Effect of the Water-based Binder on the Electrochemical Properties for Cathode Materials in Li-ion Batteries

박재우, 이창우†
경희대학교
(cwlee@khu.ac.kr†)

Li-ion batteries (LIBs) are widely used as energy storage systems for mobile devices, electric vehicles, and so on. N-methyl-2-pyrrolidone (NMP), which is listed as a carcinogenic chemical, is often used as a dispersing agent in LIBs. Recently, water-based materials have been studied as binders for LIBs because of the need for low-cost materials and relatively un-harmful manufacturing processes.
In this study, we study the effect of water-based binder on the electrochemical properties for cathode materials. By utilizing water-based material as a binder for cathodes, we have investigated to find factors which are able to make similar or superior electrochemical properties compared with those by conventional PVdF binder.
In order to investigate the crystallinity and morphology of the prepared electrodes for utilizing water-based binder, X-ray diffraction (XRD) and field emission scanning electron microscopy (FE-SEM), etc. have been basically used.