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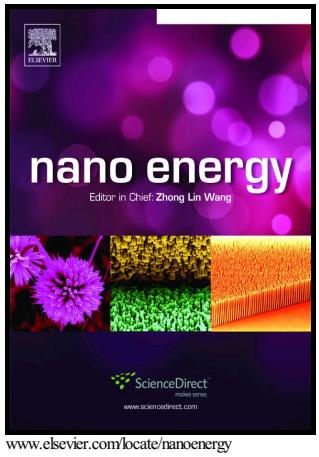

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Ultrahigh-luminosity white-light-emitting devices based on edge functionalized graphene quantum dots

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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