INTERNATIONAL IBERIAN NANOTECHNOLOGY LABORATORY

Micro and nanofabrication services

In this booklet you will find information about the INL micro and nanofabrication services. Scan this QR code to request a service or access INL facilities.
Our team is here to help you.

Are you looking for a partner with state-of-the-art facilities and a team of experts with flexibility, focus, objective- and yield-oriented that can bloom your idea?

The MNF facility at INL is your key partner starting from the early stage of the design concept up to the last phase of the first prototype. It unfolds from process integration and development to expert process engineers on the latest core technologies. MNF facility is prepared for small pre-production series, including multi-project wafers (MPW), facilitating technology transfer to industry and their standardisation.

How can we help?

+ Open-access and service provider cleanroom of 1200 m^2, offering cutting-edge capabilities and interdisciplinary solutions for 200 mm wafers.

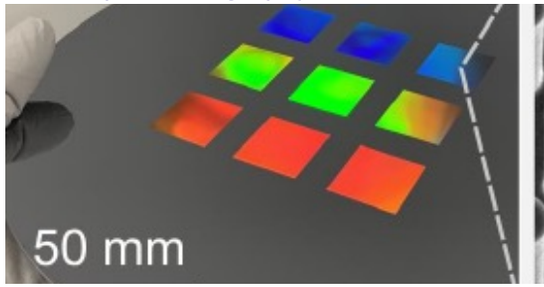
+ Support throughout all the development chain in cleanroom processes: device modelling and design, process integration and device fabrication, packaging and testing;

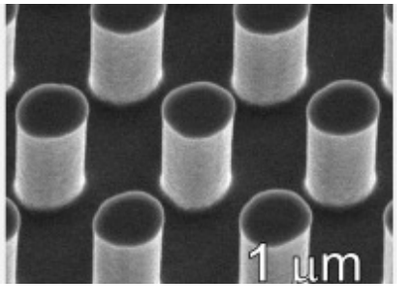
+ Core fabrication areas:
- (Thin) film deposition and growth of materials
  Sputtering, CVD, ALD and electroplating
- Etching, ashing and micromachining
  RIE and deep RIE, isotropic etch, wet etch and O_2 plasma strip
- Optical and e-beam lithography
  From µm below to 10 nm res., fast pattern replication & inversion
- Advanced packaging, annealing and back-end
  CMP, dicing, SCPD
- In-line process metrology, inspection, characterisation and testing
  SEM, OPM, OM, thin film resistivity, profilometer, interferometer

