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**Electrical characterizations of SnPc/p-GaAs heterojunction**

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**Abstract**

Current voltage and capacitance-voltage characteristics for SnPc thin film with 105 nm thickness; deposited on p-GaAs single crystals have been investigated. The dark current voltage-characteristics of the prepared junction have been investigated in a temperature range from ~303 to 393 K. The obtained results showed rectification behaviour. At low forward and reverse bias, the current was found to be limited by the thermoionic emission, while at high forward voltage, space charge limited current dominated by a single trap level of 0.22 eV. The analysis of the dark capacitance voltage characteristics indicated that the carrier concentration is  $1.4 \times 10^{14} \text{ cm}^{-3}$  with a built in voltage ~0.55 eV. © EDP Sciences.

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