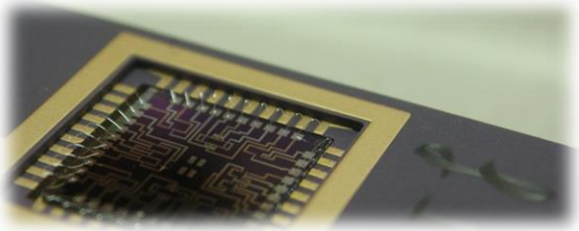
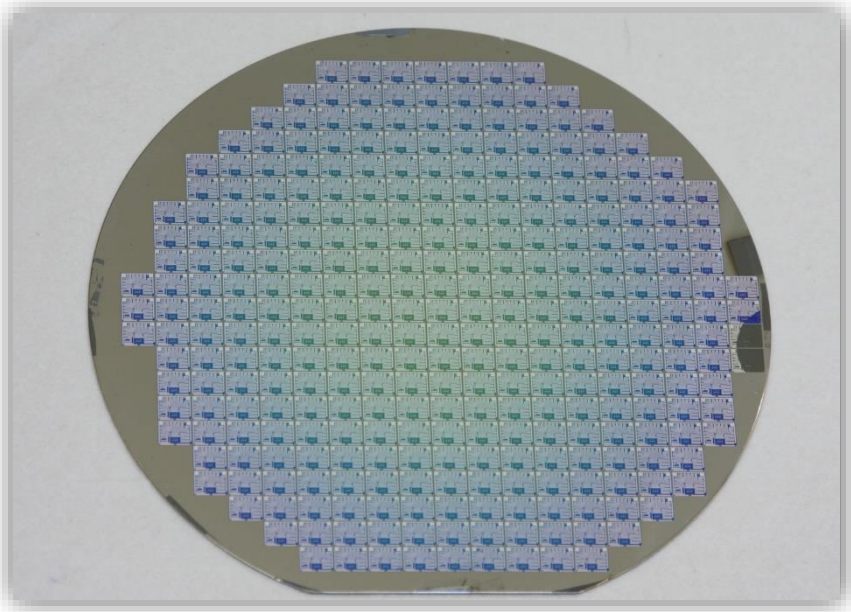
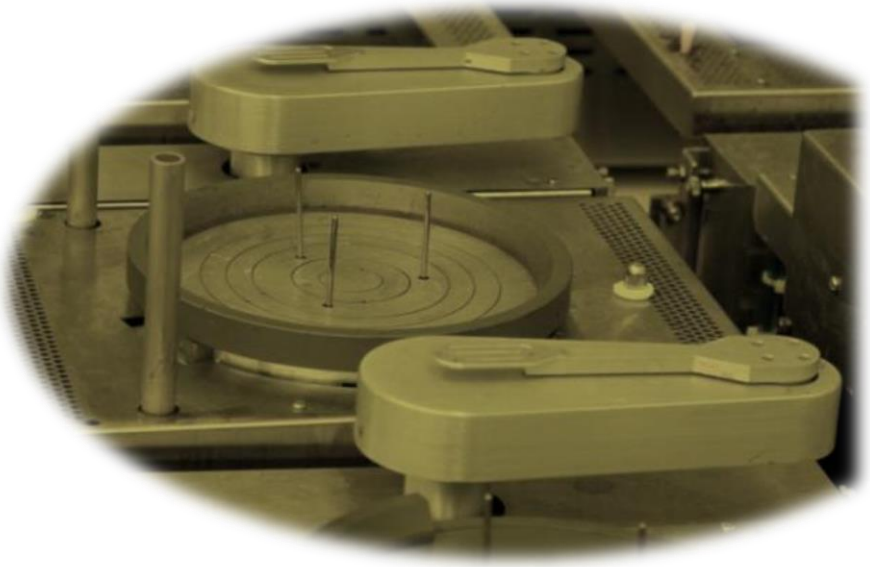


