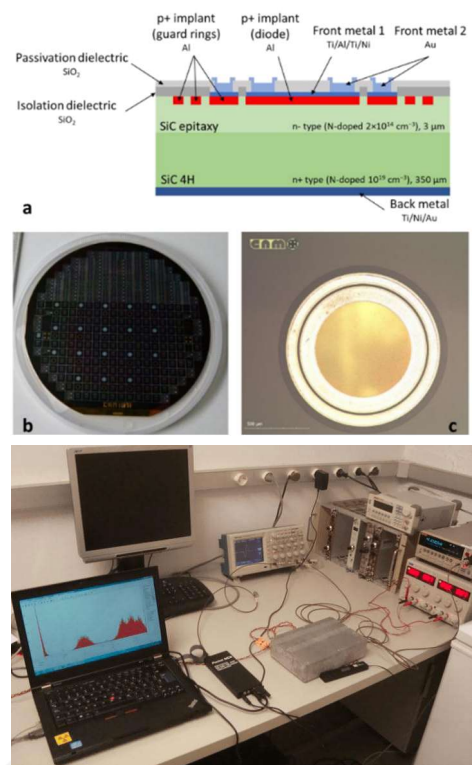


Bachelor/Master Thesis

At the Radiation Detectors Group (RDG) of IMB-CNM(CSIC)

Commissioning of a readout electronics for the characterization of silicon carbide radiation detectors

Description: Silicon Carbide (SiC) semiconductor radiation detectors have garnered increasing attention for their unique properties, including high thermal conductivity, wide bandgap, and radiation hardness, make it an ideal material for use in harsh radiation environments. These detectors offer superior sensitivity, stability, and resilience compared to traditional semiconductor materials like silicon. The proposed work aims to commissioning a readout electronic chain composed on a charge amplifier and a digitizer board based on Field-Programmable Gate Arrays (FPGAs) to use in conjunction with SiC detectors manufactured in our cleanroom facility. The objective is the utilization of the detection chain for the characterization of various types of SiC detectors fabricated within our institute for its subsequent use for the measurements of neutron fluxes in radiotherapy treatments.



Background and skills

- Electronic Engineering or similar.
- Knowledge of programming languages such as Python, C++, and familiarity with embedded systems.
- Basic understanding of FPGA programming and PCB assembly.

Contact

Dr. Martín Pérez
martin.perez@imb-cnm.csic.es

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