Contact: **nanofab@inl.int**

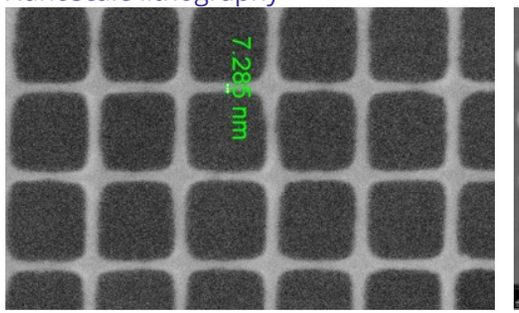
LITHOGRAPHY capabilities

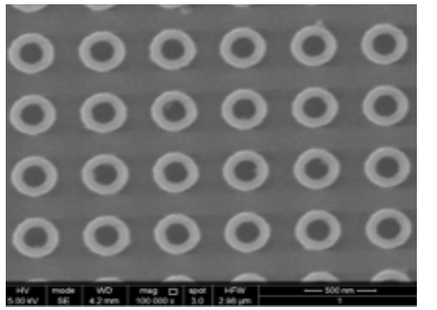
Nanoimprint lithography



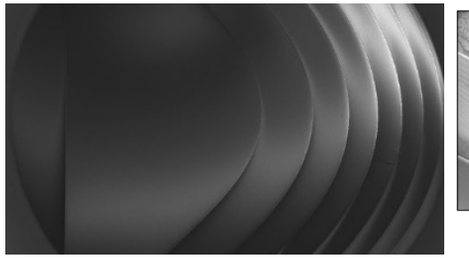


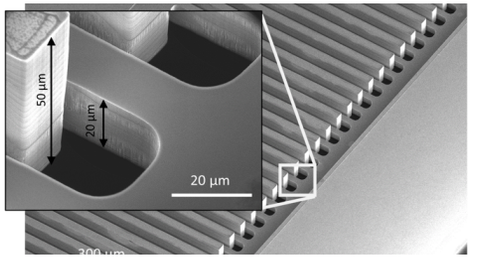
Nanoscale lithography



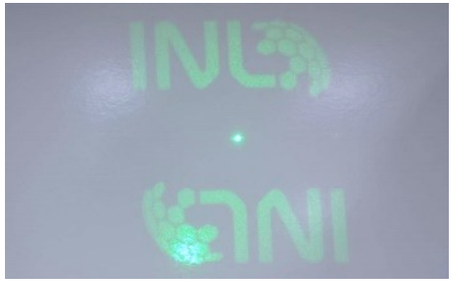


Grey scale lithography





Direct-writing laser



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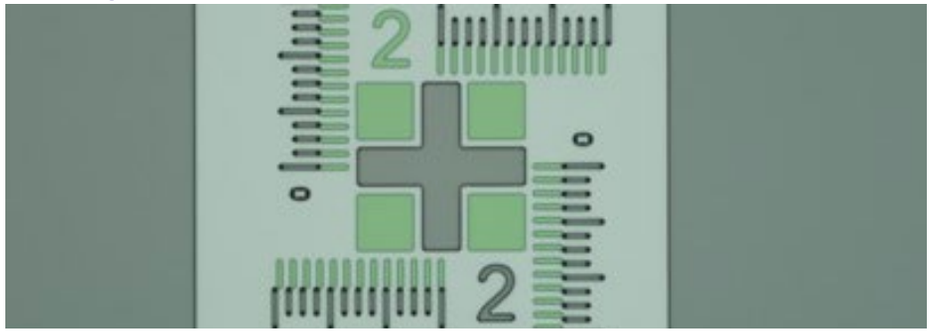
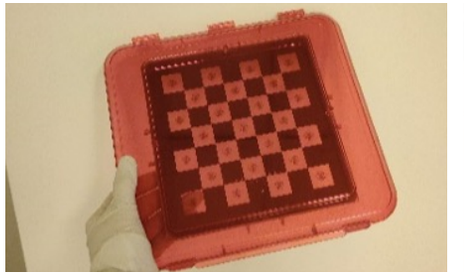
LITHOGRAPHY capabilities

