

Supporting Information

Surface preparation of porous Si – graphene nanocomposites for heteroepitaxy

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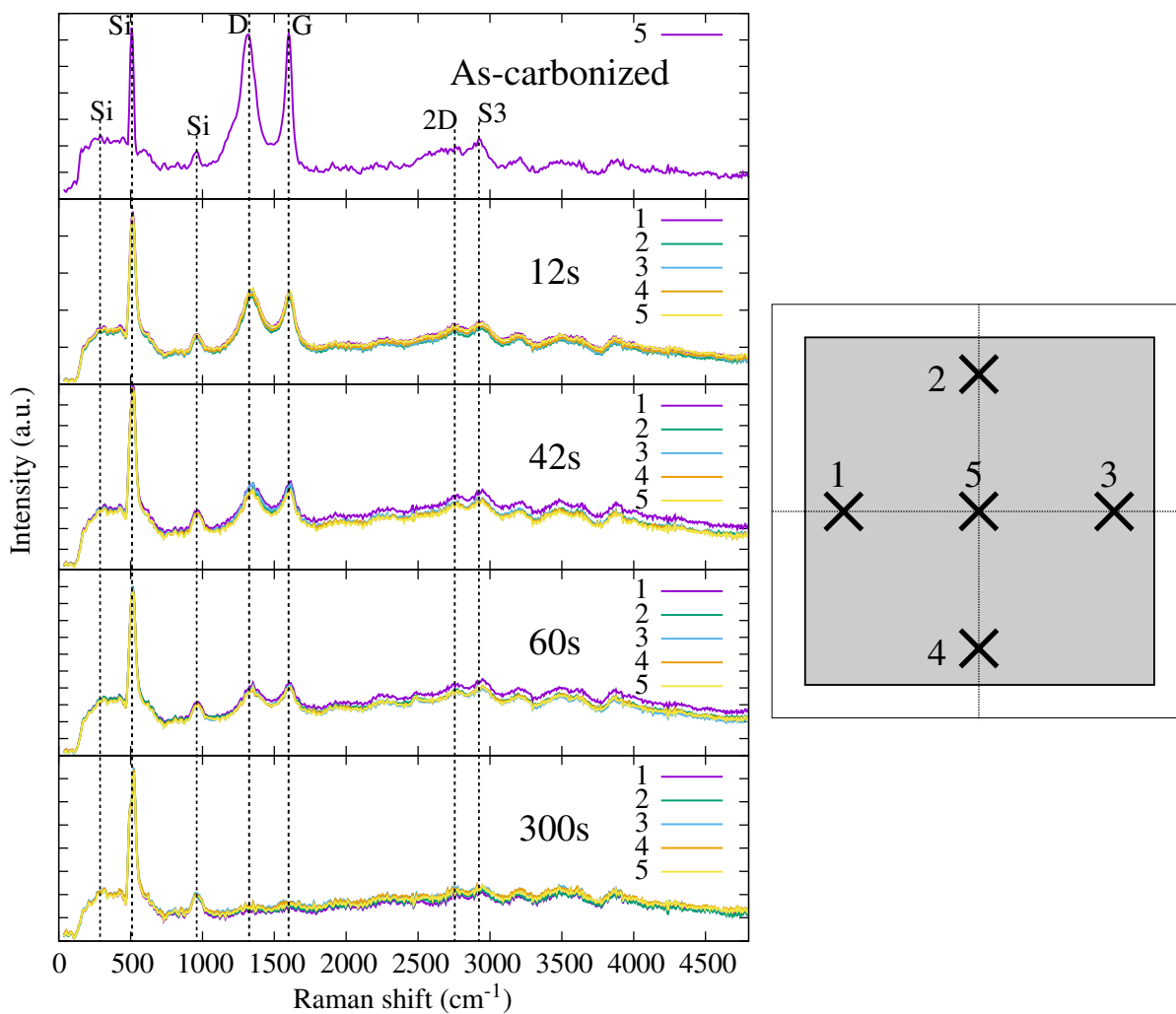


Figure S1: Raman spectra of O_2 -GPSi substrate obtained on four different positions to determine the etching uniformity.

