Supporting Information

for

Highly phase-separated alternating copolymer of alkyl vinyl ether and sulfonic acid group-containing trifluoro vinyl ether

Kaishi Hori[a] Shoji Miyanishi[b] and Takeo Yamaguchi[b]

[a]Laboratory of Advanced Science & Technology, Corporate Research & Development, Asahi Kasei Corporation, 2-1 Samejima, Fuji, Shizuoka, 416-8501, Japan

[b]Laboratory for Chemistry and Life Science Institute of Innovative Research, Science Tokyo, R1-17, 4259, Midori-ku, Yokohama, Kanagawa, 226-8503, Japan

Corresponding auther: yamag@res.titech.ac.jp

Contents

(left) of C_{18}-SO_3Li

Figure S19. PFG-NMR diffusion plot of C_2-SO_3H (a), C_4-SO_3H (b), C_{12}-SO_3H (c) and C_{18}-SO_3H (d)

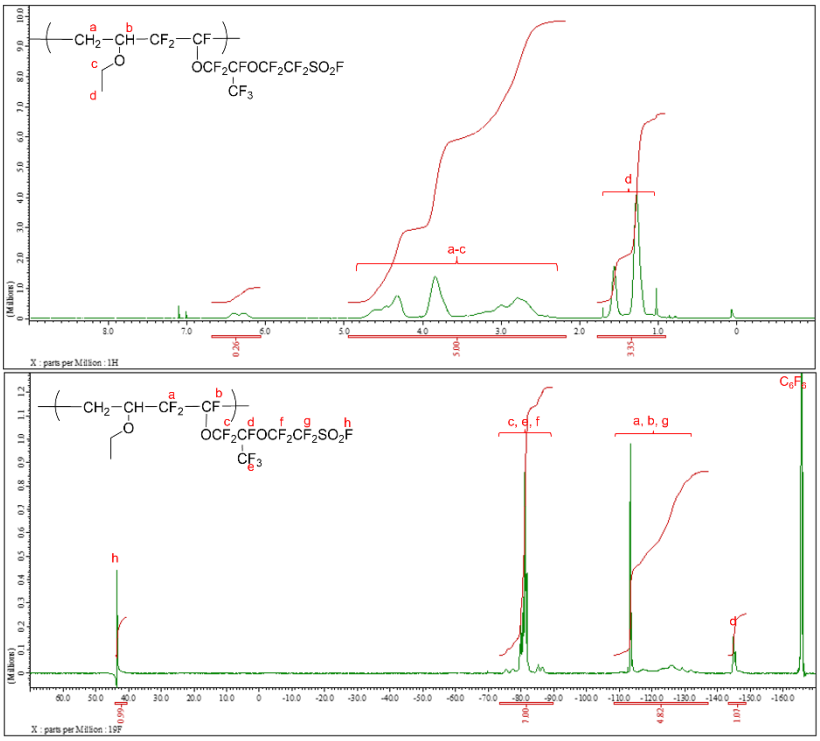

