

SUPPORTING INFORMATION

Are (co)polymers of 1,1,3,3,3-pentafluoropropene possible?

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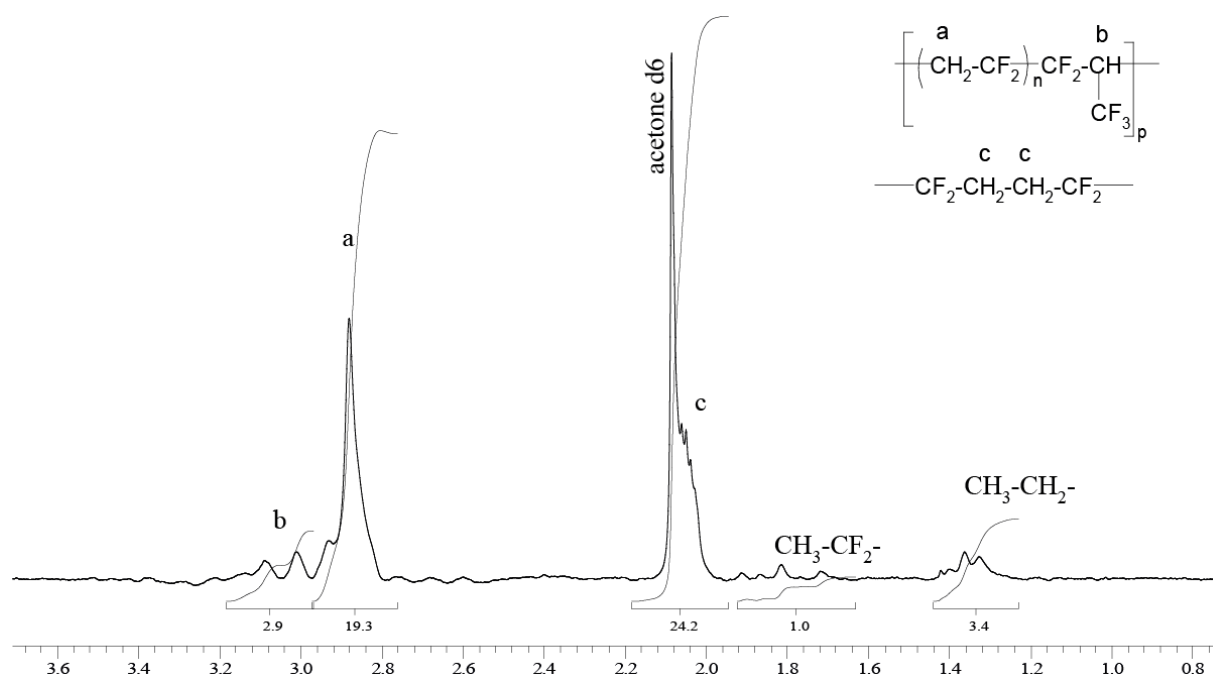


Figure S1: expansion of the 0.8-3.6 ppm zone in the ^1H NMR spectrum of poly(PFP-co-VDF) recorded in acetone- d_6 . (Run No 1 in Table 1).

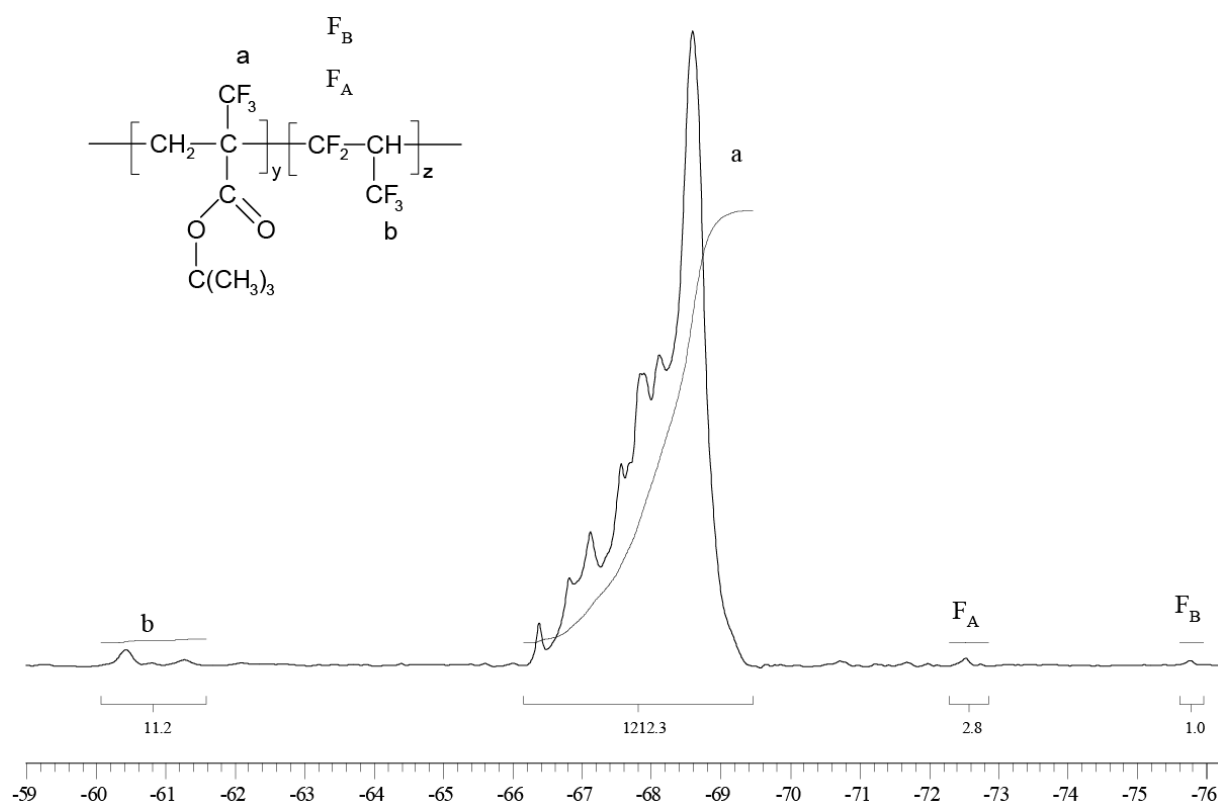


Figure S2: expansion of the -59 to -76 ppm zone in the ^{19}F NMR spectrum of poly(PFP-co-MAF-TBE) recorded in acetone- d_6 . (Run No 5 in Table 1).

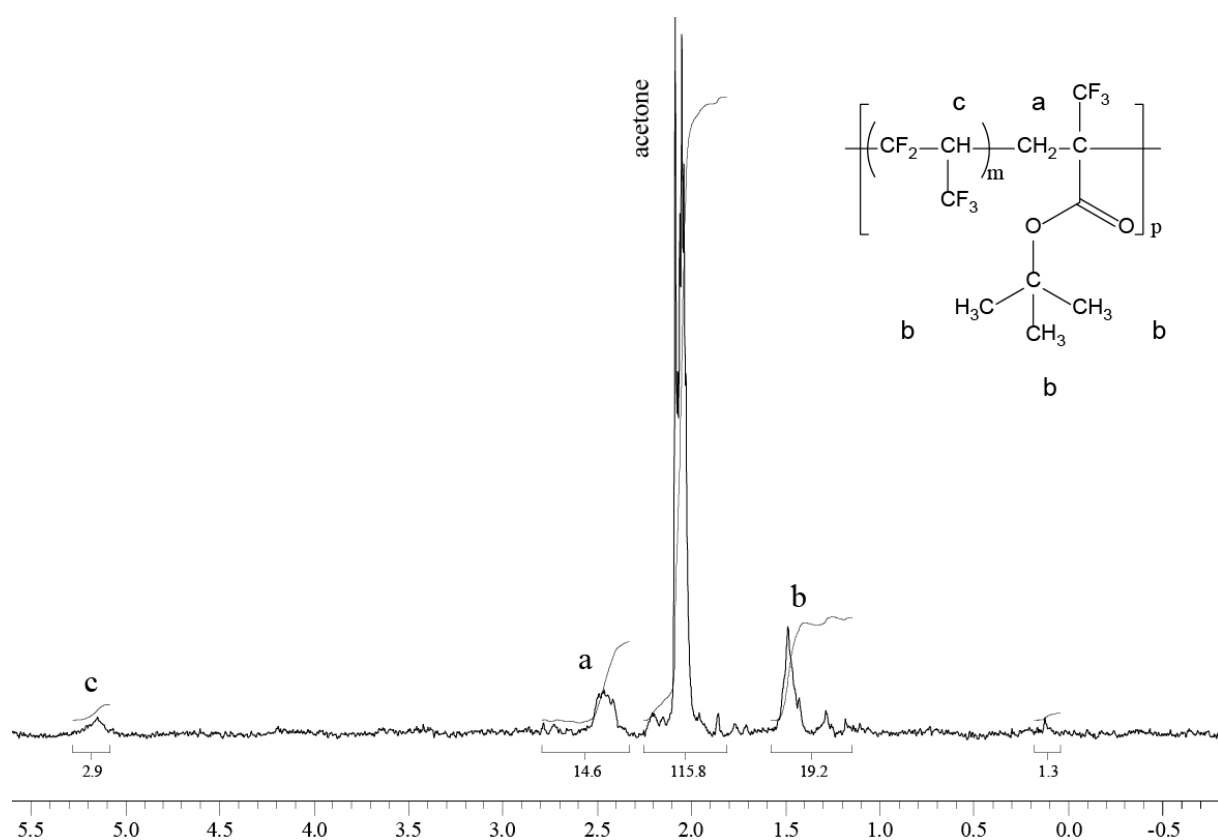


Figure S3: ^1H NMR spectrum of poly(PFP-co-MAF-TBE) recorded in acetone- d_6 . (Run No 5 in Table 1).

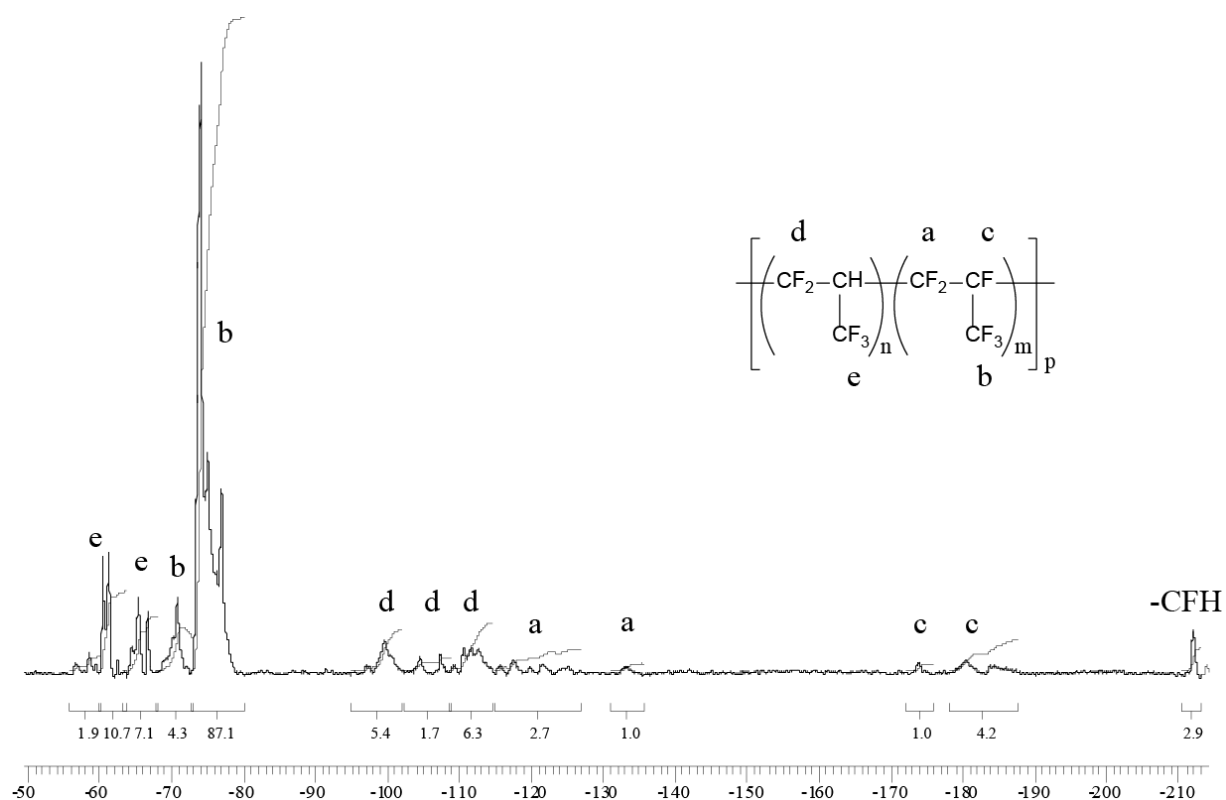


Figure S4: ^{19}F NMR spectrum of poly(PFP-co-HFP) recorded in acetone- d_6 (Run No 2, Table 2)

