NANOSTRUCTURING AND CHARACTERIZATION

Nanostructuring

- Electron beam lithography (EBL)
- UV nanoimprint lithography (UV-NIL)
- Focused ion and electron beam etching & deposition (FIB)
- Chip modification and repair

Characterization

- Physical and electrical analysis
  - SEM, TEM, EDX, XPS, SNMS
  - AFM, SSRM, SCM, c-AFM, TUNA
  - Elymat, µ-PCD, SPV, DLTS
- Device characterization (parameters and reliability)
- Failure analysis
- TEM sample preparation
- Cross-sectioning

CONTACT

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PROVIDING A UNIQUE PLATFORM FOR ACADEMIC AND INDUSTRIAL COMMUNITIES

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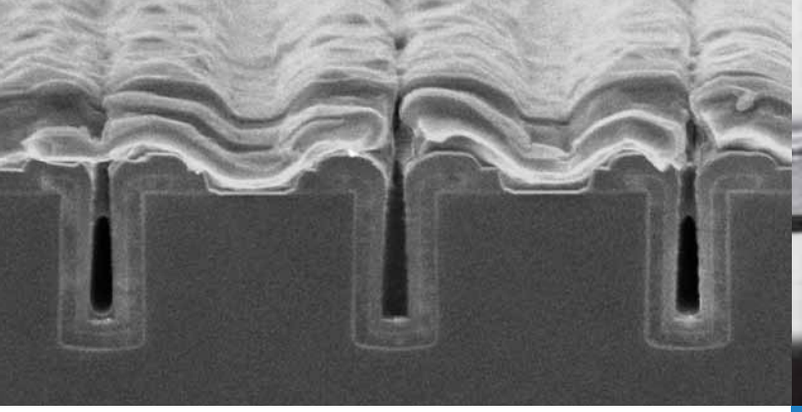
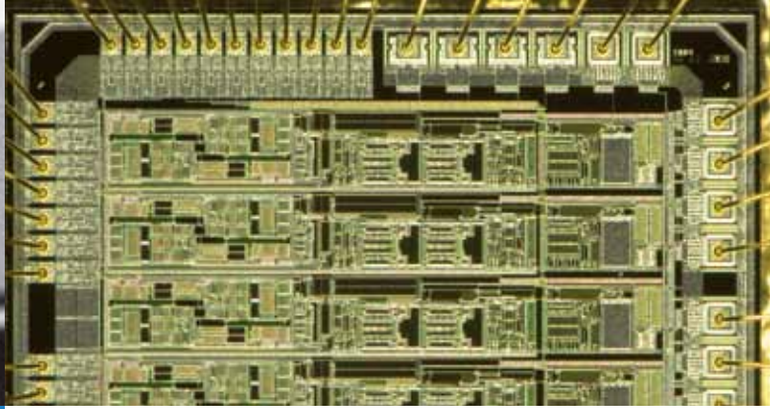
INTEGRIERTE SYSTEME UND
BAUELEMENTETECHNOLOGIE IISB

SOLUTIONS & SERVICES

ON NANO AND MICRO SCALE

- microelectronics & energy
- sensors & actuators
- photonics & rf technology
- material science
- bio technology & medicine





PROCESSES

Diffusion, Oxidation, Annealing:	Furnace & RTP
Implantation:	Low to high energies Large variety of ion species
Layer deposition:	ALD & MOCVD PECVD & LPCVD Sputtering & evaporation
Dry etching:	RIE & ICP
Wet chemistry:	Cleaning & etching
Photolithography:	Mask aligner & laser direct writing
Metrology:	Optical, mechanical & electrical

For wafers and substrates of Si, SiC, Ge, quartz and others from test samples up to 200 mm diameter

DEVICE PROTOTYPING

Customized sample preparation

- Complete process sequences
- Micro and nano scale patterning

Development of novel devices

- Feasibility studies
- Simulation and proof of concept
- Prototype manufacturing

Integration of electron devices

- Passives
- Logic
- Power electronics
- Piezoelectric
- Sensors and actuators

CIRCUIT PROTOTYPING

Design of monolithically integrated smart-power circuits in high-voltage automotive technologies

- Driver circuits for power devices & lighting systems
- Energy management & conversion circuits
- Sensor circuits & microsystems

Design flow service for smart-power circuits

- Circuit & system modeling
- Circuit design & simulation
- Layout design
- Assembly & test

Failure analysis

- Failure analysis for devices, circuits, and systems
- Decapsulation and deprocessing of integrated circuits