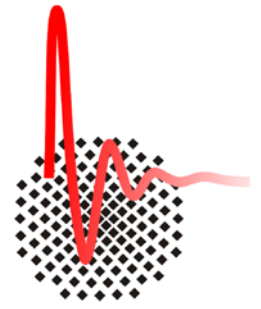
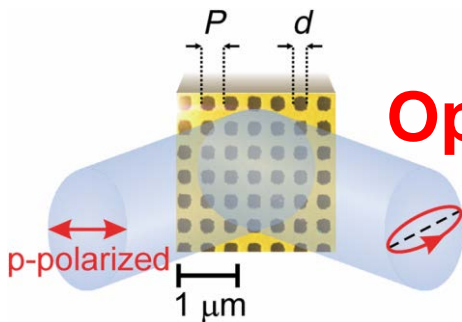
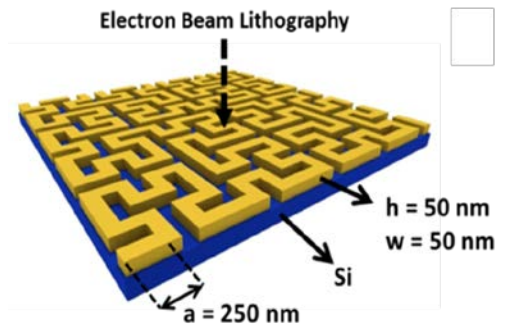


# Group Leader Position Optics on Nanostructures Universität Stuttgart

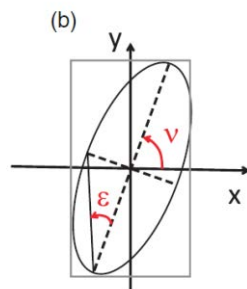
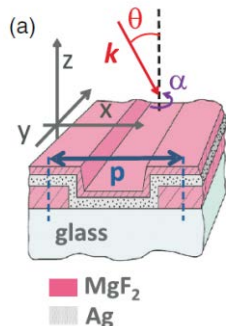


We are seeking an excellent young scientist who is capable and ambitious to build up a strong research group devoted to the optical properties of nanostructures. This may include

- Metallic nano-particles in structured or self-organized arrangements, composites close to the percolation threshold, etc.
- two- and three-dimensional metamaterials fabricated by lithography or other methods, dielectric or metallic nanostructures, magnetic and biological matter etc.



These nanostructures are investigated by( Müller-Matrix) ellipsometry, FTIR spectroscopy, second harmonic generation and other optical means. The results are compared to simulations and theoretical predictions. The observed phenomena address fundamental questions about k-dependent optics, spatial dispersion or depolarization in inhomogeneous media that require deep understanding, sharp distinction and precise formulations. In addition possible applications are explored.



**Top:** Perforating a semitransparent metal film by a periodic structure of nanometer sized holes suppresses the optical transmission (PRL **103**, 203901) and rotates the polarization of light at grazing incidence (PRL **106**, 185501); **Middle:** Fractals are promising candidates as nonperiodic, non-resonant structures exhibiting a homogeneous, isotropic, and frequency-independent effective optical response (ACS Photonics **2**, 1719); **Left:** Müller matrix ellipsometry allows to assign polarization effects to the microscopic plasmonic excitations of a metasurface (PRB **89**, 195434)

The successful applicant has the opportunity to build up and lead a sub- group and to develop an independent research profile. There is the possibility of further qualification (Habilitation). The excellent infrastructure and research environment allows the initiation of new projects and the realization of new ideas.

Please send complete applications to: Prof. Dr. Martin Dressel  
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<http://www.pi1.uni-stuttgart.de>