

**Research Title:** Electrical and Optical Properties of High Brightness LED at High and Low Temperature.....

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## ABSTRACT

This research presents a study of the influence of operating temperatures on optical properties of high power LEDs. The optical spectrum and luminance of the LEDs were measured at various operating temperatures from -90 to 70 °C. Four different colored LEDs, i.e. red, green, blue and cool white, were used in the study. Experimental results show that the illumination of each LED decreases when their operating temperature was increased. These have a good agreement with results obtained from the spectrum measurement. In addition, it was found that the peak spectrum of blue, green and red LEDs was shifted towards longer wavelength.

**Keywords :** High power LEDs, luminance, optical spectrum.