pair source based on a fiber Sagnac interferometer
15.05-15.25	Stewart A.	SensL	Applications of Single Photon Detection with Geiger-Mode APDs
15.25-15.45	Eckstein A.	Max Planck Research Group, Erlangen	Entanglement of Discrete Spectral Modes in Waveguided Parametric Downconversion

**15.45-16.15** **Coffee Break**

**Session 10** *SINPHONIA* **Chairman: Villegier J.-C.**

16.15-16.40	Semenov A.	Institute of Planetary Research	Intrinsic Quantum Efficiency And Energy Resolution Of A Superconducting Single-Photon Detector
16.40-17.05	Hamed Majedi A:	University of Waterloo	Characterization of NbN nanowire Superconducting Single Photon Optical Detectors at Telecom Wavelengths
17.05-17.25	Engel A.	University of Zurich	Magnetic Vortices in Superconducting Photon Detectors

**17.25-19.00** **Poster Session**

**17.25-18.25** **SPW 2007 Local Organizing Committee promotes the Round Table:  
Perspectives on a joint European project in the field of "sources and detectors of single (few) photons and their characterization".**

**Social Dinner sponsored by ELSAG DATAMAT**

**28/9/2007**

**Session 11 Chairman: Sergienko A.**

9.00-9.25	Wong F. N. C.	Massachusetts Institute of Technology	Single Photons On Demand Using A Modular Array Of Parametric Downconverters With Polarization Control
9.25-9.50	Chekhova M.	Moscow State University	High-Visibility Ghost Imaging With Thermal Light
9.50-10.15	Cheung J.	NPL	Single Photon Metrology Research At NPL
10.15-10.35	Brida G.	INRIM	Absolute calibration of analog photodetectors using Parametric Down Conversion
10.35-10.55	Mosley P. J.	Clarendon Laboratory, University of Oxford	Direct production of pure heralded ultrafast single photons

**10.55-11.20 Coffee Break**

**Session 12 Chairman: Cova S.**

11.20-11.45	Thew R. T.	University of Geneva	Up-Conversion Detection at Telecom Wavelengths
11.45-12.05	Itzler M.	Princeton Lightwave Inc.	Characterization and Modeling of InP-based Single Photon Avalanche Diodes for 1.5 um and 1.06 um Photon Counting
12.05-12.25	Giudice A.	Micro Photon Devices	Electronic Module For Operation Of Silicon Single Photon Avalanche Diodes
12.25-12.45	Zhiliang Yuan	Toshiba Research Europe Ltd	High Speed Single Photon Detection In The Near Infrared

**12.45-14.30 Lunch sponsored by MICRO PHOTON DEVICES**

**Session 13 Chairman: Genovese M.**

14.30-14.55	De Martini F.	University of Rome "La Sapienza"	Test of EPR correlations in entangled macroscopic systems and NOON states
14.55-15.20	Zavriyev A	MagiQ Technologies, Inc	Quantum key distribution for secure communication. Are we entangled yet?
15.20-15.40	Ereards P.	University of Geneva	Si-APDs matrix for High-Speed Photon-Counting
15.40-16.00	Duerr E. K.	MIT	Photon-Counting Avalanche Photodiodes from 1.06- to 2- $\mu$ m Wavelength

**16.00-16.30 Coffee Break**

**Session 14 Chairman: Chekhova M.**

16.30-16.55	Ducci S.	Université Paris - Diderot	A Semiconductor Source Of Counterpropagating Twin Photons
16.55-17.15	Ellis D. J. P.	Toshiba Research Europe Ltd.	Oxide-apertured pillar microcavities for single photon sources
17.15-17.35	Balet L.	Ecole Polytechnique Fédérale de Lausanne	Single photon sources at telecom wavelength using single quantum dots in photonic crystal microcavities
17.35-17.55	Xiulai Xu	Hitachi Cambridge Laboratory	'Plug and play' single-photon sources towards 1.3 um
17.55-18.15	Wu E.	Ecole Normale Supérieure de Cachan	Triggered single-photon source based on photoluminescence of Nickel-related colour centres in CVD-grown nanodiamonds

