Electronic Supplementary Information

Facile Synthesis of Cylindrical Molecular Brushes via Lewis Pair-Mediated Polymerization

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1. Experimental Procedure

Scheme S1. Schematic illustration for the synthesis of vinylimidazolium salt and molecular brushes.

2. $^1$H NMR spectra

Figure S1. $^1$H NMR spectrum of 1-(2-chloroethyl)-2-methyl-$^1$H-imidazole. $^1$H NMR (400 MHz, DMSO-$d_6$): δ=7.10 (s, 1H, CH$_2$NCH=), 6.73 (s, 1H, -CHN=C), 4.22 (t, 2H, -CH$_2$Cl), 3.90 (t, 2H, CH$_2$N), 2.29 (s, 3H, -CH$_3$).
Figure S2. $^1$H NMR spectrum of 2-methyl-1-vinyl-$^1$H-imidazole. $^1$H NMR (400 MHz, DMSO-$d_6$): $\delta=7.51$ (s, 1H, NCH=CHN), 7.08 (m, 1H, CH=CH$_2$), 6.82 (s, 1H, NCH=CHN), 5.37, 4.85 (2H, =CH$_2$), 2.34 (s, 3H, CH$_3$).

Figure S3. $^1$H NMR spectrum of polyimidazolium salt (PDMVII-2).
Figure S4. $^1$H NMR spectrum of polyimidazolium salt (PDMVII-3).