

# SPSS 2016 Programme

## Day 1 : Monday, September 12th

08.30-09.00 : Registration and arrival

09.00-09.15 : Workshop opening by Jason Smith (WASPS) and Félix Bussi eres (WG1 NQO COST)

### Session 1 – Quantum sources of light

Chair : Christoph Becher

09.15 : **Peter Lodahl (Keynote speaker)** - Niels Bohr Institute, University of Copenhagen  
*Single-photon quantum-information processing*

10.00 : **T. Grange** – Institut N eel, CNRS, Grenoble, France  
*Generation of indistinguishable single photons from noisy solid- state emitters*

10.15 : **N. Somaschi** – LPN-CNRS, Marcoussis, France  
*Near-optimal Single Photon Sources in the Solid State*

10.30 : **A. Thoma** – Institut f ur Festk orperphysik, Technische Universit at Berlin, Germany  
*A bright twin-photon source in the solid state*

10.45 : **D. McCutcheon** – Department of Electrical and Electronic Engineering, University of Bristol, UK  
*Fundamental Limits to Efficiency and Indistinguishability of Quantum Dot Based Single Photon Sources*

11.00 : **G. Weihs** – Institut f ur Experimentalphysik, Universit at Innsbruck, Austria  
*One, two and three photons from a nanowire*

11.15-11.45 : Coffee break

### Session 2 – Novel single-photon sources

Chair : Costanza Toninelli

11.45 : **J. Claudon** – Univ. Grenoble Alpes, CEA-CNRS, INAC-SPINTEC, France  
*Large and uniform optical emission shifts in quantum dots strained along their growth axis*

12.00 : **J. Benedikter** – Ludwig-Maximilians-Universit at, Universit at des Saarlandes, Germany  
*SiV Centres in Microcavities – an efficient single-photon source at room temperature*

12.15 : **A. Exarhos** – Quantum Engineering Laboratory, University of Pennsylvania, USA  
*Single-Photon Sources in Free-Standing Hexagonal Boron Nitride Membranes*

12.30 : **A. Branny** – Institute of Photonics and Quantum Science, SUPA, Heriot-Watt University, UK  
*Deterministic arrays of single photon emitters in locally strained mono- and bilayers WSe<sub>2</sub>*

12.45 : **P. Dolan** – Department of Materials, University of Oxford, UK  
*Room temperature spectral enhancement of a single NV centre by controllable coupling to multiple open access microcavities*

13.00-14.00: Lunch break

### Session 3 – Photon manipulation and detection

Chair : Tim Bartley

14.00 : **Wolfram Pernice (Invited)** – University of M unster, German  
*Detecting single photons in waveguide devices*

14.30 : **M. Caloz** – Group of Applied Physics Quantum Technologies, U. of Geneva, Switzerland  
*Detection mechanism in amorphous MoSi SNSPDs*

14.45 : **V. Averchenko** – Max Planck Institute for the Science of Light, Erlangen, Germany  
*Shaping a single photon without interacting with it*

15.00 : **C. Feuillet-Palma** – LPEM - ESPCI/CNRS/UPMC PSL Research University, France  
*Photon detectors based on high-T<sub>c</sub> superconductors*

15.15-15.45 : Coffee break

Session 4 – Quantum Networks

Chair : Matthias Keller

15.45 : **Tim Taminiau (Invited)** – TU Delft, The Netherlands

*Quantum networks with spins in diamonds*

16.15 : **C. Autebert** – Laboratoire MPQ, U. Paris Diderot, Sorbonne Paris Cité, CNRS-UMR, France

*Multi-user quantum key distribution with a semiconductor source of entangled photon pairs*

16.30 : **A. Seri** – ICFO, The Barcelona Institute of Science and Technology, Spain

*Spin-wave storage of heralded single photons in a crystal*

16.45 : **A. Delteil** – Institute of Quantum Electronics, ETH Zurich, 8093 Zurich, Switzerland

*Generation of heralded entanglement between distant quantum dot hole spins*

Equality and Diversity presentation

17.00 : **Ruth Oulton** – Bristol University UK

*Equality and Diversity presentation*

17.30 : Poster session

19.00 : Workshop dinner

**Day 2 : Tuesday, September 13th**

Session 5 – Cavities and nonlinearities

Chair : David Hunger

09.00 : **Maiken Mikkelsen (Invited)** – Duke University, USA

*Ultrafast single photon source using plasmonics*

09.30 : **M. van Exter** – Huygens-Kamerlingh Onnes Laboratory, Leiden University, The Netherlands

*Purification of a single-photon nonlinearity of an intra-cavity quantum dot*

09.45 : **O. Barter** – University of Oxford, Clarendon Laboratory, Oxford, United Kingdom

*Photonic Quantum Logic with Atom-Cavity Photons*

10.00 : **M. Scheucher** – Atominstitut, VCQ – TU Wien, Austria

*Single-atom-controlled, fiber-integrated optical circulator*

10.15 : **S. Götzinger** – MPQ, Friedrich Alexander University, Erlangen, Germany

*Coherent Nonlinear Optics with a Single Molecule*

10.30-11.00 : Coffee break

Session 6 – Spin-photon interfaces

Chair : Ruth Oulton

11.00 : **Helena Knowles (invited)** – Cavendish Laboratory, University of Cambridge, UK

*Polarisation and localisation of a cluster of electronic spins in diamond*

11.30 : **J. Becker** – Universität des Saarlandes, Saarbrücken, Germany

*Ultrafast all-optical coherent control of silicon vacancy colour centres in diamond*

11.45 : **L. Rondin** – Laboratoire Aimé Cotton, CNRS, Université Paris-Sud and ENS Cachan, France

*Magnetic domains imaging with a scanning NV magnetometer at cryogenic temperature*

12.00 : **D. Riedel** – Department of Physics, University of Basel, Switzerland

*Efficient readout of a coherent single spin in diamond*

12.15 : **A. Kubanek** – University of Ulm, Germany

*Quantum Optics with color centers in diamond*

12.30 : **R. Coles** – Dept. of Physics and Astronomy, University of Sheffield, UK

*Polarisation Independent In-plane Spin Initialisation of a Quantum Dot in a Nanobeam Waveguide*

12.45 : **P. Androvitsaneas** – H. H. Wills Physics Laboratory, University of Bristol, UK  
*A charged quantum dot micropillar system for deterministic light matter interactions*

13.00-14.00 : Lunch break

14.00-15.30 Session 7 - Industrial perspectives

Chair : John Rarity

14.00 : **Jan Huwer (Invited)** – Toshiba Research Europe  
*Semiconductor Single Photon Sources for Quantum Networking Applications*

14.30 : **Bruno Sanguinetti (Invited)** – ID Quantique  
*Quantum technologies : an industry perspectives*

15.00 : **Christian Nölleke (Invited)** – Toptica  
*Diode lasers for single-photon generation*

15.30-16.00: Coffee break

Round table discussion - European Flagship on Quantum Technologies

Invited panelists : Tommaso Calarco and Andrea Ferrari

Chair : Christophe Couteau

17.30 : Equality and Diversity discussion (Ruth Oulton)

17.50 : Closing remarks (Jason Smith and Félix Bussièrès)

18.00 : End of the workshop