Electronic Supplementary Information (ESI) for

Toughening of poly(ionic liquid)-based ion gels with cellulose nanofibers as a sacrificial network

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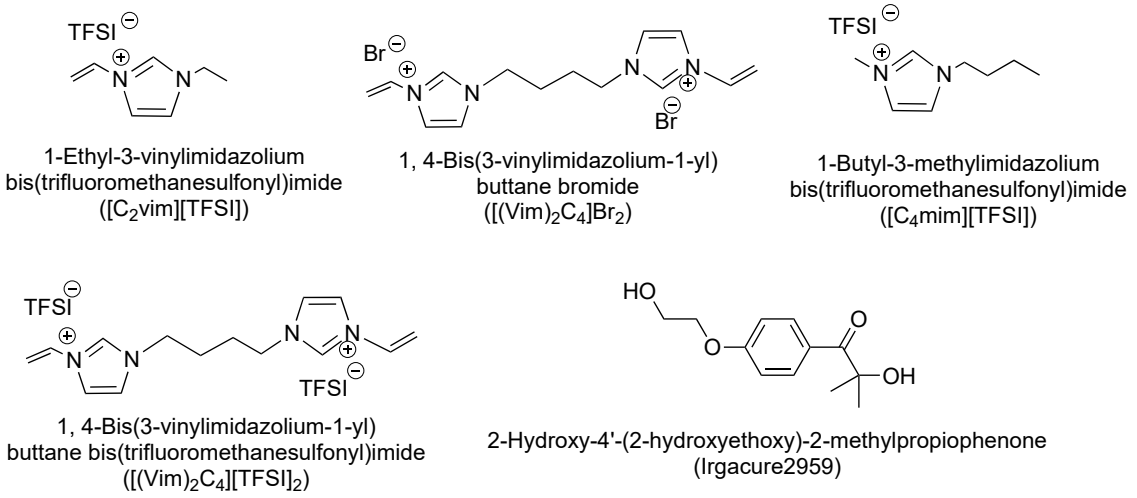
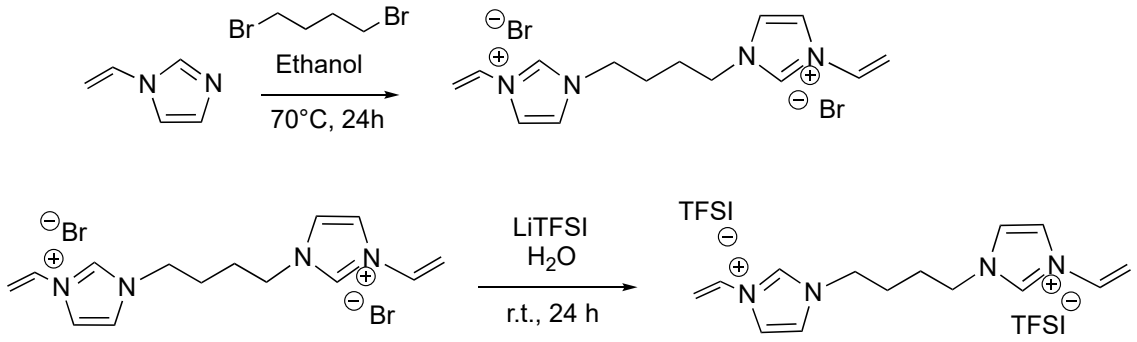


Fig. S1 Chemical structures of reagents used to prepare PIL ion gels.

Scheme S1 Synthesis of $[(Vim)_2C_4]Br_2$ and $[(Vim)_2C_4]$ $[TFSI]_2$.



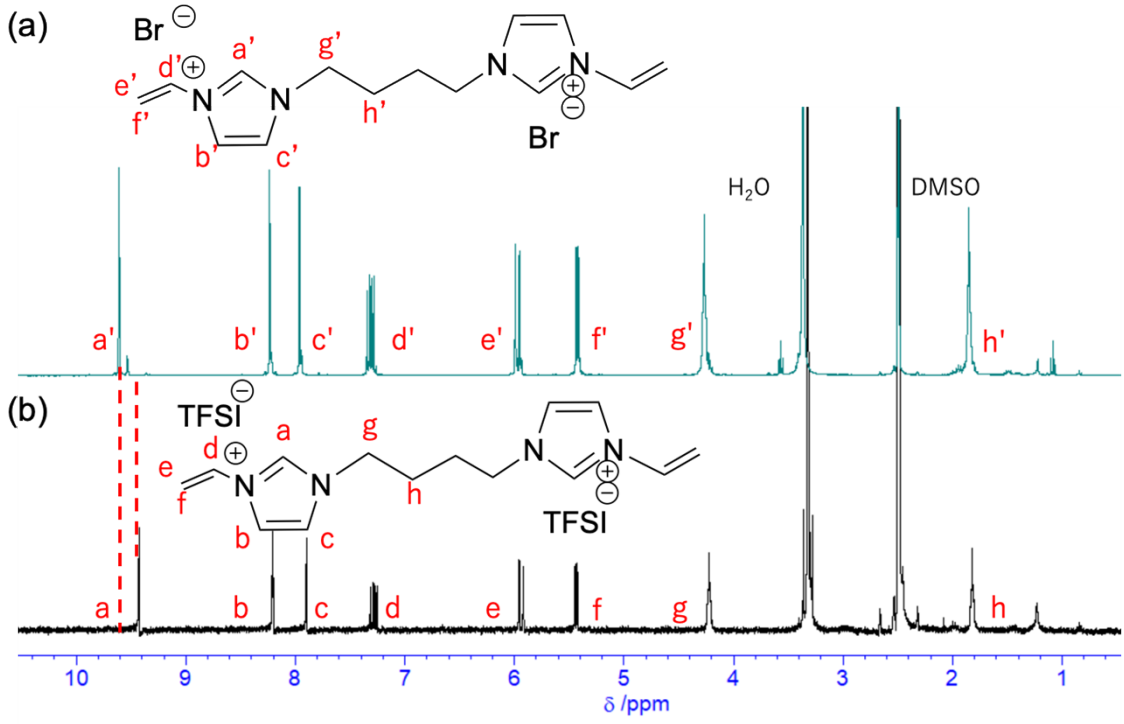


Fig. S2 ^{1}H NMR spectra of **(a)** $[(Vim)_2C_4]Br_2$ and **(b)** $[(Vim)_2C_4]$ $[TFSI]_2$. (Solvent: DMSO-d_6).

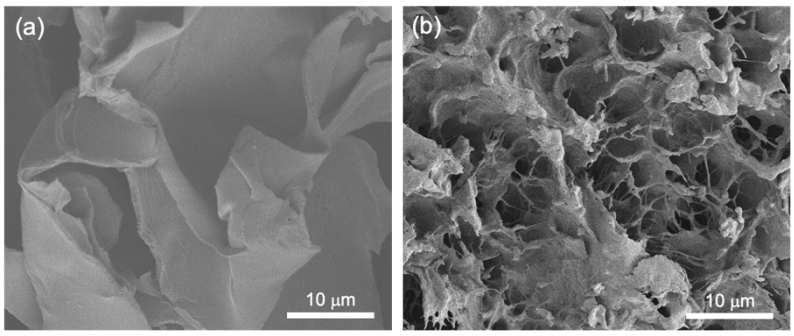


Fig. S3 Cross-sectional SEM images of lyophilized **(a)** PIL SN and **(b)** TOCNF/PIL DN gels. The concentration of TOCNF in the DN gel was 6 wt% relative to the PIL network.