

Polyfluorene-based electrolyte membrane for hydrogen/oxygen gas separation under humidified
conditions

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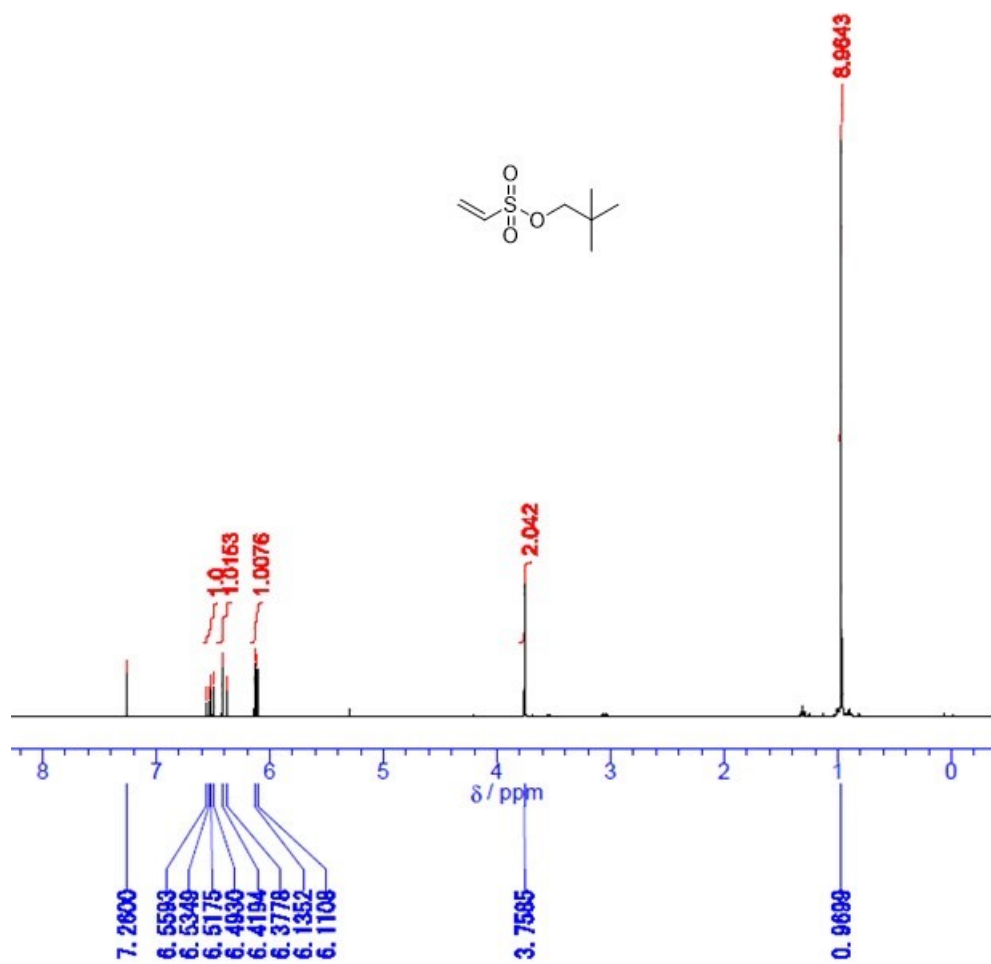
Table S1. Molecular weight of the polymers

