

CONDUCTIVITIES OF $\text{LiCo}_{0.1}\text{Ni}_{0.9}\text{O}_2$ AND LiCoO_2

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ABSTRACT

CONDUCTIVITIES OF $\text{LiCo}_{0.1}\text{Ni}_{0.9}\text{O}_2$ AND LiCoO_2

A good performance of battery is very important because the lifespan of the battery can be longer. In this project work, the values of conductivity of $\text{LiCo}_{0.1}\text{Ni}_{0.9}\text{O}_2$ and LiCoO_2 were investigated inside Nanomaterials Lab in the Faculty of Applied Science, UiTM Shah Alam. The parameters are pure cathode materials and composite cathode materials where composite materials contain PTFE and Super P. These parameters were measured using EIS system. The equipment was connected to the computer that using a Zman Sofeware to obtained the Nquist plot. The data is observed and collected then was analyzed using Microsoft Excel. The measurement was carried out for two month. It was found that the conductivity of composite of cathode materials is bigger than the pure of cathode materials. The graph of composite cathode materials is assume to have two semi-circle indicating two Debye response which can be implied that it's had a two conducting species whereas for pure cathode materials the graph showed one semi-circle indicating a Debye response. From this study it was observed that the conductivity of $\text{LiCo}_{0.1}\text{Ni}_{0.9}\text{O}_2$ is greater than LiCoO_2 . It can be assumed that is because due to the present of Nickel.