Figure S1. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_2-SO_2F

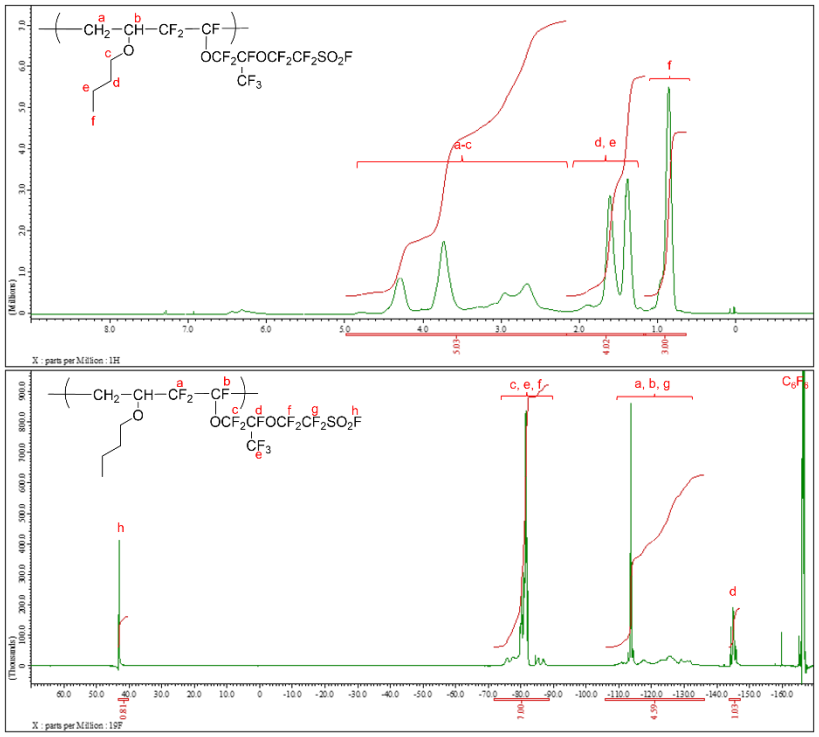

Figure S2. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_4-SO_2F

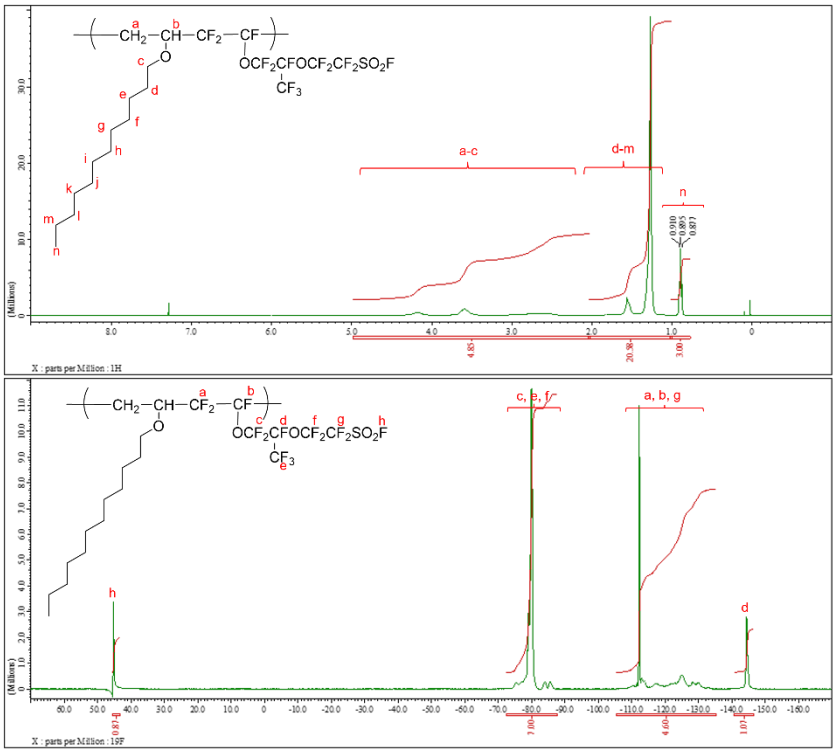

Figure S3. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_{12}-SO_2F

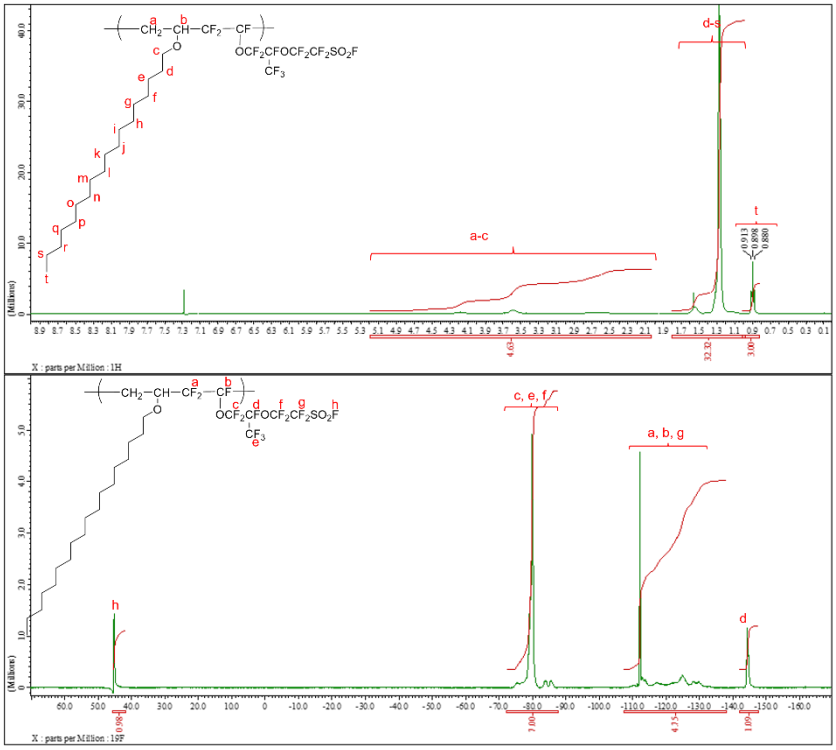

Figure S4. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_{18}-SO_2F