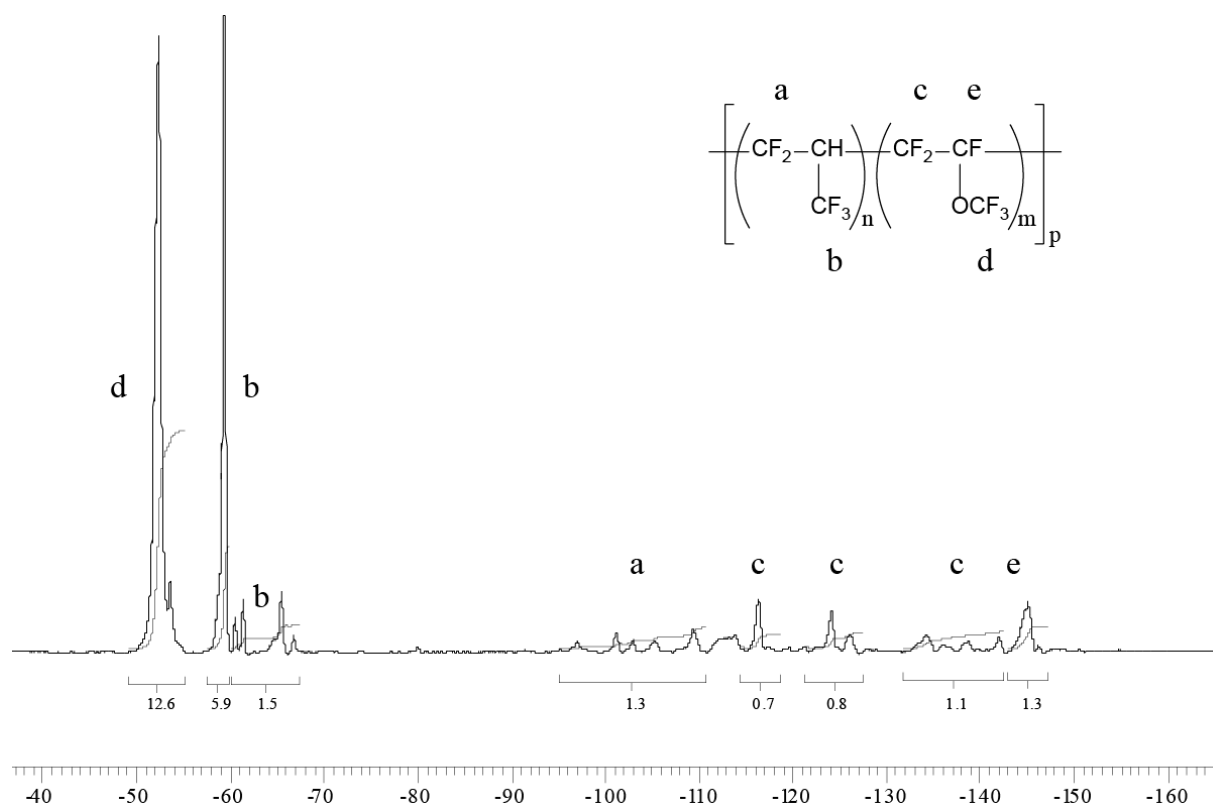


Figure S5: ¹⁹F NMR spectrum of poly(PFP-*co*-PMVE) cooligomer recorded in acetone-*d*₆ (Run No 7, Table 2)

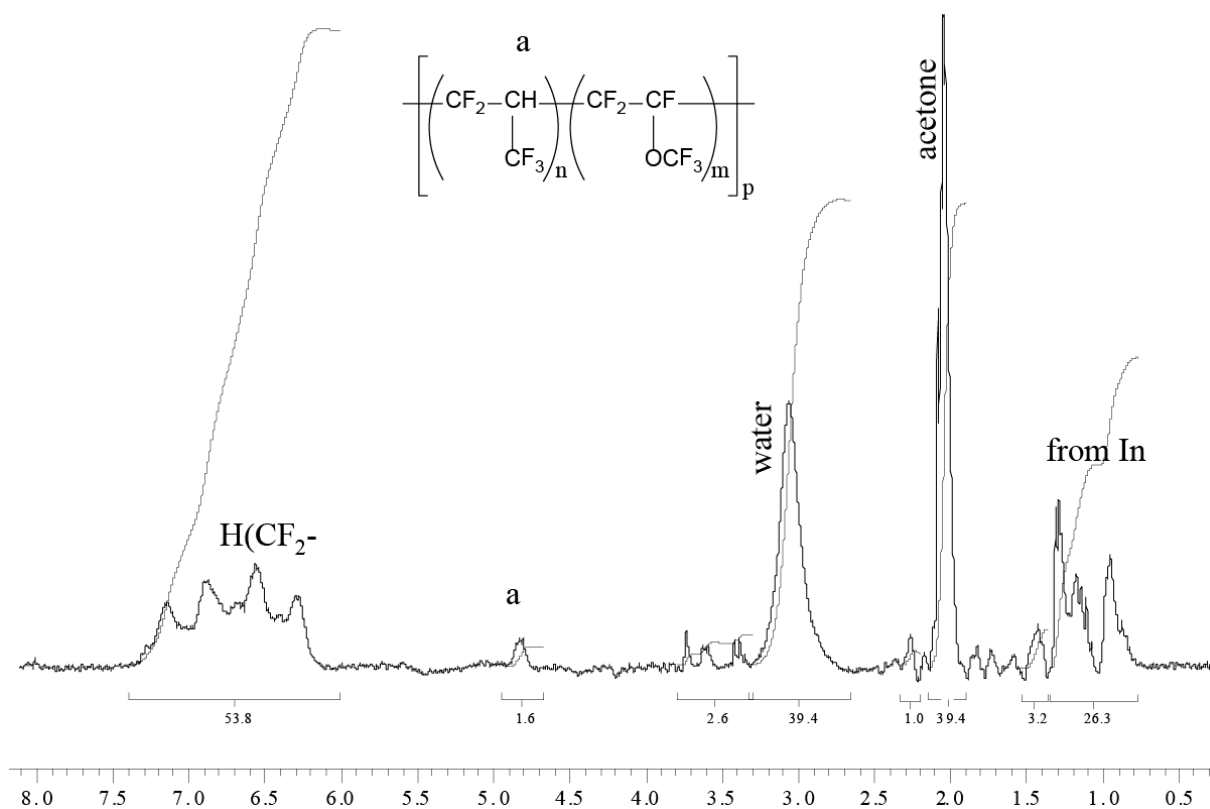


Figure S6: ^1H NMR spectrum of poly(PFP-co-PMVE) cooligomer recorded in acetone- d_6 . (Run No 7 in Table 2).

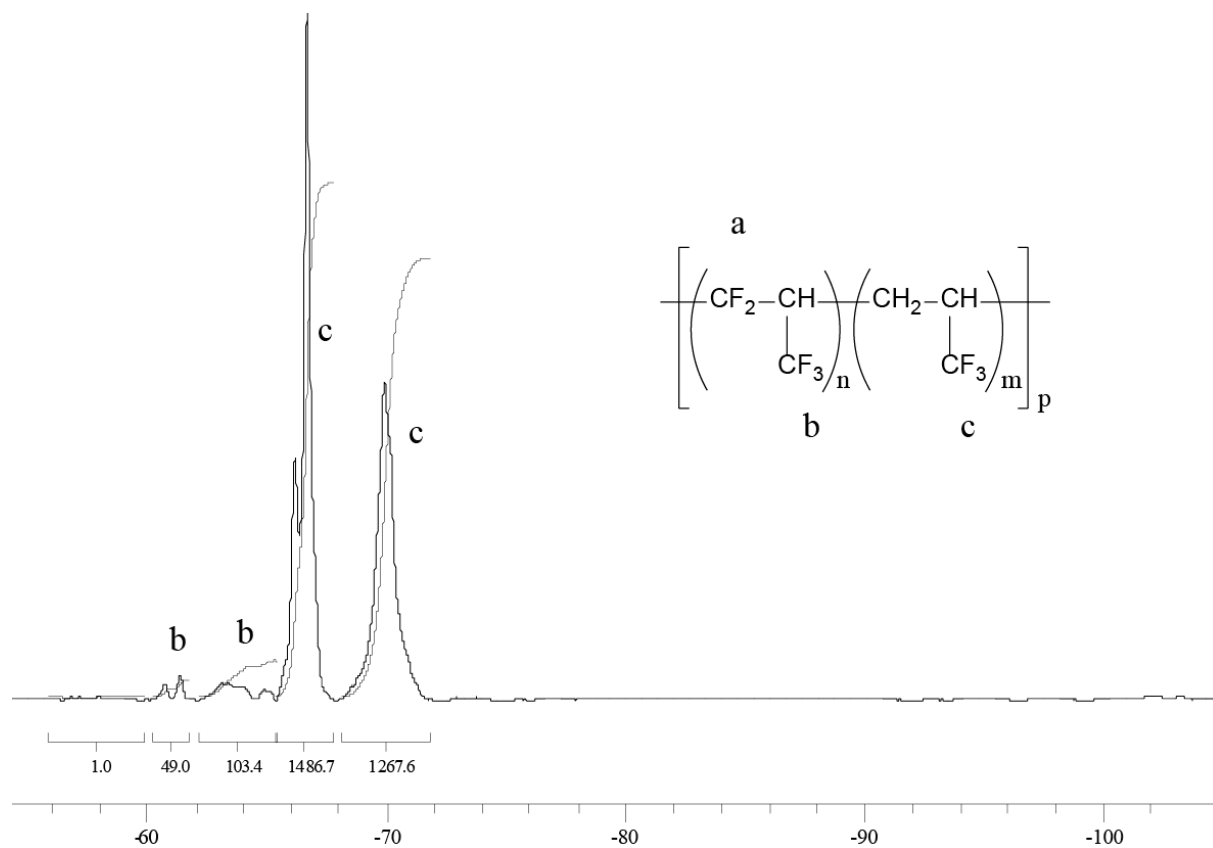


Figure S7: ^{19}F NMR spectrum of poly(PFP-co-TFP) cooligomer recorded in acetone-d₆ (Run No 9, Table 2)

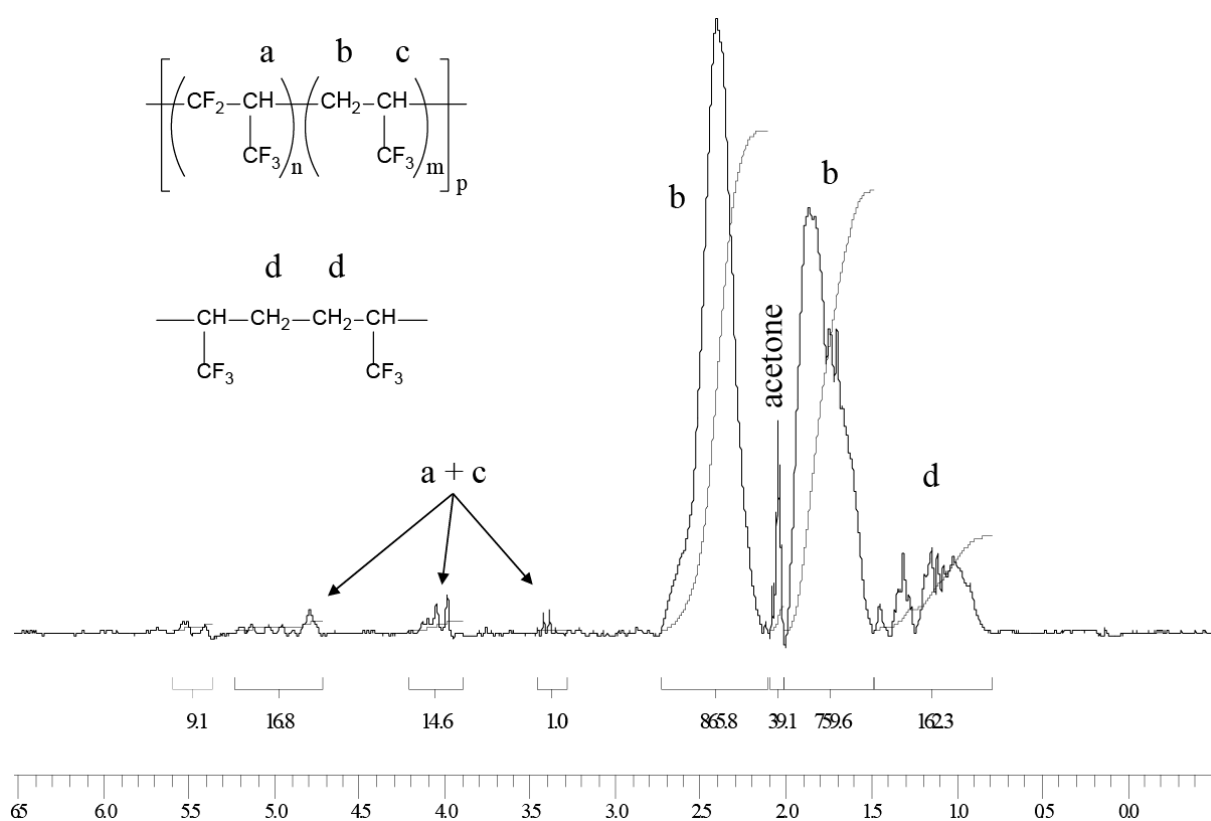


Figure S8: ¹H NMR spectrum of poly(PFP-co-TFP) cooligomer recorded in acetone-d₆. (Run No 9 in Table 2).

