

Investigation of electrochemical reaction of Ionic liquid containing allyl and vinyl group

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The electrochemical reaction of ILs (Ionic liquids) bearing double bond as a functional group, 1-allyl-3-methylimidazolium bis(trifluoromethanesulfonyl)imide ([AMIm]TF2N) and 1-allyl-3-vinylimidazolium bis(trifluoromethanesulfonyl)imide ([AVIm]Tf2N), were studied using electrochemical and spectroscopic methods. ¹H NMR spectra of 1-ethyl-3-methylimidazolium tetrafluoroborate ([EMIm]BF₄) contains 5 wt.% of [AMIm]TF2N were obtained. By comparing the ¹H NMR spectra of IL mixture, it was founded that the allyl and/or vinyl functional groups in the range of xx-xx ppm were diminished and new signal grew at xx ppm by the electrochemical reaction. To gain the deeper understand of the reaction, [AMIm]TF2N and [AVIm]Tf2N were passivated on the surface of electrodes using cyclic voltammetry (CV), respectively. The obtained brown powders were washed and dried followed by obtaining FT-IR spectra.