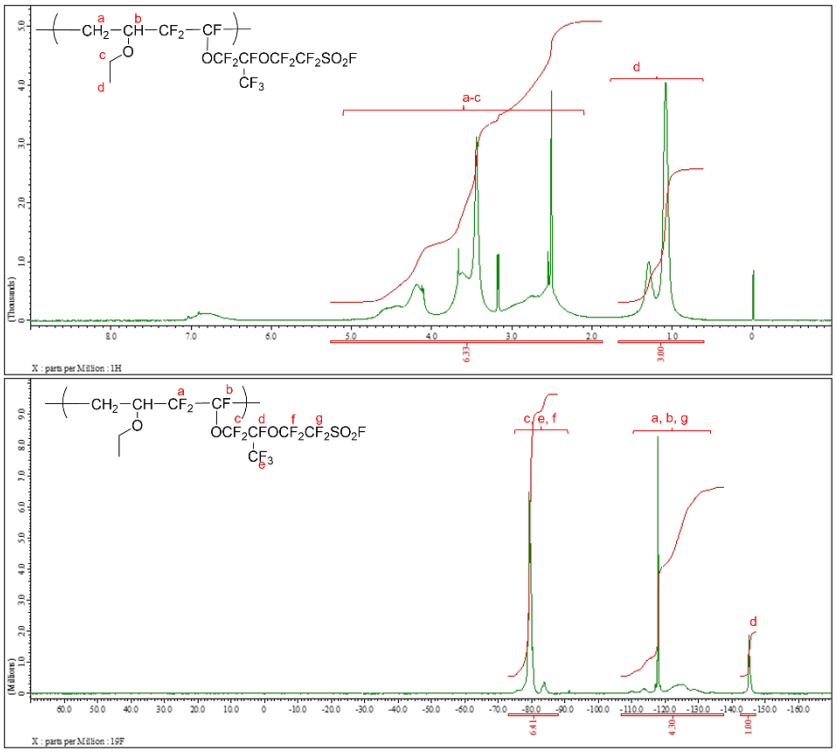

Figure S5. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_2-SO_3Li

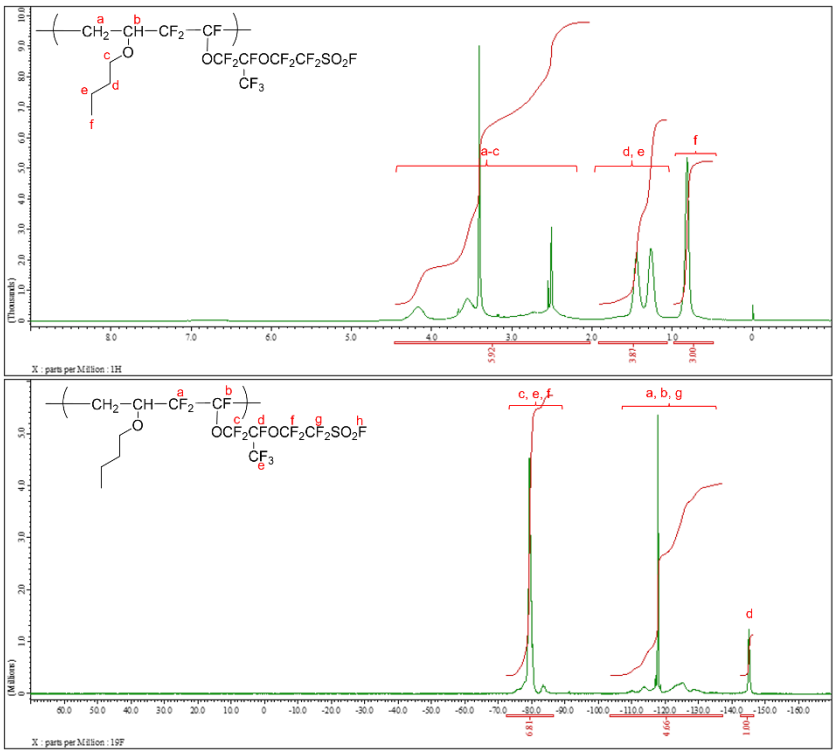

Figure S6. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_4-SO_3Li

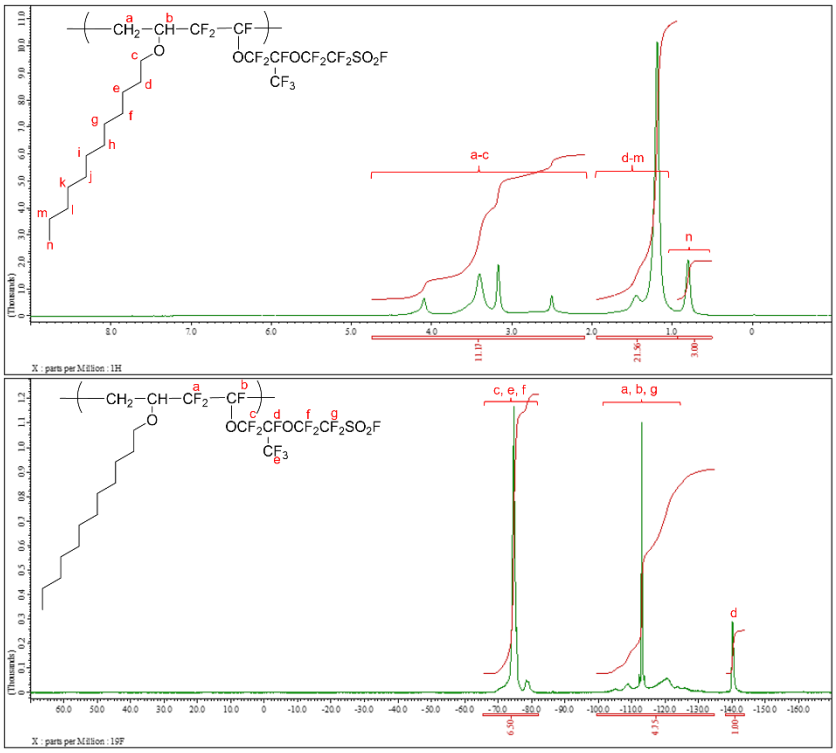

Figure S7. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_{12}-SO_3Li

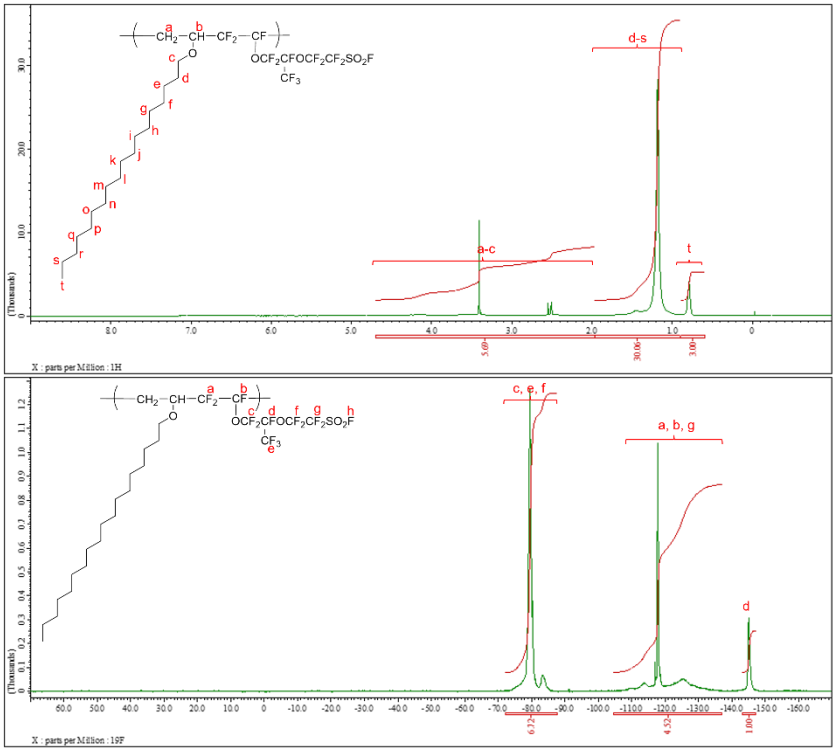

