

Gradient Concept of $\text{Li}[\text{Ni}_x\text{Mn}_{1-x}]\text{O}_2$ for High Capacity Lithium Ion Battery

정슬기¹, 전영표¹, 이철위^{1,2}, 임지선^{1,*}

¹한국화학연구원; ²과학기술연합대학원대학교

(jsim@kriect.re.kr*)

$\text{Li}[\text{Ni}_x\text{Mn}_{1-x}]\text{O}_2$ cathode materials were synthesized with varying concentration-gradient of Ni and Mn ions from the core (90 wt% for Ni and 10 wt% for Mn) to the shell (50 wt% for Ni and 50 wt% for Mn) by a co-precipitation process. Cathode materials were prepared in various experimental conditions to investigate the particle size effects and morphology. The prepared cathode materials were characterized by X-ray diffraction (XRD), scanning electron microscopy (SEM) and electrochemical performance. As a result, a half cell using our concentration-gradient cathode material achieved an optimum condition for a high capacity, long cycle life and improved safety.