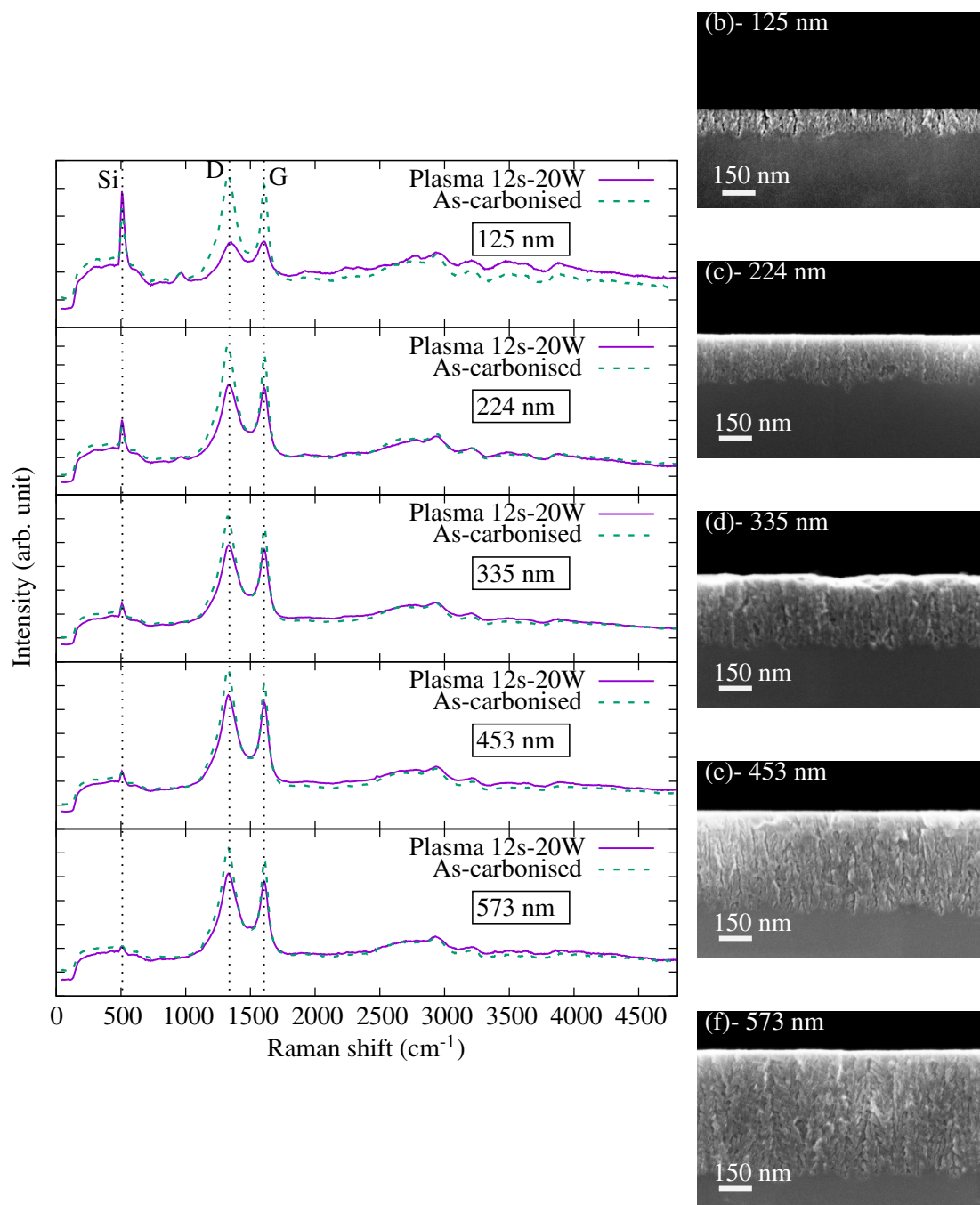


Figure S2: (a) Raman spectra of GPSi before and after O_2 plasma treatment (12s-20W) on five porous layers with various thicknesses. (b-f) The corresponding cross-section SEM images after O_2 plasma treatment.

