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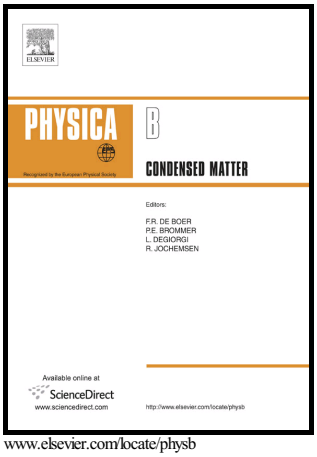

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Fabrication and electrical characterizations of graphene nanocomposite thin film based heterojunction diode

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Abstract

The use of graphene in electronic devices is becoming attractive due to its inherent scalability and is thus well suited for flexible electronic devices. Here we present the electrical characterization of heterojunction diode, based on the nanocomposite of graphene (G) with silver nanoparticles (Ag NPs), at room temperature. The diode was fabricated by depositing nanocomposite on the n-Si substrate. The current – voltage ($I - V$) characteristic of the fabricated junction shows rectifying behavior similar to a Schottky junction. The junction parameters such as ideality factor (n), series resistance (R_s), and barrier height (ϕ_b) has been extracted, using