Entanglement Distribution in Quantum Networks (SYED)

jointly organised by
the Quantum Information Division (QI) and
the Semiconductor Physics Division (HL)

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Scalable quantum networks, i.e., links between quantum nodes that are capable of storing and processing quantum information, promise advantages in many applications such as secure quantum communication, networks of distributed quantum sensors and connecting quantum computers. A common prerequisite is the ability to create and distribute entangled states as resource for establishing such a network. This symposium reviews some recent developments in the field of entanglement generation and distribution in quantum networks with solid state and photonic qubit systems, both from an experimental and conceptual perspective.

Overview of Invited Talks and Sessions

(Lecture hall H1)

Invited Talks

SYED 1.1	Wed	9:30–10:00	H1	**A multi-node quantum network of remote solid-state qubits** — •Ronald Hanson
SYED 1.2	Wed	10:00–10:30	H1	**Quantum key distribution with highly entangled photons from GaAs quantum dots** — •Armando Rastelli, Santanu Manna, Saimon Covre da Silva, Gabriel Undeutsch, Christian Schimpf
SYED 1.3	Wed	10:30–11:00	H1	**Entanglement distribution with minimal memory requirements using time-bin photonic qudits** — •Johannes Borregaard
SYED 1.4	Wed	11:15–11:45	H1	**Quantum photonics: interference beyond HOM and quantum networks** — •Stefanie Barz
SYED 1.5	Wed	11:45–12:15	H1	**Photonic cluster-state generation for memory-free quantum repeaters** — •Tobias Huber

Sessions

SYED 1.1–1.5	Wed	9:30–12:15	H1	**Entanglement Distribution in Quantum Networks**