

## **Self-assembled SiGe islands: From fundamental perception to ultra large scale integration**

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### **Abstract :**

Self-assembled SiGe islands have become a prototype to understand formation of strained quantum dot heterostructures. In a series of experiments we were able to identify fundamental growth phenomena such as intermixing processes, shape transitions and plastic relaxation mechanisms during lattice mismatched epitaxy [1]. This detailed knowledge might help to promote Si based nanoelectronics in ultra large scale integration (ULSI) technologies, where local SiGe stressors enhance the performance of ever shrinking metal oxide semiconductor field effect transistors [2-5].

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