

PS-1

Influence of Ion Isolation on the Resistivity of Different Types of GaN

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Resistivity of GaN has been investigated under the influence of ion implantation. n-type, p-type and also undoped GaN has been used here. A ring shape pattern of Au was fabricated on GaN film by the photolithography technique. H, He and Ar were used for implantation. The ion implantation energy, fluence and post-implant annealing temperature varied in this research. Because of the making barrier in some selected area using ions, the resistivity changed in all the samples with the change of both fluence and energy. At room temperature, the resistivity of n-type GaN has been increased from 1.9×10^{-2} to $17.7 \times 10^{-2} \Omega \cdot \text{cm}$. This is high for He ion. But undoped and p-type GaN showed some anomalous character.

Keywords: Implantation, Annealing, Resistivity, GaN, Electronic isolation

PS-2

Fabricated SWCNT-PEDOT Hybrid Film Using by SAW-ED and Their Optoelectronic Properties

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SAW-ED를 이용하는 박막공정 기술을 통하여 나노레벨의 SWCNT 와 PEDOT의 thin film 및 hybrid화된 film구조를 얻을 수 있었다. SWCNT와 전도성고분자와의 hybridization을 통해 균일상의 표면 morphology를 갖는 고전도성 투명 필름을 제작하고, 이들의 전기광학적 성질을 확인하였다. SAW-ED를 이용하는 박막공정 기술은 나노입자 및 나노구조물의 박막화·패턴화를 포함하는 새로운 deposition 기술로서의 응용성을 가지고 있으며, 본 연구에서는 SWCNT와 전도성고분자를 이용하여 이를 확인하였다.

Keywords: SWCNT, PEDOT, Hybrid, Dry deposition system