

# **The Synthesis of TiO<sub>2</sub> Nanoparticles and Its Electrochemical Performances**

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## **Abstract**

In recent years, there has been growing interest in nanoparticles electrode materials due to its potential application in rechargeable lithium batteries as an alternative to the LiCoO<sub>2</sub> cathode now used. We report the results from the investigation of TiO<sub>2</sub> nanoparticles which is synthesized using polyol process. The objective was to understand the effect of the process conditions on particle size, morphologies, and the characteristics of materials in electrochemical applications. The electrochemical characteristics are discussed in relation to chemistry and structure. The stability of the positive electrode materials with the electrolyte were investigated using advanced characterization methods, which included calendar and cycle life testing to measure electrochemical properties.