Supporting information for

Effect of rapid thermal annealing on crystallization and stress relaxation of Si_xGe_{1-x} particles deposited by ICP PECVD

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Porosity measurement

The porosity of all samples was measured using scanning electron microscopy. The images were captured with energy of 5 kV, a current of 0.1 nA and a magnification of 5000X. For each sample, a total surface of 3000 μm^2 was analyzed using contrast threshold enhancement technique to distinguish the SiGe nanoparticles from the substrate. To further increase the precision of the measurement, a watershed algorithm was used to split agglomerated nanoparticles. Finally, a particles determination algorithm (ImageJ ™ software) was used to determine the total surface covered by SiGe nanoparticles (cf. figure S1). The measured porosities are 34.939%, 23.423%, 24.734%, 22.682% and 19.791%, respectively for as-deposited and annealed sample 450˚C for 10 minutes, 450˚C for 30 minutes, 600˚C for 10 minutes and 600˚C for 30 minutes.

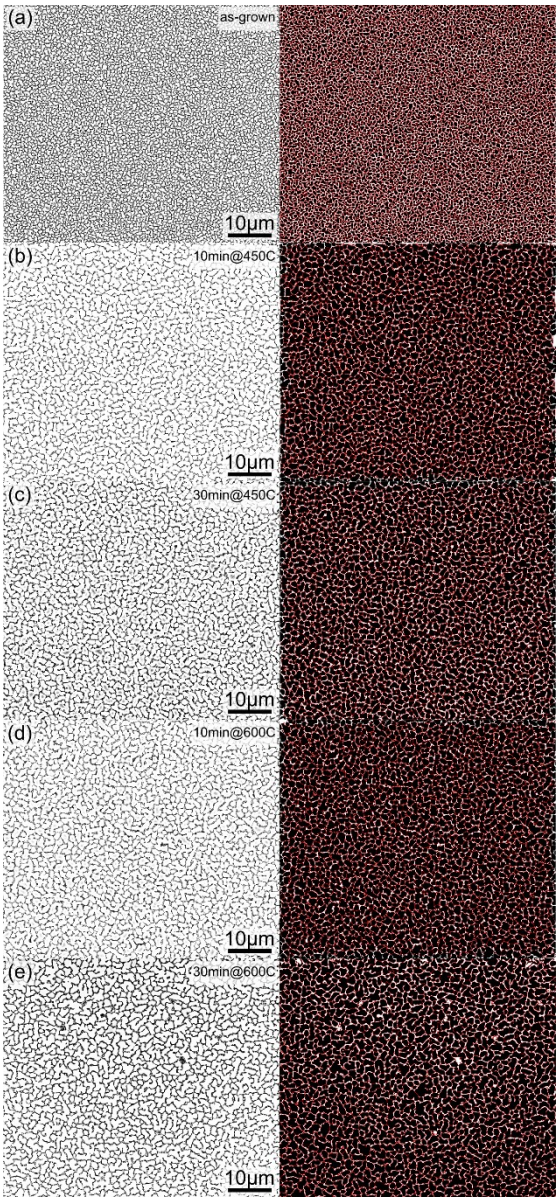

FIG. S1. SEM images of SiGe nanoparticles (left) and processed images (right) for porosity measurement using threshold enhancement and watershed algorithm for (a) as deposited sample, (b) sample annealed at 450˚C during 10 minutes, (c) sample annealed at 450˚C during 30 minutes, (d) sample annealed at 600˚C during 10 minutes and (e) sample annealed at 600˚C during 30 minutes.