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iLGAD Sensor For X-Ray Applications

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In this work, we have optimized an Inverted Low Gain Avalanche Detector (iLGAD) for X-Ray irradiations. The first iLGAD generation was fabricated at IMB-CNM as a tracking sensor for high-energy physics (HEP) experiments. Based on this device, we have designed a new periphery using TCAD simulations, which can cope with up to a dose of 10 Mrad. The breakdown voltage of the sensor has been increased by four times in a harsh radiation environment. The second generation of iLGADs has been fabricated at IMB-CNM. We present in this contribution the electrical characterization of the sensors, as well as gain measurements. Moreover, the detectors have been irradiated at 10 Mrad, showing promising results.

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