



Laser-Laboratorium Göttingen e.V.

# Seminar

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## Vortragsankündigung:

**Dr. Rüdiger Grunwald**

Max Born Institute for Nonlinear Optics and Short-Pulse Spectroscopy, Berlin

### **Adaptive microoptics and nonlinear nanooptics**

Recent progress at Max Born Institute in the fields of spatio-temporal shaping, characterization and application of ultrashort-pulsed lasers is reported. Previously studied thin-film approaches for tailoring nondiffracting beams (e.g. for advanced types of autocorrelators, wavefront sensors and metrology) were extended towards programmable liquid crystal SLMs and new MEMS. The concept of Bessel beams was generalized to a class of fringeless, highly localized few-cycle wavepackets owning all features of real free-space "light bullets". The mechanisms of the self-organized formation of deep-subwavelength scale nanostructures on semiconducting and metal oxide materials by inducing surface plasmon-polaritons via nonlinear excitation channels were studied in another project. A high-speed technology for generating coherently linked ripples was developed. By revealing the key role of virtual scatterers in the very beginning of laser processing and double-pulse experiments, contributions to a deeper understanding of the dynamics of femtosecond laser-induced surface structuring were obtained. Currently, the capability of programmable microoptics for adaptive and multichannel structuring of material on nanoscale is under investigation.

**Termin: 16. Juni 2011 um 11 Uhr s.t. im Seminarraum**

**Veranstaltungsort: Laser-Laboratorium Göttingen e.V., Hans-Adolf-Krebs-Weg 1, 37077 Göttingen**

Gastgeber: Peter Simon und Alexander Eigner

