

Photonic Quantum Technologies – A Revolution in Communication, Sensing, and Metrology

764. WE-Heraeus-Seminar

17 Mar - 19 Mar 2022

**Hybrid
at the Physikzentrum Bad Honnef/Germany**

**WILHELM UND ELSE
HERAEUS-STIFTUNG**



Program

Wednesday, 16 March 2022

17:00 – 21:00 Registration

From 18:30 BUFFET SUPPER / *Informal get together*

Thursday, 17 March 2022

07:30 BREAKFAST

08:30 – 08:45 Scientific Organizers **Opening remarks**

08:45 – 09:00 Stefan Jorda **About the Wilhelm and Else Heraeus Foundation**

09:00 – 09:45 Harald Weinfurter **Quantum Communication**

09:45 – 10:30 Peter Michler **Quantum-Dot Single-Photon Sources for Quantum Photonic Networks**

10:30 COFFEE BREAK

11:00 – 11:30

11:30 – 12:00 Paolo Villorosi (online) **Novel photonics for Quantum Communications in Space**

12:00 – 12:30 Rinaldo Trotta **Entanglement-based Quantum Communication with Photons from Quantum Dots**

12:30 – 12:45 **Extra Discussion**

12:45 LUNCH

Program

Thursday, 17 March 2022

14:15 – 15:00	Stephan Reitzenstein	Deterministically fabricated quantum light sources for applications in photonic quantum technologies
15:00 – 15:30	Fabio Sciarrino	Photonics platform for quantum metrology, quantum walks and Boson Sampling
15:30 – 16:00	Sara Ducci (online)	Quantum photonics with nonlinear AlGaAs chips: biphoton state engineering and applications
16:00 – 16:30	Thomas Jennewein (online)	The quantum internet and why satellites will be needed
16:30 – 16:45	Conference photo	
16:45 – 19:00	Poster Session P1 and COFFEE BREAK	
19:00	<i>HERAEUS DINNER at the Physikzentrum (cold & warm buffet, with complimentary drinks)</i>	

Program

Friday, 18 March 2022

08:00	<i>BREAKFAST</i>	
09:00 – 09:45	Can Knaut	Quantum Networks based on an Integrated Diamond Nanophotonic Platform
09:45 – 10:30	Oliver Benson	Enhanced Quantum-Light-Matter Interaction Using Confinement in Photonic Micro- and Nanostructures
10:30 – 11:00	<i>COFFEE BREAK</i>	
11:00 – 11:30	Thierry Debuisschert (online)	Wide-field magnetic imaging for applications of NV centers in diamond
11:30 – 12:00	Marco Genovese	First temperature measurement in neurons by ODMR techniques
12:00 – 12:30	Stefanie Barz	Quantum photonics: interference beyond HOM and quantum networks
12:30 – 12:45	Extra Discussion	
12:45	<i>LUNCH</i>	
14:15 – 15:00	Patrick Maletinsky (online)	Photonics and Photophysics of Nitrogen Vacancy centres in Diamond
15:00 – 15:30	Costanza Toninelli	Integrated molecules for photonic quantum technologies
15:30 – 16:00	Hugues de Riedmatten	Quantum Networking with rare-earth based quantum nodes
16:00 – 16:30	Christine Silberhorn	Harnessing non-linear integrated optics and pulsed light for quantum photonics
16:30 – 19:00	Poster Session P2 and <i>COFFEE BREAK</i>	
19:00	<i>DINNER</i>	
20:30	Fun Part moderated by the Organizers	

Program

Saturday, 19 March 2022

08:00	<i>BREAKFAST</i>	
09:00 – 09:45	Doris Reiter	State Preparation Schemes for Solid-State Quantum Emitters
09:45 – 10:30	Fedor Jelezko	Quantum sensing with diamond spin qubits
10:30 – 11:00	<i>COFFEE BREAK</i>	
11:00 – 11:30	Christopher Chunnillall	Assessment of quantum random number generators
11:30 – 12:00	Stefan Kück	Single photon sources for quantum radiometry
12:00 – 12:30	David Gershoni (online)	Deterministic source of indistinguishable photons in a cluster state
12:30 – 12:45	Scientific Organizers	Closing remarks and poster awards
12:45	<i>LUNCH</i>	

End of seminar and departure