

PPy decorated cobalt carbonate hydroxide/carbon fiber clothe for high performance supercapacitor

송진우, 황해길, 최원목<sup>†</sup>  
울산대학교 화학공학부  
(wmchoi98@ulsan.ac.kr<sup>†</sup>)

The PPy@CoCH/CC composites has been synthesized via a simple hydrothermal procedure as the positive electrode materials of supercapacitors. The PPy@CoCH/CC composites possess the unique 3D hierarchical nanostructure where PPy nanodots are uniformly embedded on the nanosheets of CoCH on carbon cloth, which improve the overall electrical conductivity and ion diffusion path for superior electrochemical performance. The PPy@CoCH/CC composites delivers a high specific capacitance of 1217.5 F g<sup>-1</sup> at a current density of 1.0 A g<sup>-1</sup> with excellent cycle stability of 86.1% capacitance retention after 8000 cycles. We further assemble the flexible SSC devices using PPy@CoCH/CC composites which achieve high energy density of 43.1 Wh·kg<sup>-1</sup> at the power density of 1600 W·kg<sup>-1</sup> with mechanical stability.