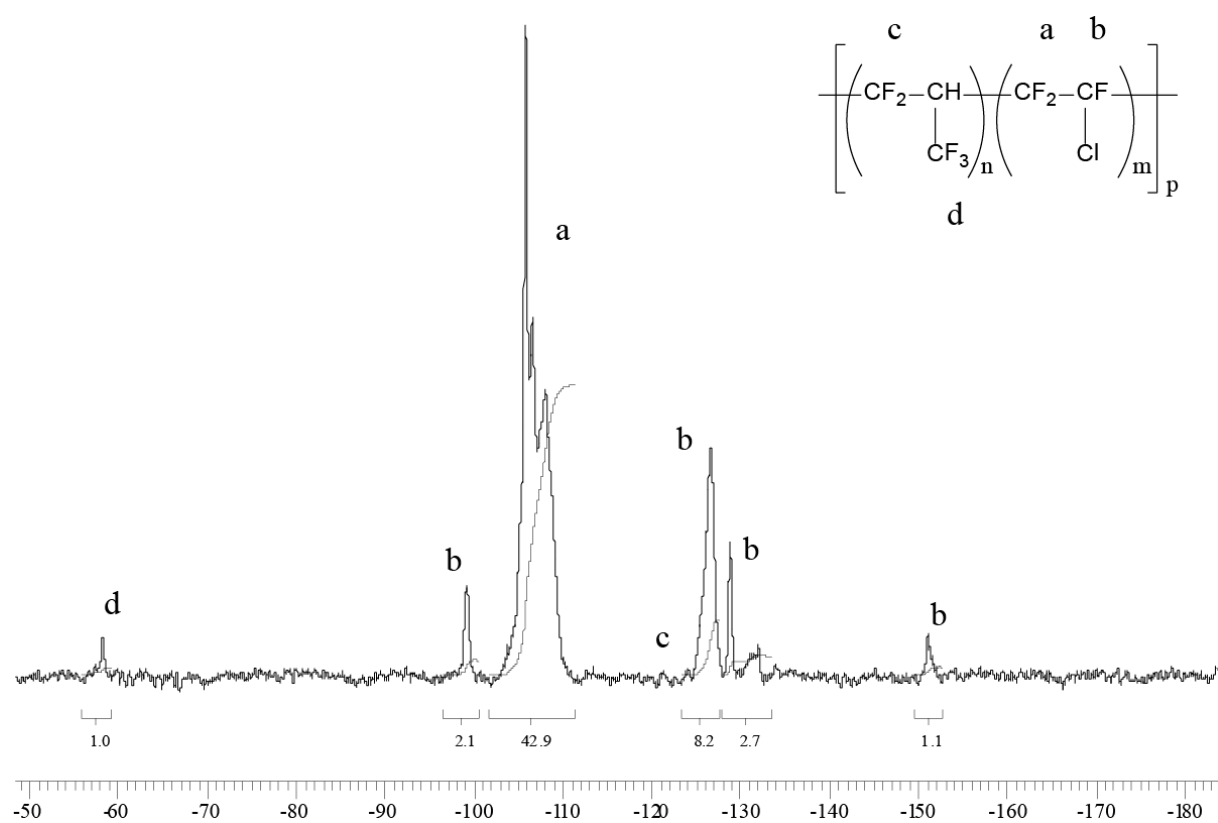


Figure S9: ¹⁹F NMR spectrum of poly(PFP-*co*-CTFE) copolymer recorded in acetone-d₆ (Run No 1, Table 4)

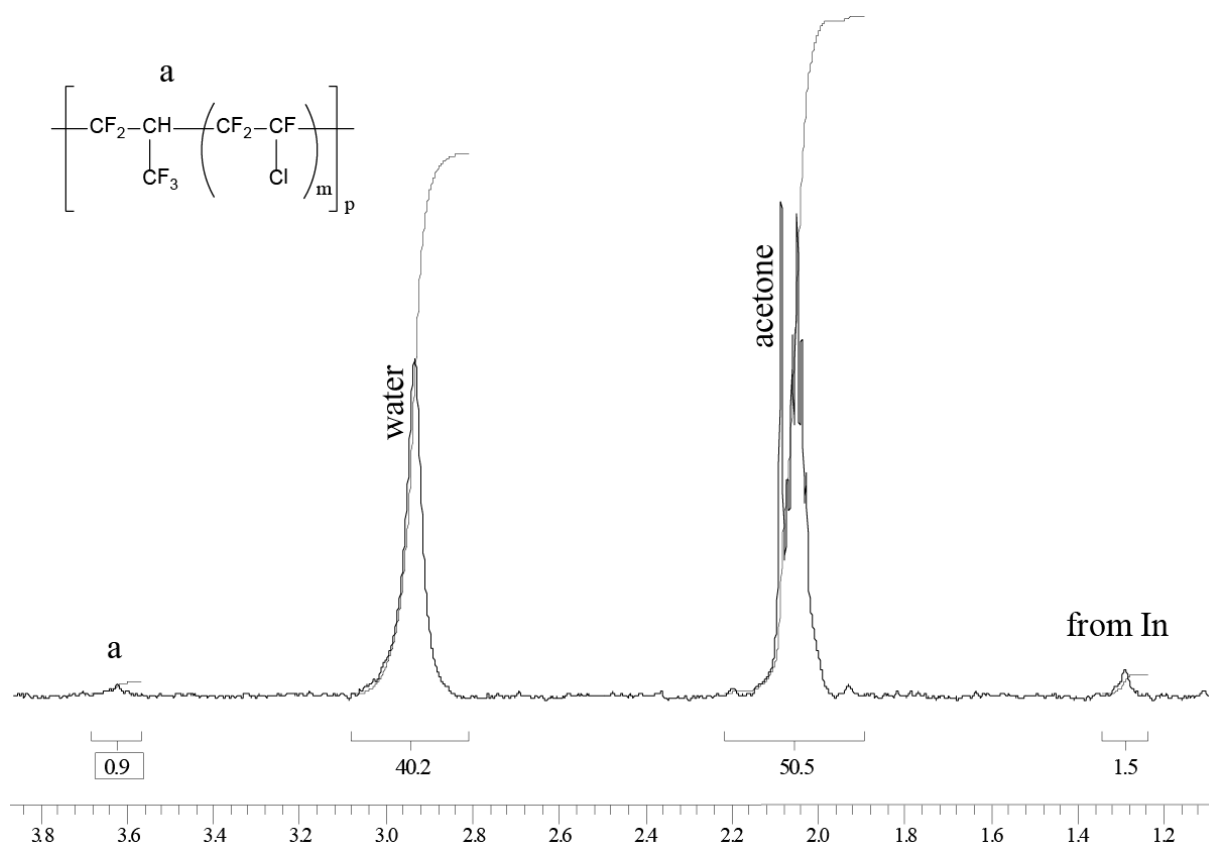


Figure S10: expansion of the zone between 1.2 to 3.8 ppm in the ^1H NMR spectrum of poly(PFP-*co*-CTFE) copolymer recorded in acetone- d_6 . (Run No 1 in Table 4).

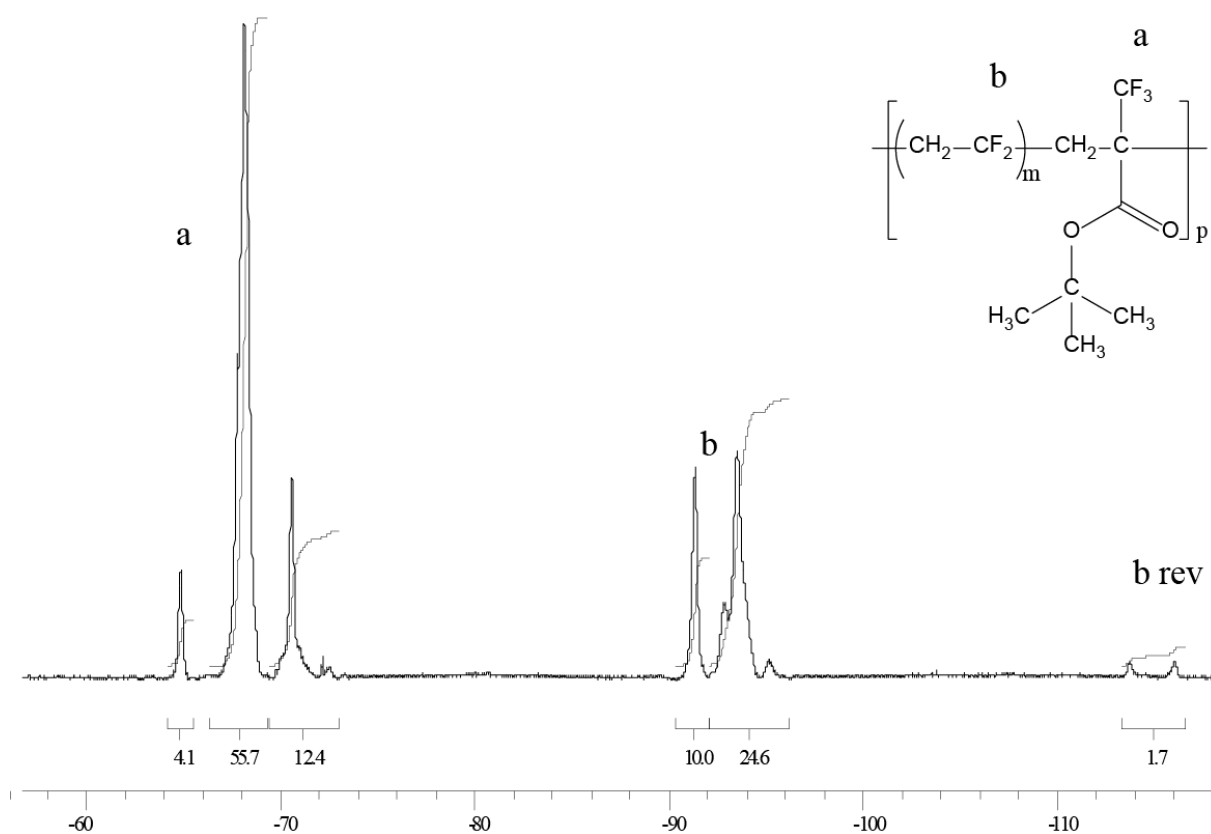


Figure S11: expansion of the zone between -65 to -120 ppm in the ^{19}F NMR spectrum of poly(VDF-*co*-MAFTBE) copolymer recorded in acetone- d_6 . (Run No 3 in Table 3).

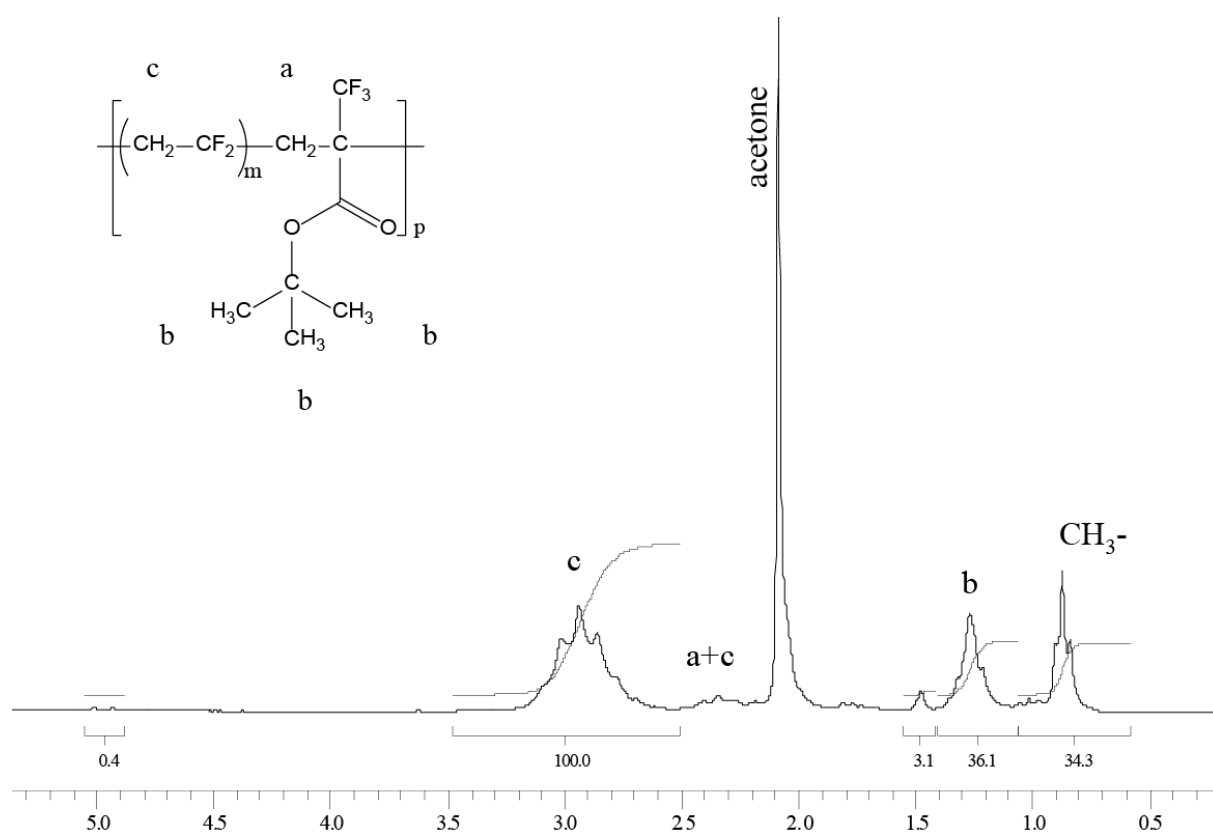


Figure S12: ¹H NMR spectrum of poly(VDF-*co*-MAF-TBE) copolymer recorded in acetone-d₆. (Run No 3 in Table 3).

