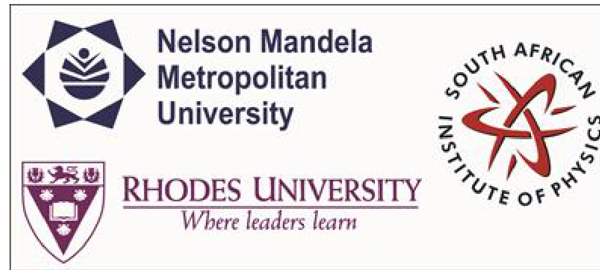

Contribution ID: **211** Type: **Poster Presentation**

Electrical Characterization of MeV Alpha-particle Irradiated Ni/4H-SiC Diodes and their Recovery by Annealing Treatment

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Abstract content
   (Max 300 words)
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In this paper, the formation and evolution of defects induced by ion irradiation with 5.4 MeV alpha particles from an Am-21 radio nuclei source in Ni/4H-SiC Schottky barrier diodes were studied and correlated with the electrical properties of the contacts. The current voltage properties of the contacts monitored before and after irradiation showed an increase in Schottky barrier height, series resistance, reverse leakage current and ideality factor with increasing irradiation dose. The changes in barrier height and series resistance could be attributed to the dopant deactivation in the near-interface region, while the increase in leakage current is associated to the formation of radiation induced defects. These defects showed evolution with increasing irradiation dose. Moreover, the current voltage measurements and deep level transient spectroscopy allowed us to demonstrate that the increase in leakage current is primarily influenced by the Z1/Z2 centre of 4H-SiC.

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