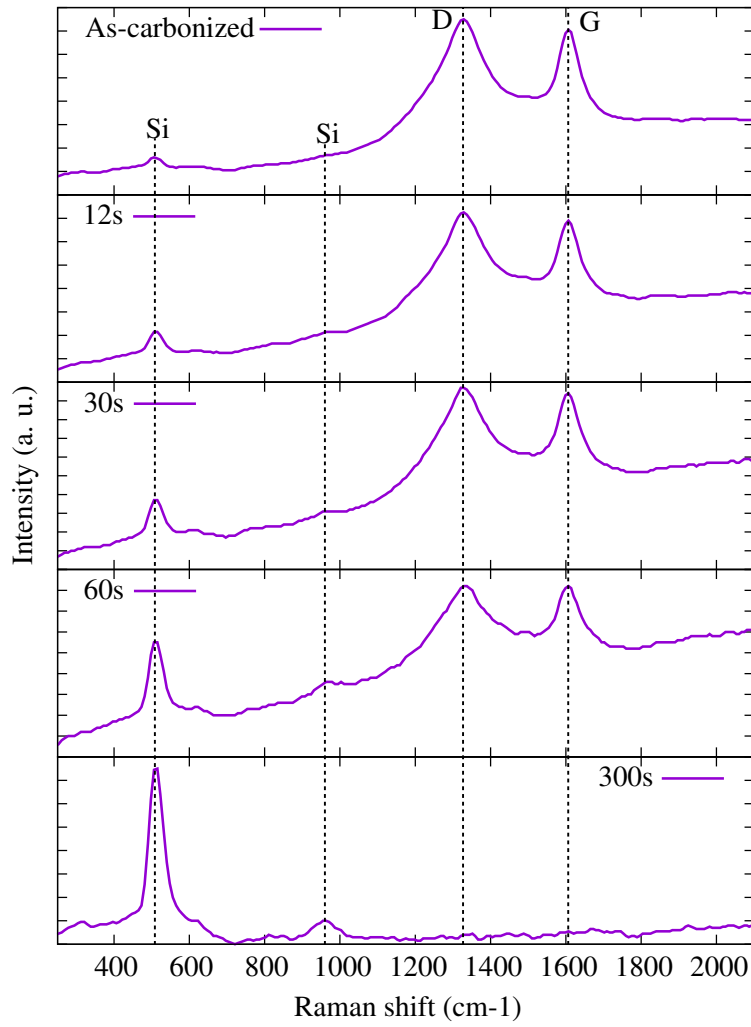


Figure S3: Raman spectra collected on 500nm thick GPSi on bulk p-type Si(111) for five exposure times to O_2 plasma etching of a constant power of 20W.