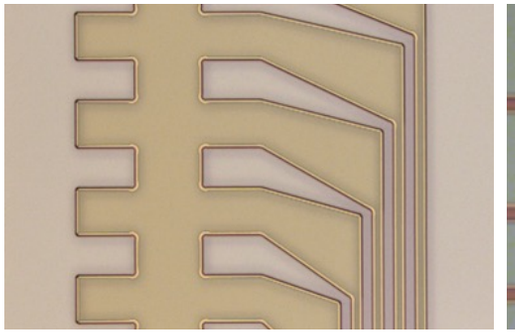
Mask aligner

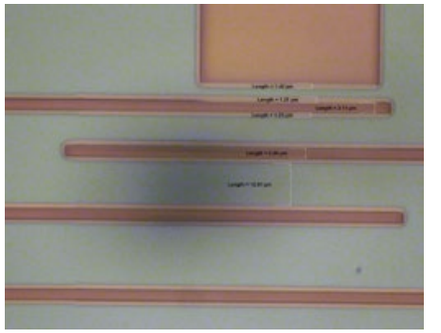


Hard mask fabrication



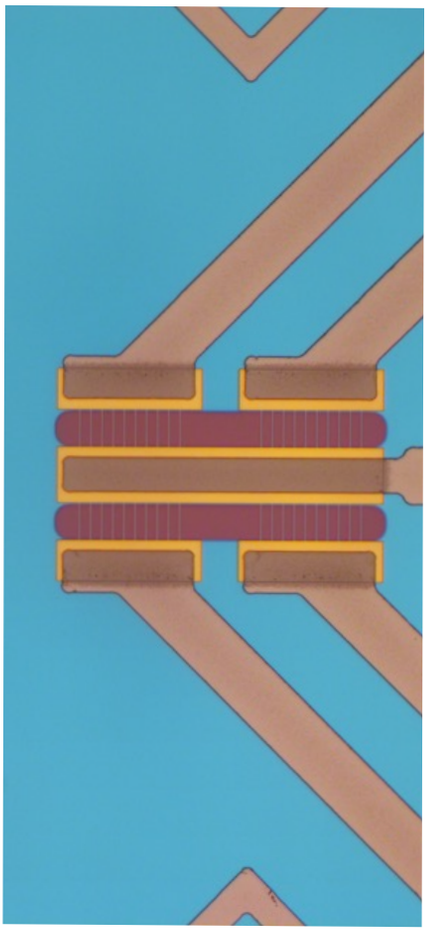
Lift-off processes

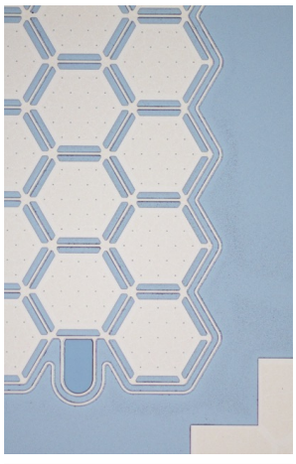




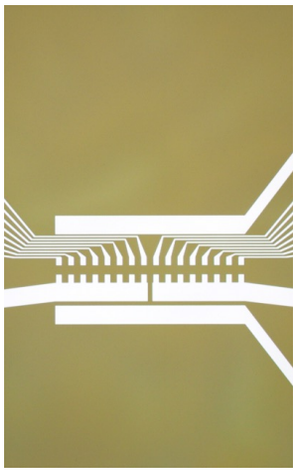
PHYSICAL AND CHEMICAL DEPOSITION

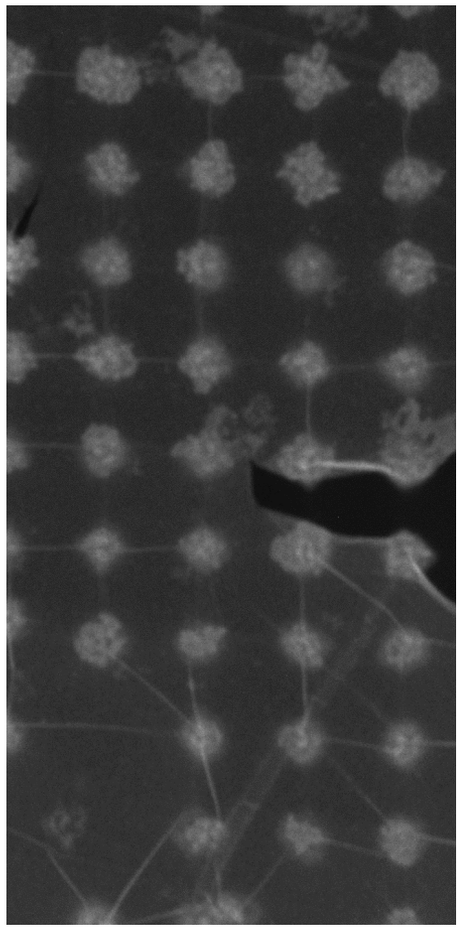
capabilities





Metal deposition by sputtering

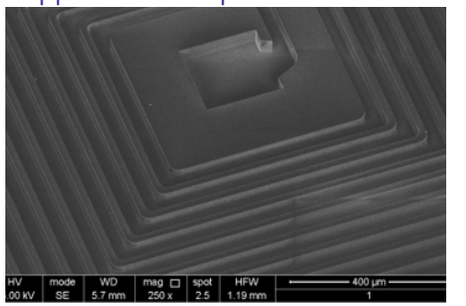


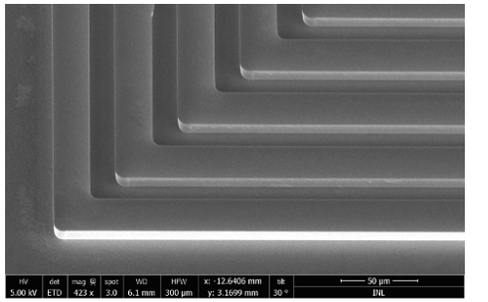


Graphene growth by CVD

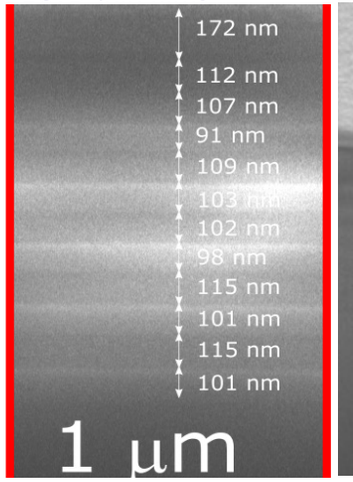
PHYSICAL AND CHEMICAL DEPOSITION capabilities

