

Melamine-assisted synthesis of nitrogen-doped ReS₂ nanosheets/carbon composites

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3D hierarchical nitrogen-doped ReS₂ nanosheets/carbon composites were obtained by a solvothermal synthesis involving the reaction of Re₂(CO)₁₀ with sulfur, melamine and solvents (toluene/water). The incorporation of N atoms in the resulting ReS₂/C composites was directed by the aggregation of carbonaceous matter from solvent and melamine, where the composite synthesized with toluene showed higher N content. This synthesis route, based on the selection of solvent, provides a simple approach to incorporate N atoms in a poorly crystalline structure for developing new functional ReS₂ materials.