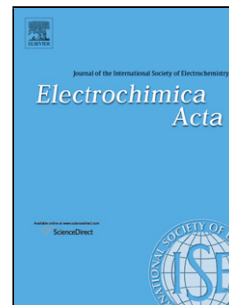


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A new method for improving the conductivity of alkaline membrane by incorporating TiO₂- ionic liquid composite particles

Yuenan Chen, Ziming Li, Nanjun Chen, Rui Li, Yajun Zhang, Ke Li, Fanghui Wang, Hong Zhu*

Institute of Modern Catalyst, State Key Laboratory of Chemical Resource Engineering ,
School of Science, Beijing University of Chemical Technology, Beijing 100029, PR China
State Key Laboratory of Chemical Resource Engineering , School of Science, Beijing
Beijing University of Chemistry
Technology, Beijing, PR China
Beijing 100029
China
Phone: +861082161887
E-mail: zhuho128@126.com

Abstract

In this paper, we prepared a series of ionic liquids including methyl ionic liquids, ethyl ionic liquids and hydroxyethyl ionic liquids. We used the common polymer backbone polyphenylene ether and the conventional conductive group triethylamine. We introduced three different ionic liquids to investigate different effects of the extent of ion conductivity improvement from its structure change. The introduction of ionic liquid significantly improved the ionic conductivity of the alkaline membrane. The highest conductivity of the composite membranes was 2.5 times higher than that of the pure membrane. A certain amount of nano-TiO₂

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