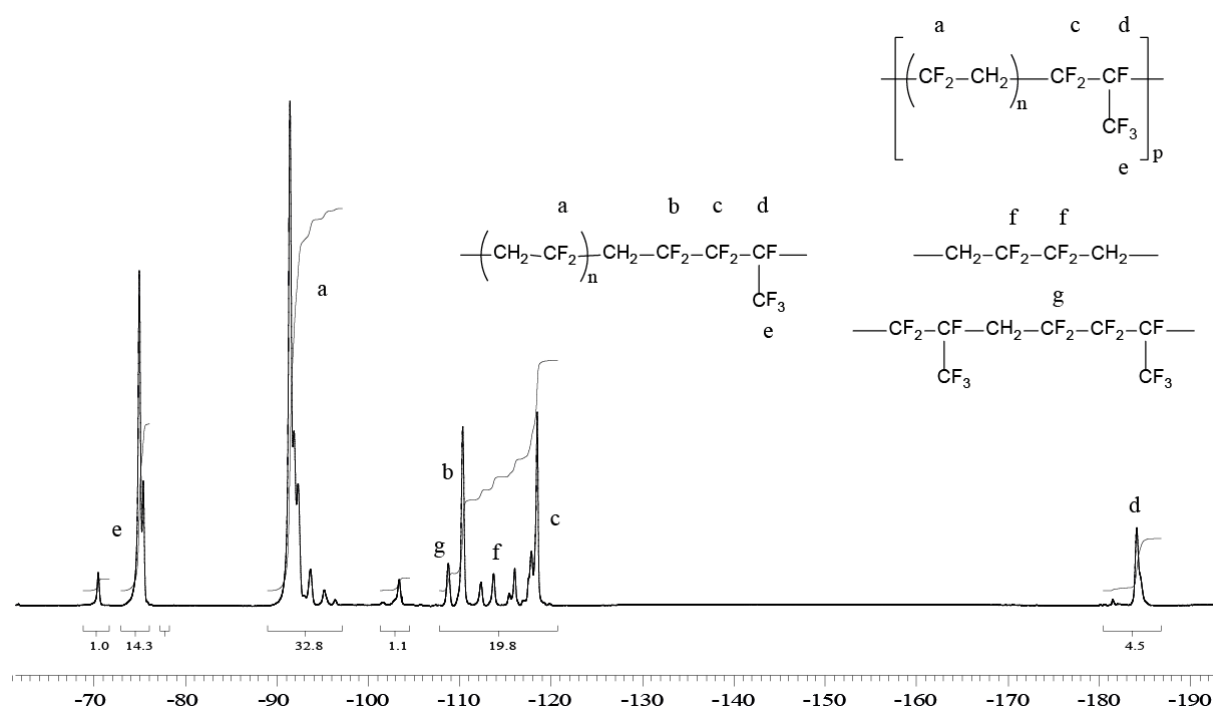


Figure S13: ^{19}F NMR spectrum of poly(VDF-co-HFP) copolymer recorded in acetone- d_6 . (Run No 3 in Table 2).

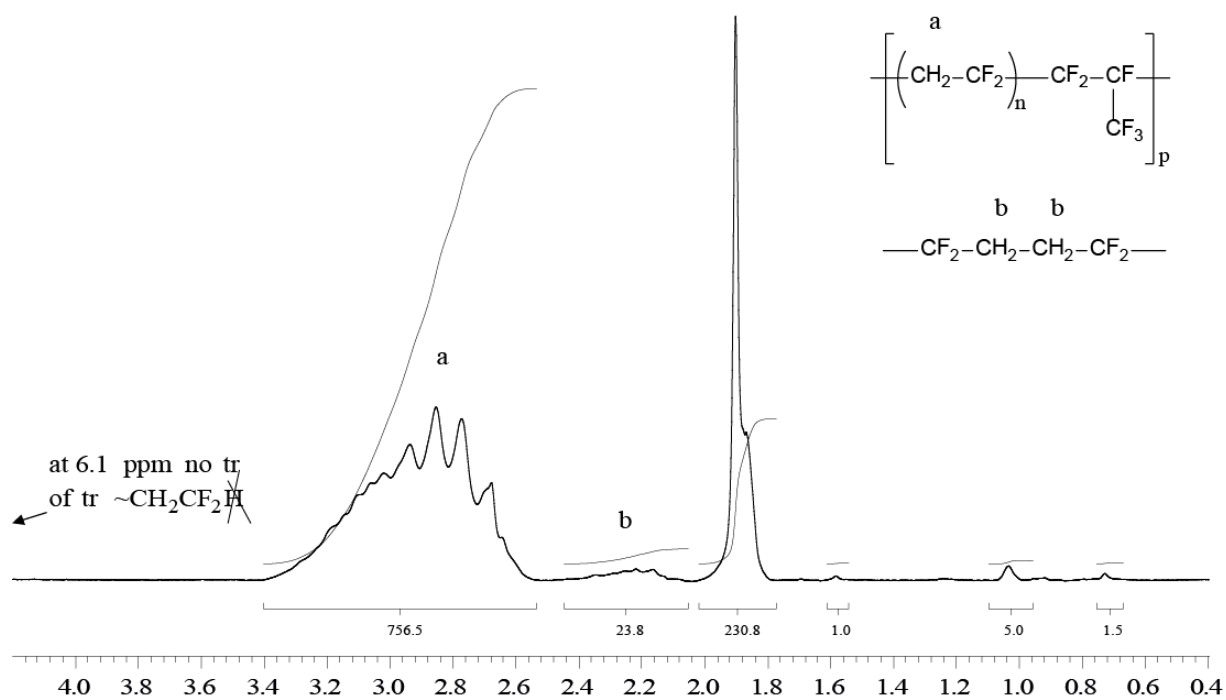


Figure S14: ^1H NMR spectrum of poly(VDF-*co*-HFP) copolymer recorded in acetone- d_6 . (Run No 3 in Table 2).

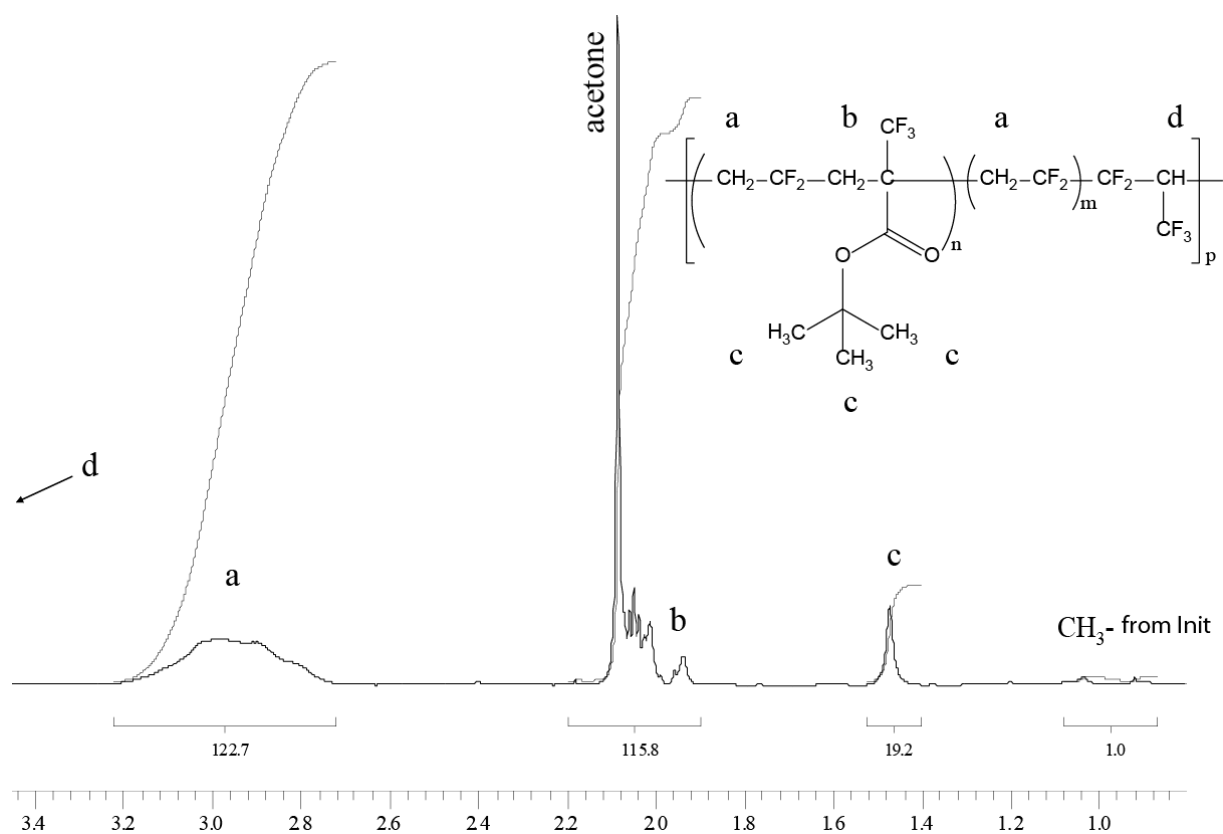


Figure S15: Expansion of the 0.8-3.4 ppm zone in the ^1H NMR spectrum of poly(PFP-*ter*-VDF-*ter*-MAF-TBE) terpolymers (recorded in acetone- d_6) (Runs 6-10 in Table 3)

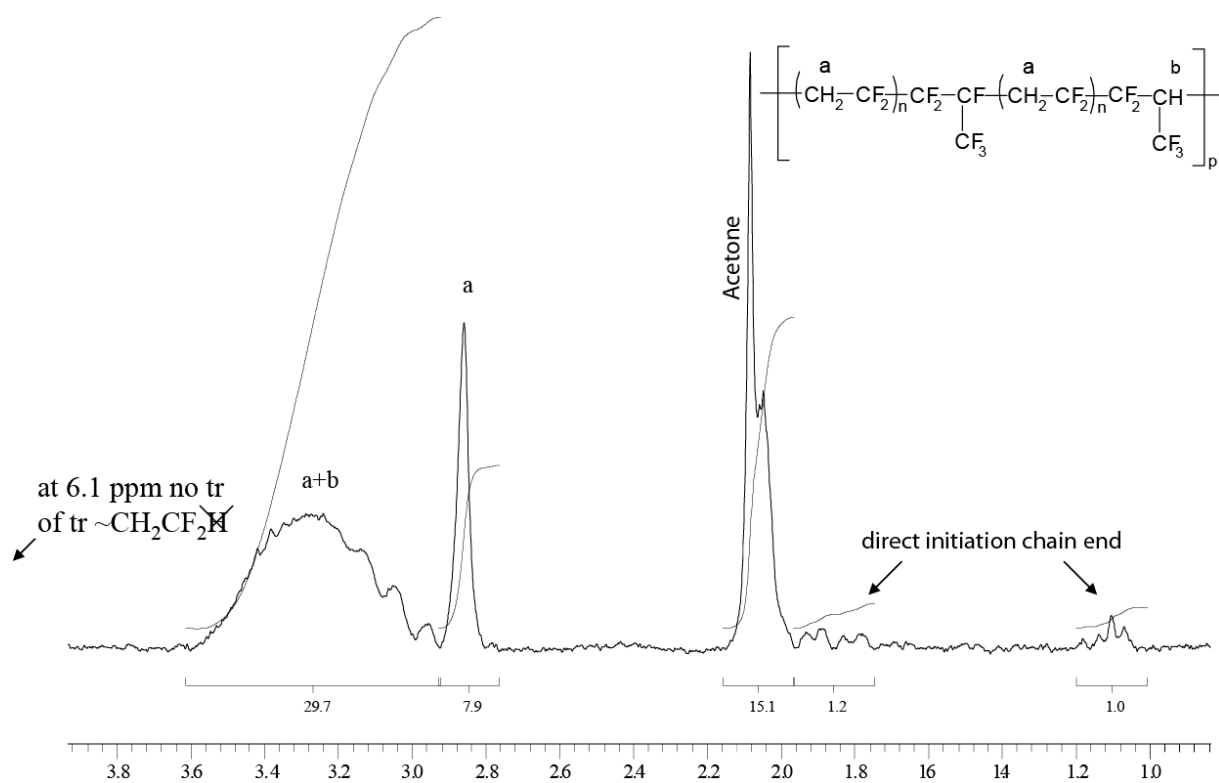


Figure S16: expansion of the 0.9-3.9 ppm zone of the ^1H NMR spectrum of poly(PFP-*ter*-VDF-*ter*-HFP) terpolymer recorded in acetone- d_6 (Run No 5, Table2)

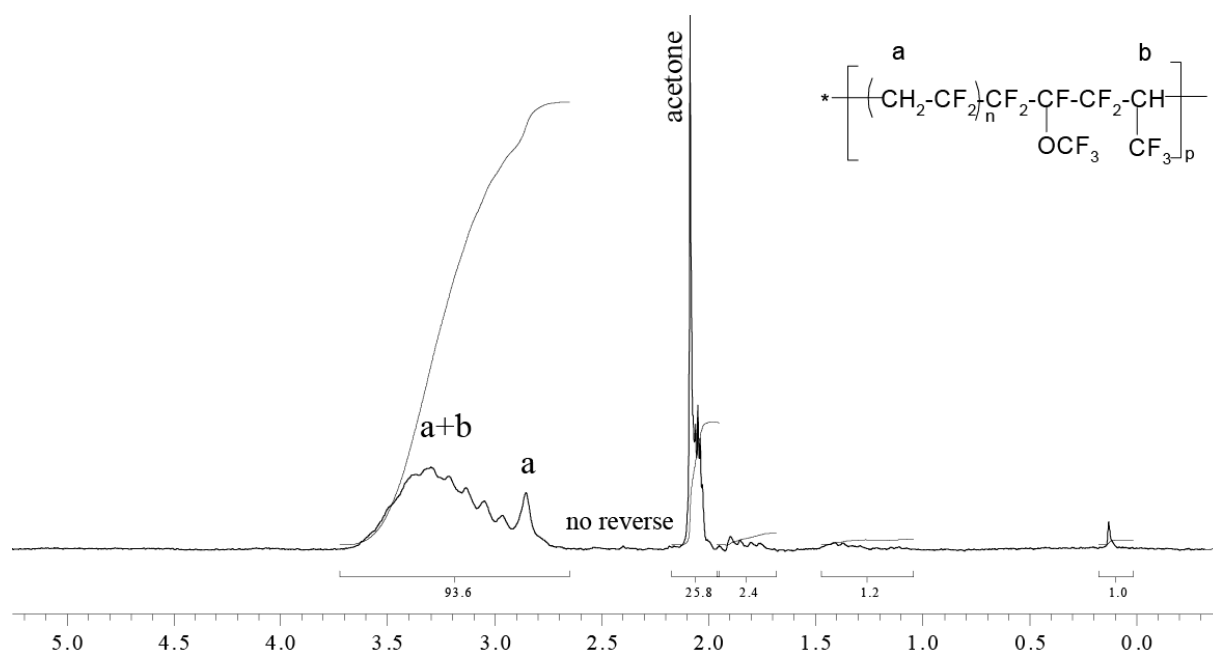


Figure S17: ^1H NMR spectrum of poly(PFP-*ter*-VDF-*ter*-PMVE) terpolymer (recorded in acetone d_6) (Run 8 in Table 2).

