UV-NANOIMPRINT
CUSTOMIZED SERVICES AND SOLUTIONS

Our objectives

• Assisting customers along the UV-NIL process chain
• Developing imprint solutions for customer specific applications

Providing the complete process chain

• Master fabrication
• Stamp manufacturing (PDMS, quartz)
• Antisticking layer coating
• Full wafer imprints using UV-SCIL or Step & Repeat UV-NIL
• Pattern transfer using RIE
• Combining nanoimprint with a complete CMOS line

What can we do for you?

• Develop an imprint process for your specific application
• Evaluate new resist materials
• Supply you with customized stamps or master wafers

Fraunhofer Institute for Integrated Systems and Device Technology IISB
Schottkystrasse 10
91058 Erlangen
Germany

Contact
Dr. Mathias Rommel
Fon: +49 (0)9131 / 761-108
Fax: +49 (0)9131 / 761-360
mathias.rommel@iisb.fraunhofer.de

www.iisb.fraunhofer.de/nil
FRAUNHOFER IISB OFFERS R&D SERVICES ON UV-NANOIMPRINT FROM MASTER PROCESSING AND RESIST EVALUATION TO IMPRINT PROCESS DEVELOPMENT AND PROTOTYPE FABRICATION.

Our capabilities

Master fabrication
- 0.8 µm resolution with laser or conventional photolithography
- Nanostructures by EBL (external partner)

Stamp manufacturing
- High resolution PDMS stamps (50 nm and below); quartz stamps for UV-NIL

UV-SCIL (SCIL: Substrate Conformal Imprint Lithography)
- Wafer scale imprints (up to 150 mm wafers); full wafer alignment (below 1 µm)
- Micrometer structures (e.g. lenses, waveguides)
- Nanometer resolution (e.g. plasmonic structures)

UV-NIL (NIL: Nanoimprint Lithography)
- Step & Repeat upscaling of nanostructures; nanometer alignment possible

Applications
- Micro and nano optical components and devices
- Functionalized surface patterned PDMS substrates for biomedical engineering

Full CMOS line in-house

Characterization

Physical characterization
- SEM and FIB cross sections; Atomic Force Microscopy (AFM)
- Contact angle measurement; UV-VIS spectroscopy

Chemical characterization
- Energy Dispersive X-ray Spectroscopy (EDX); X-ray Photoelectron Spectroscopy (XPS)
- Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy (ATR-FTIR)