International Semiconductor Conference Proceedings
27-29 Sept. 2006, Sinaia, Romania,
pag. 85-92, INSPEC Accession Number: 9211114

Technology of Wide-Bandgap Diode Structures for Highfrequency Operation

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https://doi.org/10.1109/SMICND.2006.283938

Abstract

This paper reports on technology development aspects for GaN-based diodes in view of their application at high frequencies. The investigated devices include structures for transferred electron effects for operation at high electric-fields as well as heterostructure varactors (HBV) and Schottky diodes for frequency multiplication function. The impact of factors such as high threshold voltage for transferred electron effects, strong piezoelectric effects and Schottky barrier properties on device technologies and performances are addressed.