

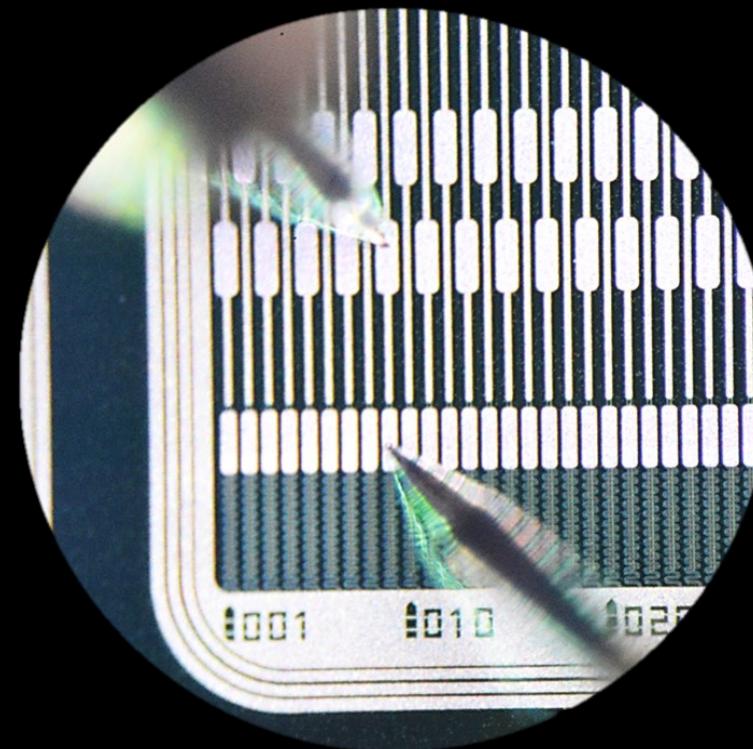
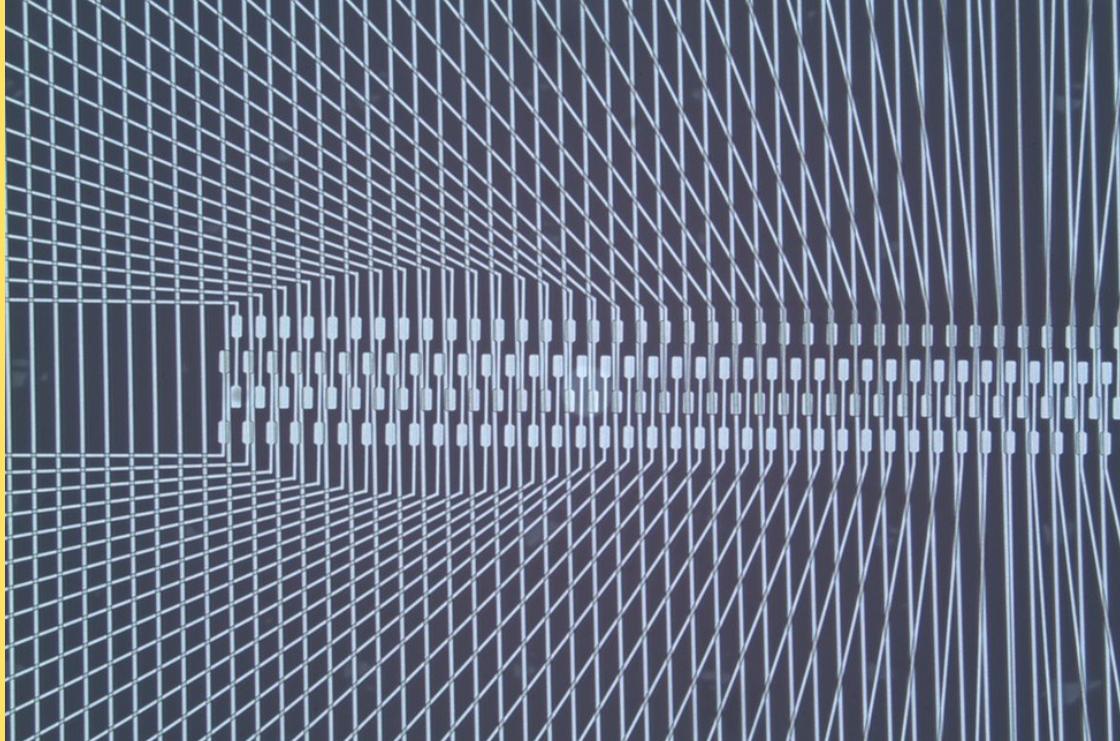


The R&D activity of the group rest on the expertise of its members in layout design, electrical and technological simulation, fabrication, functional and electrical characterization of microelectronics devices.