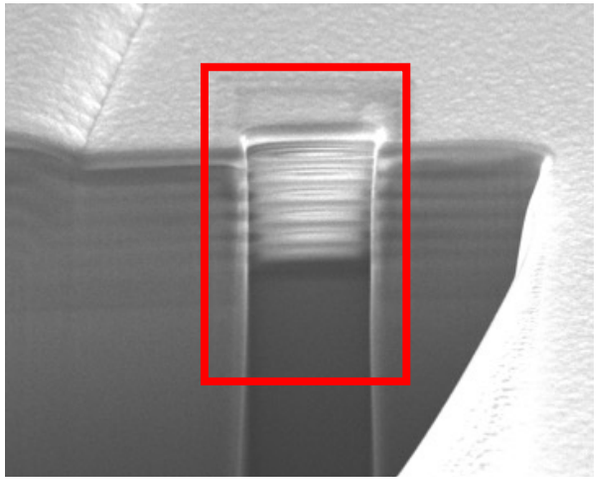
Copper electrodeposition



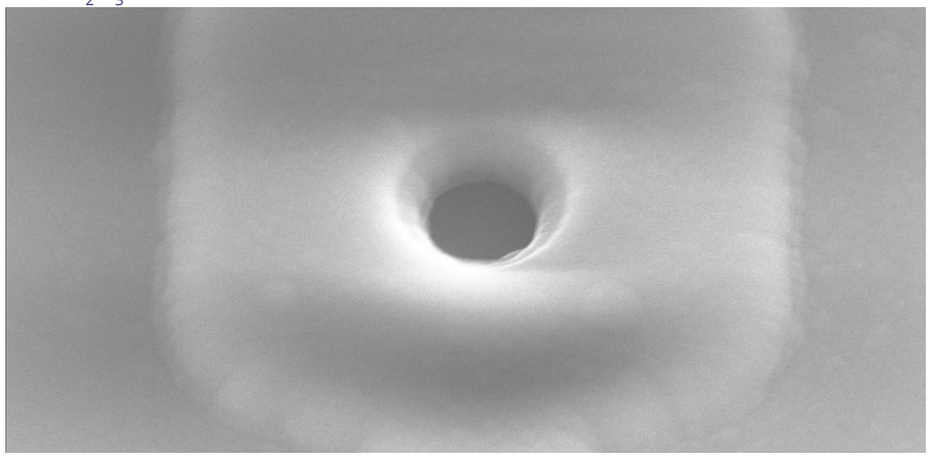


PECVD thin films





ALD Al_2O_3



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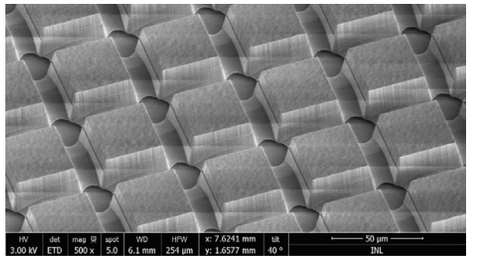
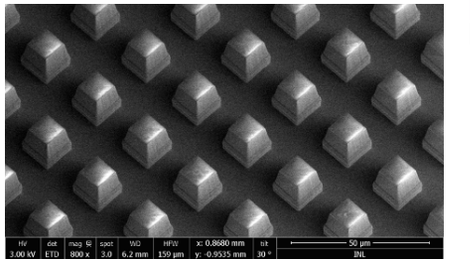
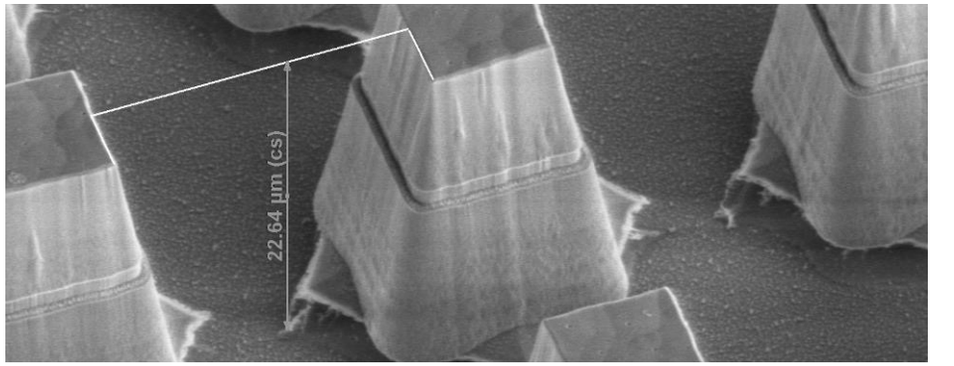
ETCHING AND MICROMACHINING capabilities

