COMPOSITION AND ELASTIC STRAIN IN CAPPED SELF-INDUCED SiGe NANOISLANDS

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S u m m a r y

Self-induced SiGe nanoislands grown on a Si substrate by molecular-beam epitaxy have been investigated by Raman spectroscopy and atomic force microscopy. It is established that the capping of islands with a layer of silicon results in an increase of the Si content and elastic strain in them. It is shown that a variation of the Ge deposition rate within the range $0.12 - 0.5$ Å/s does not affect the composition of islands and mechanical stresses in them. This phenomenon is explained by a dominating influence of interdiffusion, which is primarily caused by non-uniform stresses in islands and in the substrate around them, on stresses in islands and their composition.