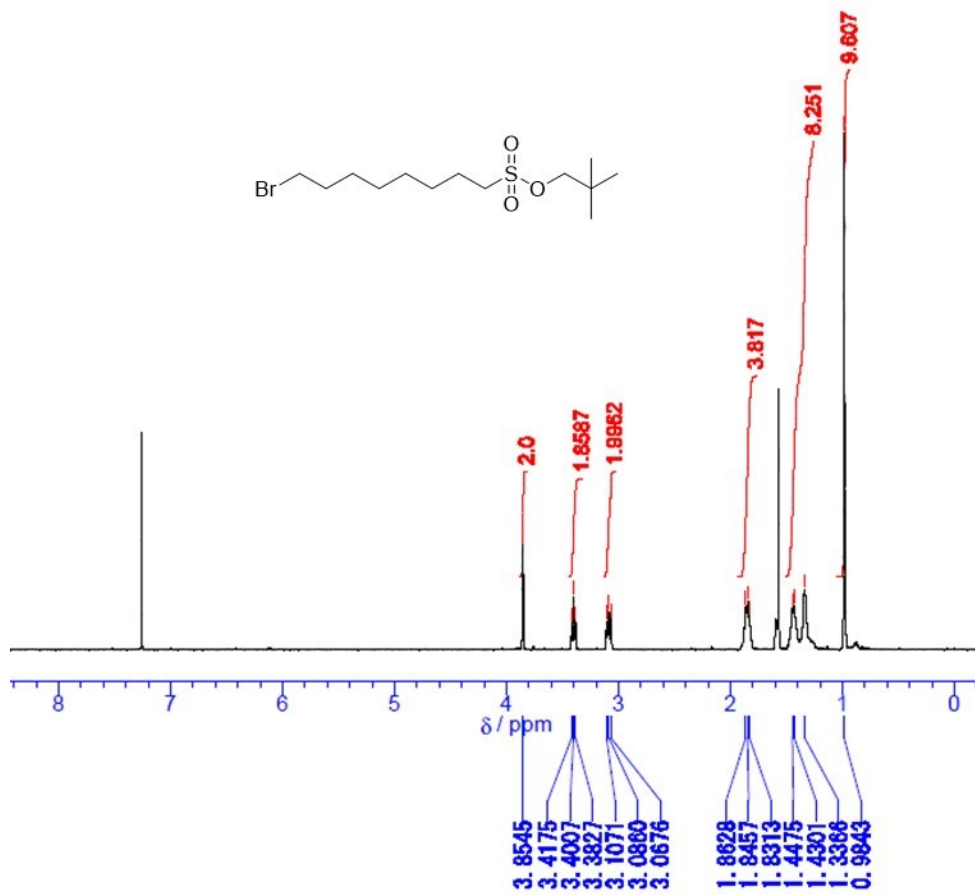
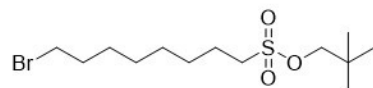
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Figure S1. ¹H-NMR spectra of the monomers





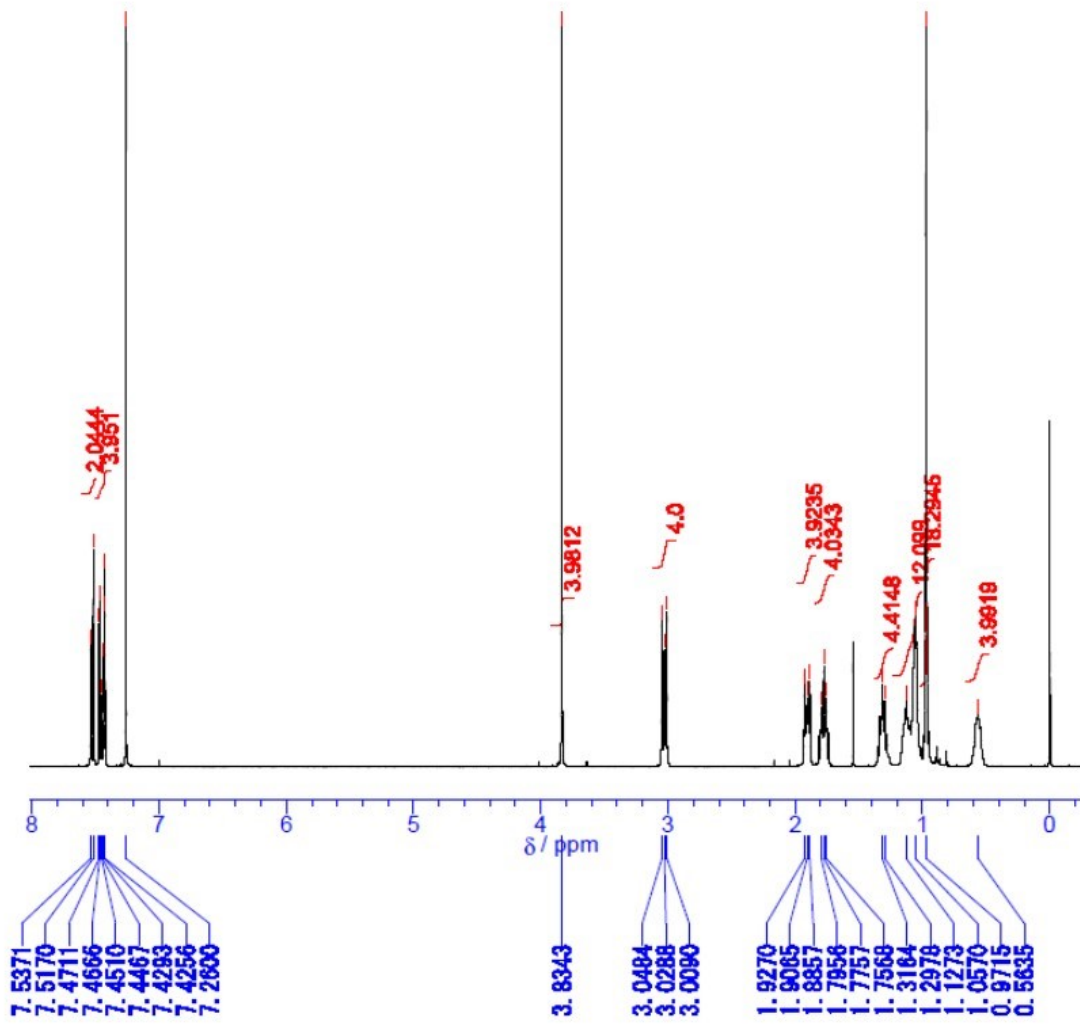
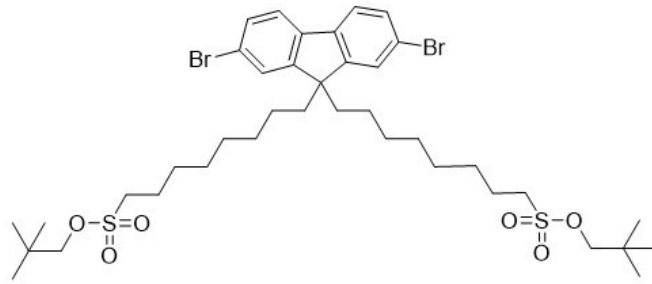


