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Type: **Poster Presentation**

## **Static electrical characteristics of silicon diodes at different temperatures: For radiation-hard detectors.**

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### **Abstract content <br> &nbsp;   (Max 300 words)**

In this work the diodes were fabricated on undoped and on gold-doped p-type silicon. The diodes were characterised by Current-voltage measurements in the temperature range of 283 – 333 K. The temperature dependence of the saturation current, the Schottky barrier height and the ideality factor was investigated. The main indication is that effects due to the temperature are more pronounced on the undoped p-type silicon diodes than on the gold-doped p-type silicon diodes. The obtained results are interpreted in terms of defect levels that are induced by gold in the energy gap of silicon. These levels act mainly to recombine the thermal generated carriers and are responsible for the conversion of silicon from lifetime to relaxation material. The diodes fabricated from relaxation material are characterized by the Ohmic behaviour and high resistivity due to recombination of charge carriers by the defect levels. Properties of the relaxation diodes are not affected by the incident radiation. Thus, the diodes can be used to devise the radiation-hard detectors.

### **Apply to be<br> considered for a student <br> &nbsp;   award (Yes / No)?**

No

### **Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?**

No

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