SUPPLEMENTARY INFORMATION

Self-assembled α/β-dipeptide as dielectrics to improve the behavior of multilayered conducting polymer pseudocapacitors

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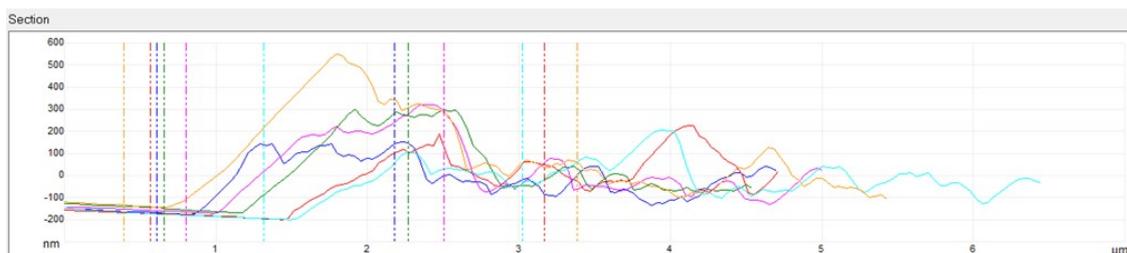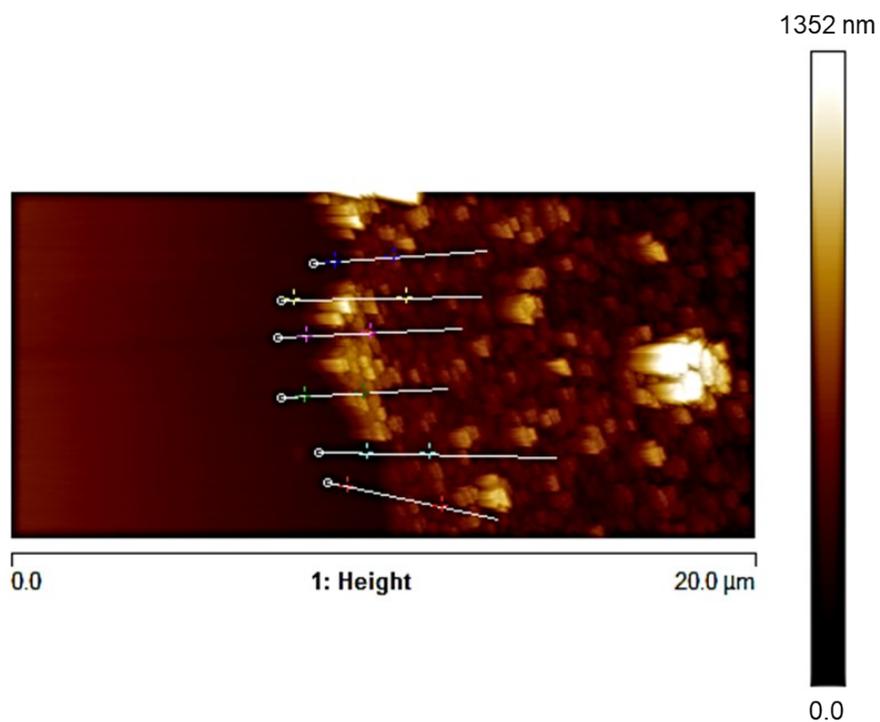
Figure S1. AFM scratch analysis of PEDOT(15s) prepared in acetonitrile. Film thickness was evaluated from height profiles.

Table S1. Conditions used to study the self-assembly of DP1 on PEDOT.

