Three Dimensional Macroporous, Functionalized Graphene Frameworks for Gas Separation and Storage

박호석*, 박슬기, 윤 솔, 정의영, 강성웅

경희대학교 화학공학과

(phs0727@khu.ac.kr*)

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 graphtic 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 gas separation and storage. The chemical strategies described herein would pave the way to fabricate advanced nanosorbents and to understand the correlation between physical (or surface) properties and structure (or composition).