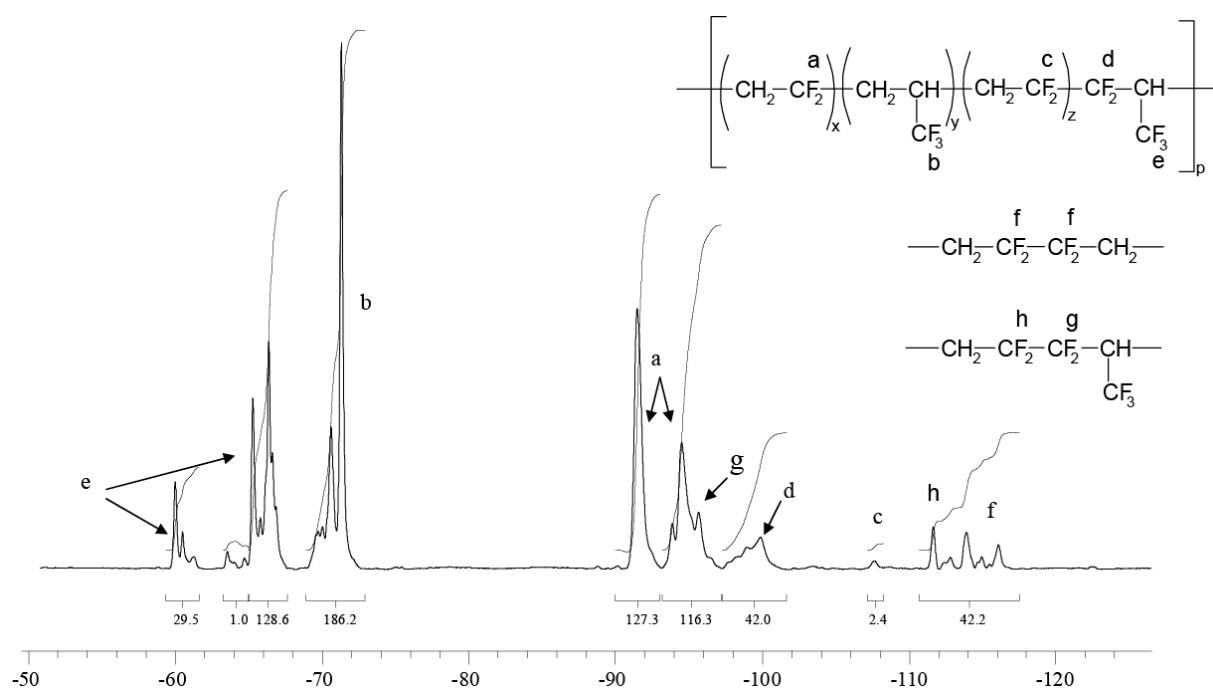


Figure S18: ^{19}F NMR spectrum of poly(PFP-*ter*-VDF-*ter*-TFP) terpolymer (recorded in acetone d_6) (Run 10 in Table 2)

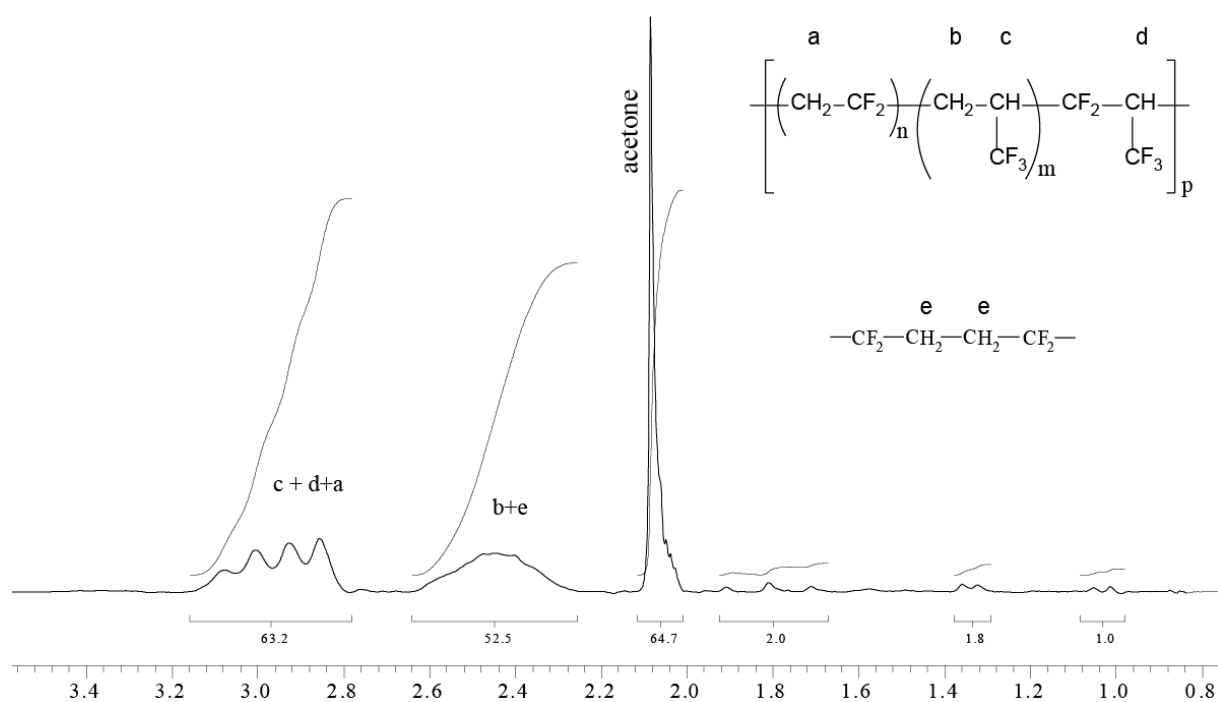


Figure S19: ^1H NMR spectrum of poly(PFP-*ter*-VDF-*ter*-TFP) terpolymer (recorded in acetone d_6) (Run 10 in Table 2)

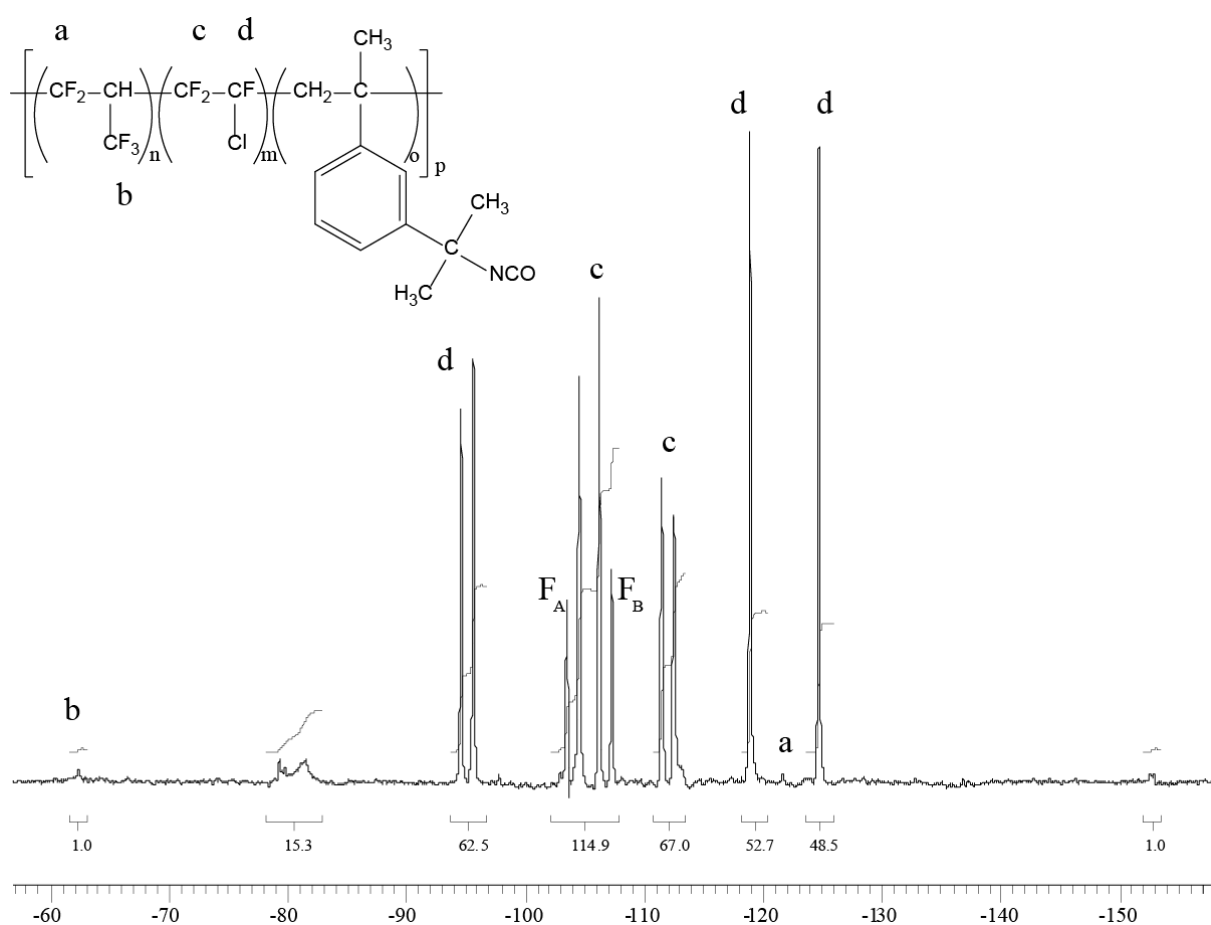


Figure S20: ^{19}F NMR spectrum of poly(PFP-*ter*-CTFE-*ter*-mTMI) terpolymer (recorded in acetone d₆) (Run 3 in Table 4).

