Synthesis of porous reduced graphene oxide–activated carbon composite using polystyrene template for supercapacitor electrode

김원빈, 이용환, Jieling Qin, 조미숙, 이영관[†]

성균관대학교

(yklee@skku.edu[†])

Here we demonstrate a novel strategy for the preparation of porous reduced graphene oxide (rGO)–activated carbon (AC) composite. GO, polystyrene (PS) and AC are mixed in water and ethanol. The mixture are thermally treated under nitrogen at 600℃ for 4h. The morphologies of the composite are controlled by the concentration of PS. The morphology, composition and property of surface area are investigated by scanning electron microscope, X–ray photoelectron spectroscopy and Brunauer Emmett Teller. Electrochemical properties and performance of rGO–AC composite are confirmed by cyclic voltammetry, electrochemical impedance spectroscopy and galvanostatic charge/discharge analysis.