

A facile synthesis of SnO₂/Co₃O₄/rGO aerogels for binder-free anode of Li-ion battery

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SnO₂/Co₃O₄/rGO aerogel was successfully fabricated through a facile one-step hydrothermal followed by a freeze drying. Scanning electron microscope (SEM) and transmission electron microscopy (TEM) showed the macroporous network of rGO nanosheets and the uniformly distribution of SnO₂ and Co₃O₄ nanoparticles on rGO sheets with very small grain less than 5 nm. With high theoretical capacity of SnO₂ and the catalyst effect of Co nanoparticles to convert Sn to SnO₂ and prevent the decomposition of LiO₂ during the lithiation/delithiation process, result in enhance electrochemical performance, the SnO₂/Co₃O₄/rGO aerogel can be used as a binder-free anode for Li-ion battery.