

## Supplementary information

### **Carbon-encapsulating to Tune Interfacial Polarization and Dielectric Properties of MoS<sub>2</sub> Nanosheets for Electromagnetic Absorption Application**

Song Ye,<sup>1</sup> Aming Xie,<sup>2</sup> Fan Wu,<sup>2</sup> Zhiwei Cai,<sup>1</sup> Xu Liu,<sup>1</sup> Tian Tao,<sup>1</sup> Gang Chang<sup>1,\*</sup>,  
Yunbin He<sup>1,\*</sup>

<sup>1</sup> Hubei Collaborative Innovation Center for Advanced Organic Chemical Materials, Ministry-of-Education Key Laboratory for the Green Preparation and Application of Functional Materials, Faculty of Materials Science and Engineering, Hubei University, Wuhan 430062, China

<sup>2</sup> School of Mechanical Engineering, Nanjing University of Science & Technology, Nanjing 210094, China

\* Corresponding Authors: [changgang@hubu.edu.cn](mailto:changgang@hubu.edu.cn); and [ybhe@hubu.edu.cn](mailto:ybhe@hubu.edu.cn)

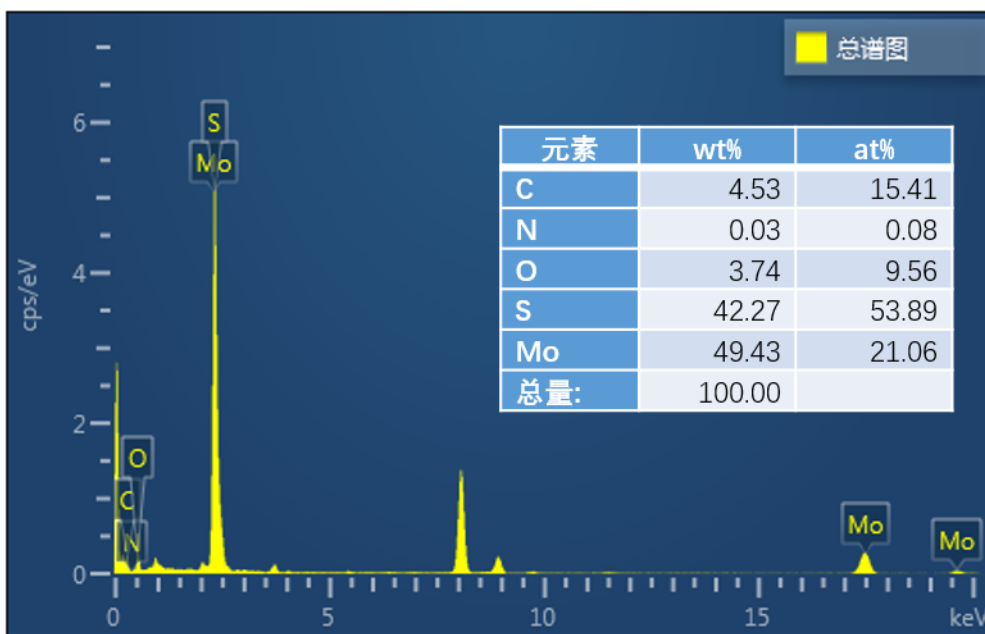


Figure S1. EDS elemental analysis of MoS<sub>2</sub>@C

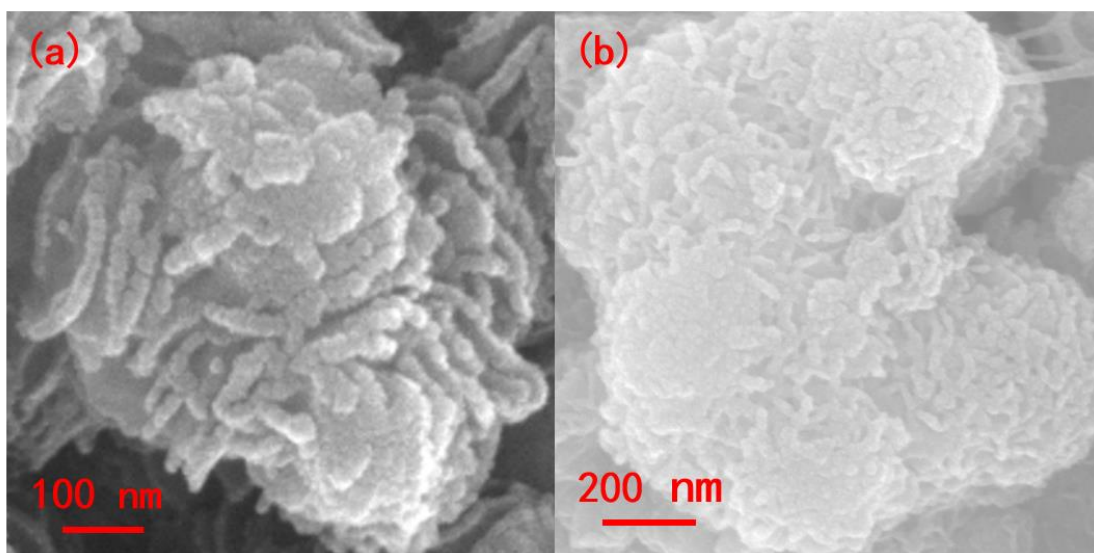
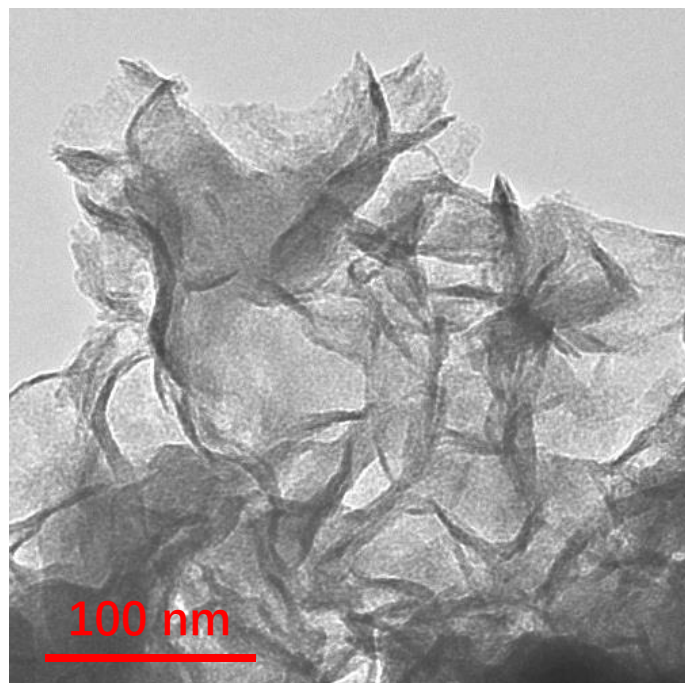
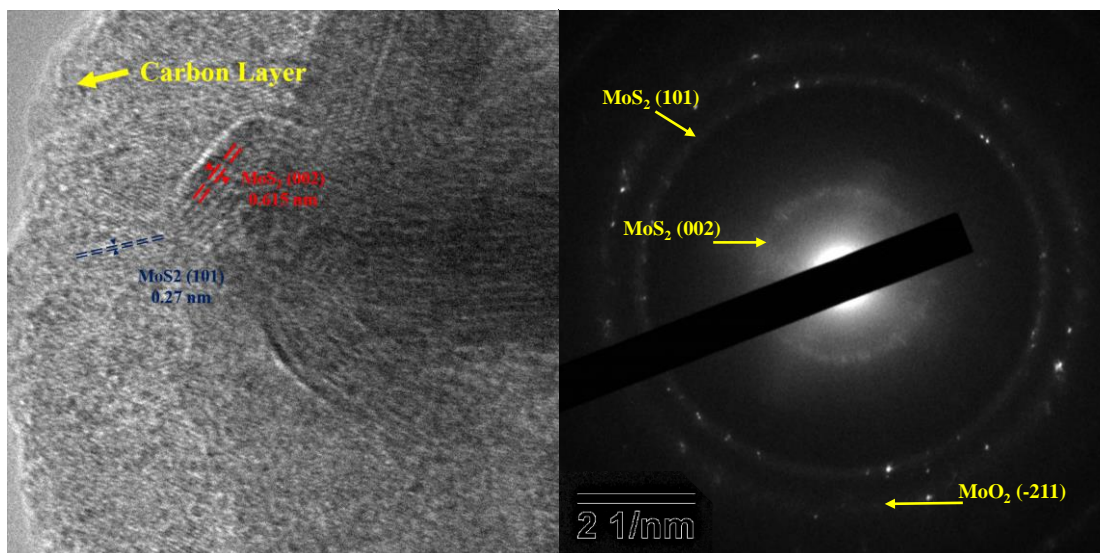