Susana Cardoso de Freitas

scardoso@inesc-mn.pt



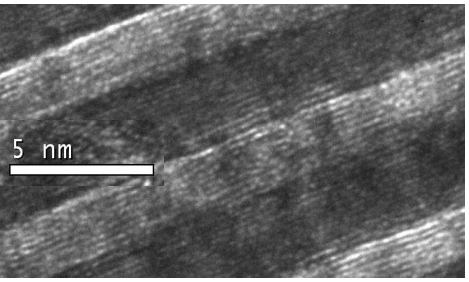


Microsistemas & Nanotecnologias

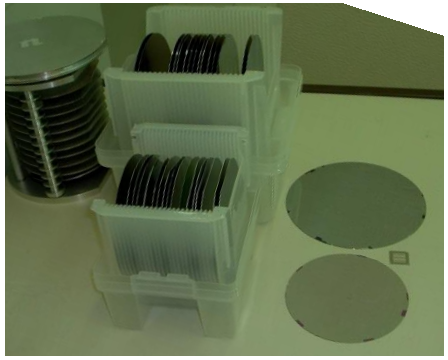
INESC MN

Private research institute, non-for profit
Lisbon - Portugal

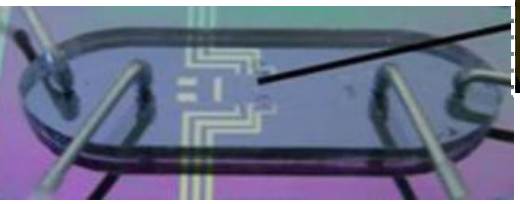
Thin films &
advanced materials



Large wafer (200mm)



Micro fluidic interfaces

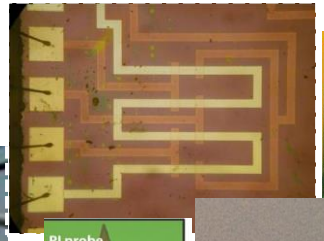


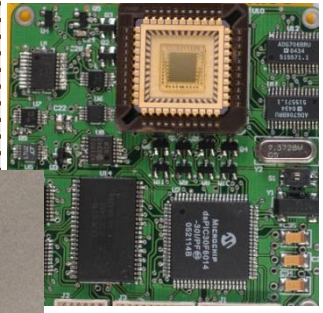
- Class 100/10 cleanroom (~200 m²)
- Silicon backend processing for feature sizes down to 1.2 µm
- Device minimum features: ~30nm
- Wafer size up to 200 mm (8 inch)
- Class 10,000 area for support equipment and film deposition laboratory (~150 m²)
- Laboratories for film and device characterization

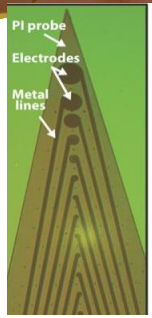
Micro- Nano-fabrication

Bio-medical
interfaces

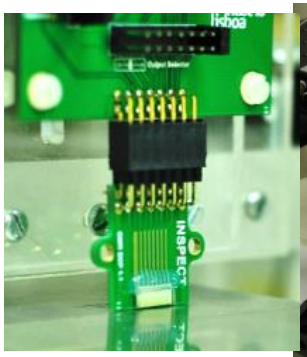
Device integration

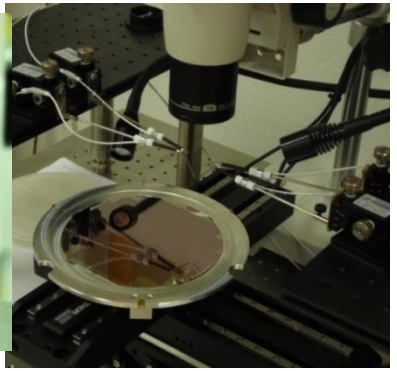




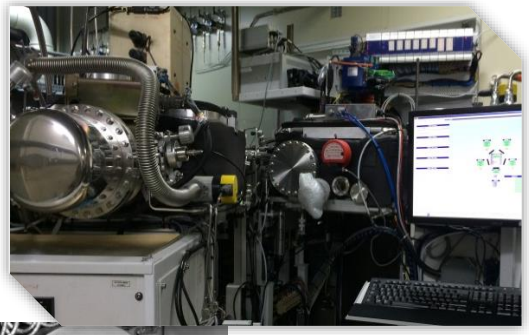


Material and device
characterization





- Coordinator of the **Laboratório Associado** IN – Institute of Nanoscience and Nanotechnology
- Node of the Micro&NanoFabs@PT of the **Roteiro Nacional de Infraestruturas** (RNIE)



People:

Senior Researchers:	6
Post-docs:	6
PhD students:	16
Research fellows:	4
Master's students:	14

