Facile Synthesized NiCo₂O₄ Nanoparticles as Electrode Material for Supercapacitors

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NiCo₂O₄ nanoparticles were successfully synthesized by a simple, fast and cost effective sucrose-assisted combustion route, and followed by calcination treatment. When NiCo₂O₄ nanoparticles were used as electrode materials for supercapacitors, the NiCo₂O₄ electrodes delivered a high specific capacitance of 429.6 F g⁻¹ at a current density of 1 A g⁻¹, remarkable capacitance retention rate of 74.30% at current density of 16 A g⁻¹ compared with 1 A g⁻¹, and 88.54% retention after 4000 cycles. The as-prepared NiCo₂O₄ nanoparticles hold promise for practical application of high-performance supercapacitors due to the facile and low cost effective synthesized method and superior electrochemical performances.

Keywords: Nanoparticles; Cobalt acid nickel; Supercapacitor

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