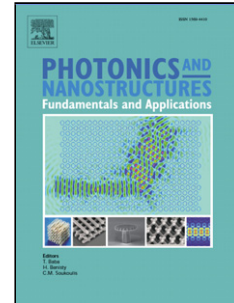


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Effects of Optical Absorption in Deep Ultraviolet Nanowire Light-Emitting Diodes

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Highlights

Summary and Significance

Aluminum gallium nitride (AlGa_N) holds significant promises for deep ultraviolet (DUV) light-emitting diodes (LEDs) and laser diodes (LDs) for wide applications including bio-medical and analytical instrumentation, fluorescence sensing, curing, phototherapy and water/air/surface purification and disinfection. Several efforts have been made to develop high efficiency DUV LEDs using such material. However, the performance of DUV LEDs has been fundamentally limited by the large dislocation density and the extremely inefficient *p*-type doping, resulted to the low efficiency and low output power. Moreover, the realization of efficient nanowire LEDs has been limited in the UV ranges because of the performance degradation with increasing Al

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