

# Investigation of nitrogen enriched silicon detectors

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A promising approach to increase the radiation hardness of existing detector designs are defect engineering and the dedicated and controlled enrichment of the silicon bulk with foreign atoms. NitroStrip is a RD50 project with the goal of understanding the effect of nitrogen enrichment on the radiation hardness of high resistivity float zone silicon.

Previous works suggest an increased radiation hardness for nitrogen enriched silicon, but only bare silicon wafers and simple pad detectors were investigated.

In the framework of the NitroStrip project fully processed strip detectors with sample groups consisting of oxygen and nitrogen enriched as well as pure float zone silicon and magnetic Czochralski silicon were studied.

This presentation will give an overview of the findings and

challenges the NitroStrip project encountered. We conclude that the treatment of the wafers during the processing of the detectors makes gaining from the Nitrogen enrichment of the Silicon wafers difficult.

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