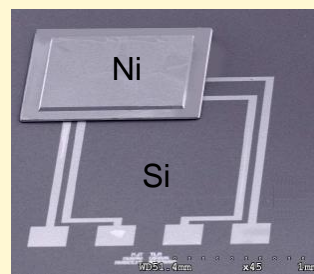


Staff: 135 researchers, professors, lecturers, engineers and technicians
95 PhD students, post-docs and temporary staff
(Including 30 persons in micro and nano systems group)

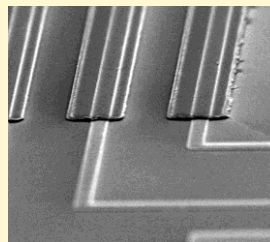
Research fields: Micro/nano electronics, nano magnetism & spin-electronics, optoelectronics, nanophotonics, micro/nanosystems and systems, related technologies

Research topics in Micro and NanoSystems

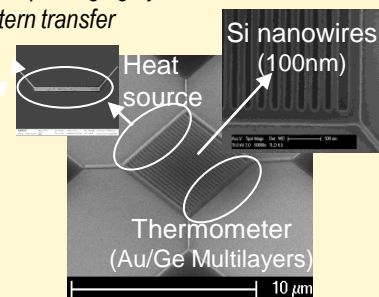
- Integration & characterization of materials for MEMS
- Si, SOI, polymer and flexible substrate technologies
- Film/ pattern transfer, (smart) Wafer Level Packaging
- Integrated actuation/detection and electronics
- Micro/nanoresonators and vibrating MEMS
- Magnetic & electromagnetic microdevices
- Bio-medical sensors & IRM antennas
- MEMS/NEMS metrology & in situ test devices
- Micro-optics and 3D Integrated MOEMS



Film wafer-level packaging by 3D pattern transfer



Giant Magneto Impedance sensor



Test device of thermal nanojunctions at $T < 1K$

Technology

- 1000 m² clean rooms class 1000 & 100
- Porous Si & Al₂O₃, magnetic films, metallic alloys
- UV, DUV, laser & e-beam (3D) lithographies
- Etching: KOH, TMAH, RIE, DRIE, IBE, CAIBE
- HF Vapor, XeF₂, supercritical CO₂ drying
- Electroplating & UV micromolding
- Si and SOI bulk and surface micromachining
- Polymer films and flexible substrate technologies
- Low T Wafer bonding and film/pattern transfer

Design, simulation & characterization tools

- Cadence, ANSYS, Coventor, Ophelie, VHDL-AMS
- OSLO optical design software, TFcalc
- X-ray diffraction, contact angle, FTIR with ATR
- Microscopies: DUV, NIR, IR, SEM, AFM & MFM
- Optical profilers & vibrometers (in-plane & out-of-plane)
- Film/wafer stress & adhesion testing
- LF and HF electrical measurements
- Spectroscopic ellipsometry, microthermography
- MEMS measurements versus P,T and humidity



**Institut d'Electronique Fondamentale
Micro and Nano Systems group**

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