Study of electrochemical properties for polyaniline/polyurethane coreshell membrane

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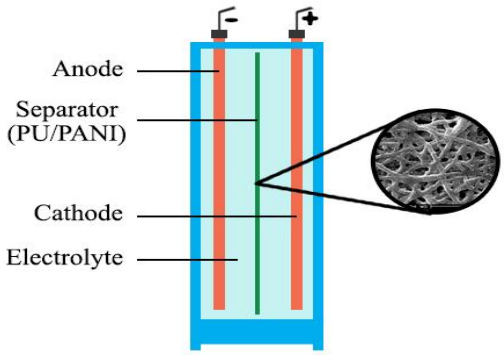
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I. Abstract

This study focus on investigation of electrochemical properties of lithium ion battery with polyaniline/polyurethane (PU/PANI) nanofibers membrane separator. Aniline was synthesized in the presence of polyurethane nanoweb at different aniline concentrations (0.005, 0.01, 0.03 and 0.04 molar in mixture of hydrochloric acid and distilled water) and its morphology was analyzed by absorption of n-butanol method and scanning electron microscope. Nanofiber membrane ion conductance at 25 ˚C temperature was measured using electrochemical impedance spectroscopy technique. The presence of synthesized polyaniline has improved the ion conductance from 0.079 mS/cm to 1.378 mS/cm. The polymeric separator which was polymerized with 0.03 molar of aniline in hydrochloric acid and distilled water has the best ion conductance, based on its lower mass resistance than other membranes. Based on the results obtained from ion conductance and chemical stability of PU/PANI nanofiber membranes, these membranes have a good potential to be used as polymeric separators in ion lithium batteries. Also, the synthesized membrane with 0.03 molar of aniline had the best results of ion conductance and chemical stability in ion lithium batteries.

II. Image:



III. Reference:

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IV. Biography:

Jelokhani has completed his bachelor at the age of 23 years from Isfahan University. He get straight to study master and got his master at the age of 26.

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