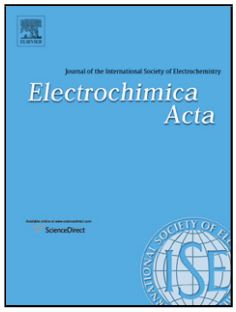

Title: Porous polyhedral and fusiform Co_3O_4 anode materials for high-performance lithium-ion batteries

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Porous polyhedral and fusiform Co_3O_4 anode materials for high-performance lithium-ion batteries

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KEYWORDS: cobalt oxide, porous, polyhedral, fusiform, lithium-ion batteries

ABSTRACT: Co_3O_4 is commonly used as a potential anode material for Li-ion batteries (LIBs). In this study, novel porous polyhedral and fusiform Co_3O_4 powders have been synthesized successfully through the hydrothermal method with different solvents followed by thermal treatment. It is shown that both of the polyhedrons (1.0-3.0 μm in side length) and the spindles (2.0-5.0 μm in length, 0.5-2.0 μm in width) are composed of similar irregular nanoparticles (20-200 nm in diameter, 20-40 nm in thickness) bonded to each other. Evaluated by electrochemical measurements, both of them have high initial discharge capacities (1374.4 $mAhg^{-1}$ and 1326.3

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