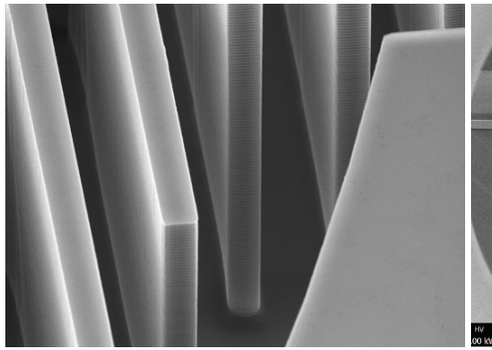
High-aspect ratio dielectric etching

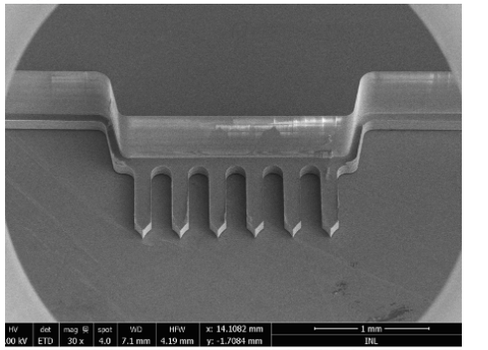


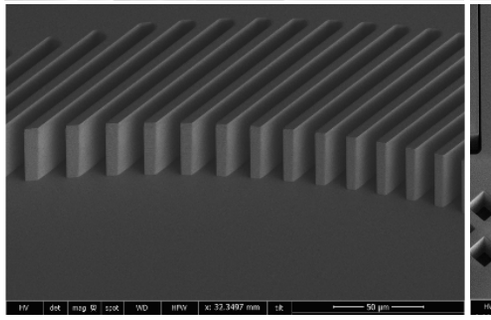


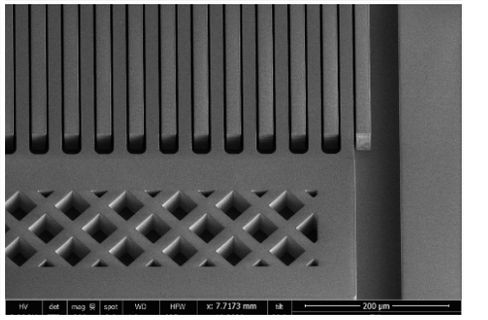


Bosch process – deep reactive ion etching

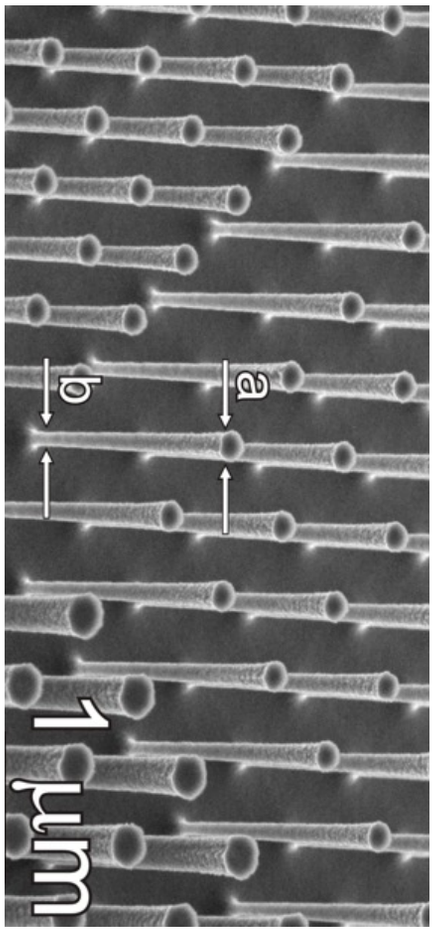


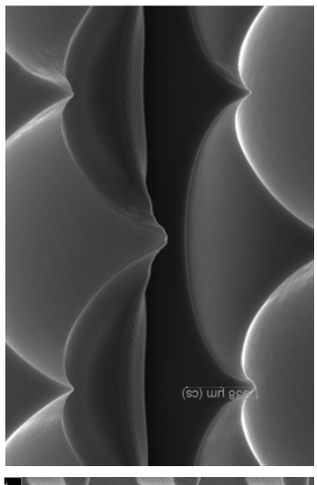


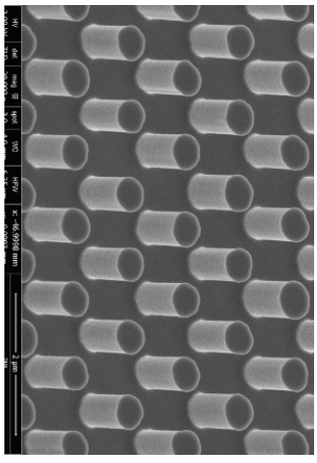




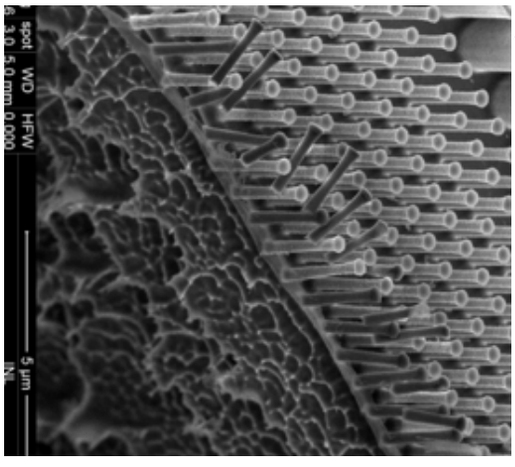
