Electronic Supplemental Information for

Embedded Silicene Nanostructures in Partly-Dehydrogenated Polysilane

Xiuling Li,^{a,b,c} Xiao Cheng Zeng,^d and Xiaojun Wu, ^{a,b,c,*}

^aCAS Key Laboratory of Materials for Energy Conversion, School of Chemistry and Materials Sciences, and CAS Center for Excellence in Nanoscience, University of Science and Technology of China, Hefei, Anhui 230026, China. ^bHefei National Laboratory of Physical Sciences at the Microscale, University of Science and Technology of China, Hefei, Anhui 230026, China.

^cSynergetic Innovation of Quantum Information & Quantum Technology, University of Science and Technology of China, Hefei, Anhui 230026, China.

^dDepartment of Chemistry, University of Nebraska-Lincoln, Lincoln, Nebraska 68588, United States.



Figure S1. Born-Oppenheimer molecular dynamic simulation for (a) *E*-1-ASiNR and (b) *E*-1-ZSiNR, respectively. The simulated temperatures of systems maintain at 500 K. The time step is 1 fs and the total simulation time is 5 ps. (c) Energy curve of *E*-1-ASiNR during simulation. (d) Energy curve of *E*-1-ZSiNR during simulation.



Figure S2. Calculated band structure of embedded armchair-edged silicene nanoribbons based on the HSE06 method for (a) E-1-ASiNR, (b) E-2-ASiNR and (c) E-3-ASiNR, respectively.