



Das Institut für Optische Technologien lädt ein zum Kolloquiumsvortrag

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Laser-induced precise surface microstructuring and nanostructuring of dielectrics

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The ongoing advancements in microelectronics have driven a growing demand for highly precise and large-scale optical elements. However, the production of these components presents a significant technological challenge. Laser-based processes, such as laser etching, represent one potential approach within a broader spectrum of technological solutions to address these challenges. In laser etching, the dielectric surface to be structured is first added with an absorbent layer before being irradiated with pulsed laser radiation. During irradiation, energy is precisely transferred from the absorber layer to the dielectric surface, enabling controlled surface structuring. Given the increasing need for environmentally friendly processes, the use of absorber layers remains a key aspect of current etching methods. In laser-induced plasma etching, a localized plasma is generated within a reactive gas atmosphere, where reactive species chemically etch the surface, resulting in precise structuring through a dry etching mechanism.

This presentation provides a comprehensive overview of laser etching processes, illustrating that while they play an important role, they are just one part of the broader set of solutions available to meet current technological demands. Additionally, it highlights the latest scientific advancements in the field.

Einladender: Prof. Dr. Evgeny Gurevich

Ort:

Raum D 145
(Gebäudeteil D, Parkplatz P3)
Stegerwaldstraße 39
48565 Steinfurt

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