

Study of InAlN/GaN High Electron Mobility Transistors (HEMTs) and its Radiation Hardness



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Research Interest:

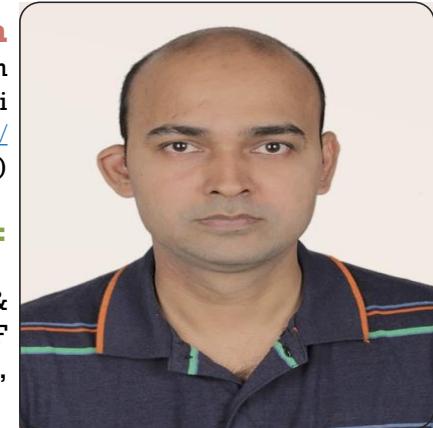
Wide bandgap semiconductors, Fabrication of GaN based devices, characterization of semiconductors devices.

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Research Interest:

GaN HEMT: Device & Simulation, DC/RF Characterization and modeling, Device Circuit Co-Design.



High Electron Mobility Transistors (HEMTs) are useful in high power and high frequency applications. GaN based transistors can handle high power as well as high frequency applications such as radars. InAlN/GaN HEMTs are also supposed to have better electrical performance than AlGaIn/GaN transistors.

The proposed research work involves the characterization of InAlN/GaN heterostructure material grown using MOCVD technique. The HEMTs fabricated using this material will be characterized using DC electrical measurements.

Modelling and simulation of the devices will help in designing the optimum device structure and also the effect of irradiation on these devices. The irradiation of the material as well as devices will be carried out and the effect of irradiation on the properties of HEMTs will be studied.



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