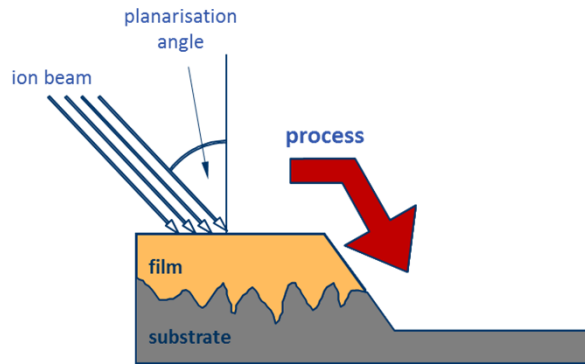


ION BEAM ASSISTED SURFACE SMOOTHING

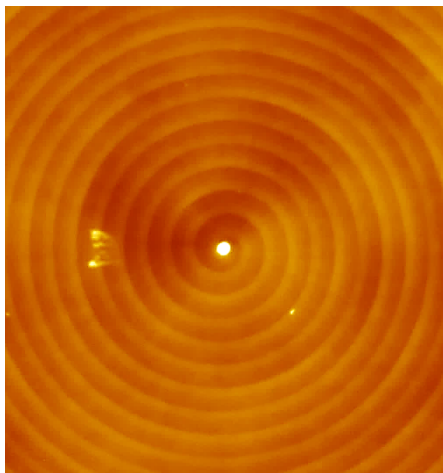
THE INSTITUTE

IOM

Leibniz Institute of
Surface Engineering



- Use of ion beams for surface smoothing down 0.1 nm rms
- Techniques: ion beam direct smoothing, ion beam planarization, thin film deposition
- Application: removal of tool marks after diamond turning



The Leibniz Institute of Surface Engineering (IOM) is well known for its competence and excellence in engineering surfaces and thin films by ion beam, electron, laser and plasma techniques. The institute performs application-oriented basic research by aiming for scientific knowledge gain related to the physical and chemical mechanisms in the preparation, synthesis and modification of insulating, metallic, semiconducting and polymeric surfaces and thin films. One of the main objectives of the institute is to transfer its scientific understanding to product- and method-oriented applications useful to industrial partners who wish to use engineered materials and surfaces in economically relevant and forward-looking technology fields.

Leibniz Institute of Surface Engineering (IOM)

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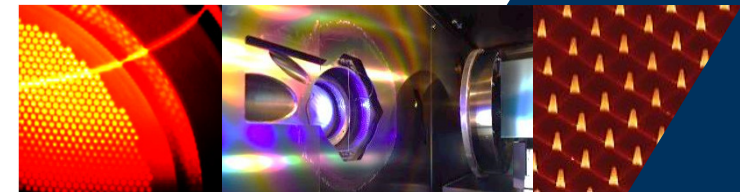
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Leibniz
Association



IOM APPLICATION CENTER: ION BEAM ASSISTED TECHNOLOGIES



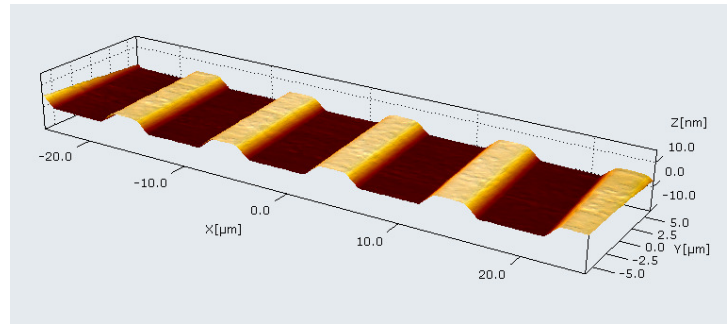
TAILORED SURFACES

ION BEAM DRIVEN SELF-ORGANIZATION



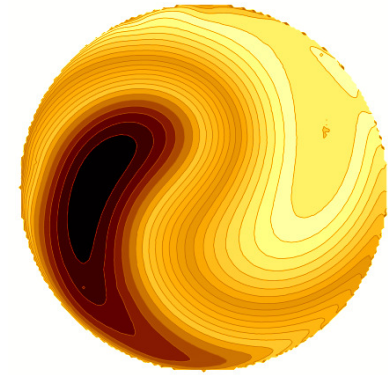
- Application of ion beam assisted self-organization processes for nano-patterning of surfaces
- Simple and cost efficient method
- Tested materials: Si, Ge, SiO_2 , Al_2O_3 , III-V-semiconductors, metals, etc.

(R)IBE FOR PATTERN TRANSFER



- Reactive and non-reactive etching technologies
- Structure depth from 50 nm up to 10 μm
- Materials: Si, fused silica, different glasses, Zerodur, semiconductors, optical layer systems, etc.

IBE/RIBE ON LARGE SURFACES



- Modern machinery for IBE/RIBE processes (patterning, smoothing, etc.)
- Development of sophisticated motion algorithms for IBE/RIBE
- Application: uniform etching processes up to 500 mm in diameter

