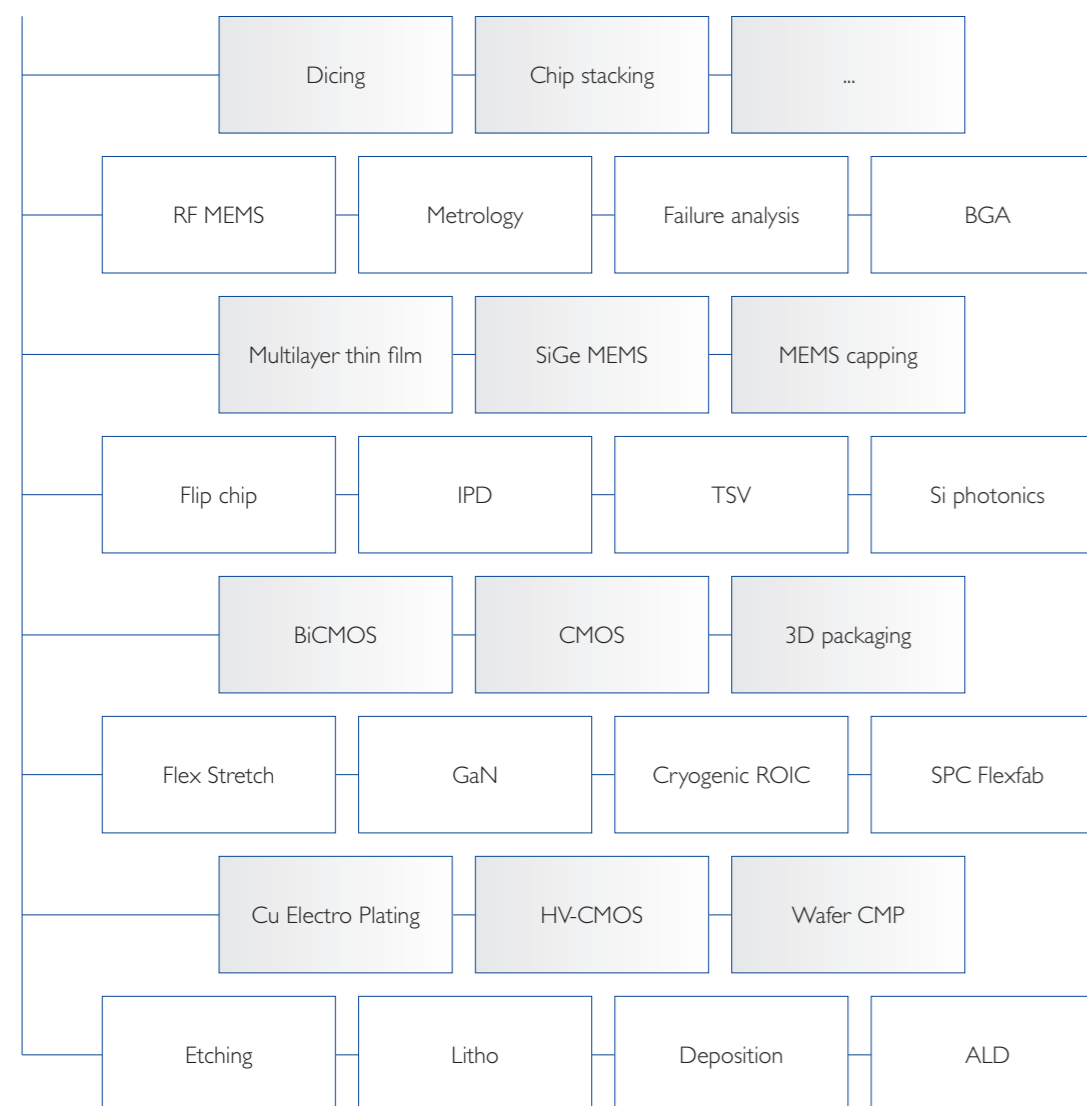


CMORE TECHNOLOGY OVERVIEW



Capabilities

- Access to a 200 & 300mm high-end flexfab facility for proprietary R&D and low-volume manufacturing
- 24h/7days 130/90/65nm CMOS flexfab (SPC controlled)
- Extended technology portfolio including MEMS, Si-photonics (in collaboration with Ghent University), 3D packaging, design, characterization and modeling.
- Continuous operation: 24/7
- Fully SPC controlled
- Trained operator force
- Quality control
- >25 years experience

What we offer?

Imec develops and implements your ideas and concepts into a microsystem product, leveraging on imec's advanced technology platforms including MEMS, sensors, CMOS processes and IC designs skills. We do prototyping and low-volume production in house on 200 & 300mm wafers, and can transfer the requisite manufacturing process to a high-volume foundry if necessary.

