

Preliminary Studies of InGaON Thin Film on Si Substrate Using Simple Growth Technique

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In this paper, we present a simple growth setup which is able to grow indium gallium oxynitride (InGaON). This setup only involves furnace, ammonia gas, as well as gallium (Ga) and indium (In) sources. The characterization results heavily implied the growth of InGaON on silicon (Si) substrate. Firstly energy-dispersive x-rays (EDX) measurement confirmed the presence of In, Ga, O and N. Despite O being significant, Fourier transform infra-red (FTIR) spectroscopy and x-rays diffraction (XRD) results revealed the absence of metal oxides signals. Further analysis from both measurements showed the sample contained high In content, with crystalline structure resembled that of InGaN, and was of (001) dominance.