

Mechanism of selective porosification at heterojunctions in Group IV multilayer structures

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Highly selective porosification of SiGe or Ge layers is observed in multilayer Si/SiGe or Si/Ge structures grown on (100)Si. These alternating porous/non-porous structures could potentially be used to fabricate light-emitting devices. The etch-selectivity appears to be dominated by band-structure effects and other factors such as lattice strain and electrochemical potential differences play a minor role. Additional structures and electrolytic etching are being examined to confirm these results.

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