

## Latest developments of Low Gain Avalanche Detectors at FBK

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Several efforts have been done in the last years at FBK to develop a new generation of Low Gain Silicon Detectors for tracking and timing applications in HEP experiments. The last UFSD3 production has been devoted to studying specific methods to improve the radiation hardness, as requested by the future Endcap Timing Layer of CMS at the High Luminosity LHC. Moreover, new microfabrication methodologies, like as stepper photolithography and photocomposition technique have been implemented in order to demonstrate the production feasibility of large-area and low-defectiveness sensors. Electrical and functional characterization, carried out by FBK and INFN Torino, will be reported and discussed. Plans for future LGAD productions at FBK will also be discussed. In particular, the ongoing activities are devoted to the development of a new LGAD design, based on the trench-isolation technique (TI-LGAD). This new scheme is very promising in reducing the inter-pad distance and then the minimum achievable pixel dimension of the sensor.

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