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Type: **Poster Presentation**

The effect of iron-particles on the electrical properties of n-GaSb semiconductor material

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Semiconductor material are characterized with the Schottky barrier diodes (SBDs) as a basic structure. The study was conducted in order to check the effect of iron particles on the electrical properties of Gallium antimonide (GaSb) semiconductor material. Gallium Antimonide (GaSb) was implanted with iron particles at various ion fluences ranging from 1.2×10^{15} to $1.2 \times 10^{17} \text{ cm}^{-2}$ while keeping the ion energy at 90 keV. Aluminium (Al) Schottky barrier diodes (SBDs) were fabricated on Te-doped n-type Gallium Antimonide implanted with Fe^+ at various fluences. Structural and electrical properties have been investigated using the Raman spectroscopy and I-V characterization. I-V measurements were performed for all the samples. Raman spectroscopy shows a slight amorphization at fluences higher than $1.2 \times 10^{15} \text{ cm}^{-2}$. The ideality factor (n) increased from 1.3 for the undoped to 2.0 for $1.2 \times 10^{17} \text{ cm}^{-2}$. The barrier height was found to decrease from 0.735 eV for $1.2 \times 10^{17} \text{ cm}^{-2}$ to 0.653 eV for $1.2 \times 10^{17} \text{ cm}^{-2}$. Generally, the barrier height decreased with the increasing doping fluences while the ideality factor increased with the increasing doping fluences.

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

Yes

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

MSc

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