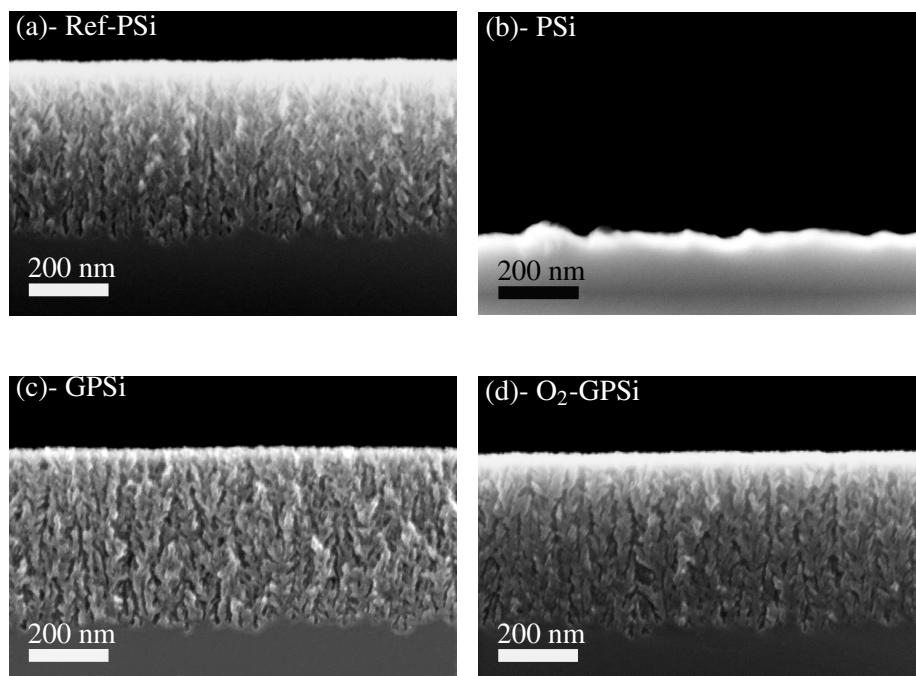


Figure S4: Cross-section SEM images of 500nm thick porous layer substrates: (a) as-prepared PSi, (b) KOH dipped PSi, (c) KOH dipped GPSi and (d) KOH dipped O₂-GPSi. The KOH treatment was performed in KOH aqueous solution (30%) heated up to 40°C during 2min.

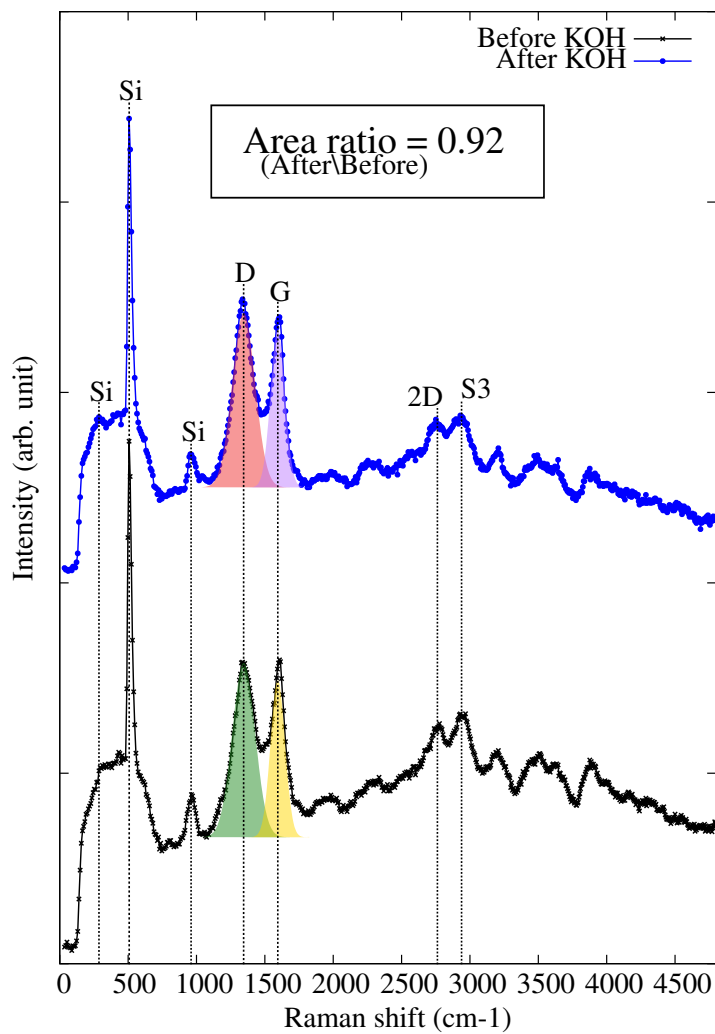


Figure S5: Raman spectra from a 125nm thick O₂-GPSi: (a) before (black, cross-marked curve), and (b) after (blue, circle-marked curve) KOH treatment.