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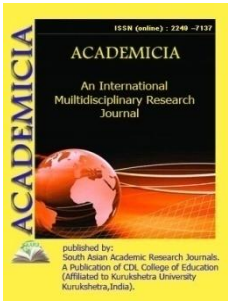

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DETERMINATION OF IONIC CONDUCTIVITY OF POLYMER ELECTROLYTES IN LI-ION BATTERIES USING ELECTROCHEMICAL IMPEDANCE SPECTROSCOPY

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ABSTRACT

In this work, we studied the graph of impedance spectroscopy of a solid polymer electrolyte at room temperature for lithium-ion batteries and its temperature dependence. When studying solid polymer electrolytes, Nyquist coordinates and electrochemical impedance spectroscopy were used. The ionic conductivity of the electrolyte was $6.39 \cdot 10^{-6} \frac{1}{Ом \cdot см}$ *at 303 K and* $1{,}07 \cdot 10^{-4} \frac{1}{Ом \cdot см}$ *at 373 K. Maximum conductivity electrolyte based on* $LiTf_2$ *was* $3{,}075 \cdot 10^{-5} \frac{1}{Ом \cdot см}$*, which was achieved with a sample thickness of 0.033 cm.*

KEYWORDS: *Li-Ion, Polymer Electrolyte (PE), Impedance Spectroscopy, Polymethyl Methacrylate (PMMA), Conductivity.*

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