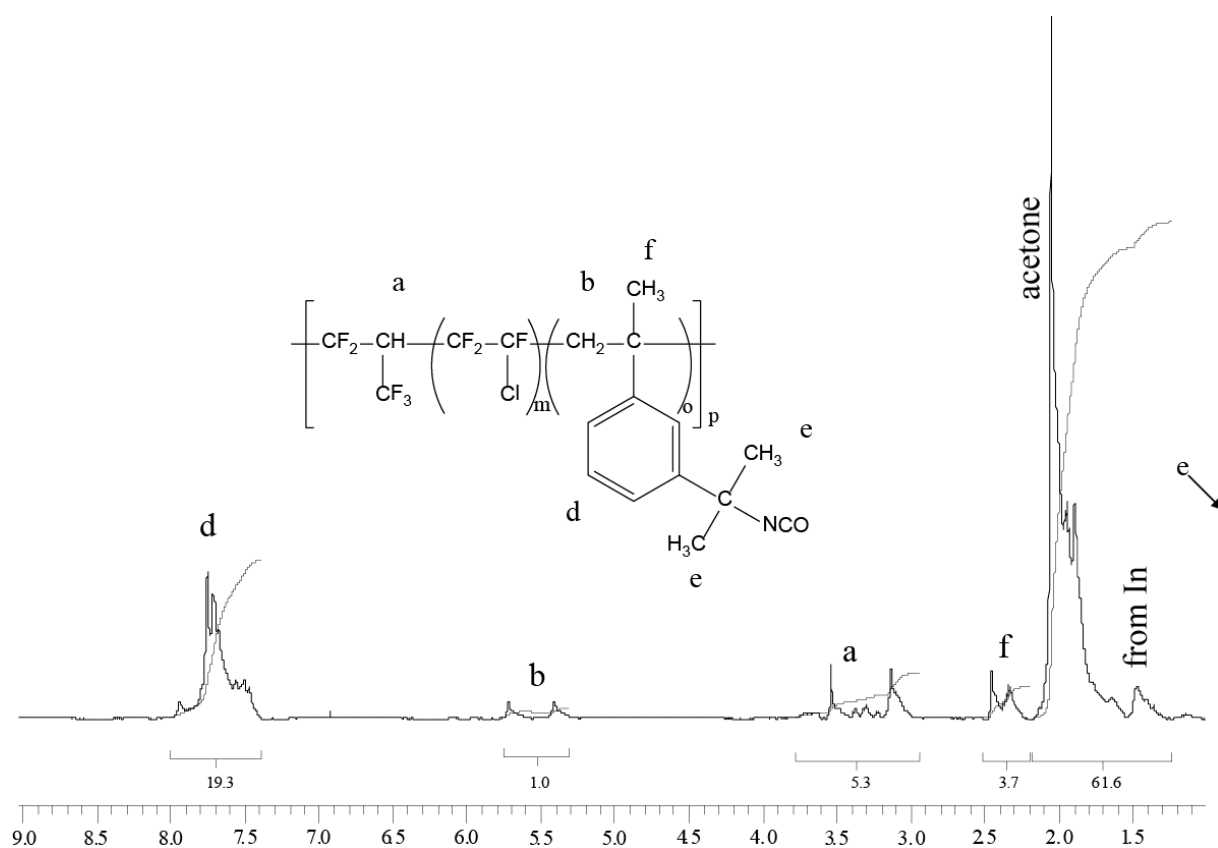


Figure S21: expansion of the 0.6 to 4.0 zone in the ^1H NMR spectrum of poly(PFP-*ter*-CTFE-*ter*-mTMI) terpolymer (recorded in acetone d_6) (Run 3 in Table 4)

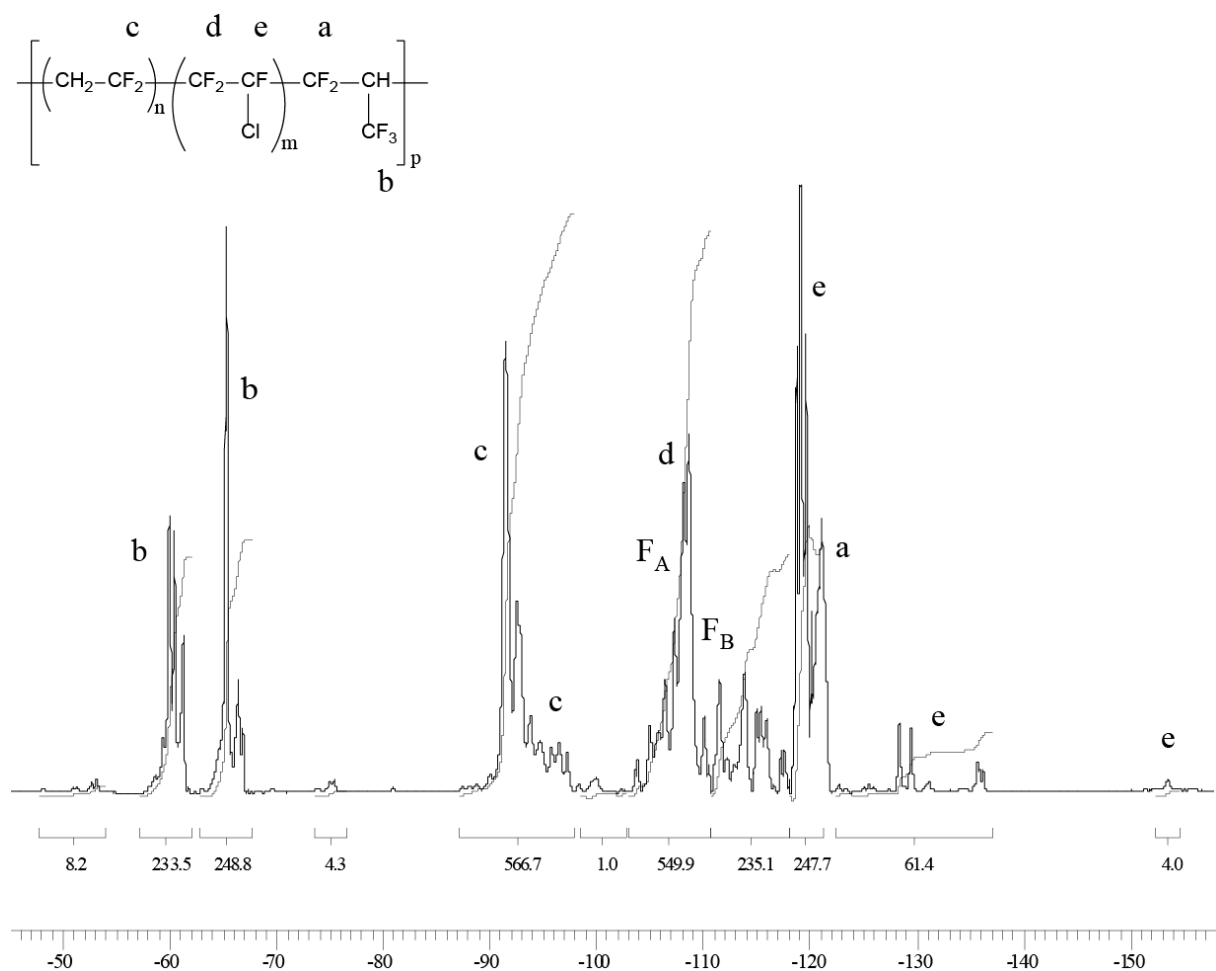


Figure S22: ^{19}F NMR spectrum of poly(PFP-*ter*-CTFE-*ter*-VDF) terpolymer (recorded in acetone d_6) (Run 2 in Table 4)

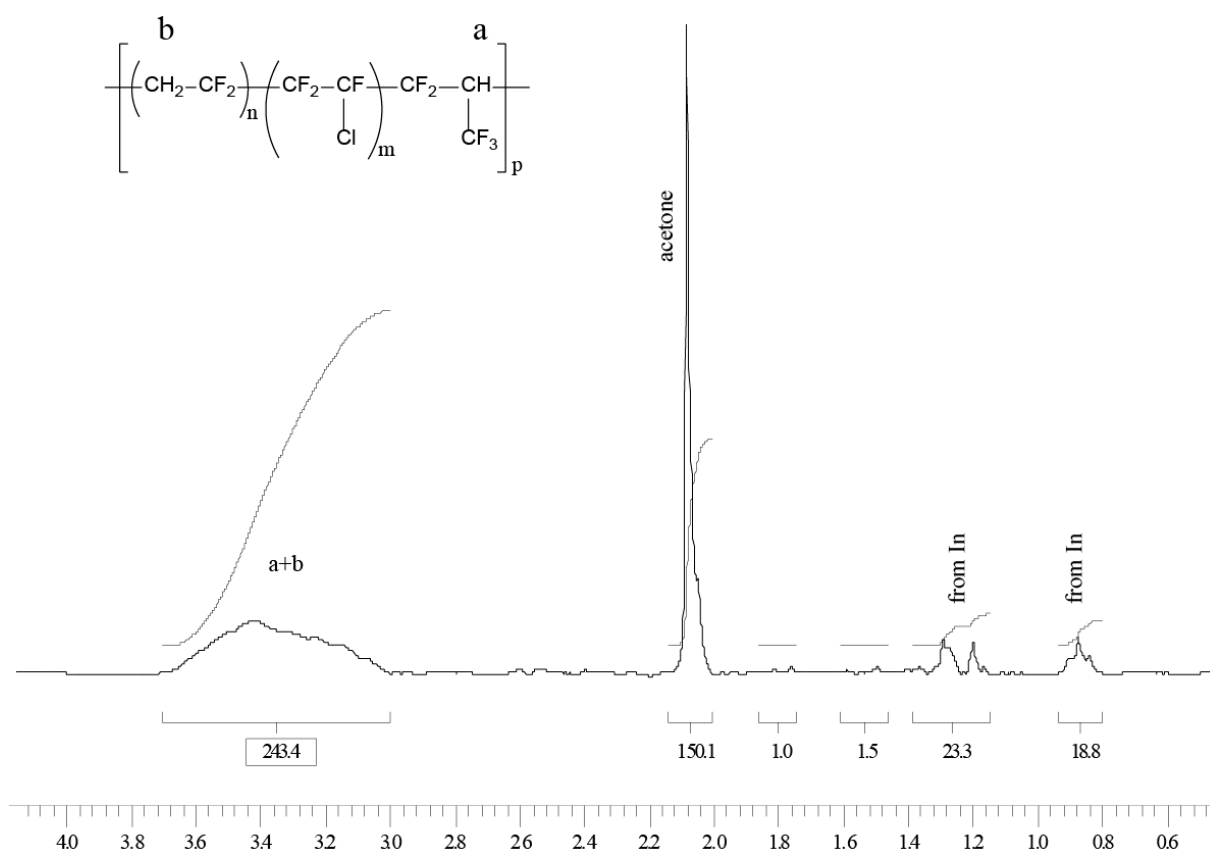


Figure S23: ^1H NMR spectrum of poly(PFP-*ter*-CTFE-*ter*-VDF) terpolymer, recorded in acetone d_6 (Run 2 in Table 4)

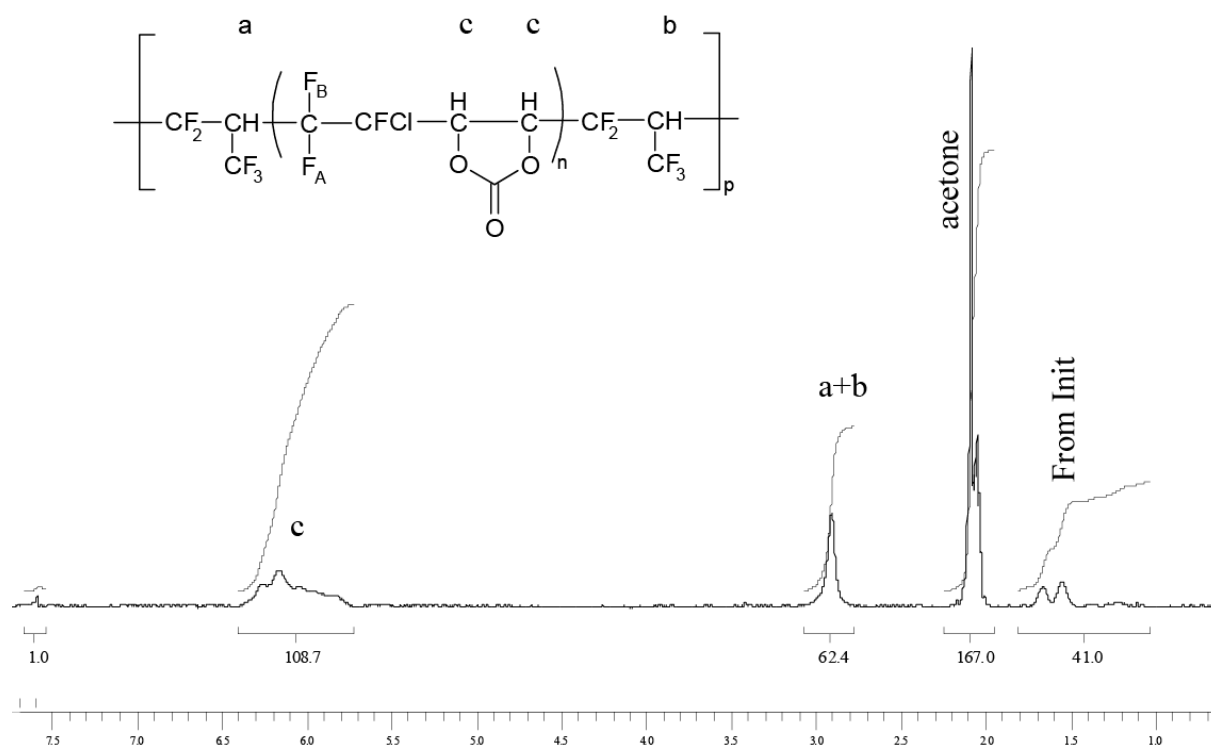


Figure S24: ^1H NMR spectrum of poly(PFP-*ter*-CTFE-*ter*-VCA) terpolymer (recorded in acetone d_6) (Run 4 in Table 4)

