

## UV-curable QD acrylate nanocomposite and its application to LED device

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Quantum dot (QD) has been attracting enormous interests to be the next-generation material in optoelectronic devices, especially for light-emitting devices (LEDs) because of its high color gamut, quantum yield, and stability. To apply QD into LEDs, acrylate polymers and silicone polymers are frequently used as a matrix of QD nanocomposites. Among those various kind of polymers, polymethylmethacrylate (PMMA) shows great optical and chemical properties such as high thermal stability, transparency and refractive index. To applicate QD into QD-acrylate nanocomposite for LED, it is important to make QD well-dispersed in QD-acrylate nanocomposite. In general, QD shows poor dispersity in methyl methacrylate (MMA) monomer causing degradation of optical properties of QD. In this work, we present a novel process of preparing UV-curable QD acrylate nanocomposite and its application to QD-LED devices by applying acrylate monomer which has high affinity with QD.