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Supporting Information of:

Magnetic monolayer of Elemental 2D Metals

Yinti Ren,[1,2] Liang Hu,[2] Yangfan Shao,[2] Yijian Hu,[2] Li Huang,[2] and Xingqiang Shi[3,*]

[1]Harbin Institute of Technology, Harbin 150080, China

[2]Department of Physics, Southern University of Science and Technology, Shenzhen 518055, China

[3] Hebei Key Laboratory of Optic-Electronic Information and Materials, College of Physics Science and Technology, Hebei University, Baoding 071002, China

[*]E-mail: shixq20hbu@hbu.edu.cn

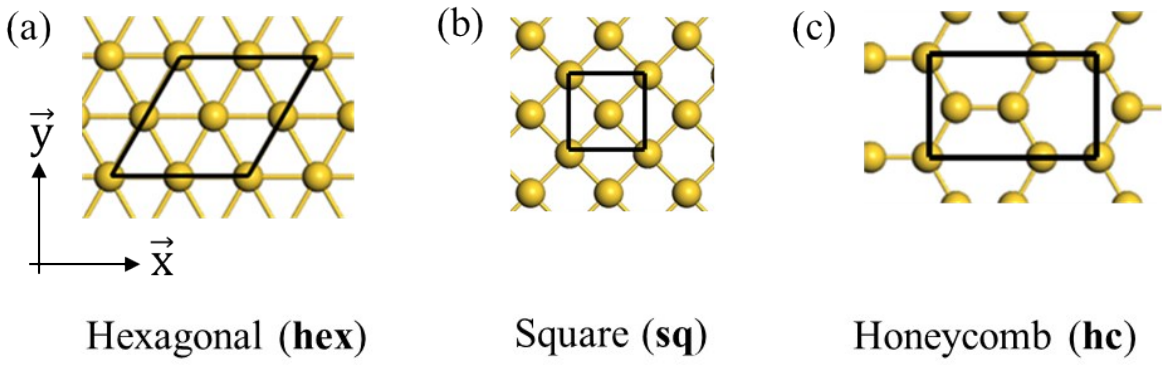

FIG. S1. The three 2D lattice structures. Yellow spheres denote metal atoms; black lines indicate the supercells constructed to consider different magnetic configurations. Note that a supercell is needed to consider the anti-ferromagnetic configurations.

Table S1. Some 2D metals and their structure types, for both theoretical and experimental works.

Elements	Structures	Experiment/Theory
Fe (in graphene nanopores)	sq	Experiment[1]
Mo (in monolayer $MoSe_2$ nanopores)	hex	Experiment[2]
Sn (on Cu(111))	hc	Experiment[3]
Au (in bulk Au-Ag alloy nanopores)	hex	Experiment[4]
Pb/In (on Si(111))	hex/sq	Experiment[5]
Hf (on Ir(111))	hc	Experiment[6]
Cr	hex, sq, hc	Experiment and Theory[7]
Au	hc	Theory[8]
Ag	hex, sq, hc	Theory[9]

