普析通用 PGENERAL
旗舰型离子色谱
FEI COMPANY TOOLS FOR NANOTECH
岛津 SHIMADZU

半绝缘砷化镓中本征缺陷的光学显微研究

刘红艳 天津红桥区丁字沽1号路8号河北工业大学信息工程学院 300130

孙卫忠 天津红桥区丁字沽1号路8号河北工业大学信息工程学院 300130

王娜 天津红桥区丁字沽1号路8号河北工业大学信息工程学院 300130

等

摘 要：本文利用光学显微技术系统分析热处理对液封直拉法生长的半绝缘砷化镓（LEC SI-GaAs）中本征缺陷的影响。实验结果表明，晶体生长后的热处理可以影响砷沉淀的密度与分布。500℃热处理对As沉淀的密度无明显影响；真空条件下，在850~930℃范围内热处理AB腐蚀坑变浅，砷沉淀数量增加；真空条件下，高于1100℃热处理后，砷沉淀几乎消失。晶体中砷沉淀的密度会随热处理条件的不同而变化，本文对其机理进行探讨。

关键词：半绝缘砷化镓,热处理,砷沉淀,光学显微技术

文章全文为PDF格式，请下载到本机浏览。[下载全文]

如您没有PDF阅读器，请先下载PDF阅读器 Acrobat Reader [下载阅读器]

Investigation of the native defects in LEC SI-GaAs by optical microscopy

300130

300130

300130

Abstract：The effects of thermal annealing on the native defects in LEC SI-GaAs were studied by optical microscopy. The results showed that the thermal annealing could affect the density and distribution of the arsenic precipitates. The density and distribution of the arsenic precipitates can not be affected obviously at 500 ℃. Under vacuum conditions, AB etching pits become shallower, and the number of arsenic precipitates increases in the range of the 850~930℃. Under vacuum conditions, arsenic precipitates almost disappear after thermal annealing above 1100℃. The density of arsenic precipitates in SI-GaAs crystal changes with different thermal annealing conditions, the mechanism of the change was discussed.

Key words：SI-GaAs,Thermal annealing,Arsenical precipitates,Optical microscopy

【大 中 小】 [关闭窗口]