

Optimization of II -VI Quantum dots with intermediate shell for Blue light emission

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Quantum Dots (QDs) have been attracting attention as candidates for next-generation displays because of its high color purity and stability. Research for QD-LED is actively going on and blue light emitters are essential for it. ZnSe has a large bulk band gap, so that it is a strong candidate for blue emitters. However, for the deep blue emission, which has target wavelength of 450 nm, it is necessary to adjust the bandgap. To this end, we tried to synthesize ZnSeTe/ZnSe/ZnS alloyed core/shell/shell QDs for smaller band gap. We observed the optical properties with various concentration of tellurium and optimized composition of ZnSeTe. Also, ZnSe intermediate shell made the QDs emit deep blue light with high quantum yield and narrow FWHM.