ETCHING AND MICROMACHINING
capabilities

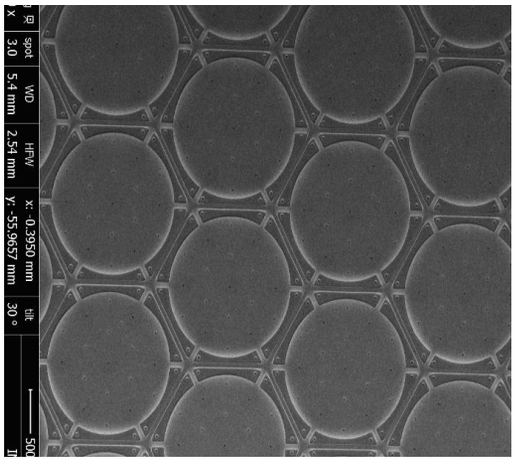






Precise silicon machining



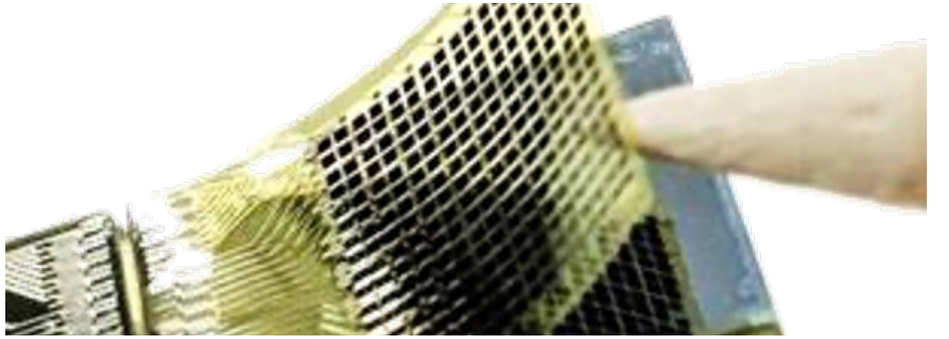


Dry and wet release of MEMS and membranes

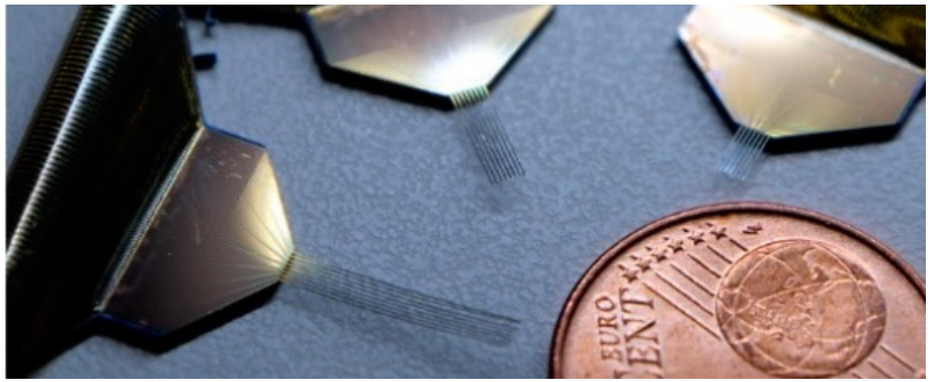
FLEXIBLE DEVICES

integrated devices

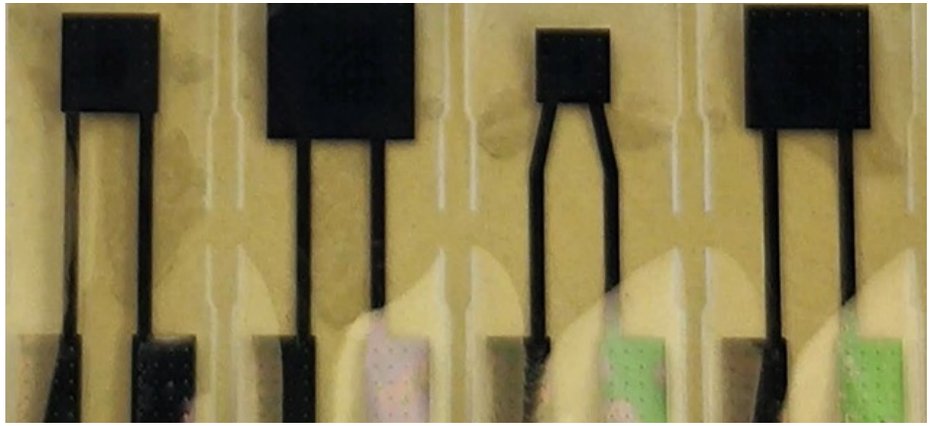
Tactile sensor



Integrated silicon neural probe with flexible connector

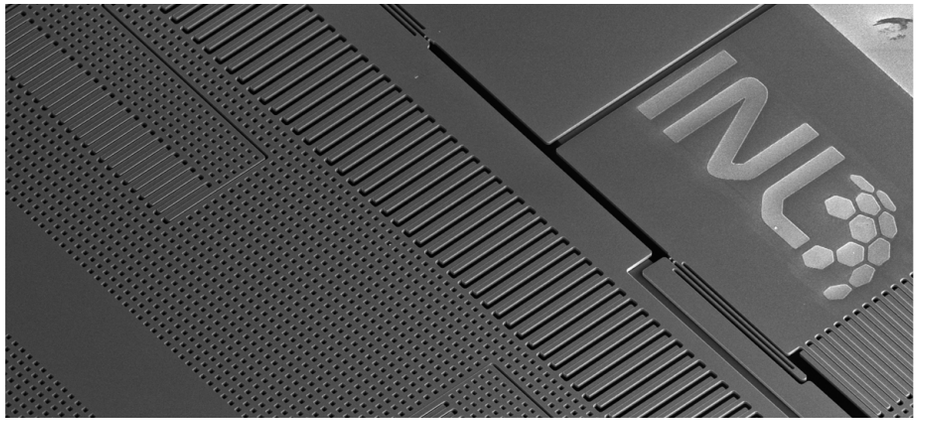


