

Optimization of composition and synthesis method of ZnSeTe for blue emitting Quantum Dots

장혜정, 이도창[†]

KAIST

(dclee@kaist.edu[†])

Quantum dots (QDs) are strong candidate for next-generation displays because they can be solution-processed with high color purity and stability. Currently, research is actively underway to go to QD-LEDs and blue light emitters are essential for it. ZnSe has the advantage of large bulk band gap, so it is a good candidate for non-Cd blue emitter. However, it is difficult to synthesize ZnSe which emits a target wavelength of 450 nm only by adjusting the size of ZnSe. Therefore, it is necessary to adjust the bandgap of ZnSe to a smaller size. To this end, we tried to synthesize alloyed QDs with ZnTe which has smaller bandgap. We also observed the optical properties such as FWHM and PLQY while controlling the concentration of Te. Through this process, we optimize composition of ZnSeTe and synthesis methods for blue light emitting.