

## Obtaining and Investigation of Polymer-Electrolytes on the Basis of Silicon-organic Polymers

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The electrolytes obtained on the basis of polymer materials containing different salts of lithium attract a great interest of scientists and technicians, as these materials are the typical alternative sources of the energy. The main interest to these materials is due to many positive properties (low density, possibility of the variation of electric parameters in a wide range, durability, etc).

The presented work is devoted to investigation of the electro physical properties of electrolytes based on polysiloxane polymer with propylbutyrate, propylacetioacetate and ethyltriethoxysilane side groups and Li salts of two types. It is shown that this dependence is nonlinear, has maximum, the height and position on the diagram of which depend on the type and concentration of the salts. The experimental data allow provide the optimization of the content of polyelectrolytes for obtaining of material with maximum conductivity.

The temperature dependence of the electrolytic membrane ion conductivity in Arrhenius coordinates in the range of 25 – 90°C has a linear character, inclination of which depends on lithium salt type. The conductivity of all membranes increases, which is connected with increasing of the ion mobility. These dependences are reversible and are characterized by hysteresis. It was shown that the electro conductivity of obtained solid polymer-electrolytes changes in the range  $5 \times 10^{-4}$  -  $1 \times 10^{-7}$  S/cm.

The voltamogrammes of the electrolytes in the regime of the permanent voltage at room temperature are characterized by the saturation of the electric current, the value and change character of which also depend on the electrolyte composition. The analysis of experimental results is explained by the structural peculiarities and phenomena which define the charge transport processes in the polymer matrix.