Pressure sensor

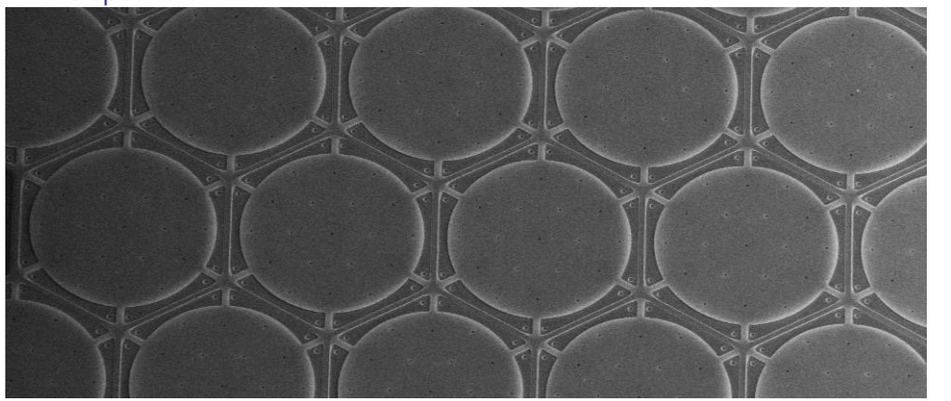


MEMS integrated devices

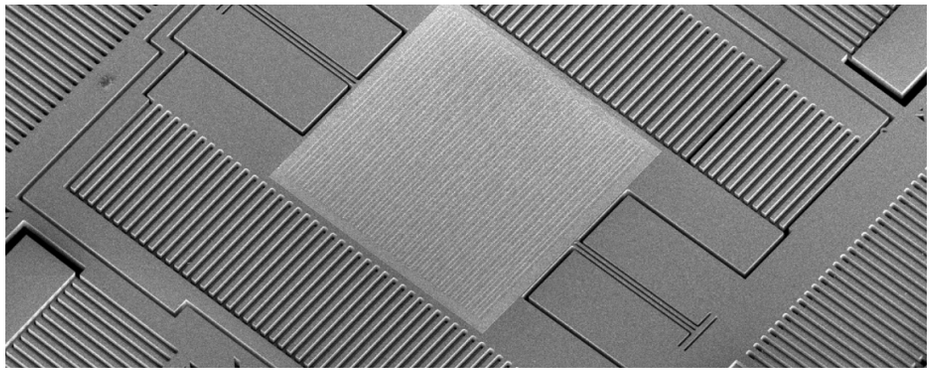
MEMS accelerometers



MEMS speakers



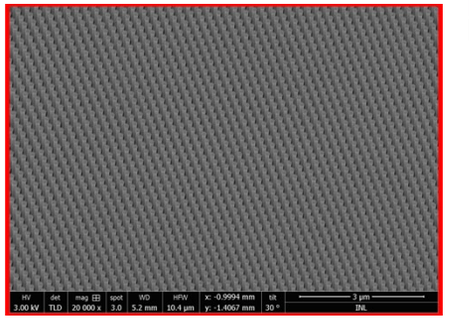
MEMS Micromirror



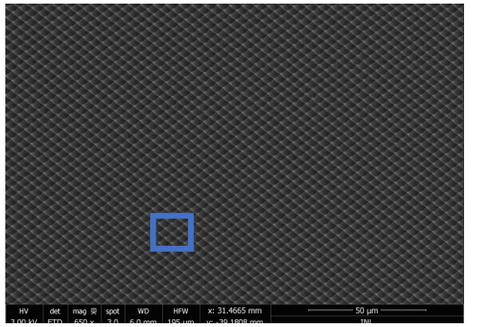
SILICON MASTERS

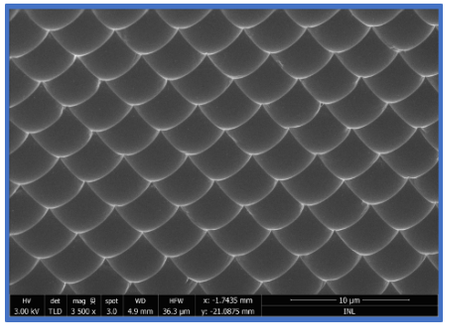
integrated devices

Micro pillars master

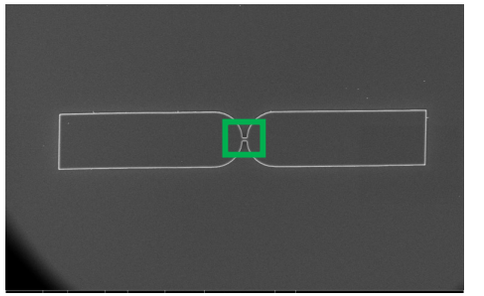


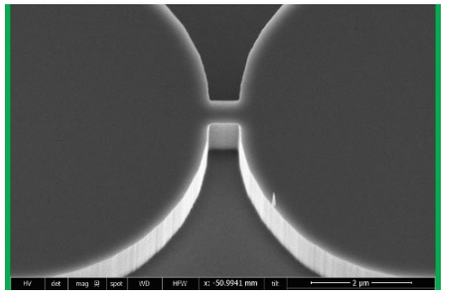
