

Production of Lithium Iron Phosphate Particles by Hydrothermal Synthesis under Supercritical Condition

박유석, 김재덕*, 김재훈, 밤방
한국과학기술연구원
(jdkim@kist.re.kr*)

Supercritical water provides an excellent reaction medium for hydrothermal synthesis of metal oxide nanoparticles. In this work, an easy and quick hydrothermal synthesis was developed to prepare lithium iron phosphate (LiFePO_4) particles to be used as cathode material for Li-ion batteries by reacting iron sulfate, phosphoric acid, and lithium hydroxide in a flow system. The effects of temperature and feed concentration on the size and morphology of particles were investigated. Based on scanning electron microscopy (SEM), X-ray diffraction, and electrophoretic light scattering analyses, uniform particles were obtained.