- A platform for application-specific design and process co-development:
- Process and component design and realization
 - Prototyping
 - Testing and packaging
 - Product qualification
 - Low-volume production at imec
 - Process transfer to a large-volume manufacturing partner

Potential partners

Partners include companies involved in different markets and applications where use of our platforms can make the difference:

- Companies involved in manufacturing system solutions that need smart/integrated microsystem and semiconductor products:
 - Integrated device manufacturers
 - System houses with or without in-house Si-processing capabilities
 - Fabless IC manufacturers
 - Si foundries
 - Start-ups
- Semiconductor equipment manufacturers and material suppliers
- Semiconductor assembly and test services houses
- Design houses

Why imec?

- You can lower the risk of your investment and the time to market for the development of new products by using imec's state of the art facility for design, development and low-volume production.
- You get access to advanced technologies for custom-designed solutions.
- You work with imec on next-generation products (200mm and 300mm).
- Imec translates your innovative ideas into products.
- Imec offers you a dedicated team of experts for each project.

A PLATFORM FOR TURNING INNOVATIVE CONCEPTS INTO PACKAGED MICROSYSTEM PRODUCTS



IMEC CMORE

Building chips with sensational functions

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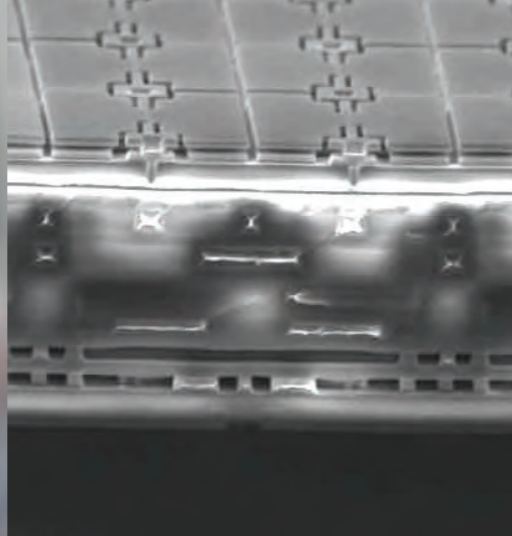
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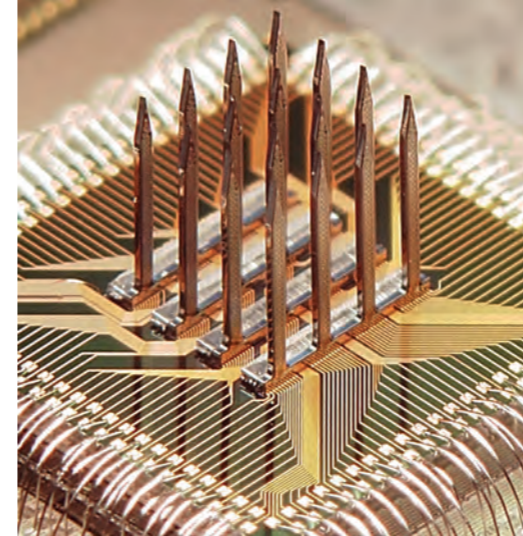
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www.imec.be/cmored

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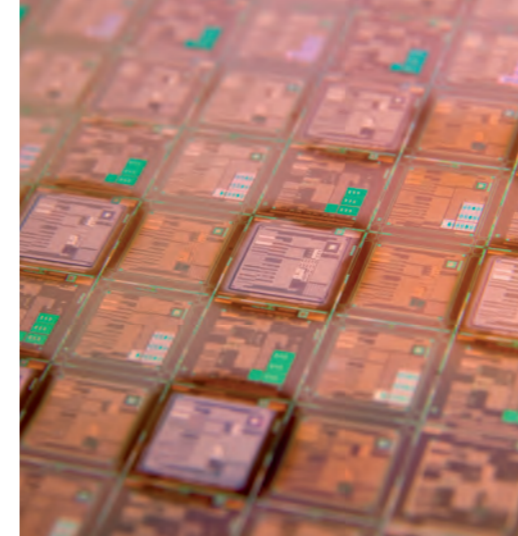




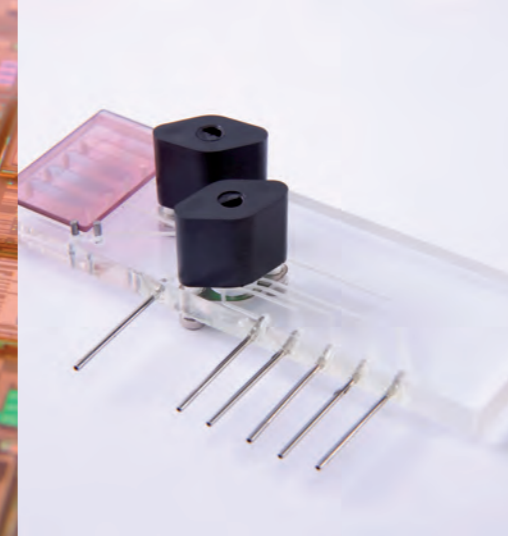
Cross-sectional view of integrated micro-mirror array, showing the mirrors on top of the 6 layers of Al interconnect.