The fabrication of custom-made radiation sensors according to the needs of each application is carried out in the Micro and Nanofabrication clean room at IMB-CNM which is driven by a team of expert engineers and technicians.

The Integrated Clean Room for Micro and Nano fabrication (SBCNM) is a Large Scale Facility (ICTS) dedicated to the development and application of innovative technologies in the field of Microelectronics. The Clean Room is of 1500 m², class ISO-5 to ISO-7, has more than 150 high-tech instruments inside and is complemented with other 350 m² of back-end and electrical characterization laboratories.

RDG has also its own test laboratory to fully characterize radiation detectors with radiation sources, X-ray tube and laser TCT. It is a Radiation Facility licensed by the Spanish Nuclear Security Council.



SUPPORTERS



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Radiation Detectors Group

Advanced technologies for semiconductor radiation detectors

The Radiation Detectors Group (RDG) started its activity in 1996 participating in the CERN ATLAS Inner Detector Collaboration with the aim of developing silicon radiation sensors for the tracker system and studying the radiations effects on the devices.

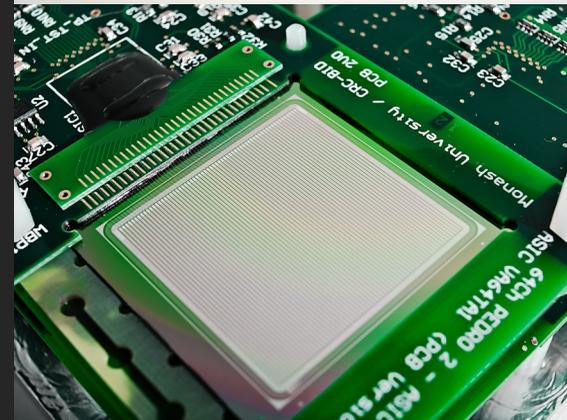
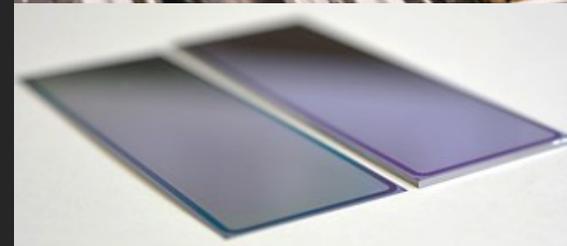
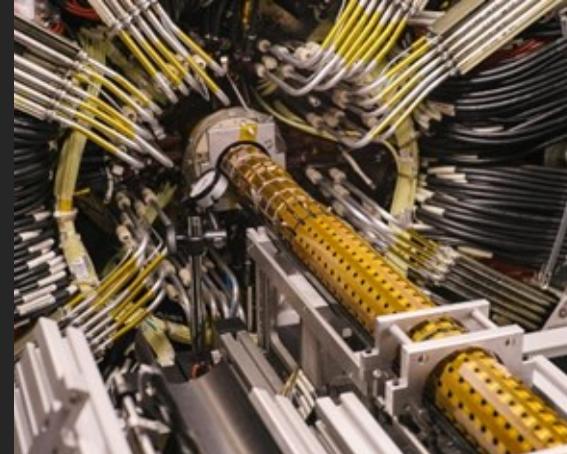
In the last 20 years RDG has been participating in the development/upgrade of the instrumentation of important high-energy physics experiments at CERN (ATLAS, TOTEM, CT-PPS, CMS) and outside the CERN.

At the same time the activity of the group has been broadening out with the development of advanced technologies for many others applications: nuclear physics, medical physics, synchrotron and nuclear fusion facilities, space applications, civil security.



