

The multifunctional role of ionic liquids in the formation of polymer nanocomposites

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Supplementary Information

1-Triethylene glycol monomethyl ether-3-methylimidazolium methanesulfonate.
 ^1H NMR (300.0 MHz, CDCl_3 , 298 K) δ 9.62 (bs, 1H), 7.66 (bs, 1H), 7.47 (bs, 1H), 4.54 (t, $J=4.7$, 2H), 4.02 (s, 3H), 3.88 (t, $J=4.7$, 2H), 3.67-3.60 (m, 6H), 3.57-3.53 (m, 2H), 3.38 (s, 3H), 2.85 (s, 3H); $^{13}\text{C}\{^1\text{H}\}$ NMR (75.4 MHz, CDCl_3 , 298 K) δ 137.6 (CH), 123.2 (CH), 122.8 (CH), 71.5 (CH_2), 70.0 (CH_2), 69.9 (CH_2), 69.8 (CH_2), 68.7 (CH_2), 58.6 (CH_3), 49.2 (CH_2), 39.4 (CH_3), 35.9 (CH_3).

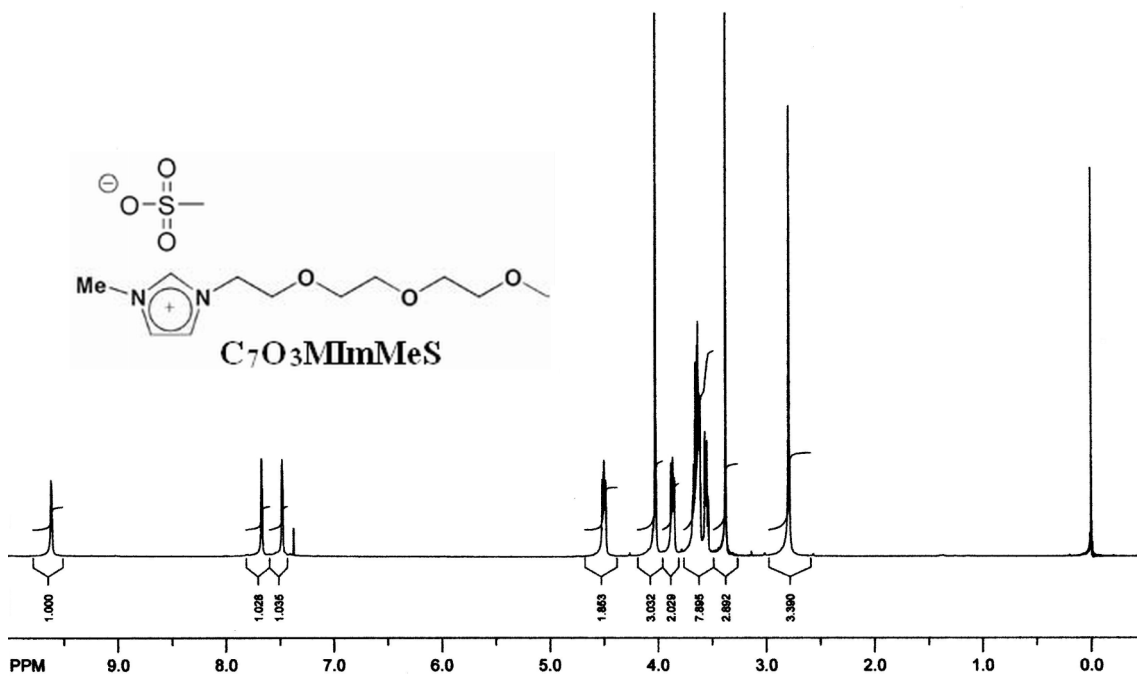


Figure S1. ^1H NMR spectrum of 1-triethylene glycol monomethyl ether-3-methylimidazolium methanesulfonate ($\text{C}_7\text{O}_3\text{MImMeS}$) (300 MHz, CDCl_3).