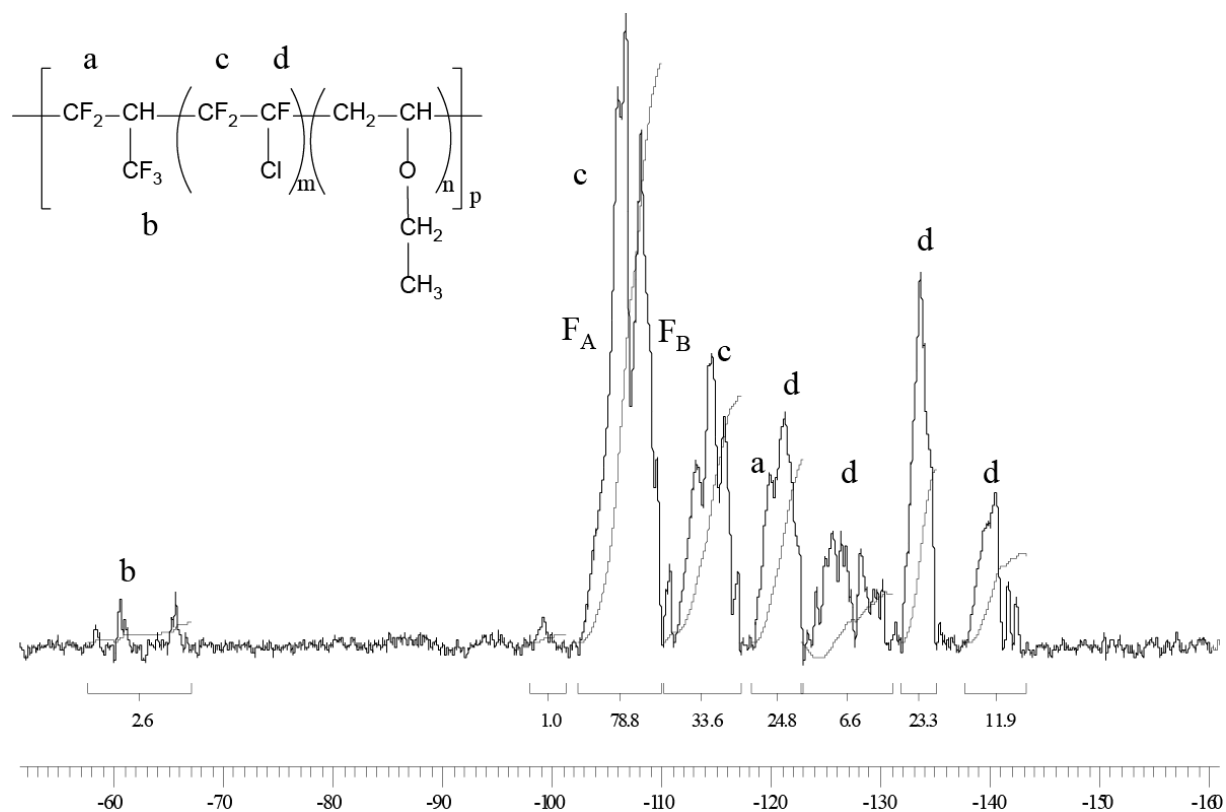


Figure S25: ^{19}F NMR spectrum of poly(PFP-*ter*-CTFE-*ter*-EVE) terpolymer (recorded in acetone d_6) (Run 5 in Table 4)

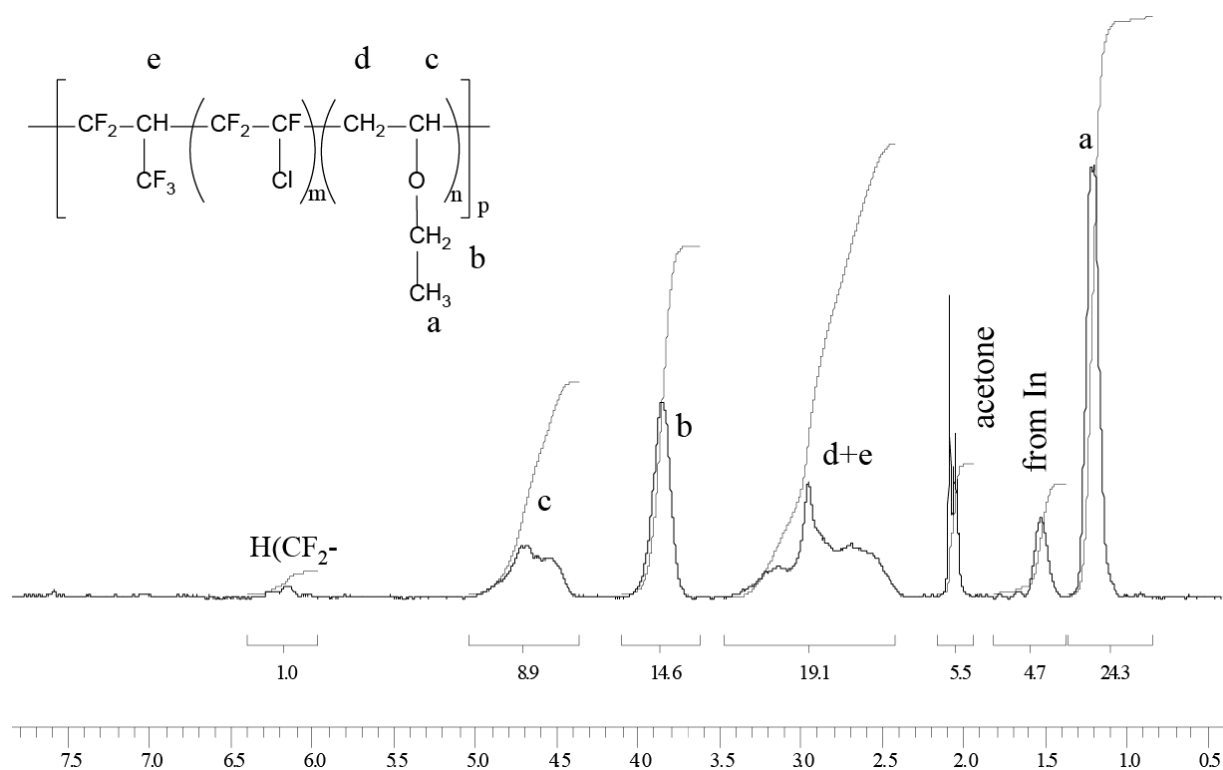


Figure S26: ^1H NMR spectrum of poly(PFP-*ter*-CTFE-*ter*-EVE) terpolymer (recorded in acetone d_6) (Run 5 in Table4)

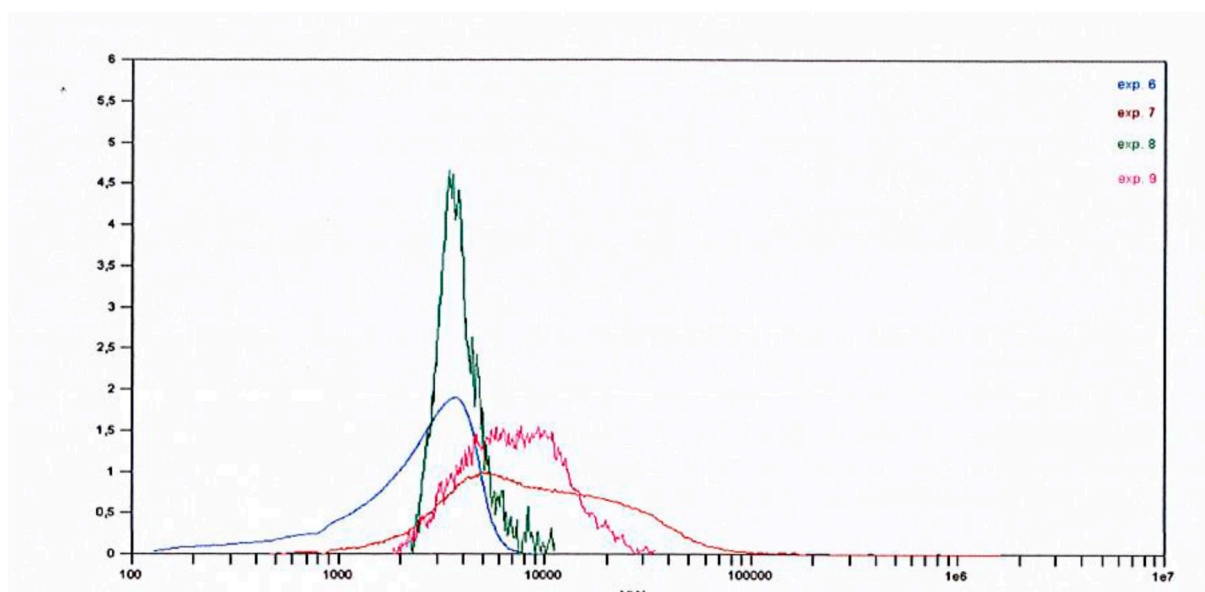


Figure S27: GPC chromatograms (Solvent THF, PMMA standards) of poly (PFP-*ter*-VDF-*ter*-MAF-TBE) terpolymers. The run numbers correspond to experiment numbers in Table 3.

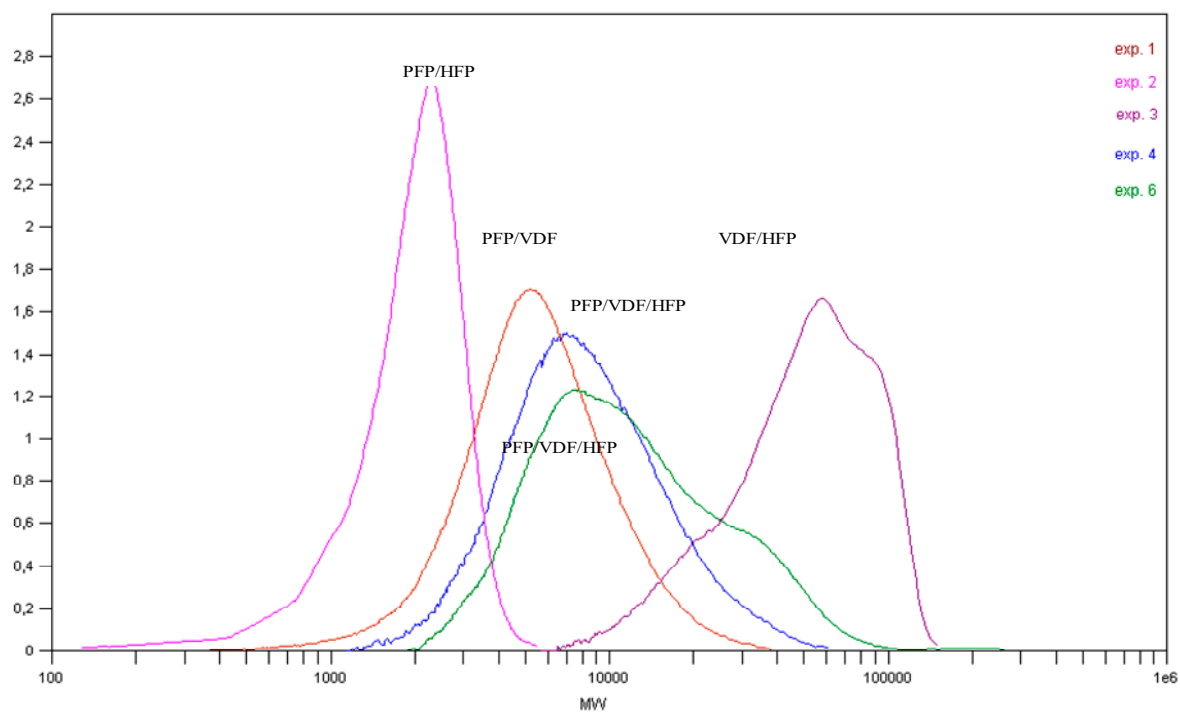


Figure S28: GPC chromatograms of co- and ter-polymers based on PFP, VDF and HFP

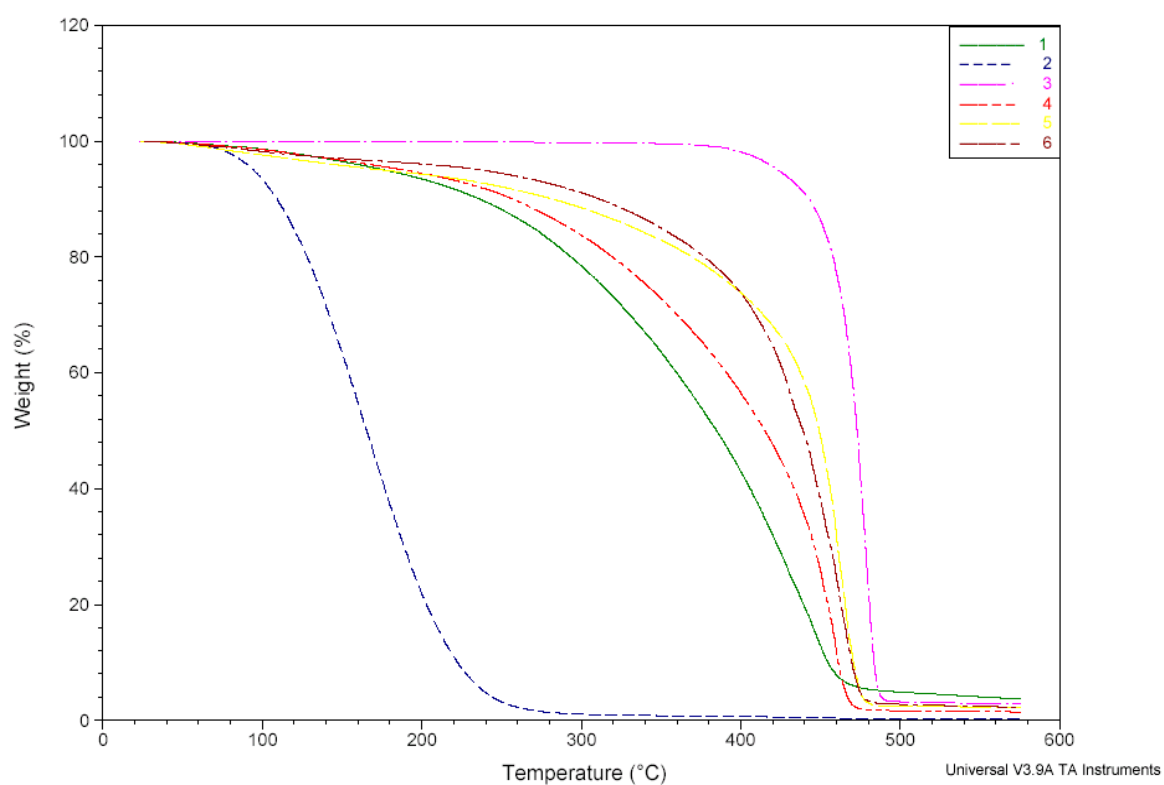


Figure S29: TGA thermograms under nitrogen of PFP/VDF, PFP/MAF-TBE, VDF/MAF-TBE copolymers. The number of the experiments of the caption corresponds to the number of experiments in Tables 1 and 3.

