

研究简报

分子束外延生长的GaAs-Al_xGa_{1-x}As多层异质结构中的“精细低维调制条纹”的观察

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收稿日期 1987-12-29 修回日期 1989-6-9 网络版发布日期 2009-12-16 接受日期

摘要

应用透射式电子显微镜观察了GaAs-Al_xGa_{1-x}As多层异质结结构中的“精细低维调制条纹”。在邻近GaAs-Al_xGa_{1-x}As超晶格层的缓冲层中和与这缓冲层邻近的GaAs-Al_xGa_{1-x}As超晶格层的小区域中发现了等宽度的“精细低维调制条纹”，其宽度为9.1Å的GaAs条纹，12Å的Al_xGa_{1-x}As条纹。文中介绍了用显微密度计获得的这些条纹的密度分布结果。同时还给出了GaAs-Al_xGa_{1-x}As多层异质结结构的晶格像和用X射线能量散射谱技术获得的成分定量分析结果。

关键词 [GaAs-Al_xGa_{1-x}As](#) [精细低维调制条纹](#) [超晶格](#) [晶格像](#)

分类号

OBSERVATION OF FINE LOW DIMENSIONAL MODULATED FRINGES IN GaAs/Al_xGa_{1-x}As MULTILAYER HETEROSTRUCTURES GROWN BY MBI

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Abstract

Fine low dimensional modulated fringes (FLDMF) by named in GaAs/ Al_xGa_{1-x}As multilayer heterostructures using transmission electron microscopy (TEM) have been observed. Philips EM400ST and JEOL EM4000EX were used in this work. The FLDMF with equal width were discovered within the buffer layer and also within the two adjacent superlattice layers of GaAs/AlGaAs The width with 9.1 Å is GaAs fringes, 12 Å is AlGaAs fringes. Some results from the density analysis of the fringes using microdensitometer are presented. Otherwise lattice image of GaAs/Al_xGa_{1-x}As multilayer heterostructures and analytic results of composition in GaAs/Al_xGa_{1-x}As multilayer heterostructures by using the techniques of energy dispersive X-ray analysis (EDX) have been given.

Key words [GaAs/Al_xGa_{1-x}As](#) [Fine low dimensional modulated fringes](#) [Superlattice Lattice image](#)

DOI :

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