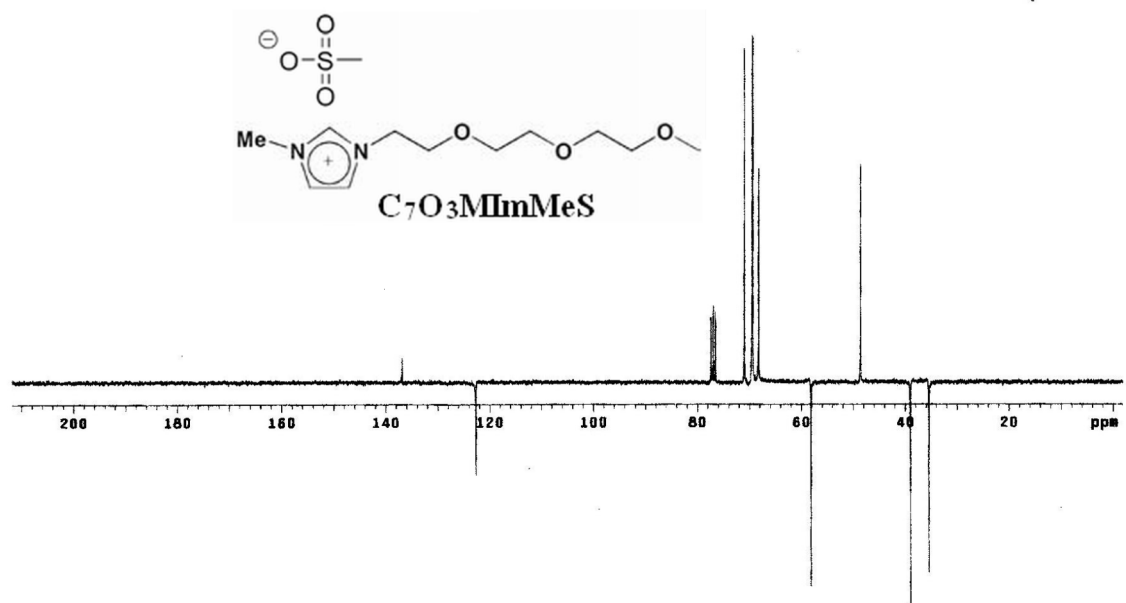


Figure S2. ^{13}C NMR spectrum of 1-triethylene glycol monomethyl ether-3-methylimidazolium methanesulfonate ($\text{C}_7\text{O}_3\text{MImMeS}$) (75 MHz, CDCl_3).

1-Triethylene glycol monomethyl ether-3-methylimidazolium tetrafluoroborate.
 ^1H NMR (300.0 MHz, d_6 -acetone, 298 K) δ 9.00 (bs, 1H), 7.77 (bs, 1H), 7.68 (bs, 1H), 4.52 (t, $J = 4.8$, 2H), 4.07 (s, 3H), 3.92 (t, $J = 4.8$, 2H), 3.68-3.48 (m, 8H), 3.31 (s, 3H);
 $^{13}\text{C}\{^1\text{H}\}$ NMR (75.4 MHz, d_6 -acetone, 298 K) δ 138.5 (CH), 124.8 (CH), 124.5 (CH), 73.1 (CH_2), 71.4 ($2\times\text{CH}_2$), 71.3 (CH_2), 69.9 (CH_2), 59.3 (CH_3), 50.7 (CH_2), 37.0 (CH_3).

