

Supplementary Information

Facile fabrication of PANI/g-C₃N₄/MXene composites as electrode materials for supercapacitors

Hangming Xie,^{a,b} Zhibiao Guo,^a Mingkun Wang,^a Shiyu Ma,^a Zhe Kong,^a Zhiwei He^{a*}

^aCenter for Advanced Optoelectronic Materials, Anti-Icing Materials (AIM) Laboratory, College of Materials and Environmental Engineering, Hangzhou Dianzi University, Hangzhou 310018, China

^bSchool of Electronics and Information, Hangzhou Dianzi University, Hangzhou 310018, China

Correspondence and requests for materials should be addressed to Z.H. (email: zhiwei.he@hdu.edu.cn)

Table S1 A comparison of electrochemical performances of g-C₃N₄ or MXene related materials

Fig. S1 The CV curves of PANI, PC and PCM at 50 mV/s.

Table S1 A comparison of electrochemical performances of g-C₃N₄ or MXene related materials

Materials	Electrolytes	Potential window	Specific capacity	Cyclic stability	Ref.
PANI/g-C ₃ N ₄	1 M H ₂ SO ₄	-0.2~1.2 V	584.3 F/g (1 A/g)	81.91% after 1000 cycles (at 1 A/g)	1
g-C ₃ N ₄ /Ti ₃ C ₂	1 M H ₂ SO ₄	-0.8~0.2 V	552 F/g (2 mV/s)	97 % after 10000 cycles (at 3 A/g)	2
Ag/PANI/g-C ₃ N ₄	1 M H ₂ SO ₄	-0.2~0.8 V	797.8 F/g (1 A/g)	84.43 % after 1000 cycles (at 1 A/g)	3
PANI@MXene-CNTs	3 M H ₂ SO ₄	0~0.55 V	463 F/g (5 mV/s)	92% after 10000 cycles (at 10 A/g)	4
MXene/PANI	1 M H ₂ SO ₄	-0.2~0.6 V	556.2 F/g (0.5 A/g)	91.6% after 5000 cycles (at 5 A/g)	5
PCM	1 M H ₂ SO ₄	-0.2~0.8 V	570 F/g (5 mV/s)	91.1% after 1000 cycles (at 10 A/g)	This work

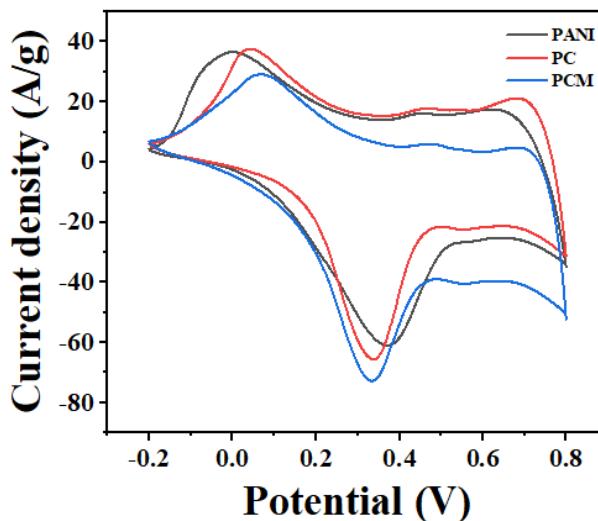


Fig. S1 The CV curves of PANI, PC and PCM at 50 mV/s.

References

1. S.-X. Zhou, X.-Y. Tao, J. Ma, L.-T. Guo, Y.-B. Zhu, H.-L. Fan, Z.-S. Liu and X.-Y. Wei, *Vacuum*, 2018, **149**, 175-179.
2. G. Xu, D. Gong, L. Yang, Y. Zheng, Y. Yue, B. Wu, Y. Feng, T. Li, W. Zhang and X. Jiang, *Int. J. Energ. Res.*, 2022, **46**, 13308-13315.
3. J. Ma, X.-Y. Tao, S.-X. Zhou, X.-Z. Song, G. Lin, W. Yao, Y.-B. Zhu, L.-T. Guo, Z.-S. Liu, H.-L. Fan and X.-Y. Wei, *J. Electroanal. Chem.*, 2019, **835**, 346-353.
4. J. Yan, C. E. Ren, K. Maleski, C. B. Hatter, B. Anasori, P. Urbankowski, A. Sarycheva and Y. Gogotsi, *Adv. Funct. Mater.*, 2017, **27**, 1701264.
5. H. Xu, D. Zheng, F. Liu, W. Li and J. Lin, *J. Mater. Chem. A*, 2020, **8**, 5853-5858.