

# Colloquium

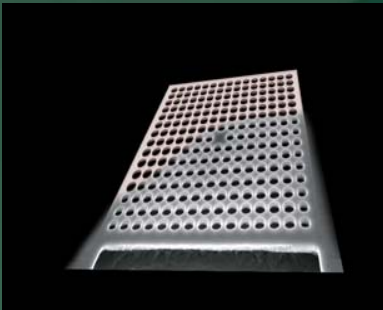
Monday, November 20, 2006

4:10 pm - 428 Pupin Hall

## “Photonic crystal chips for classical and quantum information processing”

Photonic crystal cavities enable localization of light into volumes below a cubic optical wavelength (smaller than any other types of optical resonators) with high quality factors. This permits a strong interaction of light and matter, which is relevant for construction of classical light sources with improved properties (e.g., low threshold lasers) and of nonclassical light sources (such as single photon sources) - crucial pieces of hardware of quantum information processing systems.

This talk will cover some of our recent experimental results enabled by such interaction, including spontaneous emission rate control (enhancement and suppression) of a single quantum dot inside a photonic crystal cavity, generation and transfer of single photons on a quantum dot-photonic crystal chip, an ultrafast nanocavity laser with low threshold, and two dimensional arrays of coherently coupled nanocavity lasers.



Professor Jelena Vuckovic  
Stanford University