Figure S8. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_{18}-SO_3Li

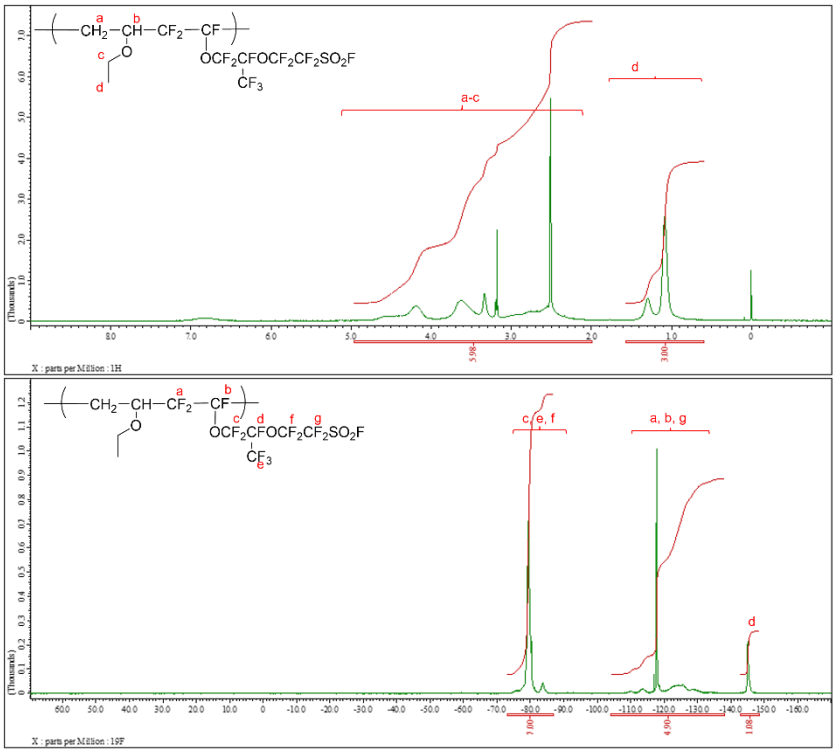

Figure S9. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_2-SO_3Cs

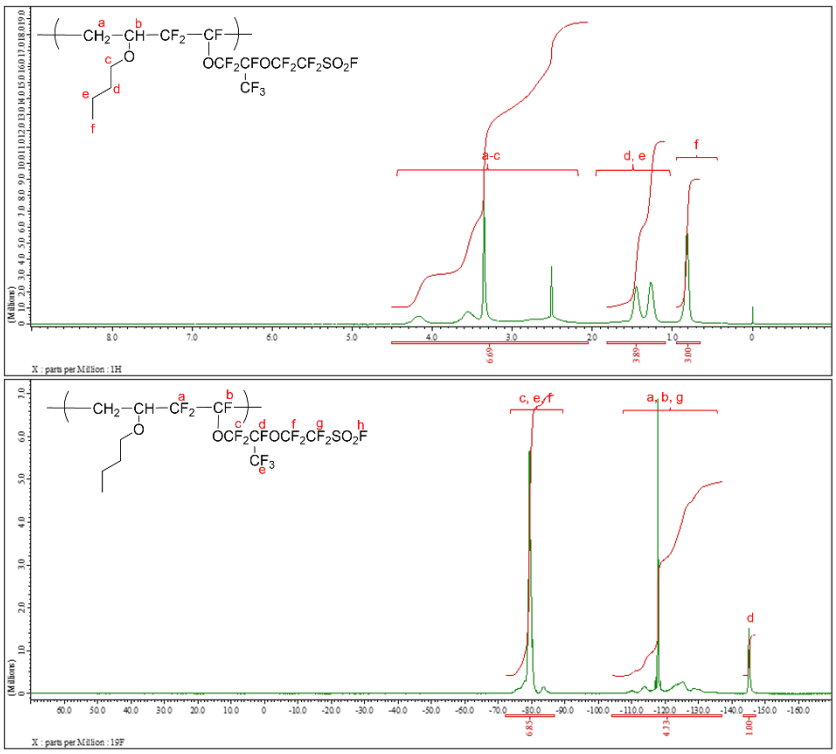

Figure S10. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_4-SO_3Cs

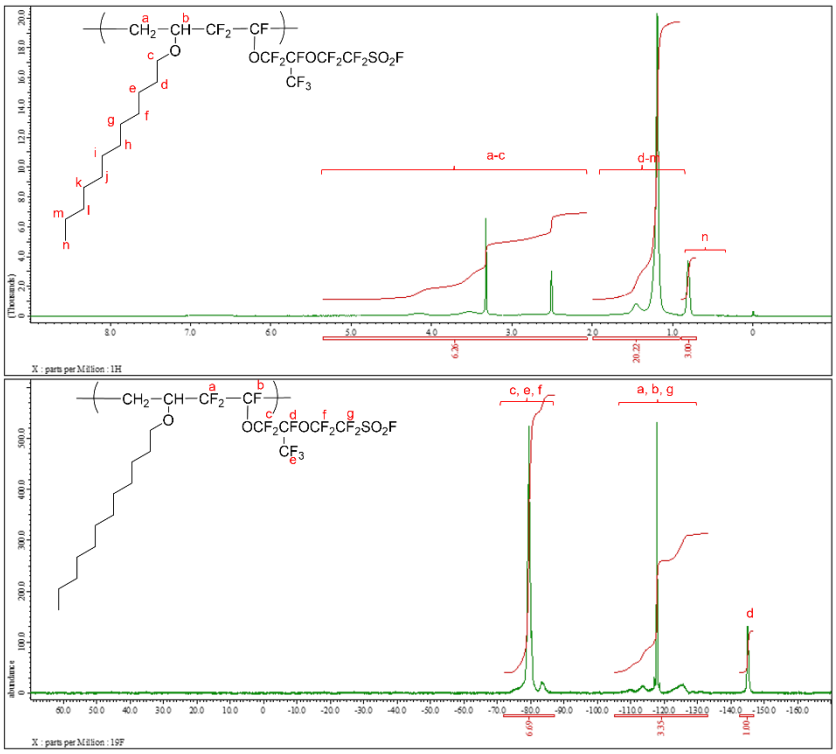

Figure S11. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_{12}-SO_3Cs

