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Late News

Optical studies of ZnSe–ZnS stain layer superlattices grown on sapphire by MOVPE

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ZnSe–ZnS stain layer superlattices (SLS) are thought to be the most promising material for optoelectronic and photomodulating devices in the short wavelength region. Also, the sapphire (α -Al₂O₃ crystal) substrate is an excellent window for transmission of visible light. We have successfully grown ZnS–ZnSe SLS on sapphire by MOVPE using DMZ, H₂S and H₂Se as source materials. Details will be published in an other paper. In that paper, we characterize ZnS–ZnSe(SLS)/ α -Al₂O₃ using photolumi-

nescence and light absorption spectra. The energy positions of the exciton and band edge shift towards higher energy, showing quantum size effects of SLS. The intensity of the exciton emission peak in the ZnSe(10 nm)–ZnS(10 nm) SLS increases remarkably compared to ZnSe epilayers on sapphire. A wide emission band of deep levels at about 540 nm is found in the PL of the SLS, which is probably induced by misfit defects.

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