



Postdoctoral position on solid-state cavity quantum electrodynamics

The Photonics and Semiconductor Nanophysics group at the Eindhoven University of Technology (The Netherlands, www.tue.nl) has an open postdoctoral position on the nanofabrication and optical characterisation of semiconductor nanocavities for the investigation of cavity quantum electrodynamic effects.

Quantum dots (QDs) are semiconductor nanostructures with a three-dimensional confinement potential, resulting in a quantized energy structure and atom-like radiative emission properties. Single QDs in photonic-crystal nanocavities provide an ideal framework to investigate cavity quantum electrodynamic (QED) effects in a solid-state environment, with important potential applications to quantum information processing. This project, funded by the Dutch FOM, aims at investigating structures where cavity QED effects can be dynamically controlled by the application of ultrafast electrical and optical fields. In particular, our goal is to demonstrate the control of spontaneous emission, in both the weak and the strong coupling regime, in a timescale shorter than the emission time. To this aim, the successful candidate will be in charge of the development of novel cavity structures, including the design, the nanofabrication and the optical characterisation by microphotoluminescence. The appointment will initially be for one year, with possible continuation subject to funding availability.

We welcome applications from excellent candidates with a PhD in experimental optics or nanotechnology. Please email (max 300 kB) a CV with name and address of two references to: **Prof. Andrea Fiore, email: a.fiore@tue.nl**

