

Fabrication and characterization of ternary compound ZnCdS nanowires

Dong-jin Lee¹, Moon-a son¹, Tae-won Kang¹

¹Department of Physics and QSRC, Dongguk University

Self assembled $Zn_{x-1}Cd_xS$ nanowires, synthesized on a Indium tin oxide coated glass substrate with low composition of Cd as $x=0.09$, were fabricated non-precursor via a co-evaporation method using of solid sources of CdS and ZnS. We studies that ZnCdS nanowires are dislocation-free and the single crystalline hexagonal wurtzite structure showed by transmission electron microscopy and selected area electron diffraction pattern. Cathode luminescence spectra showed an near band edge peak at 383nm originated from nanowires at 80K and 300K. Core level spectra of the Cd 3d, Zn 2p and S 2p in the ZnCdS nanorods were obtained by x-ray photoelectron spectroscopy. Prepared ZnCdS nanorods showed different shape with increase of substrate temperature at the growth.

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