

Performance of LPNHE/FBK/INFN thin n-on-p planar pixels sensors for the ATLAS ITk

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In view of the LHC upgrade phases towards the High Luminosity LHC (HL-LHC), the ATLAS experiment plans to upgrade the Inner Detector with an all-silicon system.

The n-on-p silicon technology is a promising candidate to achieve a large area instrumented with pixel sensors, since it is radiation hard and cost effective.

The paper reports on the performance of thin n-on-p planar pixel sensors produced by FBK-CMM; the sensors were bump-bonded to the new RD53A prototype chip.

After discussing the sensor technology an overview of 2018 testbeam results of the produced devices will be given, before and after irradiation, including cluster properties, hit and charge collection efficiency and space resolution.

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