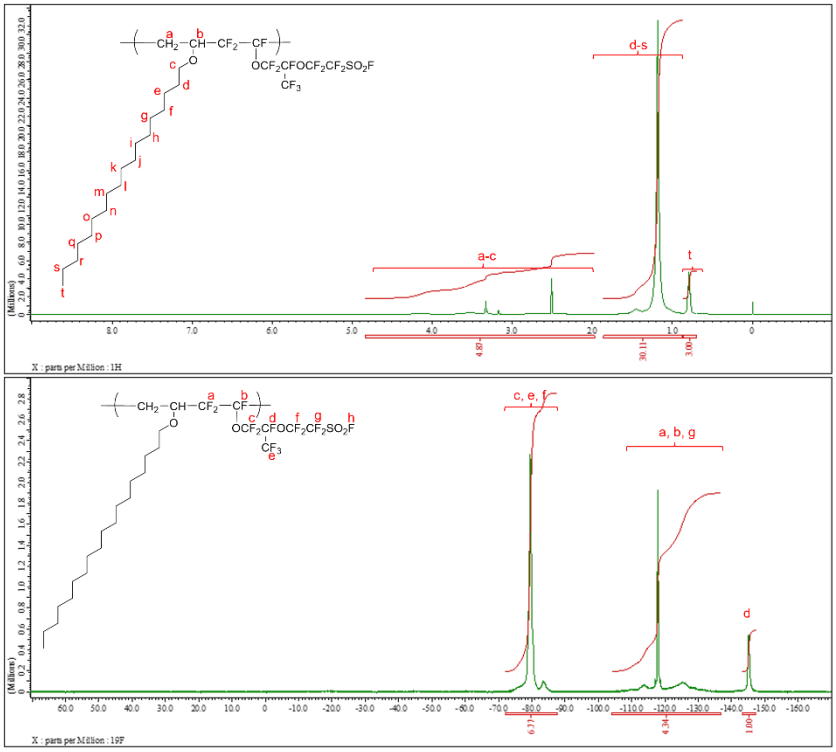

Figure S12. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_{18}-SO_3Cs

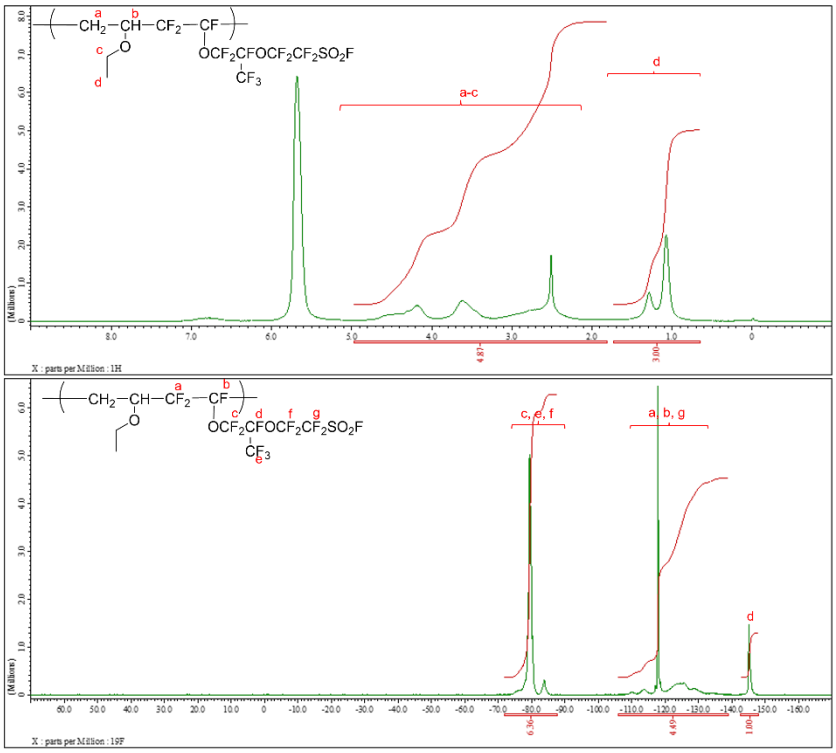

Figure S13. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_2-SO_3H

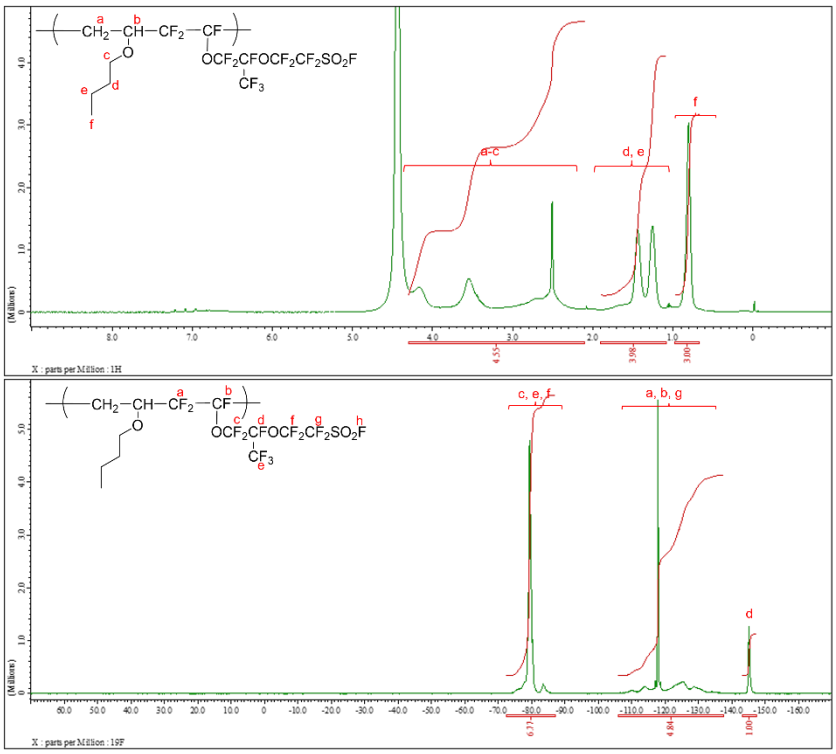

Figure S14. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_4-SO_3H

