以數值方法計算矽鍺半導體之?量子井結構

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摘 要

本論文所討論的是以數值方法計算矽鍺半導體之?量子井結構，利用量子力學中有限深能井的模型， 說明 半導體兩種晶格常數不相同的材料，此種異質界面要成長成為晶格匹配的材料時所承受的應變知 識和 量子井的構造，進而再利用薛丁格方程式（SCHRODINGER EQUATION）和MODEL-SOLID THEORY的理 論探討計算量子井中，因摻雜濃度X值時的價電帶和導電帶可能侷限的能階大小，再考慮激子的束縛能 ，得到量子井可能的發光能量。從理論的計算結果我們可由電磁波光譜表上查得所要的光波頻率。由研 究計算分析結果中得摻雜濃度和井厚度的的比例控制，均將影響到半導體的光學特性。

關鍵詞 : 無

目錄

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