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**MnO<sub>2</sub>-decorated 3D porous carbon skeleton derived from mollusc shell for  
high-performance supercapacitor**

Xin Luo,<sup>a</sup> Jiaoyan Yang,<sup>b</sup> Dan Yan,<sup>a</sup> Wei Wang,<sup>a</sup> Xu Wu<sup>c</sup> and Zhihong Zhu<sup>a,d</sup>

<sup>a</sup>*Institute of Nanoscience and Nanotechnology, Central China Normal University, Wuhan 430079, Hubei, P.R. China*

<sup>b</sup>*College of Biology, Central China Normal University, Wuhan 430079, Hubei, P.R.China*

<sup>c</sup>*School of Physics and Electronic Engineering, Xinyang Normal University, Xinyang 464000, P. R. China*

<sup>d</sup>*Key Laboratory of Analytical Chemistry for Biology and Medicine of MOE, Wuhan University, Wuhan 430072, Hubei, P.R. China*

*Corresponding authors:*

*Zhihong Zhu, E-mail: [zhzhu@mail.ccnu.edu.cn](mailto:zhzhu@mail.ccnu.edu.cn)*

**Abstract:** A three-dimensional porous carbon skeleton with hexagonal channels was synthesized by using mollusc shell as the carbon source. The obtained mollusc shell based macroporous carbon material (MSBPC) has high conductivity and is very favorable for use in the electrolyte penetration and electron transfer, making it an excellent carbon substrate for composite electrode materials. After incorporation of MnO<sub>2</sub> nanosheets, the MSBPC/MnO<sub>2</sub> was synthesized and applied in supercapacitors, which exhibited a high specific capacitance of 386 F g<sup>-1</sup> at 1 A g<sup>-1</sup> with an excellent rate performance (278.7 F g<sup>-1</sup> at 10 A g<sup>-1</sup>), and outstanding cycling stability, with a capacitance retention of 83% after 5000 cycles at 20 A g<sup>-1</sup>. The good electrochemical performance indicates the high potential of the prepared MSBPC/MnO<sub>2</sub> as a novel supercapacitor electrode material with a high power density, excellent long life cycling, and environmental friendliness.

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