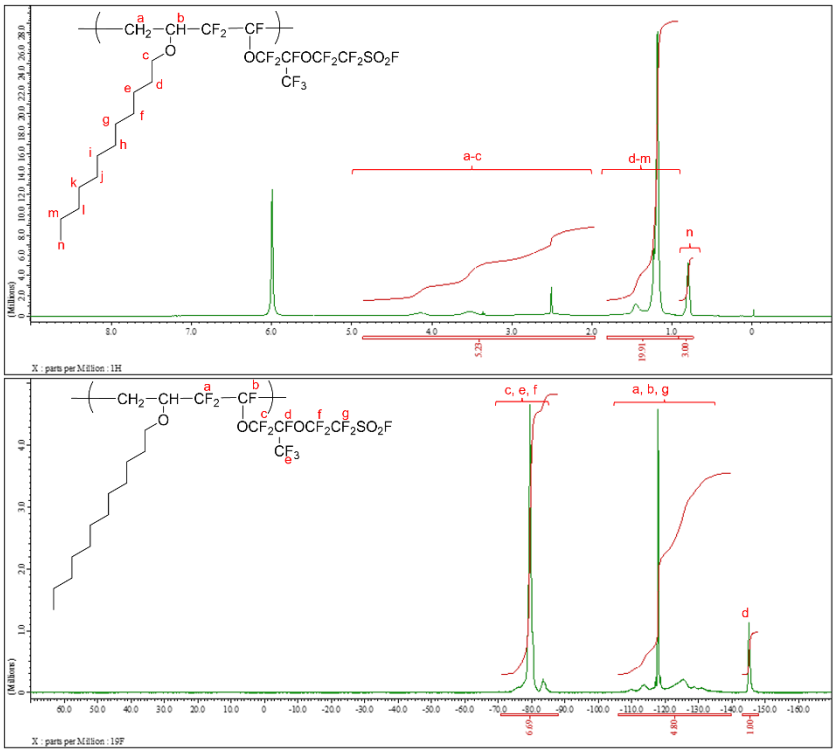

Figure S15. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_{12}-SO_3H

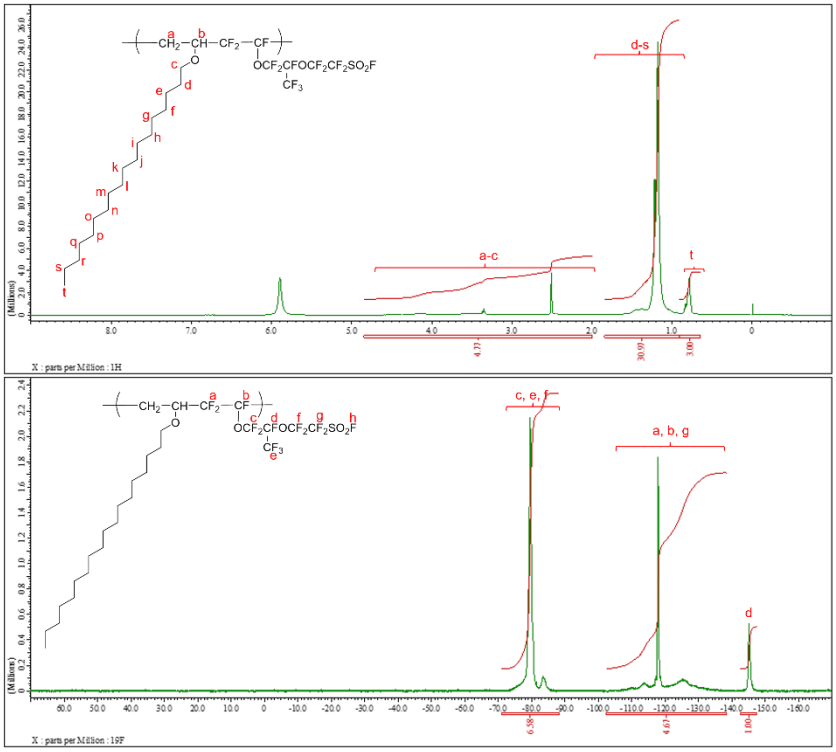

Figure S16. ^{1}H-NMR (top) and ^{19}F-NMR (bottom) spectra of C_{18}-SO_3H

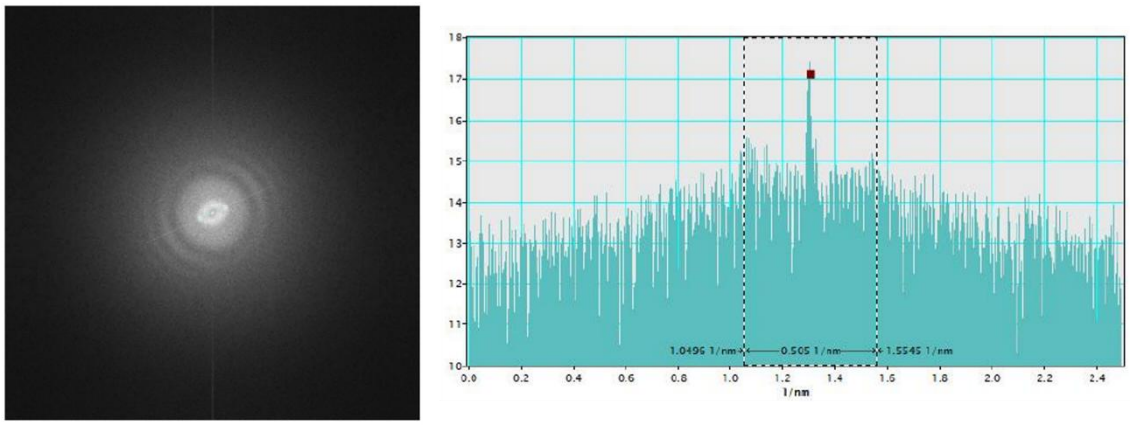

Figure S17. 2D Fourier transfer of TEM bright field image (right) and its strength profile (left) of C_{12}-SO_3Li

