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TSC Measurement of Energetic Levels in Silicon Detector Damaged by Neutrons

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This paper presents a measurement of defects in the silicon detector; which is made of high resistivity N type material. The Si detector was exposed in a nuclear reactor to neutron flux and as identification method for created defects in Si detector was applied thermally stimulated current (TSC) measurement. In our case we use a modified method of TSC for a diode with zero bias voltage in the reverse direction. For filling the traps with photoelectric effect is used LED diode with the blue light spectrum. The detector was irradiated with a total dose 1.86.1015 cm-2 of neutrons. Our results were compared with already published data. We made comparison of the TSC measurement after irradiation and after annealing (3-hours) at the temperature of 100℃ shows the separation of defects on each of the disorders.

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