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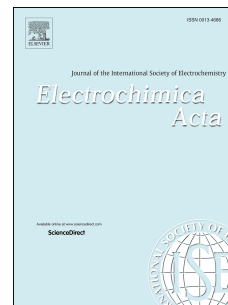
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# Hollow carbon sphere with open pore encapsulated MnO<sub>2</sub> nanosheets as high-performance anode materials for lithium ion batteries

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## Abstract

A new structured hollow carbon spheres with an open pore (HCSO) were synthesized by introducing a pore-forming agent PEG. Unlike the conventional hollow particles, the void space is fully utilized due to the presence of the open pore. As a proof-of-concept, MnO<sub>2</sub> nanosheets are in-situ grown on both the outer shell and the inner cavity of HCSO forming sandwich structure via a facile redox method, named MnO<sub>2</sub>@HCSO composite. Meanwhile, the distance for lithium ion diffusion greatly reduces. When tested as an anode material for lithium ion batteries, MnO<sub>2</sub>@HCSO composite exhibits increased performance compared to MnO<sub>2</sub>/HCS

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