

# Observation of signal multiplication in neutron irradiated SiC detectors characterized using TPA-TCT

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Pristine and neutron-irradiated silicon carbide (SiC) detectors have been systematically characterized using the Two-Photon Absorption Transient Current Technique (TPA-TCT) at the laser facility of the University of the Basque Country (UPV/EHU). The SiC detectors under investigation are p-in-n diodes fabricated at IMB-CNM, with an active thickness of 50 microns.

Our study reveals a radiation-induced signal multiplication effect, which suggests enhanced charge carrier generation under irradiation. This multiplication process has been further corroborated through Ion Beam Induced Charge (IBIC) characterization. These findings provide insights into the radiation hardness and performance of SiC detectors, making them promising candidates for applications in high-radiation environments.

## Type of presentation (in-person/online)

in-person presentation

## Type of presentation (I. scientific results or II. project proposal)

I. Presentation on scientific results

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