TECHNISCHE UNIVERSITÄT WIEN

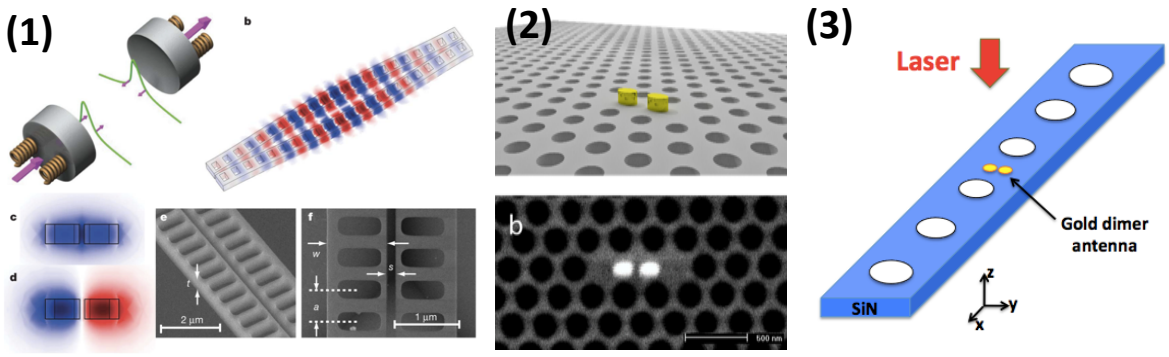
isas

Open Master Thesis

in Nanotechnology :

Photonic Crystals Cavities in Plasmomechanical Resonators

Plasmomechanical systems have generated a lot of interest in recent years, since local plasmon resonances can focus optical field below the diffraction limit of light, greatly increasing the sensitivity of nanomechanical sensors. These plasmomechanical systems could be combined with photonic crystal cavities to achieve better optical field confinement and increase again the efficiency of the nanomechanical sensors.



Figures : (1) Photonic crystal combined with a mechanical resonator (*O. Painter et al., Nature 2008*). (2) Plasmonic dimer antenna inside a photonic crystal cavity. (*K. Sediq et al., Nanotechnology 2016*). (3) An example of possible plasmomechanical resonator : A gold dimer antenna added to a string mechanical resonator with a 1D photonic crystal cavity.

Duration	6-8 months
Institute	Institute of Sensors and Actuators (ISAS, TU WIEN)
Supervisor	Univ.Prof. Silvan Schmid
Languages	English (German)
We invite students of	Physics, Chemistry, Material Science, Electrical & Electronic Engineering

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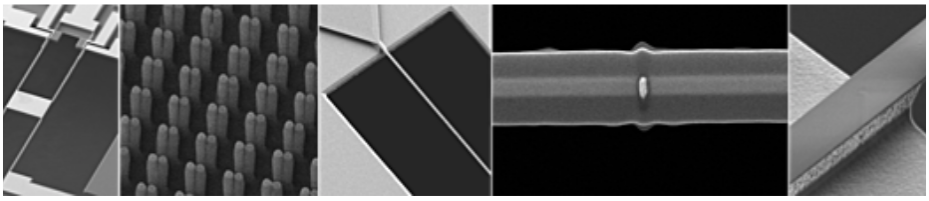

Micro and Nanosensors Group (MNS)