Figure S2. ^1H -NMR spectra and ^{19}F -NMR spectra of PFT- C_8 -SNp (a, b) and PFST- C_8 -SNp(c, d) before and after deprotection of neopentyl ester group. The peaks indicated by red arrows are derived from aromatic protons of 2,2'-spirobifluorene

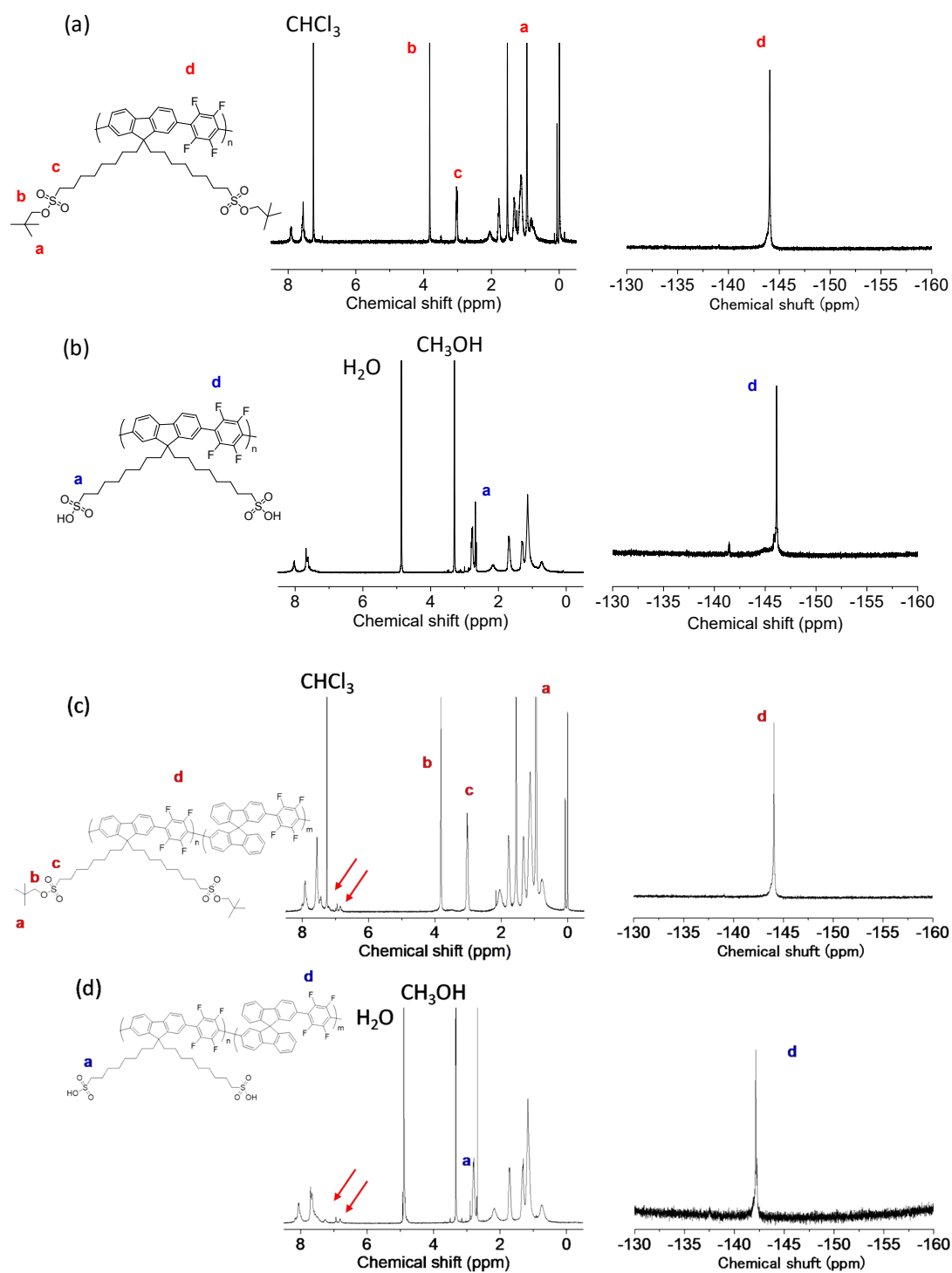


Table S1 Molecular weight of the polymers

Polymer	M_n (kDa)	M_w (kDa)	Polydispersity
