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Response of Ni/4H-SiC Schottky barrier diodes to alpha-particle irradiation at different fluences

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We have investigated the effect of ^{251}Am alpha-particle irradiation of energy 5.4 MeV on $1.9 \times 10^{16} \text{ cm}^{-3}$ N-doped 4H-SiC SBDs at different fluences. Prior to bombardment, we observed four defects with energies 0.10, 0.12, 0.16 and 0.65 eV below the conduction band. Alpha-particle irradiation introduced one additional defect with a very broad peak after receiving a $2.8 \times 10^{11} \text{ cm}^{-2}$ fluence, and the peak became conspicuous after several irradiations. The signature in term of energy and apparent capture cross section was estimated to be 0.37 eV and $5.5 \times 10^{-16} \text{ cm}^2$, respectively. The introduction rate of this defect was determined to be 6500 cm^{-1} .

Are you currently a postgraduate student? (Yes/No)

Yes

At what level of studies are you currently? (Hons/MSc/PhD)

PhD

Please provide the name and email address of your supervisor.

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