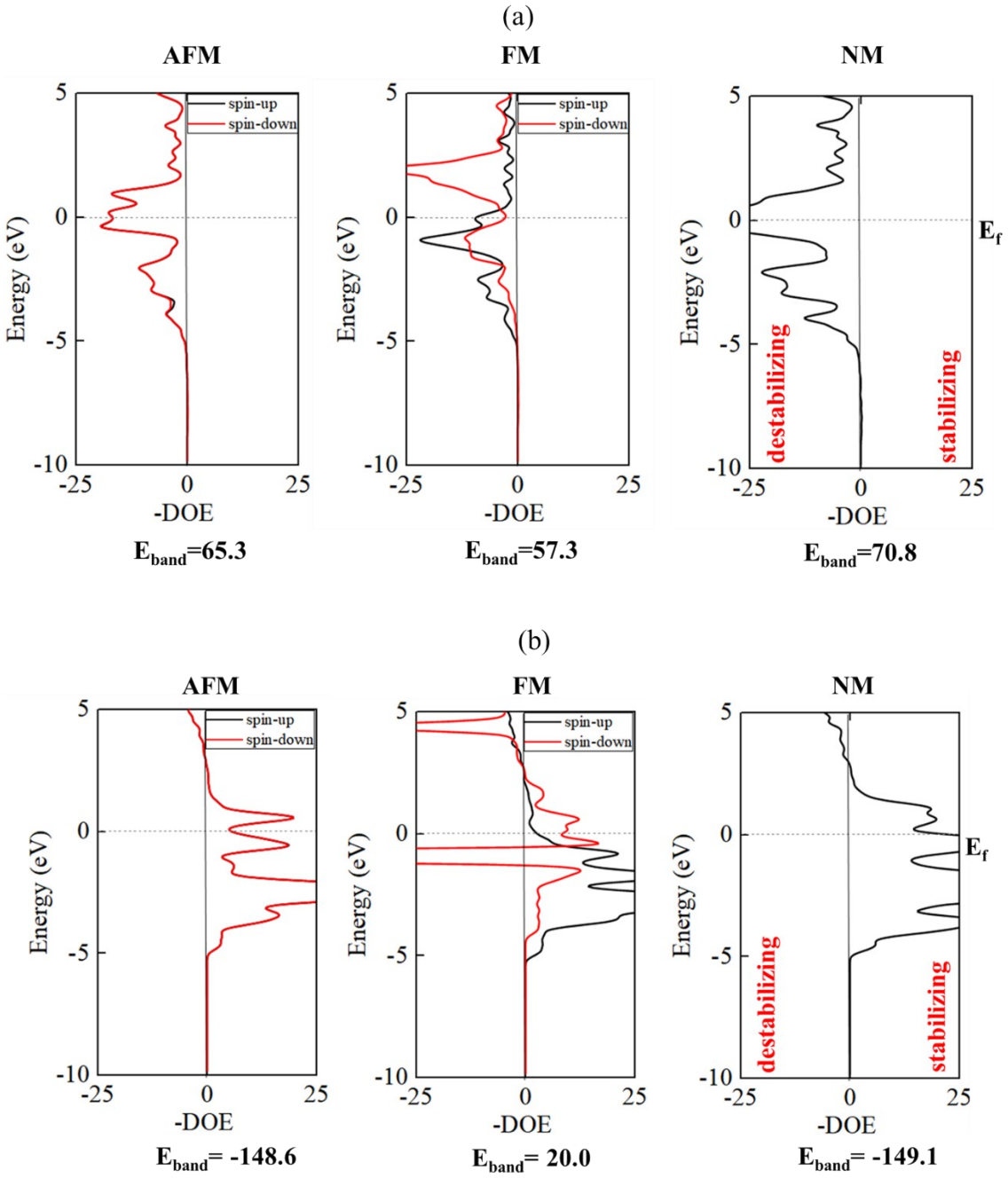

FIG. S2. DOE analysis of (a) bulk Fe and (b) hc Fe in three magnetic structures (nonmagnetic, FM, AFM). The fermi energy was set to zero (E_f). E_{band} represent the energy integral of the DOE in a energy range (Eq. 2 in the main text).

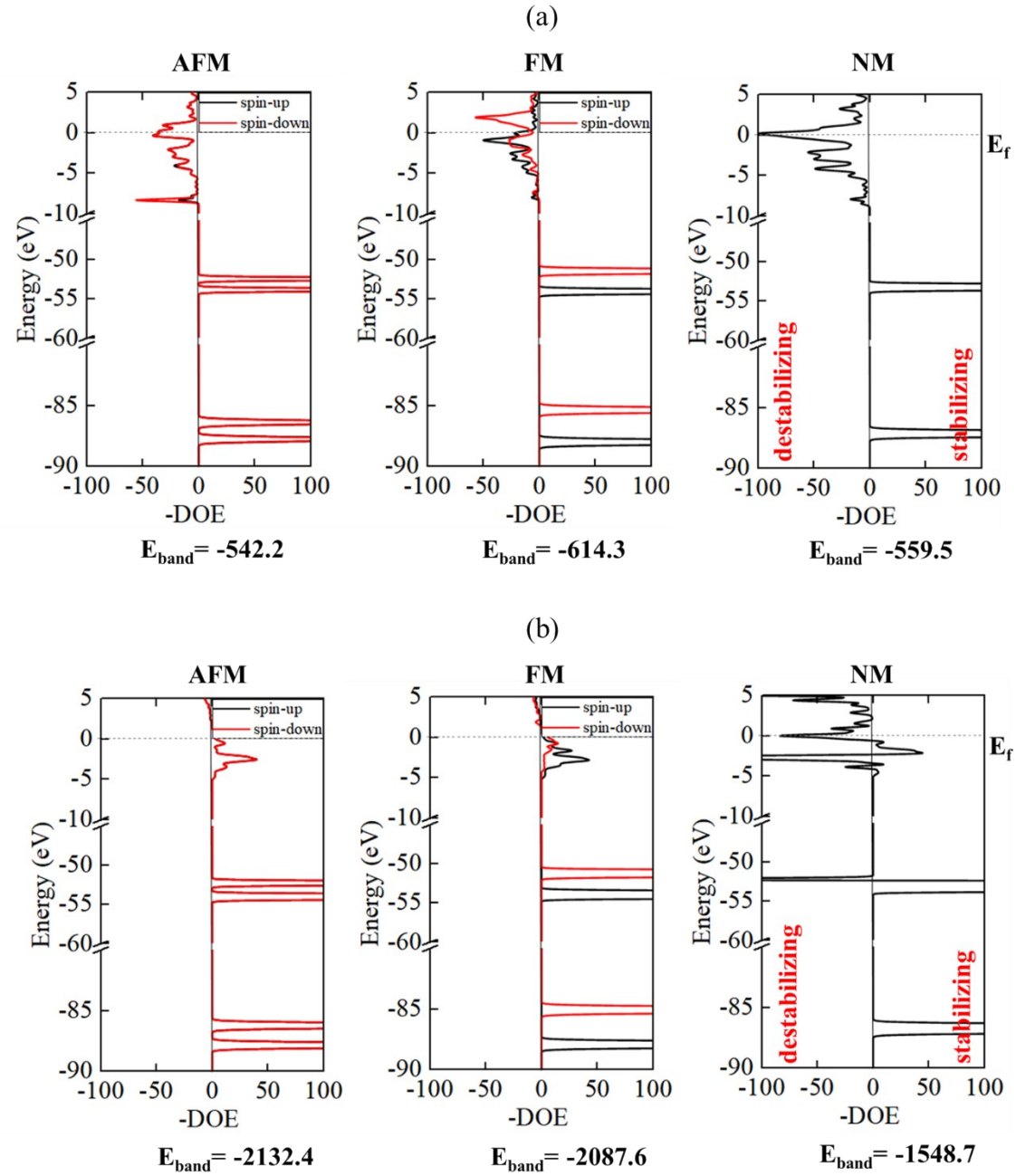

FIG. S3. Extended energy-range DOE analysis of (a) bulk Fe and (b) hc Fe in the three magnetic structures. The Fermi energy (E_F) was set to zero. E_{band} represent the energy integral of the DOE in a energy range including semi-core states.

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