p型快閃記憶體源/汲極結構影響注入效率之研究=a study of injection efficiency performance in p-flash memories for different

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摘 要

隨著半導體技術不斷地快速發展，積體電路的微縮技術日新月異。網際網路盛行，電信通訊蓬勃發展，對於複雜的圖形及語音資料處理需求日愈重要，因此需不斷地開發更高速的中央處理器及微控制器。只有更快速，更便宜且更省電的記憶體，才能充分展現這些高速電路的特性。除了個人電腦需求最大的動態隨機存取記憶體(DRAM)及靜態隨機存取記憶體(SRAM)外，最普遍的記憶體就屬快閃記憶體了(Flash Memory)。快閃記憶體因為具有非揮發性，省電及尺寸小的優勢，特別適合儲存需長時間保存的可攜帶式資料。　　本論文主要在探討不同的源極/汲極結構的P型快閃記憶體對注入效率的影響，因為注入效率的好壞，反映著寫入的時間，也就是此元件的性能好壞。改善注入效率的方式通常朝兩方面著手：一個是寫入方式的改善，也就是偏壓條件的不同，另一個就是改良元件結構，因此我們舉出四種不同結構的快閃記憶體元件，比較它們的注入效率。此外，在研究過程中，除了高性能外，高可靠度也是設計的重要考量因素，因此在本論文中也對可靠度問題做了一些探討。

關鍵詞 : 動態隨機存取記憶體 ; 靜態隨機存取記憶體 ; 快閃記憶體

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