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Characterization with a β-source setup of the UFSD3.2 production manufactured at FBK

Thursday 18 February 2021 10:00 (20 minutes)

In this contribution, I will present the characterization of the latest LGAD production manufactured at FBK (UFSD3.2), performed with the β-source (Sr90) setup of the Torino Silicon Lab (INFN –University of Torino).

The UFSD3.2 production features a wide range of designs: the tested sensors have four different active thicknesses (25, 35, 45, 55 μm), different splits of Gain Layer dopings and Carbon implantation doses, and either standard and innovative "deep" gain implants.

I will present measurements of time resolution, gain and collected charge, and provide a thorough comparison between the tested sensors, in order to highlight their strengths and weaknesses. Such measurements also include results on sensors irradiated at the JSI TRIGA reactor (Ljubljana) up to a fluence of 2.5E15 neq/cm2, which allow comparing the performances after irradiation of the different designs.

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