MicroLenses Si Master





Microfluidic channel master





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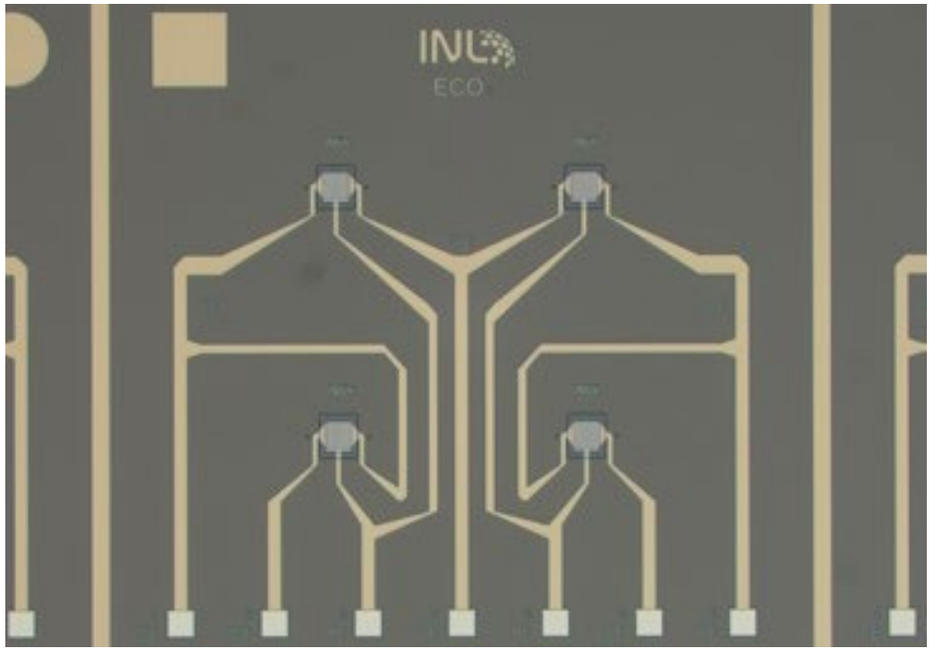
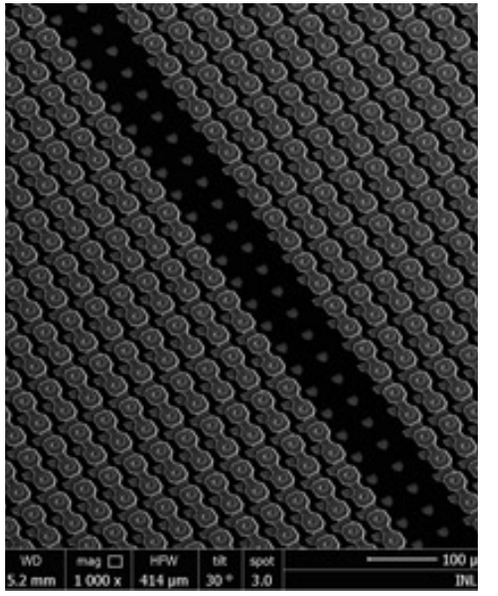
SENSORS integrated devices

Array of Electrochemical Interdigitated (IDE) sensors



Graphene field-effect transistors

Magnetic sensors based on magnetic tunnel junctions



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