Average number of external users/year

- National users: 54
- European users: 14
- International non-EU users: 9

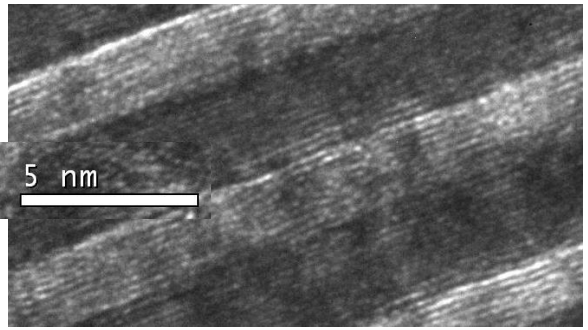
Advanced training

- Coordinator of the **FCT doctoral program** AIM (Advanced Integrated Microsystems)
- Master/PhD students
- 3 major **courses at IST**
- **Marie Curie** (hosting secondments, visits)
- Hosting post-docs, PhD students from collaborations

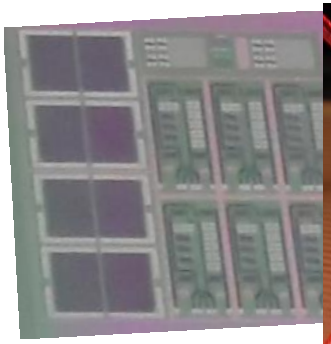
INESC-MN

Technologies

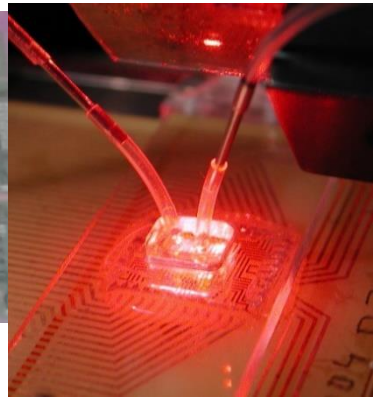
Advanced spintronics devices



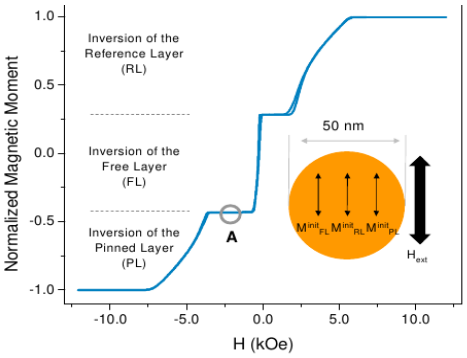
Magnetoresistive Sensors

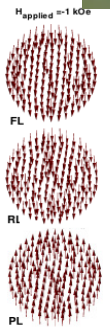


Integrated photodiodes for biochips

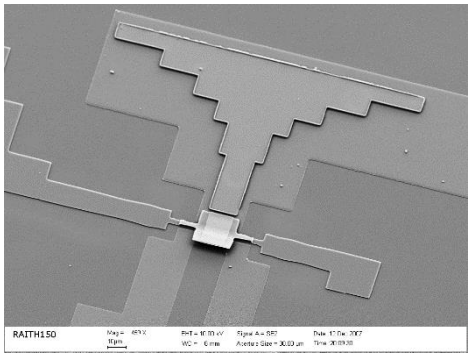


Micromagnetic Simulations

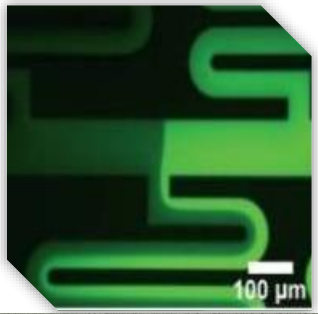




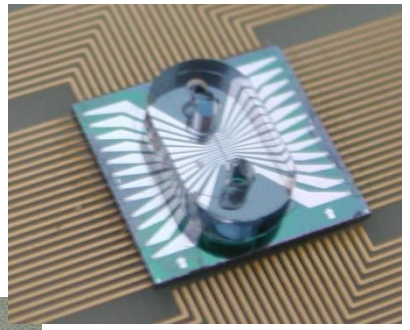
Thin film a-Si MEMS



Microfluidics

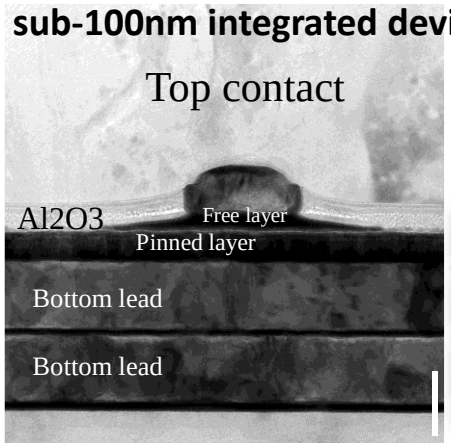


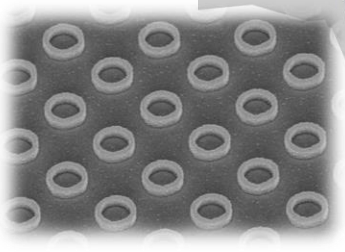
Magnetic biochips

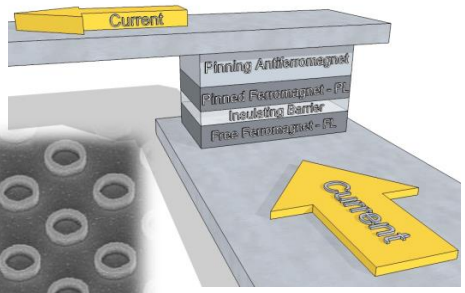


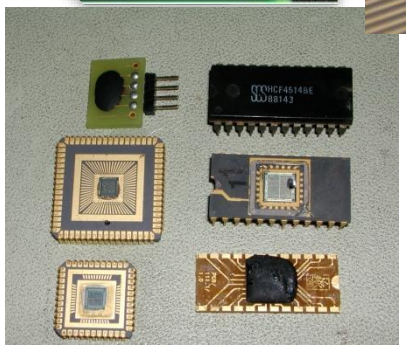
Nanofabrication

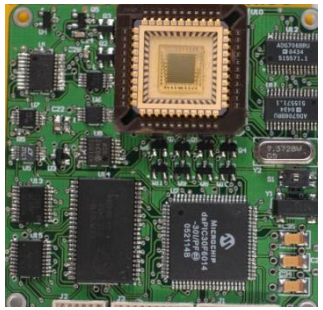
sub-100nm integrated devices











INESC-MN European projects 2015:

NANODEM – "NANOphotonic DEvice for Multiple therapeutic drug monitoring" (FP7-ICT-2011-8) 1 October 2012 - 30 September 2016 (http://nanodem.ifac.cnr.it/)

MAGNETRODES – "Electromagnetic detection of neural activity at cellular resolution" (FP7-FET- 600730) 1 January 2013 – 31 December 2015 (http://mpl1973.wix.com/magnetrodes)

SpinIcur – "A Marie Curie Initial Training Network in Spin Currents " (FP7-PEOPLE-2012-ITN-316657**)** 1 October 2012 – 30 September 2016 (www.spinicur.org)

