

Hierarchical porous 3D gel of the Co_3O_4 /graphene with enhanced catalytic performance for green catalysis

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The integration of organic and inorganic building blocks into hierarchical porous architectures makes potentially desirable catalytic materials in many catalytic applications due to their combination of dissimilar components and well-constructed reactant transfer pathways. Herein, we demonstrate the preparation of the hierarchical porous Co_3O_4 @graphene 3D gel by one-step hydrothermal method to achieve high catalytic performance for PET glycolysis applications. The obtained Co_3O_4 @graphene 3D gel consisted of the interconnected networks of Co_3O_4 and graphene sheets, and thus provide large accessible active sites due to porous structure for efficient catalytic reaction. These structural merits with synergistic effect of Co_3O_4 and graphene lead to a high performance PET degradation for recycle: high conversion yield of BHET, fast degradation rate of PET, and remarkable stability.

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