

First Experimental Results of 4H-SiC Detectors for In Vivo Dosimetry in HDR Brachytherapy and Proton Therapy

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As a result of the R&D activities on wide-bandgap semiconductor sensors—specifically silicon carbide (SiC)—the feasibility of developing dosimetry systems for gamma radiation (brachytherapy) and proton beams (proton therapy) using this technology has been investigated. Within the framework of the Plan Complementario, the first experimental tests have been performed in collaboration with the Hospital Universitario Marqués de Valdecilla and at the Danish Center for Particle Therapy (DCPT), using devices fabricated by the Institute of Microelectronics of Barcelona –National Center for Microelectronics (IMB-CNM, CSIC) and onsemi (ON Semiconductor Corporation). This contribution will present the initial results, which demonstrate the potential of SiC as a semiconductor suitable for dosimetry in clinical applications.

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