

에너지 및 기체 저장을 위한 삼차원 거대다공성, 기능화된 그래핀 구조체 개발(Three Dimensional Macroporous, Functionalized Graphene Frameworks for Energy and Gas Storage)

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The controllable assembly of graphenes into three-dimensional (3D) networked framework and their compositional control by chemical functionalization are extremely attractive for synergizing both advantages of 3D complex structure and constitutive graphitic skeletons. A structural hierarchy provides macroporous accessible area, the easy access of ion and mass to active sites, and low-resistant diffusion, while graphene nanosheets offer large surface area, chemical and mechanical stabilities, and a variety of chemistries. In this talk, I will introduce our recent progress on the development of 3D macroporous, functionalized graphene frameworks for applications into energy and gas storage. The chemical strategies described herein would pave the way to fabricate advanced nanomaterials and to understand the correlation between physical (or surface) properties and structure (or composition).