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## The influence of thermal annealing on defects induced in Xe implanted n-type 4H-silicon carbide

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In this study, 4H-silicon carbide samples were bombarded with 167 MeV Xe ions to a fluence of  $1 \times 10^{18} \text{ cm}^{-2}$  at 300 K prior to the fabrication of Schottky contacts. The samples were also annealed at approximately 900 °C before thermal fabrication of the contacts. When compared current-voltage results with the as-grown device, generation-recombination occurred in the implanted samples. The presence of four deep level defects (0.10, 0.12, 0.16 and 0.65 eV) were observed in as-grown devices when characterized by deep level transient spectroscopy. In addition, two deep level defects with activation energies of 0.40 and 0.69 eV below the conduction band minimum were induced as a result of implantation. These two induced-defects have similar signatures to other defects observed by MeV electron irradiation. It was observed that the two defects induced were annealed out at 400 °C which indicated the instability of the defects after annealing the implanted sample.

### Apply to be considered for a student ; award (Yes / No)?

No

### Level for award;(Hons, MSc, PhD, N/A)?

N/A

**Primary authors:** Dr OMOTOSO, Ezekiel (Department of Physics, University of Johannesburg); MEYER, Walter (University of Pretoria); AURET, Danie (University of Pretoria); PRINSLOO, Aletta (University of Johannesburg); SHEPPARD, Charles (Department of Physics, University of Johannesburg)

**Presenter:** Dr OMOTOSO, Ezekiel (Department of Physics, University of Johannesburg)

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