FULL PROCESS CHAIN FROM SINGLE NANO OR MACRO STRUCTURES TO WAFER SCALE PATTERNING

- Development of nano and macro structures by FIB and EBL
- Duplicating of structures by UV-NIL up to full wafer scale
- Imprinting on full wafer scale by UV-SCIL
- Transfer on wafer scale structures by ICP and RIE

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PROVIDING A UNIQUE PLATFORM FOR ACADEMIC AND INDUSTRIAL COMMUNITIES

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**SEMICONDUCTOR PROCESSING**

Oxidation, Annealing, and Doping
- Diffusion, oxidation (furnace and RTP)
- Implantation (various species and energies)

Layer Deposition
- ALD and MOCVD
- PECVD and LPCVD
- Sputtering & evaporation

Patterning and Dicing
- Photolithography (mask aligner, EBL, laser direct writing)
- Dry etching (RIE and ICP) and wet etching
- Dicing (wafers, dies, sub-dies)

For wafers and substrates
- Of Si, SiC, Ge, quartz, and others
- From test samples up to 200 mm diameter

**IMPRINT LITHOGRAPHY (NIL / SCIL)**

Stamp / Template Fabrication
- Master fabrication (Si, SiO₂) for SCIL
- Quartz stamp manufacturing for UV-NIL
- MVD of anti-sticking layer (Si, SiO₂)
- PDMS stamp manufacturing for SCIL

SCIL / NIL Processing
- Large area wafer scale imprints by UV-SCIL
- High resolution imprints (down to 40 nm)

Process Development
- Resist evaluation for UV-NIL / SCIL
- Small volume production

Equipment
- NPS 300 for UV-NIL
- MAB / BA8 with SCIL-Tooling
- SCIL stamp replication tool

**FOCUSSED ION & ELECTRON BEAM PROCESSING**

Nano- and Microstructuring (FIB)
- Various 3D structures (e.g., tips, trenches, circular structures, electrode arrays)
- Almost arbitrary 2D structures

Local Deposition (EBID, IBID)
- Conductive materials (C, Pt)
- Insulating materials (SiO₂)
- Functionalized 3D nano structures (e.g., field emitters)

Local Enhanced Material-Selective Etching (FIB)
- Metals (e.g., TiN, Al)
- Insulators (e.g., SiO₂, Si₃N₄)
- Semiconductors (e.g., GaAs, Si)
- Polymers (e.g., photoresist)