Supporting Information

Enhancing the energetic and magnetic stability of atomic hydrogen chemisorbed on graphene by (non)compensated B-N pairs

Zhengyan Chen^a, Sanjun Wang^b, Wen Xiong^c, Fei Wang^{d, *}

^a College of software, Henan Finance University, Zhengzhou 450046, China;

^b College of Artificial Intelligence, Henan Finance University, Zhengzhou 450046, China;

^c Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences, Chongqing 400714, China

^d International Laboratory for Quantum Functional Materials of Henan, School of Physics and Microelectronics, Zhengzhou University, Zhengzhou 450001, China.

^{*} Corresponding author: wfei@zzu.edu.cn

Fig. S1



Figure S1. The changing trend of partial charge of VBM at Brillouin K point, including both compensated and noncompensated G, B@G, (B+N)@G, 1- and 3-2-. The isosurface is set to 0.0016 e/Å³.





Figure S2. For noncompensated doping 3-1-BH-NH, (a) spin polarized projected bands for weights of Cp_z and adsorbate H *s*, while (b) for weights of Cp_z and doped (B+N) p_z .

Fig. S3



Figure S3. For 3-2-BH-NH, spin polarized projected bands calculated by PBE and HSE functionals. (a), (c) for weights of Cp_z and adsorbate H *s*, while (b), (d) for weights of Cp_z and doped (B+N) p_z .