## Supporting Information for:

Atomistic understanding of interfacial interactions between bone morphogenetic protein-7 and graphene with different oxidation degree

Jialiang Hou<sup>a</sup>, Binyao Liu<sup>a</sup>, Yaping Zhang<sup>a</sup>, Xiong Lu<sup>b</sup>, Changsheng Liu<sup>c</sup>, Youhong Tang<sup>d</sup>, Menghao

Wang <sup>b</sup>, Faqing Dong <sup>e</sup>, Yuxiang Ni <sup>f,\*</sup>, Hongping Zhang <sup>a,\*</sup>

<sup>a</sup> Engineering Research Center of Biomass Materials, Ministry of Education, School of Materials Science and Engineering, Southwest University of Science and Technology, Mianyang, Sichuan 621010, China
<sup>b</sup> School of Materials Science and Engineering, Key laboratory of Advanced Technologies of Materials, Ministry of Education of China, Southwest Jiaotong University, 610031 Chengdu, China

<sup>c</sup> The State Key Laboratory of Bioreactor Engineering and Key Laboratory for Ultrafine Materials of Ministry of Education, East China University of Science and Technology, Shanghai, 200237, China

<sup>d</sup> Institute for NanoScale Science and Technology, College of Science and Engineering, Flinders University, South Australia 5042, Australia

<sup>e</sup> Key Laboratory of Solid Waste Treatment and Resource Recycle of Ministry of Education, Southwest University of Science and Technology, Sichuan 621010, China

<sup>f</sup> School of Physical Science and Technology, Key laboratory of Advanced Technologies of Materials, Ministry of Education of China, Southwest Jiaotong University, 610031 Chengdu, China

\*Corresponding author. Tel: +86-816- 6089009; Fax: +86-816-6089009; E-mail: zhp1006@gmail.com (H. P. Zhang) and Tel: +86-28-66367228, Fax: +86-28-66367228, E-mail: yuxiang.ni@swjtu.edu.cn (Y. Ni)



Figure S1. RMSD of each amino acid residues of BMP-7 on graphene with different oxidation rates.



Figure S2. Ramachandran plot of BMP-7 on graphene with different oxidation rates.