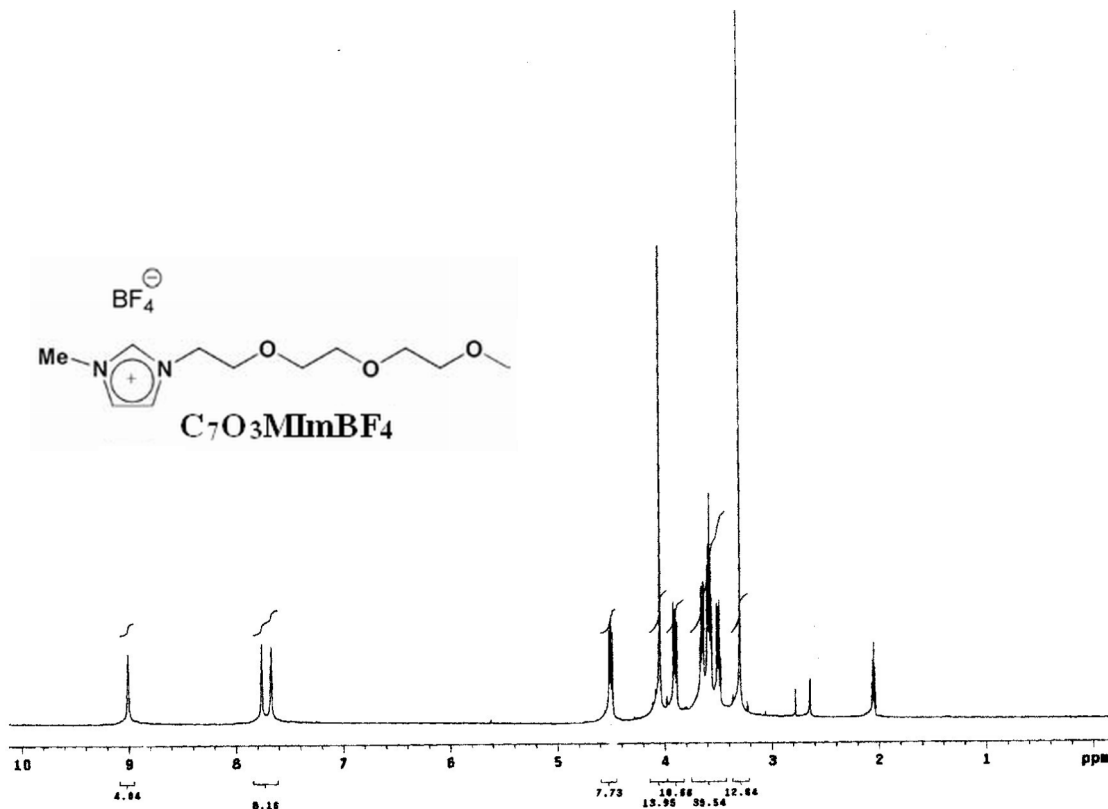


Figure S3. ^1H NMR spectrum of 1-triethylene glycol monomethyl ether-3-methylimidazolium tetrafluoroborate ($\text{C}_7\text{O}_3\text{MImBF}_4$) (300 MHz, d_6 -acetone).

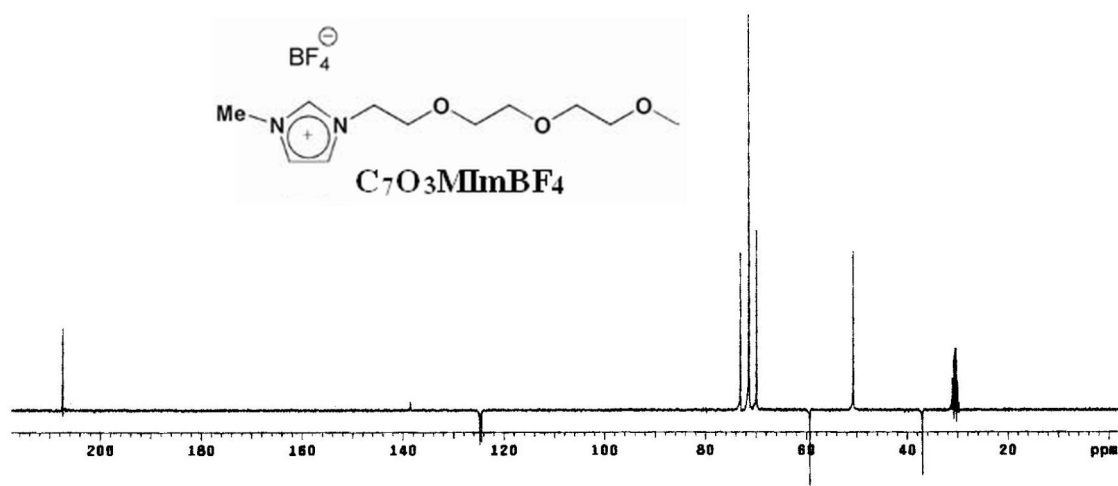


Figure S4. ^{13}C NMR spectrum of 1-triethylene glycol monomethyl ether-3-methylimidazolium tetrafluoroborate ($\text{C}_7\text{O}_3\text{MImBF}_4$) (75 MHz, d_6 -acetone).

1-Decyl-3-methylimidazolium tetrafluoroborate. ^1H NMR (300.0 MHz, CDCl_3 , 298 K) δ 9.02 (bs, 1H), 7.77 (m, 1H), 7.71 (m, 1H), 4.36 (t, $J = 7.3$, 2H), 4.05 (s, 3H), 1.95 (m, 2H), 1.36-1.27 (m, 14H), 0.87 (t, $J = 6.6$, 3H); $^{13}\text{C}\{^1\text{H}\}$ NMR (75.4 MHz, CDCl_3 , 298 K) δ 137.8 (CH), 124.9 (CH), 123.6 (CH), 50.6 (CH_2), 36.7 (CH_3), 32.9 (CH_2), 31.1 (CH_2), 30.5 (CH_2), 30.4 (CH_2), 30.3 (CH_2), 30.0 (CH_2), 27.1 (CH_2), 23.6 (CH_2), 14.7 (CH_3).

