

**SYNTHESIS AND ELECTROCHEMICAL PROPERTIES OF IONIC LIQUIDS  
BASED ON 1,2,3,4-TETRAHYDROPYRROLO [1,2-A] PYRAZINIUM CATION**

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The widespread use of polymer-containing composites in supercapacitor assemblies is limited, on the one hand, by the wettability of their surface with an electrolyte solution and, on the other hand, by the high contact resistance arising at the boundary of the electrode material - current collector. The ability to electropolymerize a pyrrole-containing ionic liquid (IL) at low potentials makes it possible to obtain a layer of conducting redox polymer on the surface of the current collector and carbon material, leading to an increase in the capacity of the composite due to the redox processes. In this work, for the first time, the complete synthesis of two pyrrole-containing ILs based on alkyl substituted pyrrolo[1,2-a]pyrazines was carried out (Fig. 1).

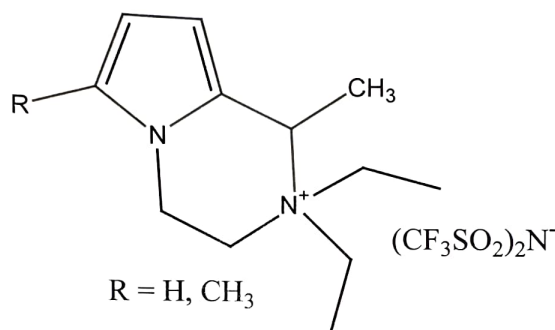


Figure 1. The structure of the obtained IL.

The composition and structure of the obtained ILs were confirmed by XPS and  $^1H$  and  $^{13}C$  NMR. The study of electrical conductivity and the electrochemical stability of acetonitrile solutions synthesized IL was performed using the impedance spectroscopy and cyclic voltamperometry.

*The work was supported by the Russian Science Foundation under grant 18-13-00-217.*