PFT-C ₈ -SO ₃ Np	50.9	224	4.4
PFST-C ₈ -SO ₃ Np	31.3	150	4.8

Figure S3. Stress-strain curve of the membranes

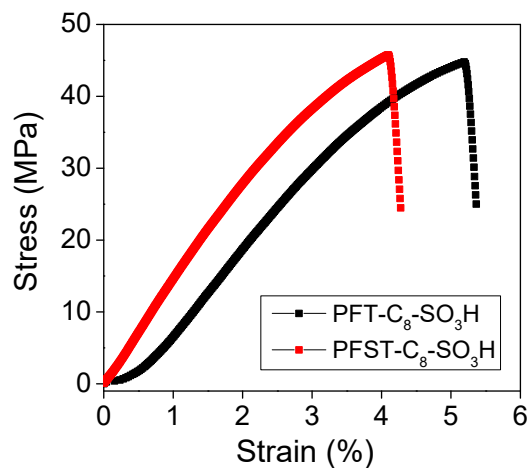


Figure S4. Chemical structure of the membranes shown in Table 1

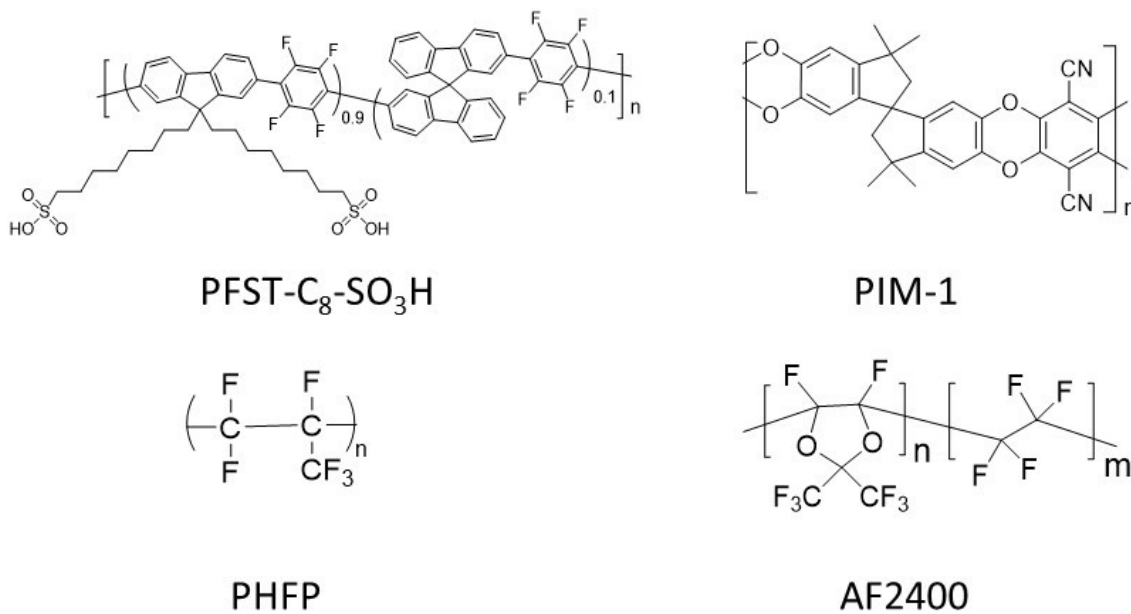


Figure S5. Stability of hydrogen permeability in PFST-C₈-SO₃H membrane at 80 °C RH90%

