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EFFICIENCY DROOP OF InGaN/GaN LED WITH DIFFERENT INDIUM COMPOSITION

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ABSTRACT- III-nitride light emitting diodes (LEDs) have attracted considerable attraction due to their various applications in displays and illumination lighting. Nevertheless, the majority of InGaN/GaN LEDs suffer from the efficiency droop. This droop would limit the potential of the LEDs in high current applications. As widely reported, high indium content in InGaN/GaN multiquantum well active region of the LED promotes indium fluctuation that degrades the efficiency of the LED. In this work, we will present results of the efficiency droop for InGaN/GaN LED with indium content of 18% and 8%, respectively. The efficiency droop of the LED with 18% of indium shows higher efficiency droop than the LED with 8% of indium content.

Keywords: efficiency droop, indium composition, InGaN/GaN LED.