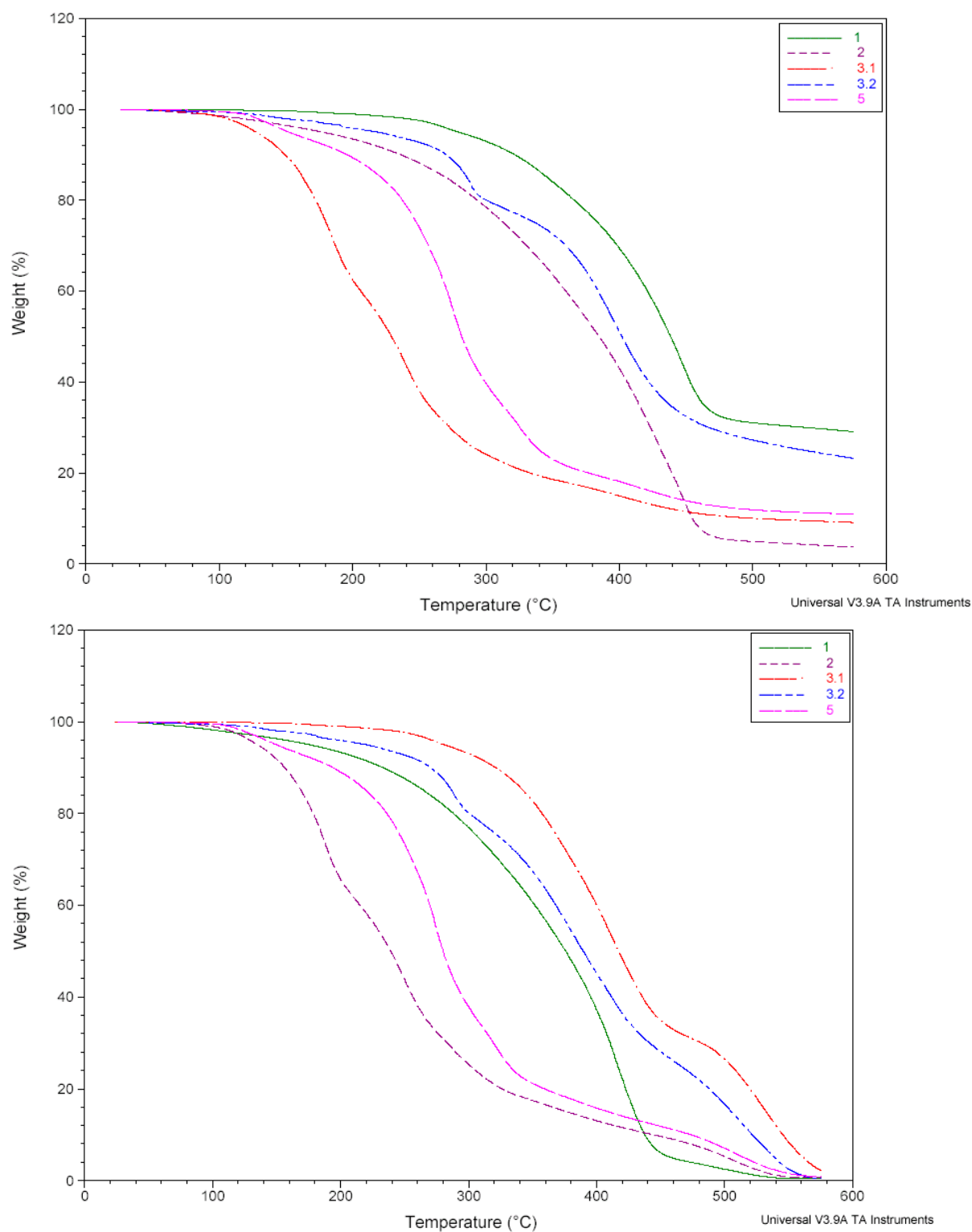


Figure S30: TGA thermograms under air of poly(PFP-*co*-VDF), poly(PFP-*co*-MAF-TBE), and poly(VDF-*co*-MAF-TBE) copolymers. The number of the experiments of the caption corresponds to the number of experiments in Tables 2-3.

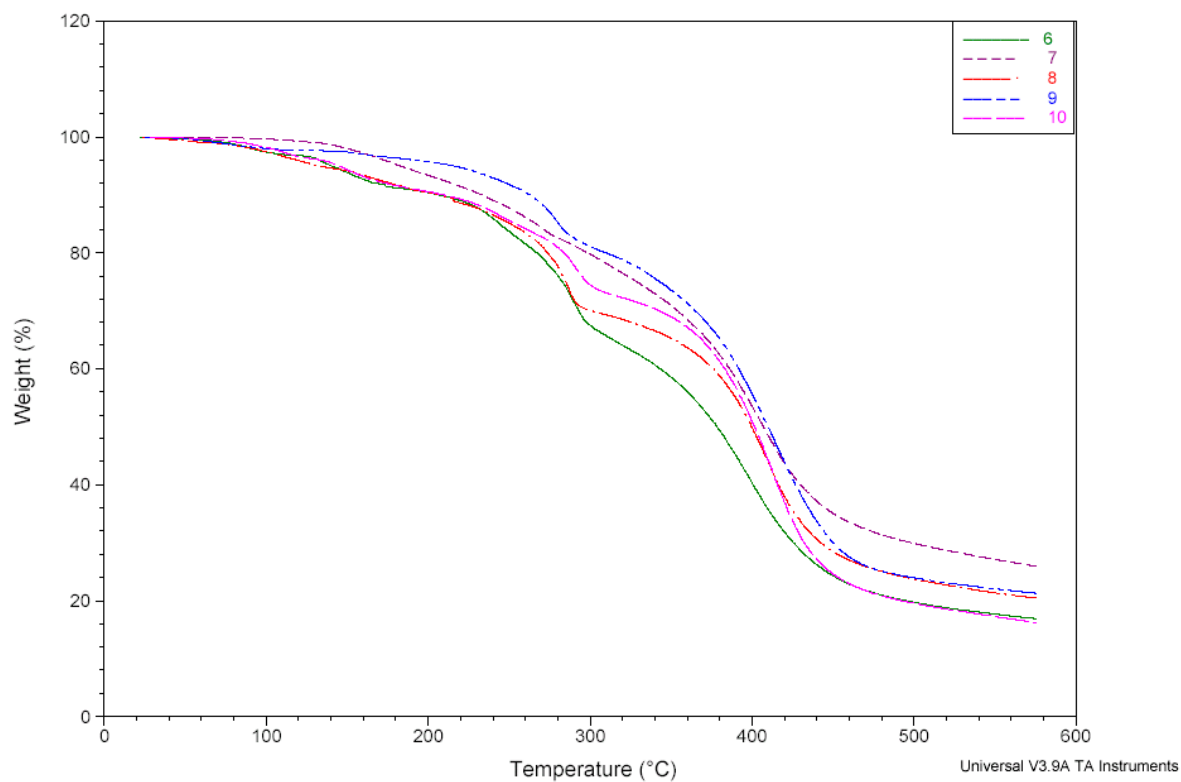


Figure S31: TGA thermograms under nitrogen of poly(PFP-*ter*-VDF-*ter*-MAF-TBE) terpolymers. The number of the experiments of the caption corresponds to the number of experiments in Tables 1 and 3.

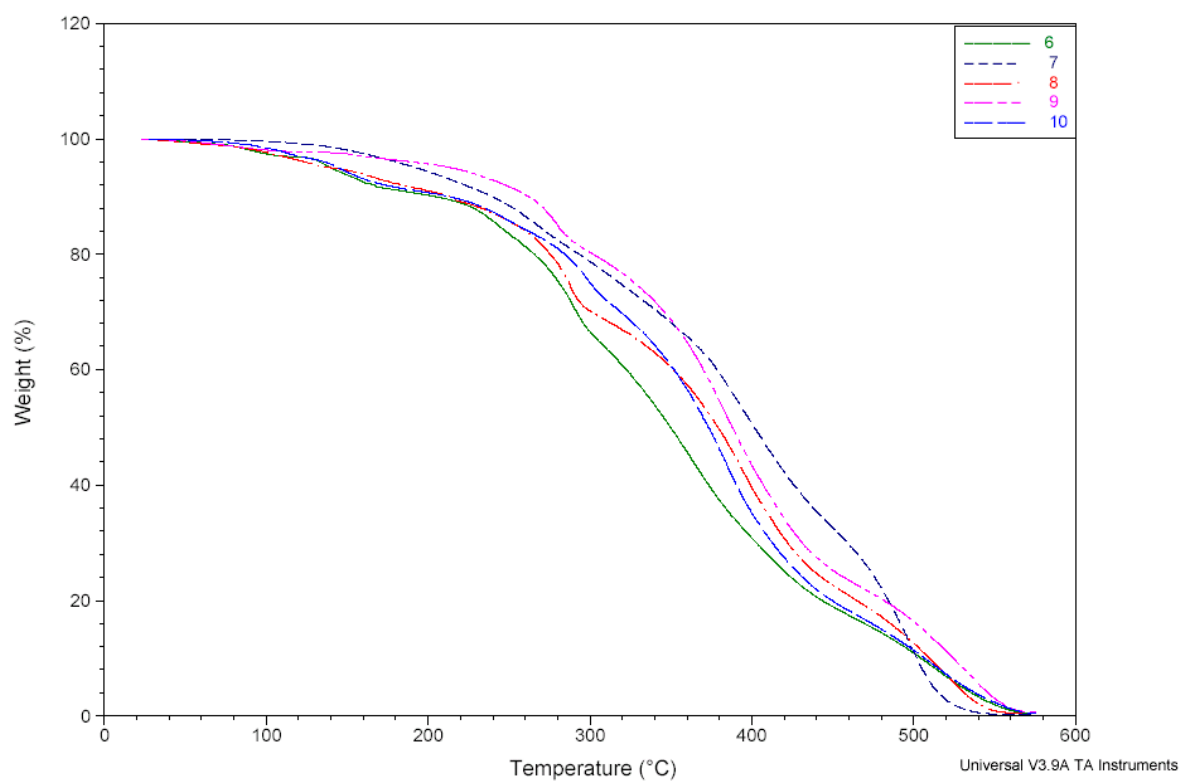


Figure S32: TGA thermograms under air of poly(PFP-*ter*-VDF-*ter*-MAF-TBE) terpolymers. The number of the experiments of the caption corresponds to the number of experiments in Tables 1 and 3.

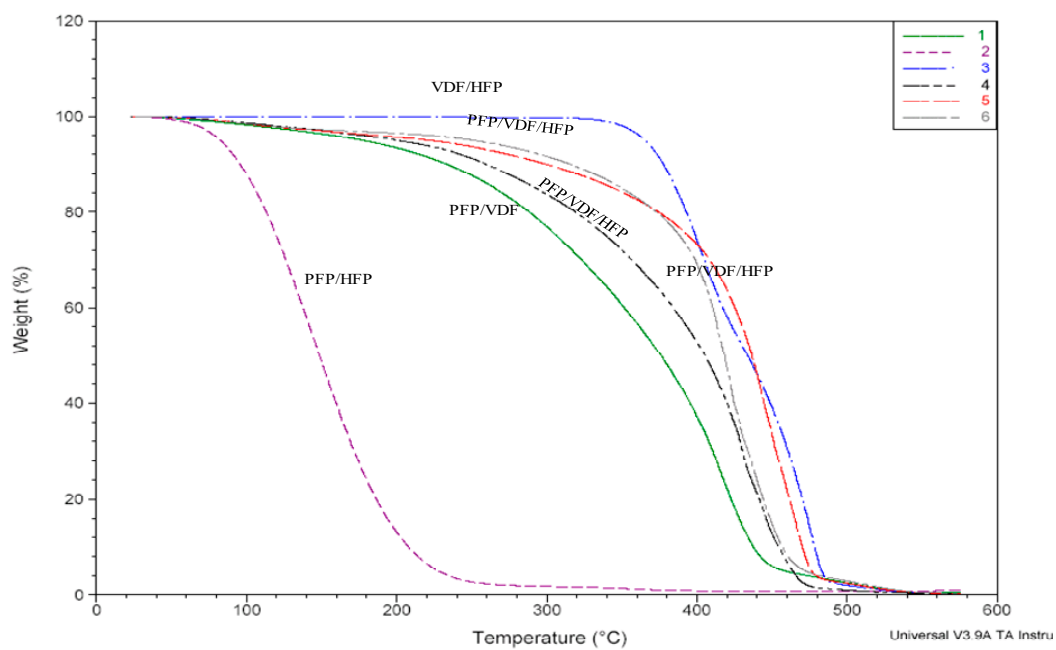


Figure S33: TGA thermograms under air of poly(PFP-*ter*-VDF-*ter*-HFP) co- and ter-polymers (Table 2).