

InP/ZnS Core/shell as Emitting Layer for Quantum Dot LED

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Instead of a highly toxic CdSe and ZnS core-shell, InP/ZnS core-shell quantum dots [1,2] were investigated as an active material for quantum dot light emitting diode (QD-LED). In this paper, quantum dot light-emitting diode (QDLED), consisting of a InP/ZnS core-shell type materials, with the device structure of glass/indium-tin-oxide (ITO)/PEDOT:PSS/Poly-TPD/InP-ZnS core-shell quantum dot/Cesium carbonate(CsCO₃)/Al was fabricated through a simple spin coating technique. The resulting InP/ZnS core-shell QDs, emitting near blue green wavelength, were more efficient than the above CdSe QDs, and their luminescent properties were comparable to those of CdSe QDs. The brightness of InP/ZnS QDLED was maximum of 179 cd/m².

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