SFB/TRR 21 - Colloquium

4. Juli 2014, Stuttgart

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Fibre-coupled cavity QED systems

Optical interfaces form an important tool in the study and control of quantum systems. In this talk, two types of optical microcavities will be shown which present particular advantages for the interaction with quantum emitters. Firstly, I will describe a cavity-QED system based on a tapered nano-fibre which allows atoms to interact with the evanescent field of light confined to a sub-wavelength guide. This system will be of particular interest for quantum memory applications, as well as for the interaction of light with one-dimensional atomic systems. Secondly, I will present our efforts towards the creation of arbitrarily large arrays of cavity QED systems on a chip using electrostatically actuated micro-mirror arrays.

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