Supplemental Documents

Proton transfer and esterification reactions in EMIMOAc-based acidic ionic liquids

Anh T. Tran, Phuoc H. Lam, Alexandra M. Miller, Dustin J. Walczyk, Jay Tomlin, Timothy D. Vaden, and Lei Yu*

Department of Chemistry and Biochemistry, Rowan University, Glassboro, New Jersey 08028, USA

Figures S1 A-D show the spectra of mass spectrometry obtained by GC-MS measurements. The structures of the eluents are identified by comparing the fragmental pattern of the experimental results with the National Institute of Standard and Technology (NIST) data base.

Figure S1 A: Mass spectrum of the eluent identified to be acetic acid.
Figure S1 B: Mass spectrum of the eluent identified to be formic acid.

Figure S1 C: Mass spectrum of the eluent identified to be methyl formate.
Figure S1 D: Mass spectrum of the eluent identified to be methyl acetate.

Figure S2 shows the FTIR spectra of pure IL EMIMOAc, MSA, and their equal-molar mixture. In addition to the superimposing of the two spectra of the pure compounds, the spectrum of the mixture shows peaks at 1223 cm$^{-1}$, 1721 cm$^{-1}$ and a shoulder at about 1750 cm$^{-1}$, that may indicate the formation of an ester and a carboxylic acid.

Figure S2: FTIR spectra of pure EMIOAc, pure MSA, and their mixtures at molar ratios of 1:1.