

## Functionalized Graphene Macroscopic Architectures for Ultrahigh Rate of Supercapacitor

Yu Xu, 박호석\*

경희대학교

(phs0727@khu.ac.kr\*)

Graphene is the advanced supercapacitance nanomaterial, due to high surface area, good thermal conductivity and fast charged carrier molility, and tunable property by size and edges. In this research, we successfully synthesized the functionalized graphene architectures (GA) material via hydrothermal method for supercapacitor. The morphology of GA was investigated by scanning electron microscope, transmission electron microscope, and scanning transmission electron microscope. The chemical structure and circumstances were confirmed by Raman and X-ray photoelectron spectroscopy, the electrochemical and capacitive behaviors were evaluated by cyclic voltammetry and galvanostatic charge discharge. This research can offer new insight into fundamental study and potential application of energy storage.