OSA Incubator
Integrated Semiconductor Quantum Photonic Devices

18-20 June 2017
Washington, DC USA

HOSTED BY:
Daniel Gammon, Navy Research Laboratory, United States
Pascale Senellart, C2N-CNRS, Université Paris-Saclay, France
Glenn Solomon, Joint Quantum Institute/NIST, United States
Edo Waks, University of Maryland/Joint Quantum Institute, United States

AGENDA

Sunday, 18 June 2017

Afternoon — Arrival/Hotel Check-in
Washington Hilton Hotel
1919 Connecticut Ave NW, Washington, DC

18:00 — Welcome Dinner
Bistro Bistro, 1727 Connecticut Ave NW, Washington, DC

Monday, 19 June 2017

8:00 — Breakfast
The Optical Society Headquarters
2010 Massachusetts Ave, NW

8:30 — Welcome
Elizabeth Rogan, CEO, OSA

8:45 — Program Overview and Goals
Hosts

Session 1: Quantum Light Sources for Linear Quantum Optics

Chair: Eric Stinaff

9:00 — Quantum Photonics with Solid-state Photon Sources
Andrew White, University of Queensland, Australia

Monday, 19 June 2017, continued

9:30 Cavity Based Efficient Single Photon Sources
Pascale Senellart, C2N-CNRS, University Paris Saclay, France

9:50 Single-photon Sources Based on Photonic Wire Antennas
Julien Claudon, CEA, Grenoble, France

10:10 Quantum Dot Sources for Quantum Communications
Andrew Shields, Toshiba Research Europe Ltd, United Kingdom

10:30 Coffee Break

10:50 Quantum Light Sources Based on Deterministically Fabricated Quantum Dot – Microlenses
Stephan Reitzenstein, Technische Universität Berlin, Germany

11:10 Why I am Optimistic About Quantum Dot Based Entangled Photon Sources
Fei Ding, IFW Dresden, Dresden, Germany

11:30 Discussion
Moderators: Mete Atature & Edo Waks

12:30 Lunch, provided

Session 2: Spin-Based Quantum Memories

Chair: Edward Flagg

13:30 A Noise-free Atomic Quantum Memory for Photonic Multiplexing
Joshua Nunn, University of Oxford, United Kingdom

14:00 Electron Spin, Hole Spin and the Nuclear Spins in a Self-assembled Quantum Dot
Richard Warburton, University of Basel, Switzerland

14:20 Quantum Spin-Photon Interfaces: Old Friends and New
Mete Atature, Cambridge University, United Kingdom

14:40 Spectroscopy and Applications of Optically Controlled Quantum Dot Spins
Duncan Steel, University of Michigan, United States

15:00 The Quantum Knitting Machine: Quantum Dots as Devices for Producing Cluster States of Many Entangled Photons
David Gershoni, Technion, Israel

Monday, 19 June 2017, continued

15:00 The Quantum Knitting Machine: Quantum Dots as Devices for Producing Cluster States of Many Entangled Photons
David Gershoni, Technion, Israel

15:20 Coffee Break

15:40 Nuclear Spin Noise Effects on Resonance Fluorescence from Quantum Dots
Brian Gerardot, Heriot-Watt University, Edinburgh, Scotland

16:00 Optical Control of Single and Coupled Quantum Dots and their Emission Properties
Sam Carter, Naval Research Laboratory, United States

16:20 Controlling Light with Quantum Dot Spin On-a-chip
Edo Waks, University of Maryland/Joint Quantum Institute, United States

16:40 Discussion
Moderators: Joshua Nunn, Peter Lodahl & Pascale Senellart

17:40 Break for dinner

18:00 Dinner
Ezme, 2016 P St NW, Washington, DC

Tuesday, 20 June 2017

8:30 Breakfast
The Optical Society Headquarters
2010 Massachusetts Ave, NW

Session 3: Materials & Device Integration

Chair: Marcelo Davanco

9:00 Towards On-chip Quantum Networks with Diamond Spins?
Dirk Englund, Massachusetts Institute of Technology, United States

9:30 Towards Hybrid Integration of Quantum Photonic Platforms
Alberto Peruzzo, Royal Melbourne Institute of Technology, Australia

10:00 Heterogeneous Integration of InAs/GaAs Quantum Dot Devices with Silicon Nitride Photonic Circuits
Kartik Srinivasan, National Institute of Standards & Technology, United States

Tuesday, 20 June 2017, continued

10:20 Coffee Break

10:40 Design and Growth of Quantum Dot Structures for Quantum Photonics
Allan Bracker, Naval Research Laboratory, United States

11:00 Discussion
Moderators: Dan Dalacu, Matt Doty & Glenn Solomon

12:00 Lunch, provided

Session 4: Devices for Non-Linear Optical Quantum Technologies

Chair: Dirk Englund

13:00 Exponential Improvement in Photon Storage Fidelities Using Atoms Coupled to An Optical Nanofiber
Darrick Chang, ICFO, Spain

13:30 Integrated III-V Nonlinear Quantum Optical Devices
Gregor Weihs, University of Innsbruck, Austria

13:50 Towards Deterministic Quantum Gates with Quantum-dot Cavity-QED Devices
Loic Lanco, CNRS - University Paris 7, France

14:10 On-chip Quantum Photonics – Towards Commercial Applications
Peter Lodahl, University of Copenhagen, Denmark

14:30 Coffee Break

15:00 Polarization-controlled Fiber Coupled Quantum Dot Cavity QED
Wolfgang Loeffler, Leiden University, The Netherlands

15:20 Ultrafast Single Photon Transistor Based on a Single Solid-state Spin
Shuo Sun, Stanford University, United States

15:40 Discussion
Moderators: Darrick Chang, Gregor Weih & Dan Gammon

16:40 Wrap-up and next step

17:00 Adjourn