

Poster Session

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Structural Characterization of Heteroepitaxial Growth of $Al_xGa_{1-x}Sb/GaSb$ by LPE

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The heteroepitaxial $Al_xGa_{1-x}Sb/GaSb$ (001) growth with different x aluminum content, from 0.05 to 0.2 prepared by Liquid Phase Epitaxy (LPE) is presented. The interest in this study is due to the layers of $Al_xGa_{1-x}Sb$ systems should be well matched for fabrication of sources and detectors operating in the 1.3-1.6 micron range. The layered structure obtained was characterized mainly by high-resolution X-ray diffraction and reciprocal space mapping. In the case of x = 0.05 aluminum content, the relaxation is minimal, and almost without deviation respect to GaSb. As the aluminum content increases above 0.05, the relaxation is larger and deviation from GaSb substrate too. Crystallographic tilt is detected by a shift of layer diffraction maximum on reciprocal space maps. Deviation changes the intensity of layer respect to substrate peak in rocking curves and hence the estimation of thickness of layer obtained from them. A correction for estimated thickness of layers is obtained from mapping.

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