

## ***Single Photon Emission and Absorption in Nanophotonic Structure***

**(12 August 2014)**

**Yuntian Chen**

***Huazhong University of Science and Technology***

Ultimate control over single light quanta, the emission of single photons, the absorption of single photons and the routing of photons between qubits is of core interest for quantum information technology. In the talk, the speaker will talk about how the nanophotonic structure can be used to control the single photon emission, and single photon absorption. In particular, the speaker will show that nanophotonic waveguide, or nano-antenna can be useful for steering single photon emission, while a terminated metallic waveguide can greatly enhance the single photon absorption.

The speaker will also show that the coupled lattice waveguide can be a rich testbed for strong coupling. The local resonance of each individual scatter can strongly couple to the waveguide mode, which results in rich phenomena like anti-crossing features in the spectrum of extinction, as well as integrated near field.