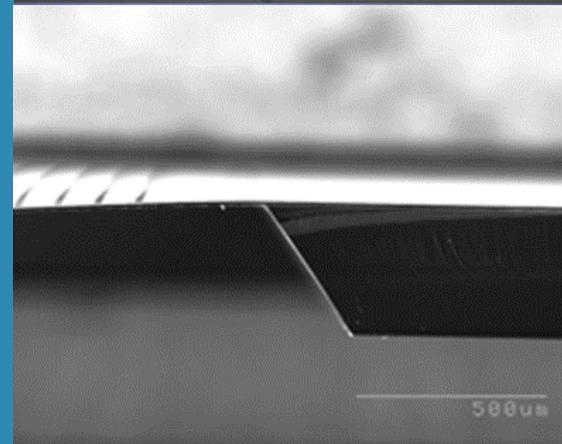
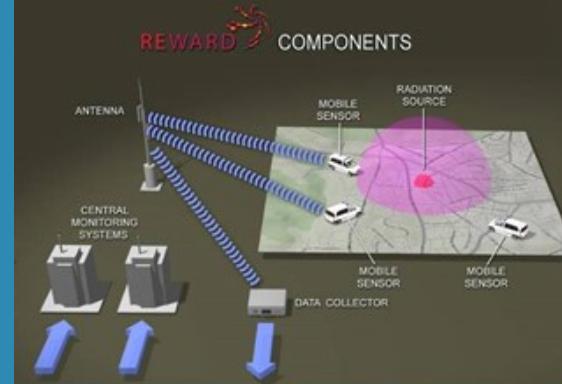
Radiation detectors for knowledge frontiers

- Position sensitive detectors for particles colliders
- High radiation hardness detectors (3D technology)
- Timing detectors (LGAD technology)
- Radiation detectors for harsh environments (SiC substrate)
- Radiation effects in devices and systems
- Instrumentation for particles colliders: vertical JFET, micro-channel cooling, heaters, embedded pitch adapters
- Micromegas for axions telescope



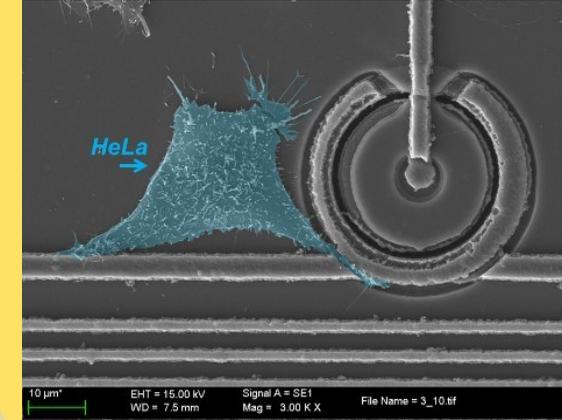
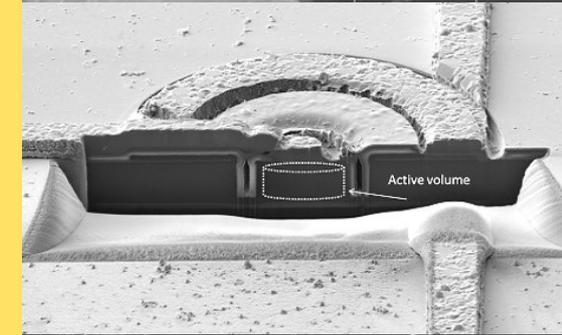
Radiation detectors for society challenges

- Photodiodes for X-ray, visible and UV light detection for synchrotron and space applications
- Detectors for security systems (wide area radiation surveillance)
- Detectors for automatic radon control in buildings
- Smart packaging of electronics components for no conventional applications



Radiation detectors for medical science

- Dosimetry and micro-dosimetry
- Radiation detectors for medical imaging
- Particles detectors for metrology in advanced radiotherapy instrumentation
- Beam diagnostic



Technology transfer and spin-off



D+T Microelectrónica A.I.E. is an Association of Economic Interest in charge of the commercial exploitation of IMB-CNM's Clean Room. Its mission is providing the microelectronics industry and research community with turnkey solutions.

ALIBAVA SYSTEMS was born from the collaboration of three research institutes: IMB-CNM in Barcelona, IFIC in Valencia and the University of Liverpool.

RDG offers its expertise to researchers and companies that aim at developing their own project, helping to defining the proper technology and conducting the whole process including design, fabrication and characterization of prototypes or final products.

Its mission is to provide technological products and services to the High Energy and Nuclear Physics research community from readout and characterization electronics, to radiation detector development and fabrication, custom engineering services and full mechanical and electronic system integration.

<https://www.dtm.es>

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