

A Novel Synthesis of 3D Graphene-Fe₃O₄ Nanocomposite Aerogel

판사오펑, Thi Toan Nguyen, Chinh Van Tran, 심재진*

영남대학교

(jjshim@yu.ac.kr*)

The studies on the preparation of 3D graphene-based nanocomposite aerogels and hydrogels have flourished because they combine the advantages of both graphene and nanoparticles, which have potential applications in catalysis, sensor and energy fields. Fe₃O₄ is considered as a promising anode-material candidate because of its high theoretical capacity, low irreversible capacity loss for the first cycle, eco-friendliness and natural abundance. Here, we reported a novel synthesis route of 3D graphene-Fe₃O₄ nanocomposite aerogel. First, we use liquid self-assembly method with the assistant of ultrasonication to get GO-Fe₃O₄ composite and then reduced by NaHSO₃ to obtain RGO-Fe₃O₄ hydrogel, followed by supercritical CO₂ drying. The as-synthesized aerogels were characterized by XRD, SEM, TEM.

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