

Abstract Submitted
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Fabrication of High In-Content InGaN/GaN Quantum-Well for Light-Emitting Diodes¹ CHEN-CHI YANG, IKAI LO, CHIA-HSUAN HU, YING-CHIEH WANG, YU-CHIAO LIN, CHENG-DA TASI, SHUO-TING YOU, Department of Physics, Center for Nanoscience and Nanotechnology, National Sun Yat-Sen University, Kaohsiung 80424, Taiwan, R. O. C. — We have grown $\text{In}_x\text{Ga}_{1-x}\text{N}/\text{GaN}$ multiple quantum-wells (MQWs) thin films with different In contents ($x = 0.194$ and 0.331) on sapphire substrate by using plasma-assisted molecular beam epitaxy. $1 \times 1 \text{ mm}^2$ size substrate was used in this study, and InGaN/GaN multiple quantum-wells (MQWs) structure was grown between the n-type and p-type GaN cladding layers. First of all, we deposited Ni/Au alloy for p-type contact by e-beam evaporation to avoid the damage of p-type GaN. Secondly, we constructed n-type GaN by inductive couple plasma etcher (ICP-Etcher). Finally, we deposited Ti/Al for n-type contact by e-beam evaporation. The optical properties of the samples were analyzed by photoluminescence (PL) and electroluminescence (EL) measurements at room temperature. The comparison of optical properties between PL and EL of the samples is under investigation.

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Chen-Chi Yang
Department of Physics, Center for Nanoscience and Nanotechnology,
National Sun Yat-Sen University, Kaohsiung 80424, Taiwan, R. O. C.

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