

One-Pot synthesis MnO/C Composite for Li-ion battery anodes

박홍열, 이정규*
동아대학교
(jkleee88@dau.ac.kr*)

Lithium-ion batteries with high energy density are in demand as power sources for various applications such as mobile electronics and various electrified vehicles, etc. To further improve the energy density of current LIBs, various anode materials are being explored to replace carbonous materials whose theoretical capacity has been practiced. Among various candidates, transition metal oxide(TMO) nanostructures have attracted of great attention due to high conversion capacity, high intrinsic density. Among TMOs, manganese oxides possess the advantages of low cost and highly desirable electrochemical property of low lithium storage voltage. For their application in LIBs as anode materials, one has to design manganese oxide nanostructures enabled with electrical conductivity. In this study, we have attempted a facile one-pot route for the synthesis of MnOx/C nanocomposite for which manganese oxide nanoparticles were grown in aqueous medium followed by carbon gel formation in a one-pot reactor. Thus obtained MnOx/C carbon gels were transformed into MnO/C nanocomposites by thermal annealing in Ar flow. The electrochemical properties of MnO/C nanocomposites as anodes for LIBs will be presented.