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Size Distribution Effect of InAs/InP Self-Organized Quantum Dots on Optical Properties

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Abstract : Self-organized InAs quantum dots (QDs) have been grown on 3,1% InP (110) lattice mismatched substrate by Solid Source Molecular Beam Epitaxy (SSMBE). Stranski-Krastanov mode growth has been used to create self-assembled 3D islands on InAs wetting layer (WL). The optical quality depending on the temperature and power is evaluated. In addition, Atomic Force Microscopy (AFM) images shows inhomogeneous island dots size distribution due to temperature coalescence. The quantum size effect was clearly observed through the spectra photoluminescence (PL) shape.

Keywords : AFM, InAs QDs, PL, SSMBE
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