

# **New results from MALTA monolithic CMOS sensors with small electrode size on high resistivity substrate.**

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In parallel to the impending upgrade of the LHC towards the High Luminosity LHC, a Monolithic Active Pixel Sensor is being developed to withstand the higher radiation environment foreseen. This novel sensor makes use of a 180 nm TowerJazz CMOS imaging technology process featuring small collection electrode designs and small pixel sizes of 3  $\mu\text{m}$  and 36.4  $\mu\text{m}$ , respectively. These sensors can be depleted with a relatively low bias voltage. In this contribution, efficiency measurements obtained through test-beam campaigns at ELSA and DESY will be presented along with a focus on the performance of chips with extra process modifications, including those produced on Czochralski substrate, both before and after irradiation up to  $2\text{E}15$  neq/cm<sup>2</sup>.

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