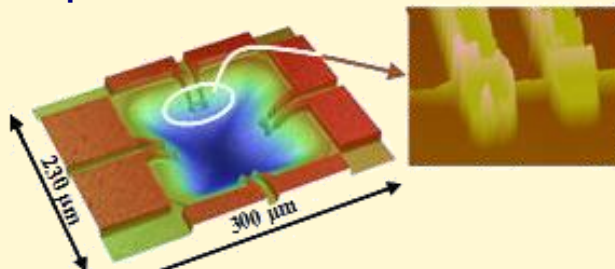


**Staff:** 75 researchers, professors, lecturers, engineers and technicians  
105 PhD students, post-docs and temporary staff

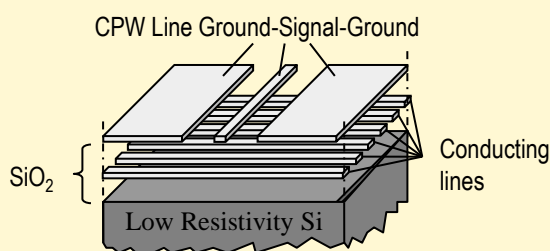
**Research fields:** Micro nano electronics, RF and optomicrowaves, THz optoelectronics and photonics

### Research topics in Micro and NanoSystems

- Microfluidics, micro-coolers
- Study of nanostructures for More than Moore integration (new functions on the chip: sensors, energy harvesting)
- Field effect detection using nanostructures or ultra thin SOI films properties
- Transport, noise and interface properties of nanostructures and their impact on micro and nanosystems performance
- RF MEMS and NEMS for frequency agile systems, nanoresonators, nano antennas



*Si/SiO<sub>2</sub> Nano wires integration into pressure sensors*



*New MEMS RF designs*

### Technology (PTA)

- 700 m<sup>2</sup> clean rooms class 1000 (100 locally) Small to 100 mm wafers
- UV, deep UV, nano-imprint and E-beam with 10nm resolution
- Standard 2μm MOS technology including ion implantation
- MEMS technology: deep RIE, super critical drying, double-side alignment, wafer bonding...

### Design, simulation & characterization tools

- Simulation: ANSYS, COMSOL Multiphysics, VHDL + home-made simulation for thermoelectric properties of nanostructures
- Electrical characterization: I-V, C-V, conductance, interface and traps, noise limitation, influence of T (from 4K to 450K), strain...
- Near-field topographical, mechanical and electrical characterization (Nanoman II AFM with z control loop, all electrical modes, and environmental control)
- Interferometry / Vibrometry (Fogale Zoomsurf 3D)