Design and Synthesis of Nanomaterials for Energy Storage by Electrospinning Process

조중상, 강윤찬†
고려대학교
(yckang@korea.ac.kr†)

To create rechargeable lithium-ion batteries with superior electrochemical properties, nanostructured transition metal oxide materials with high specific capacities, fast rate performances, and long cycle lives have been developed. When used as energy storage materials, hollow metal oxide powders exhibit good electrochemical properties at high current densities because of their decreased diffusion length and the increased contact area between the electrolyte and electrode for Li+ insertion/desertion. Conductive graphitic carbon (GC) could be applied as a suitable coating layer. It could derivatively serve as fast and continuous transport pathways for electrons upon cycling due to its high electroconductivity. In this study, the formation mechanism of unique advanced nanomaterials as anode in LIBs was investigated.