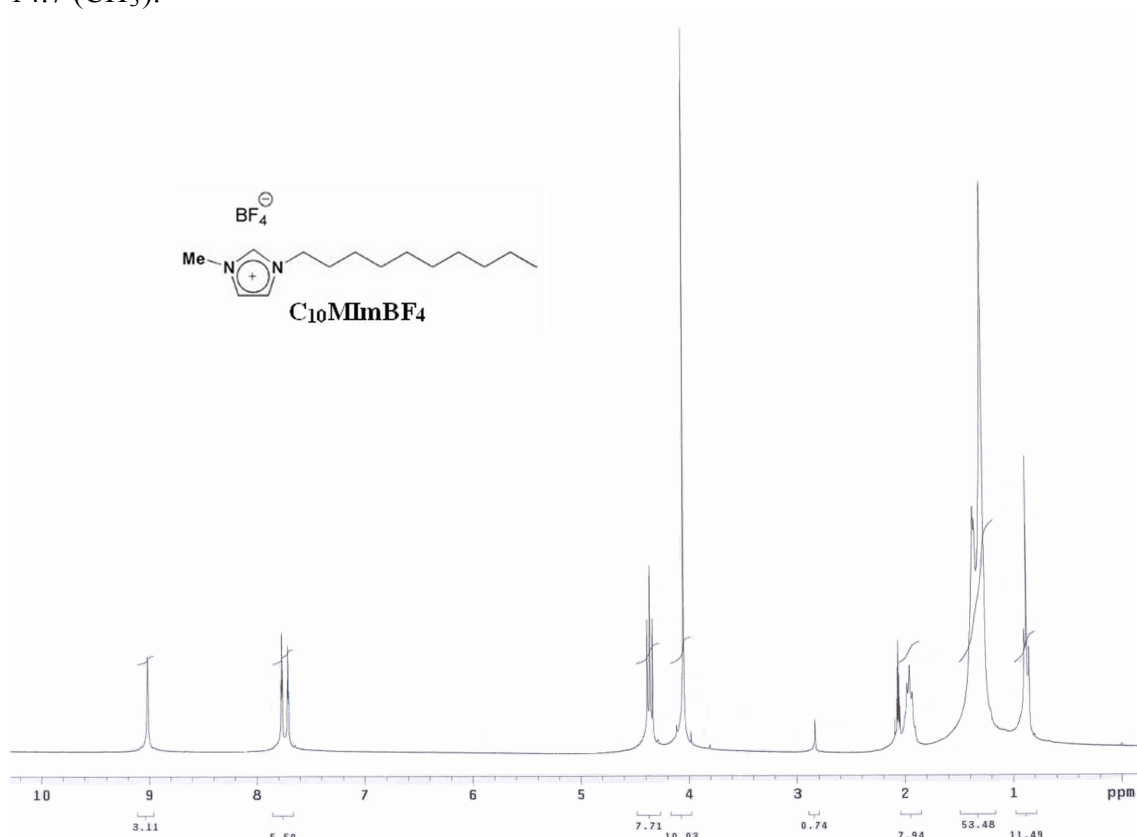


Figure S5. ^1H NMR spectrum of 1-decyl-3-methylimidazolium tetrafluoroborate ($\text{C}_{10}\text{MImBF}_4$) (300 MHz, d_6 -acetone).

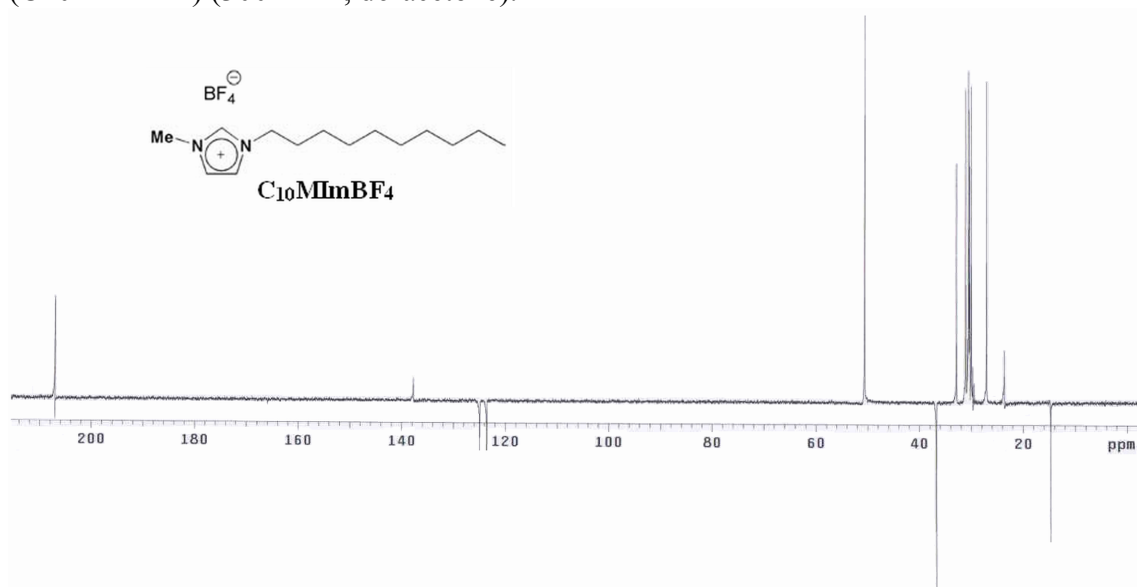


Figure S6. ^{13}C NMR spectrum of ionic 1-decyl-3-methylimidazolium tetrafluoroborate ($\text{C}_{10}\text{MImBF}_4$) (75 MHz, d_6 -acetone).