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材料合成及性能

GaAs微尖上碳纳米管的制备

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引用本文

摘要：采用热化学气相沉积的方法在选择性液相外延方法制备的GaAs微尖上生长碳纳米管。利用扫描电子显微镜以及拉曼光谱对生长的碳纳米管进行表征。结果表明：GaAs微尖在高温下重新结晶成条状梯形GaAs阵列,生长的碳纳米管连接在相邻的GaAs阵列之间,形态规整,具有较好的石墨微晶结构。在此基础上,提出在微尖上生长纳米管的模型,为实现微纳器件互联提供了一种新方法。

关键词：碳纳米管 热化学气相沉积 GaAs 选择液相外延

Fabricating of Carbon Nanotubes on GaAs Microtips

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Abstract: Carbon nanotubes (CNTs) fabricated by thermal chemical vapor deposition (T-CVD) on GaAs microtips were investigated. Scanning electron microscope and Raman spectrum were used to characterize the properties of the nanotubes. The results showed that the GaAs tips changed into ladder-like array at high temperature and carbon nanotubes connected the neighbor GaAs with high graphite microcrystal structure. A model for the CNTs grown on GaAs microtips was also proposed. The results presented here make a significant step to the connection for micro or nano devices.

Keywords: carbon nanotubes T-CVD GaAs liquid phase epitaxy

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