PROSENSE – "Parallel sensing of Prostate Cancer Biomarkers" (FP7-PEOPLE-2012-ITN – 317420) 1 October 2012 – 30 September 2016 (www.prosense-itn.eu)

DEMOTOX – "A new device to detect quickly and friendly Ochratoxin A and other myco-toxins in feed, food and beverage" (FP7-SME-2013-604752) 1 July 2013 – 31 June 2015 (www.demotox.it)

RRI Tools: building a better relationship between science and society (FP7 – 612393) 1 January 2014 – 31 December 2016 (www.rri-tools.eu)

TO BE - "Towards oxide based electronics" (H2020 – MPNS COST Action-MP1308) (http://to-be.spin.cnr.it/)

NANOSENS -"Upgrading the capacity of NIRDTP to develop sensing applications for biomedicine using magnetic nanomaterials and nanostructured materials" FP7-REGPOT-2012-2013-1-316194, Associated partner (http://nanosens.phys-iasi.ro/node/10)

IMAGIC - "Integrated Magnetic imagery based on spIntronics Components" (FP7-ICT-2011-7-288381) 1 September 2011 – 31 August 2014 (http://imagiceu.free.fr/)

Collaboration with Industry

MAGNOMICS NANOTECH FOR LIFE SCIENCES	Startup founded in 2014 from INESC MN and INESC ID research
LE®TECH	Contract research to develop sensors for industrial applications (CHINA)
NEOCERA	Contract research to develop MR sensors for scanning applications (USA)
LEM®	Contract research to develop spintronic devices (SWITZERLAND)
pixtronix	Contract research to thin film silicon MEMS actuators (USA)
LumiSense	Development of a prototype microfluidic system for toxin detection (EU project) (PORTUGAL)
infineon	Contract research to optimize magnetic materials for sensors (GERMANY)
Nordiko INNOVATION WITH RELIABILITY	Validation of industrial deposition/etching tools (UK)
Picosense LLC	Sensors for ultralow magnetic field detection for biomedical applications (USA)