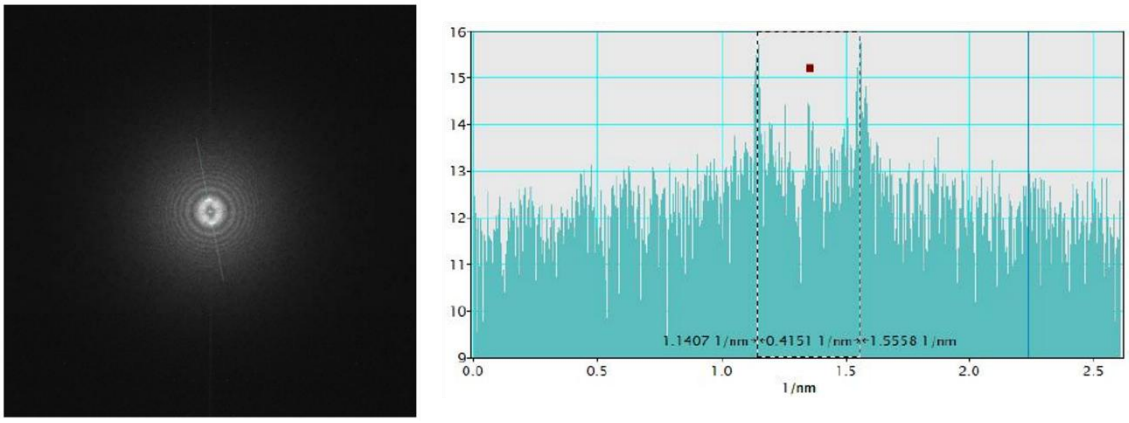

Figure S18. 2D Fourier transfer of TEM bright field image (right) and its strength profile (left) of C_{12}-SO_3Li

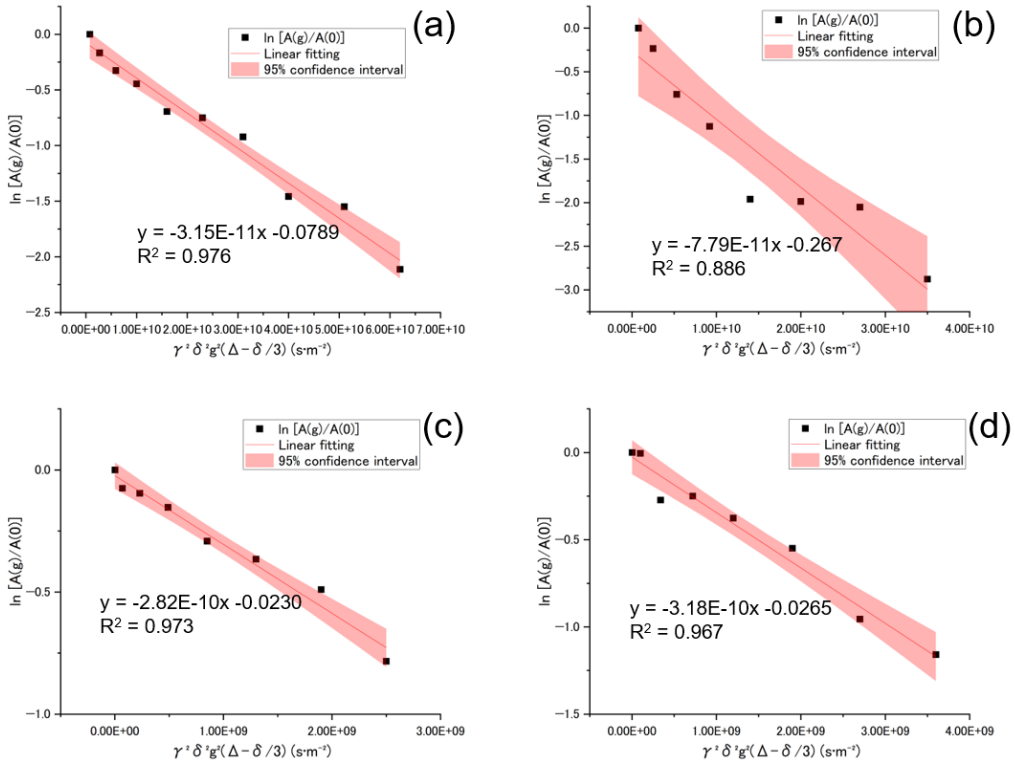

Figure S19. PFG-NMR diffusion plot of C_2-SO_3H (a), C_4-SO_3H (b), C_{12}-SO_3H (c) and C_{18}-SO_3H (d)