The Electrical Properties of Schottky Barrier Diode Structures
Based on HVPE Grown Sn Dopped Ga₂O₃ Layers

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Abstract. We report on the analysis of the electrical properties of Schottky barrier diode structures based on gallium oxide (Ga₂O₃). Ga₂O₃ has been grown by chloride-hydride vapor phase epitaxy on Al₂O₃ substrate. Samples with different amounts of Sn impurity are experimentally characterized. Surface and cross-sectional scanning electron microscopy images, X-ray diffraction patterns and current-voltage characteristics of Ga₂O₃ layers both with and without contact pads are presented. The value of the Ga₂O₃ optimal doping is determined and the parameters of the surface treatment that is performed before the contact pads deposition are established.

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