CoWO₄ Nanoparticles Prepared in Different Solvents and Their Pseudocapacitant Performances

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Cobalt tungstates (CoWO₄) nanoparticles have been successfully fabricated through a facile hydrothermal route by employing different solvents. The structure, morphology, surface area and pore distribution of the as-prepared products were characterized and their capacitances were investigated. The results showed that CoWO₄ nanoparticles synthesized in the mixed solvent of deionized water and ethylene glycol presented the highest specific capacitances of 1 817.14 F·g⁻¹ at the discharge current density of 1.0 A·g⁻¹. The high surface area and proper pore distribution contributed to this high specific capacitances. In addition, the CoWO₄ also showed good cycle-life stability.

Keywords: CoWO₄ nanoparticles, solvent, surface area, pore distribution, pseudocapacitance

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