**POSTER SESSION**

Panel	Author	Affiliation	Title
1	Ahtee V.	Centre for Metrology and Accreditation (MIKES)	Towards Indistinguishable Photons From Two Independent Molecules
2	Billotta S.	INAF – Osservatorio Astrofisico Catania	Characterization of detectors for the Italian Astronomical Quantum Photometer Project
3	Blazej J.	CTU in Prague	Photon Counting Module For Laser Time Transfer Via Earth Orbiting Satellite
4	Bondani M.	CNR-INFN Uninsubria Como	High-Rate Optical Quantum Random Generator
5	Bondani M.	CNR-INFN Uninsubria Como	Self-Consistent Characterization Of Light Statistics
6	Caricato V.	INRIM	Propagation of Entangled Photons in Optical Fibers
7	Castellano F.	Politecnico di Torino	Terahertz radiation detection via multiphoton absorption in semiconductor-based unipolar devices
8	Curtz N.	DPMC, University of Geneva	Deposition and patterning of YBCO films for SSPDs applications
9	Dauler E. A.	MIT	High system detection efficiency superconducting nanowire single photon detectors
10	Degiovanni I.P.	INRIM	Intensity Correlations, Entanglement Properties And Ghost Imaging In Multimode Thermal-Seeded PDC: Theory
11	Gramegna M.	INRIM	Technique Of Reconstruction For Photon Number Distributions With "On/Off" Detectors
12	Kitaygorsky J.	Delft University of Technology	Resolving the amplitudes of dark and photon pulses in NbN superconducting single-photon detectors
13	Lozza V.	University of Trieste and INFN	Applications Of A Single Photon Detector To The Pvlas Experiment
14	Lukishova S. G.	University of Rochester	Room-Temperature Single Photon Source Based On Colloidal Quantum Dots In Photonic Bandgap Structures
15	Meda A.	INRIM	Photon Statistics Reconstruction Of Stimulated Pdc States By On/Off Detectors
16	Minaeva O.	Boston University	Biophotonics Application of Superconducting Single-Photon Detectors
17	Nistico' G.	Universita' della Calabria	Detection of incompatible properties
18	Park H. S.	KRIST	Correction of Dead Time in the Twin-Photon Coincidence Counting Measurement
19	Piacentini F.	INRIM	Experimental Local Realism Test Without Fair Sampling Assumption
20	Portesi C.	INRIM	Au/Ti TESs : fabrication and characterization in view of optical photon counting
21	Qin Wang	The Royal Institute of Technology	Improved practical decoy-state method in quantum key distribution with parametric down conversion source
22	Rajteri M.	INRIM	How To Avoid Reflection Losses In Superconducting Light Detectors
23	Restelli A.	NIST	Sub-nanosecond gating to reduce quantum bit error rate in high-speed free-space quantum key distribution
24	Ruo Berchera I.	INRIM	Towards an Experimental Demonstration of Sub-Shot Noise Spatial Correlations in SPDC for Quantum Imaging
25	Schettini V.	INRIM	Implementing a multiplexed system of detectors for higher photon counting rates
26	Smerzi A.	INFN-CNR BEC	Mach-Zehnder Interferometry with coherent and squeezed-vacuum light
27	Traina P.	INRIM	realization of high-precision interferometers for single photon application in quantum information
28	Ursin R.	University of Vienna	Quantum Information And Quantum Physics In Space
29	Valente P.	INFN-Roma	A single photon tagging source at the Frascati BTF
30	Vallone G.	University of Rome "La Sapienza"	One-way quantum computation via manipulation of polarization and momentum qubits in two-photon cluster states
31	Antonietti N.		Static Atmospheric Effects in a Free-Space Quantum Communication Channel
32	Bagliani D.	University of Genova	Ir TES electron-phonon thermal conductance and single photon detection