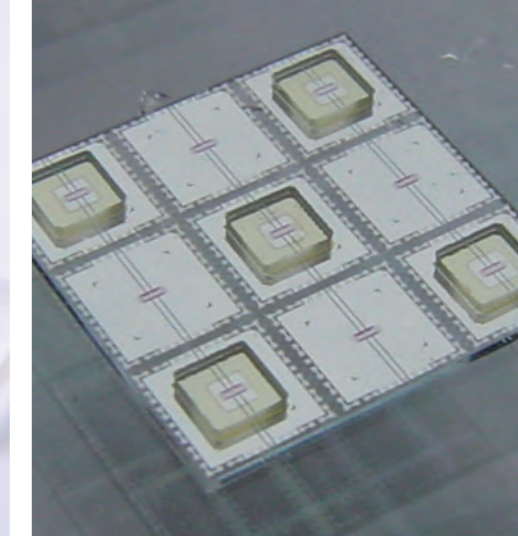
Complete 3-dimensional CMOS microprobe array. Each probe contains 112 electronically addressable electrodes and is connected to the platform using 11 interconnect points



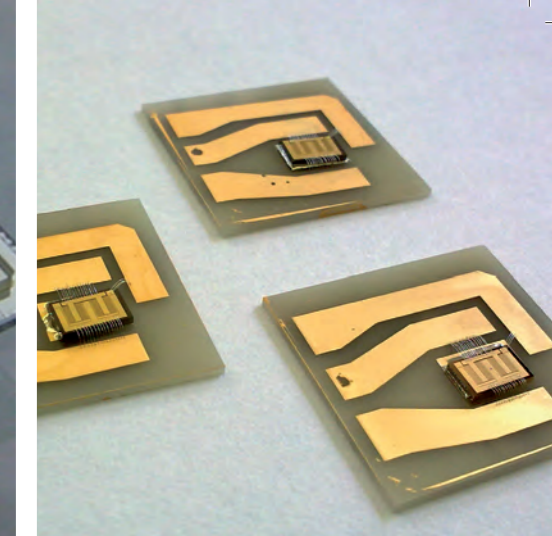
Ultra-thin die (25µm- with through-Si-via connections bonded to a 200mm device wafer using a collective die-to-wafer bonding technique



Microfluidic chip with biosensor



Capacitive RF-MEMS switches packaged with 300µm-thin glass caps with BCB seal



SiN/AlGaIn/GaN field effect transistor caps with BCB seal

REALIZATIONS

TURN YOUR SILICON CONCEPT INTO A PRODUCT

CMOS processes currently used in manufacturing of logic and/or DRAM chips can enable and drive an entire new industry. They can be used to develop new types of devices and integrated systems such as integrated microsystems, smart sensors, power devices, CMOS MEMS, etc. Such smart devices and systems are developed using a CMOS design methodology and processes, integrating sensor and actuator functions, either modified

for, or optimized for power efficiency, operating voltages and drive currents, or using above IC thin-film technology for integrated passives and MEMS and other analog functionality. We offer an interdisciplinary know-how based on the combination of a wide set of expertise, ranging from CMOS process and design technology to packaging and interconnect technology to provide a complete system solution.

Advantages

- Advanced 200/300mm 24/7 flexfab infrastructure
- CMOS + heterogeneous technologies tailored to your product
- Volume in line with your business needs
- Strong imec research & development skills
- Collaboration model from concept to product.

From concept to product



Based on more than 25 years of experience, imec has developed several CMOS-based process technologies with extended functionality. We make these available for component development, prototyping and system-level optimization, and technology transfer:

01 CMOS-based

130/90/65nm CMOS, complementary BiCMOS, high voltage, detectors, etc.

02 SiGe-based integrated CMOS MEMS devices and technologies

Micromirrors, gyroscopes, new type of memories, biosensors, resonators, RF switches, cantilevers, etc.

03 CMOS-integrated sensor systems

CMOS gas sensors, cell-IC interfaces, biocompatible needles, electronic lenses, etc.

04 Thin-film based technologies

Above-IC integrated passive devices, etc.

05 Silicon photonics

Photonic integrated circuits based on submicron optical waveguides in silicon-on-insulator; wavelength filters, fiber interfaces, etc. (in collaboration with Ghent University)

06 GaN on silicon

Wafer and device technologies, etc.

07 Advanced packaging and integration technologies

Through-silicon-vias, multi-layer thin-film, MEMS capping, 3D interconnection, system and design expertise for digital, analog, RF, MEMS, etc.