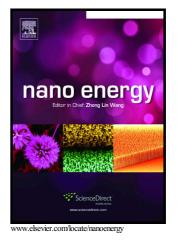
Author's Accepted Manuscript

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 PII:
 S2211-2855(18)30459-2

 DOI:
 https://doi.org/10.1016/j.nanoen.2018.06.064

 Reference:
 NANOEN2845

To appear in: Nano Energy

Received date:15 May 2018Revised date:15 June 2018Accepted date:19 June 2018

Cite this article as: Dae Hun Kim and Tae Whan Kim, Ultrahigh-luminosity white-light-emitting devices based on edge functionalized graphene quantum dots, *Nano Energy*, https://doi.org/10.1016/j.nanoen.2018.06.064

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ACCEPTED MANUSCRIPT

Ultrahigh-luminosity white-light-emitting devices based on edge functionalized graphene quantum dots

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Keywords: quantum dot, graphene, white light-emitting device, white graphene quantum dot, external quantum efficiency

Abstract

Graphene quantum dots (GQDs) have received considerable attention as excellent candidates for promising applications in multifunctional optoelectronic devices. The synthesis method for GQDs has been investigated in an attempt to find an optimal method for fabricating white GQDs (WGQDs) suitable for use in display systems. However, the emission wavelengths of WGQDs are still not sufficient to cover the range of wavelengths required by lighting sources, and the luminance of the light-emitting devices (LEDs) based on the WGQDs is still lower than that of white LEDs (WLEDs) fabricated utilizing organic molecular phosphors. Here, we report high-luminosity Download English Version:

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