

NEXT LITE-SEMINAR

"Plasmonic Nanostructures and Metamaterials for Optical and Microwave Applications"

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Plasmonic nanostructures have the potential to improve the sensitivity of biochemical sensors, the efficiency of solar cells, and the resolution of near-field optical microscopy, to name just a few. Metamaterials with negative indices of refraction can be used to improve the directivity of a microwave antenna. In this talk, I will present our recent results on laser deposition of silver micro- and nanostructures on a glass substrate, laser light-to-heat energy transformation with gold nanoparticles, and s-shaped metamaterials designed to exhibit a negative index of refraction over broad band microwave frequency regions. Laser beams can be used to deposit fluorescent silver nanoparticles in a solution onto a substrate, potentially opening the door for 3D mesoscale printing technology. The light energy of a laser can be efficiently transformed into heat by using gold nanoparticles with their SPR tuned to the excitation wavelength of the laser. These studies are crucial for practical applications of gold nanoparticles in nanotechnology and bioengineering, such as enhancing the treatment efficiency of laser surgery.

Date and Time: **Tuesday, March 3rd, 2015, 17:00.**

Location: Lecture Hall 05.01, Institute of Physics
Karl-Franzens-University Graz
Universitätsplatz 5, 8010 Graz

16:30 Meet-the-speaker-tea
Library Experimental Physics
Institute of Physics, 1st floor

Host: J. Krenn

