Seminar/Talk

Towards Scalable Solid State Platforms for Quantum Information Processing

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Host:

Light-matter interactions lie at the heart of a very broad range of fundamental physics and applications. At a single particle level, such interactions enable all-optical quantum control of qubits which is of great interest for quantum information. At a more macroscopic level, strong light-matter interactions are a key to collective phenomena such as condensation of exciton-polaritons in microcavities. In this talk I will present my previous and current research which is unified under the broad field of light-matter interactions in semiconductors. In particular, I will briefly introduce polariton condensates along with the typical experimental methods used for their study and will cover a few exciting experiments ranging from the observation of pinned singly-charged vortices to the demonstration of a polaritonic Josephson junction. Moving from such collective quasi-particle phenomena to the investigation of more discreet quantum emitter systems, I will then address experimental efforts on the coherent control of scalable quantum emitter platforms. More specifically, I will present recent work on site-controlled quantum dots and silicon vacancies in diamond, and will conclude with an overview of my vision for future research.

Wednesday, February 1, 2017 09:45am - 10:45am
Mondi Seminar Room 3, Central Building

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.
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