

## Synthesis and Characterization of Chitosan-Starch Polymer Reinforced with Functionalized Multiwalled Carbon Nanotubes as Electrolyte for Lithium Batteries

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### ABSTRACT

In recent years, it has been reported that solid electrolytes are considered promising materials in store energy field, due to their unique properties such as high ionic conductivity, physical flexibility and their ability to provide good electrode / electrolyte contact. Compared to the liquid state, the production of leak and gas formation during the decomposition of the solvent is avoided, in addition to being small, lightweight and safe.

In this work is reported the synthesis and the physical and electrochemical characterization of chitosan-starch polymers modified with carbon nanotubes and lithium. For obtain the structural and physicochemical properties of polymers were used the techniques of: Dynamical Mechanical Analysis, Scanning Electronic Microscopy, FTIR and Raman spectroscopy. The electrical and electrochemical properties were determinated by using Electrochemical Impedance Spectroscopy and Conductivity Measurements. The results obtained indicate that the polymeric material is a viable candidate to be used as electrolyte for lithium batteries.

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