

화염분무열분해공정을 통해 합성된 나노 $\text{Li}(\text{Ni}_{1/3}\text{Co}_{1/3}\text{Mn}_{1/3})\text{O}_2$ 분말의 전기화학적 특성

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It is well known that the electrochemical performance of a cathode material is strongly affected by the particle properties such as morphology, specific surface area, crystallinity, and composition. In recent years, attempts have been made to use fine cathode powders (powders comprising fine-sized particles) for the development of high-capacity lithium secondary batteries. The use of cathode powders comprising nanosized particles has been also investigated because these powders have high charge/discharge rates. The high charge/discharge rates are in turn due to the large electrode/electrolyte interface area achieved when using these powders.

Flame spray pyrolysis has been extensively used to prepare cathode and anode powders comprising nanosized particles. LiCoO_2 , LiV_3O_8 , $\text{Li}_4\text{Ti}_5\text{O}_{12}$, LiFe_5O_8 , and LiMn_2O_4 powders prepared by flame spray pyrolysis have been reported to have good electrochemical properties. In this study, nano-sized $\text{Li}(\text{Ni}_{1/3}\text{Co}_{1/3}\text{Mn}_{1/3})\text{O}_2$ powders were prepared by flame spray pyrolysis. The electrochemical properties of the prepared powders were investigated.