

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

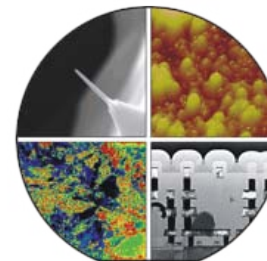
- Development of nano and macro structures by FIB and EBL
- Duplicating of structures by UV-NIL up to full wafer scale
- Imprinting on full wafer scale by UV-SCIL
- Transfer on wafer scale structures by ICP and RIE

**CONTACT**

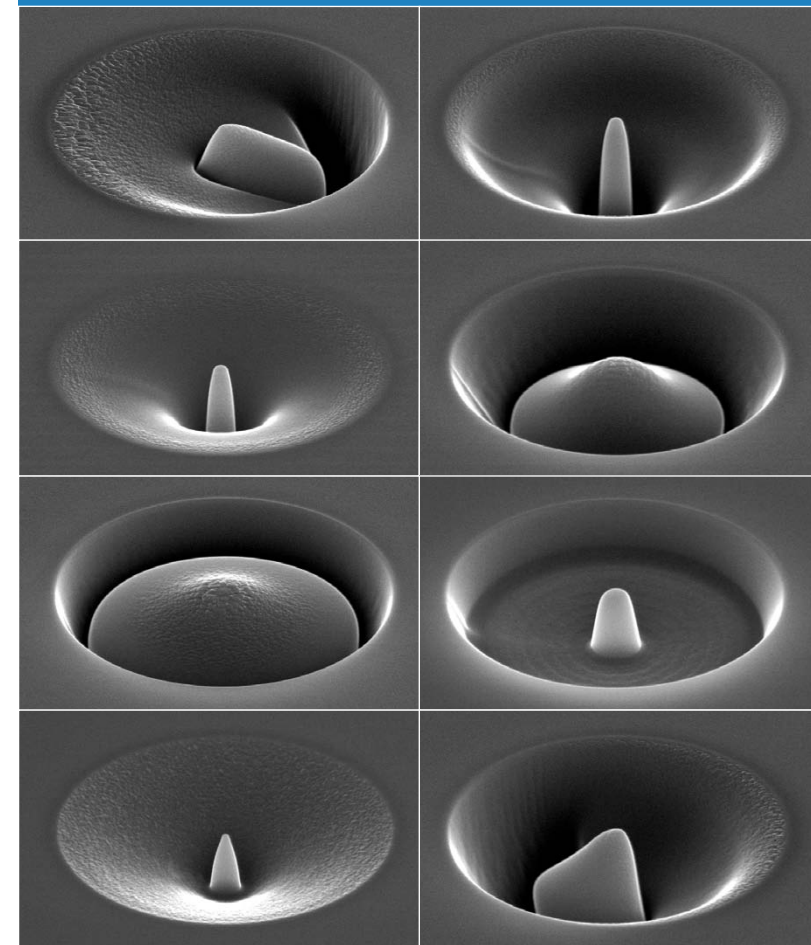
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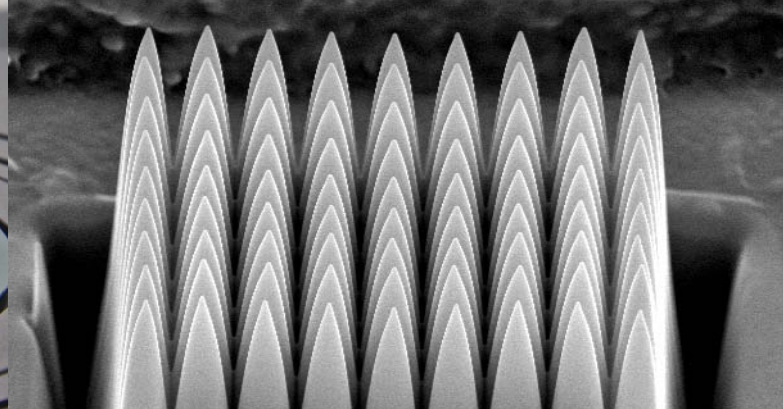
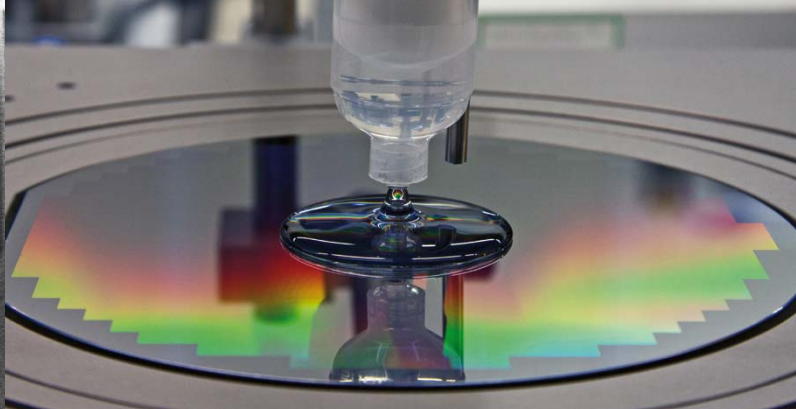
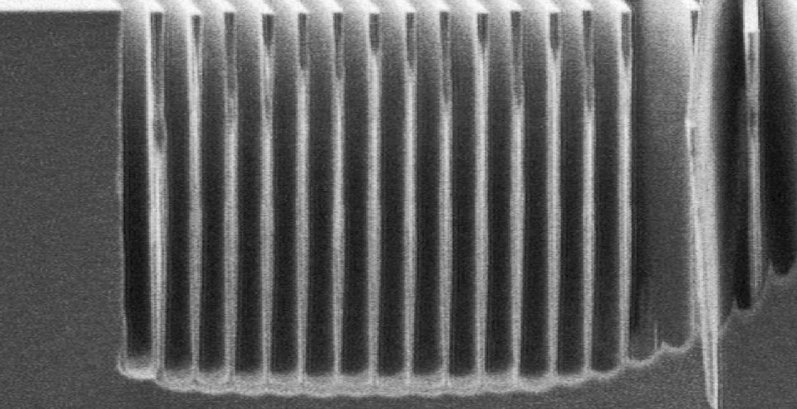
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**CUSTOMIZED PATTERNING  
FROM NANO TO MACRO SCALE**



**PROVIDING A UNIQUE  
PLATFORM FOR ACADEMIC  
AND INDUSTRIAL COMMUNITIES**



## 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, SiO<sub>2</sub>) for SCIL
- Quartz stamp manufacturing for UV-NIL
- MVD of anti-sticking layer (Si, SiO<sub>2</sub>)
- 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
- MA8 / 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 (SiO<sub>x</sub>)
- Functionalized 3D nano structures (e.g., field emitters)

### Local Enhanced Material-Selective Etching (FIB)

- Metals (e.g., TiN, Al)
- Insulators (e.g., SiO<sub>x</sub>, Si<sub>x</sub>N<sub>y</sub>)
- Semiconductors (e.g., GaAs, Si)
- Polymers (e.g., photoresist)