Supporting Information

Ionic Liquids based on diethylmethyl(2-methoxyethyl)ammonium cation and bis(perfluoroalkanesulfonyl)amide anions: influence of anion structure on liquid properties

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[TMA][[(FSO)₂N]] (TMA-0). IR (KBr) \(\nu_{\text{max}}\): 453w, 571s, 754m, 837m, 949m, 1096m, 1182s, 1222w, 1365m, 1391m, 1491m, 3050w cm\(^{-1}\). \(^1\)H NMR (600 MHz, CDCl\(_3\)) \(\delta\) 3.32 (s, 12H) ppm. Anal. Calcd for C\(_4\)H\(_{12}\)F\(_2\)N\(_2\)O\(_4\)S\(_2\): C, 18.89; H, 4.76; N, 11.02%. Found: C, 18.92; H, 4.65; N, 11.13%.

[TMA][[(CF₃SO)₂N]] (TMA-1). IR (KBr) \(\nu_{\text{max}}\): 515m, 571m, 615m, 626w, 742w, 764vw, 793w, 951m, 1039w, 1054s, 1145m, 1191w, 1204s, 1225w, 1332m, 1348s, 1359w, 1422vw, 1492m, 3047w cm\(^{-1}\). \(^1\)H NMR (600 MHz, CDCl\(_3\)) \(\delta\) 3.31 (s, 12H) ppm. Anal. Calcd for C\(_6\)H\(_{12}\)F\(_6\)N\(_2\)O\(_4\)S\(_2\): C, 20.34; H, 3.41; N, 7.91%. Found: C, 20.05; H, 3.25; N, 7.95%.

[TMA][[(C\(_2\)F\(_5\)SO)₂N]] (TMA-2). IR (KBr) \(\nu_{\text{max}}\): 522vw, 529m, 537w, 616s, 645w, 657vw, 740w, 757w, 779vw, 953w, 981s, 993vw, 1070w, 1090m, 1131vw, 1152m, 1178s, 1190w, 1212w, 1223w, 1231s, 1335m, 1354s, 1425vw, 1495m, 3044w cm\(^{-1}\). \(^1\)H NMR (600 MHz, CDCl\(_3\)) \(\delta\) 3.31 (s, 12H) ppm. Anal. Calcd for C\(_8\)H\(_{12}\)F\(_{10}\)N\(_2\)O\(_4\)S\(_2\): C, 21.15; H, 2.66; N, 6.17%. Found: C, 20.98; H, 2.57; N, 6.17%.

Table S1. Ionic Conductivity (\(\sigma\) / S cm\(^{-1}\))

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<th>T / °C</th>
<th>DEME-0</th>
<th>DEME-1</th>
<th>DEME-2</th>
<th>DEME-3</th>
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Table S2. Viscosity ($\eta$ / mPa s)

Table S3. Best-Fit Parameters of the Litovitz equation