

## **TSC studies on n- and p-type MCZ Si pad detectors irradiated with neutrons up to $10^{16}$ n/cm<sup>2</sup>**

*Monday 16 November 2009 16:55 (20 minutes)*

We report on the investigation of the radiation damage induced by neutron irradiation on both n- and p-type Magnetic Czochralski silicon pad detectors by the Thermally Stimulated Currents technique. Detectors have been irradiated with fast neutrons in the range  $10^{14}$ - $10^{16}$  n/cm<sup>2</sup>. Temperatures spanned from 10K to 250K to investigate the presence of both shallow and deep traps in the irradiated devices. Priming conditions have been studied in detail in order to investigate the residual electric field due to frozen charged traps after the priming step. Zero bias TSC measurements have also been performed as an additional tool to study the defects distribution and the residual electric field. The electric field distribution inside the sample and its effect on the TSC emission are qualitatively explained by a band diagrams description.

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**Session Classification:** Defect Characterization