Electronic Supplementary Material (ESI) for Nanoscale.

Supplementary Information for

Negative Possion's ratio and high-mobility transport anisotropy in SiC_6 siligraphene

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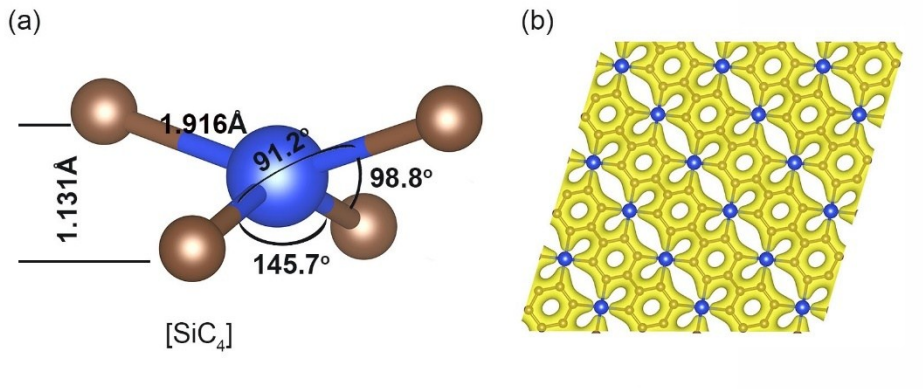

Figure S1 (a) the structure paremeter of the $[SiC_4]$ unit in the SiC_6 siligraphene and (b) the isosurfaces of the total electron density of SiC_6 siligraphene with the isovalue of 0.08 e/Å^3. The large blue balls represent silicon atoms.

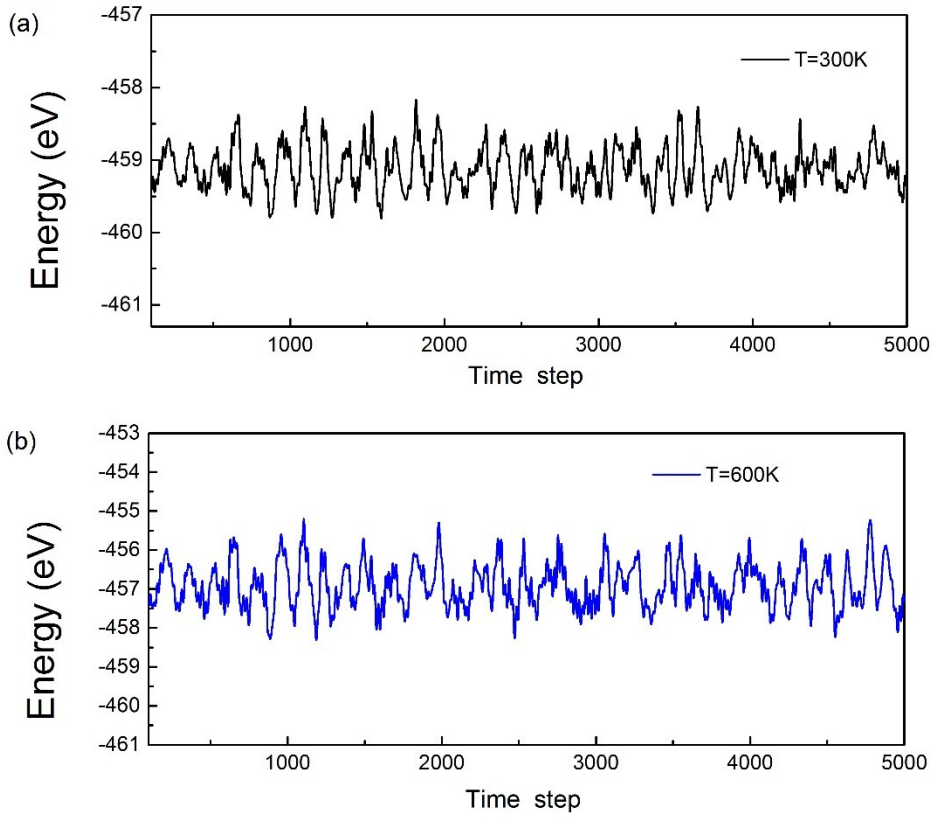

Figure S2 The time evolution of total energy of the SiC_6 siligraphene at the temperatures of (a) 300K and (b) 600 K, obtained by ab initio molecular dynamics simulations. The simulation lasted for 5000 steps with a time step of 0.5 fs.

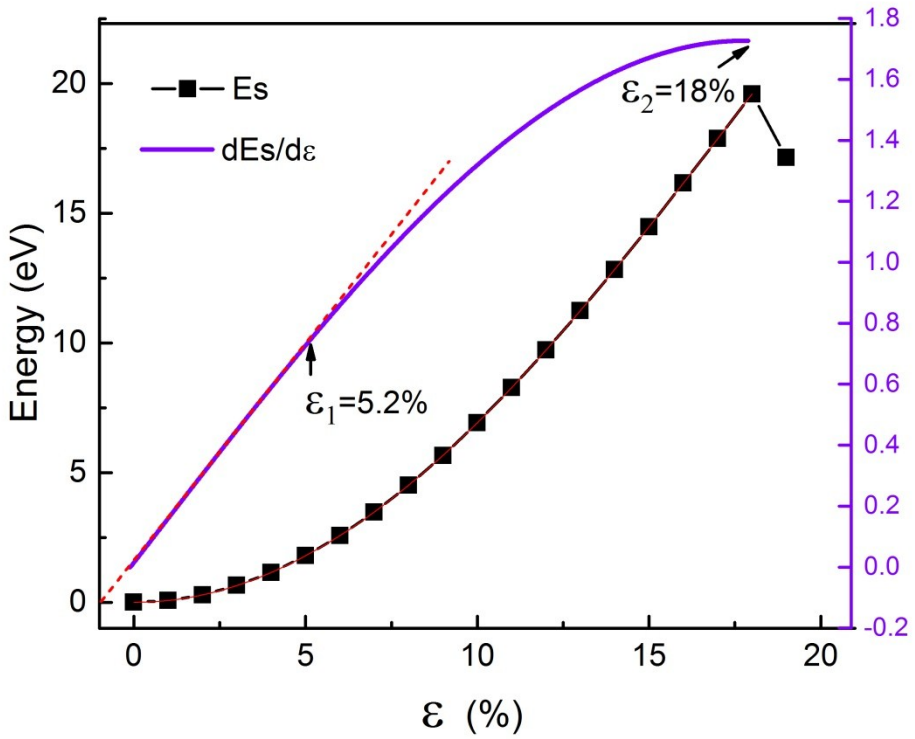

Figure S3 The strain energy and its derivative of the SiC_6 siligraphene under uniform expansion. The critical strain between elastic and plastic regions is about 18%.