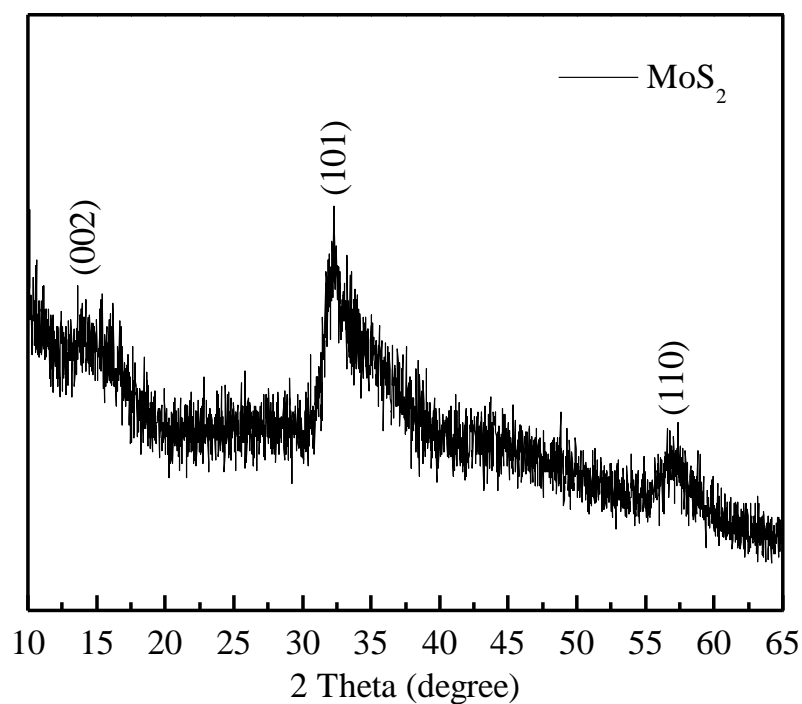
Figure S2. SEM image of MoS<sub>2</sub>@PPy and MoS<sub>2</sub>@NC.



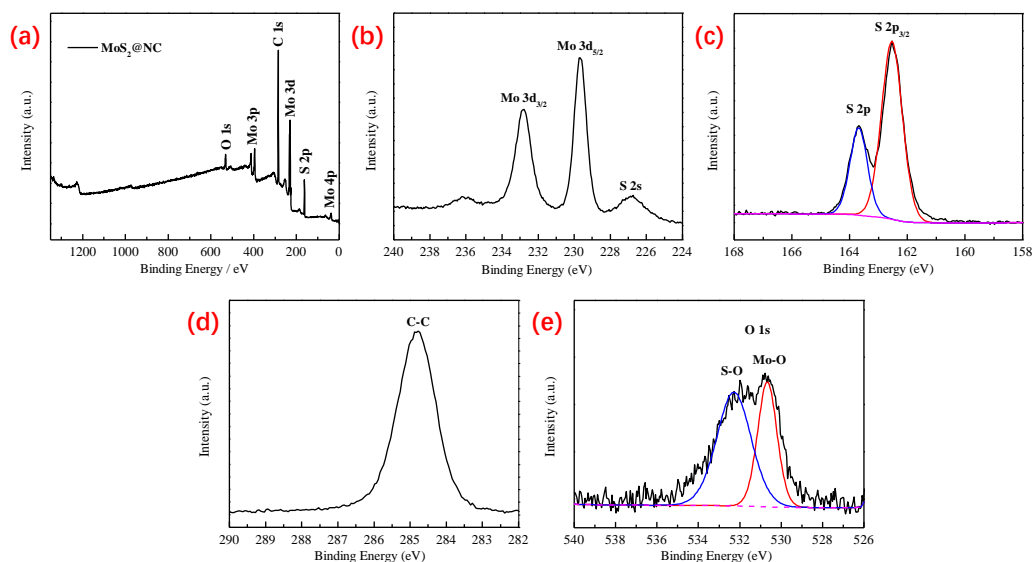
**Figure S3.** TEM image of MoS<sub>2</sub>@NC.



**Figure S4.** HR-TEM image and SAED pattern of MoS<sub>2</sub>@NC.



**Figure S5.** Magnified XRD pattern of pure MoS<sub>2</sub>.



**Figure S6** XPS full spectrum of (a) MoS<sub>2</sub>@NC, and core-level spectra of (b) Mo 3d, (c) S 2p, (d) C 1s, (e) O 1s of MoS<sub>2</sub>@NC.