

3D silicon detectors for High Energy Physics and Imaging Applications

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Abstract

3D silicon detectors, with electrodes and active edges penetrating throughout the silicon substrate, have been processed using a combination of MEMS (micro electro mechanical systems) and VLSI technologies. In this design, the electric field, and consequently the carriers drift, is parallel instead than orthogonal to the wafer's surface. This key aspect of 3D design offers several potential advantages for HEP and imaging, which will be addressed during the presentation. The talk will discuss processing aspects of 3D technology, the current state of the art, some recent results and possible applications.