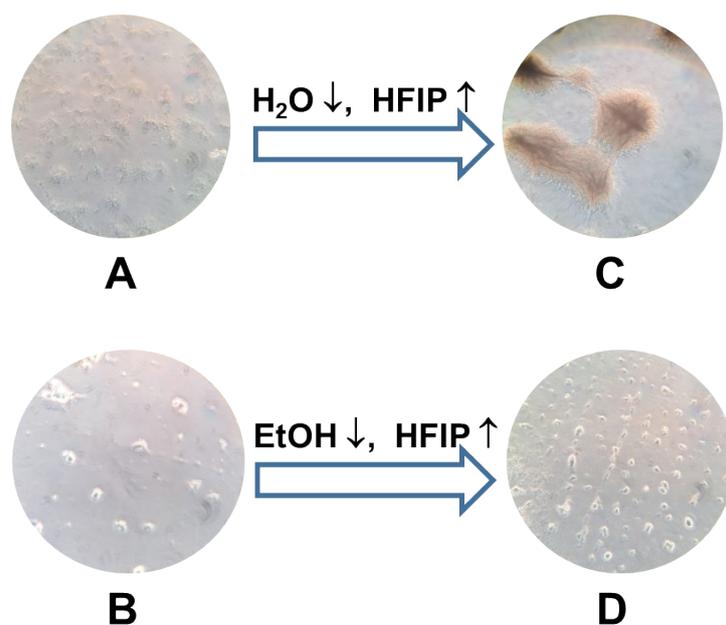| Peptide concentration	Solvent, Cosolvent mixture (v/v %)	Label
0.5 mg/mL	2 % HFIP, 98 % H_2O	A
	2 % HFIP, 98 % EtOH	B
	20 % HFIP, 80 % H_2O	C
	20 % HFIP, 80 % EtOH	D
2.0 mg/mL	2 % HFIP, 98 % H_2O	E
	2 % HFIP, 98 % EtOH	F
	20 % HFIP, 80 % H_2O	G
	20 % HFIP, 80 % EtOH	H
	40 % HFIP, 60 % H_2O	I
	40 % HFIP, 60 % EtOH	J
	60 % HFIP, 40 % H_2O	K
	60 % HFIP, 40 % EtOH	L
	80 % HFIP, 20 % H_2O	M
	80% HFIP, 20 % EtOH	N
4.0 mg/mL	40 % HFIP, 60 % H_2O	O
	40 % HFIP, 60 % EtOH	P
	60 % HFIP, 40 % H_2O	Q
	60 % HFIP, 40 % EtOH	R
8.0 mg/mL	40% HFIP, 60 % H_2O	S

Figure S2. Representative optical micrographs of the DP1 assemblies formed using conditions A-D (see Table S1).
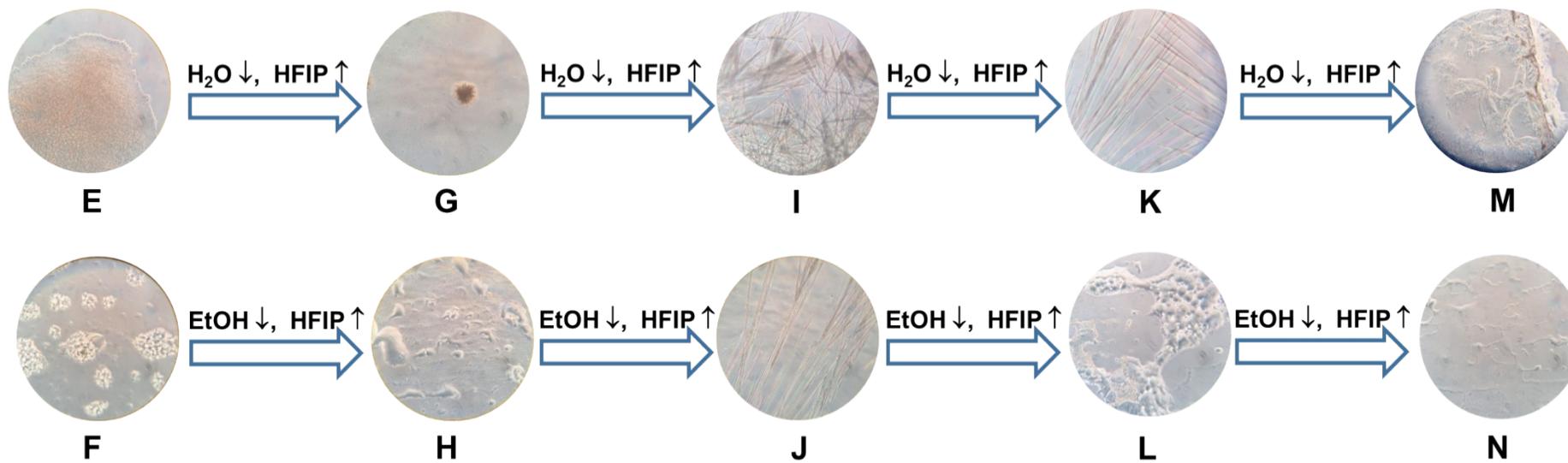
Figure S3. Representative optical micrographs of the DP1 assemblies formed using conditions E-N (see Table S1).
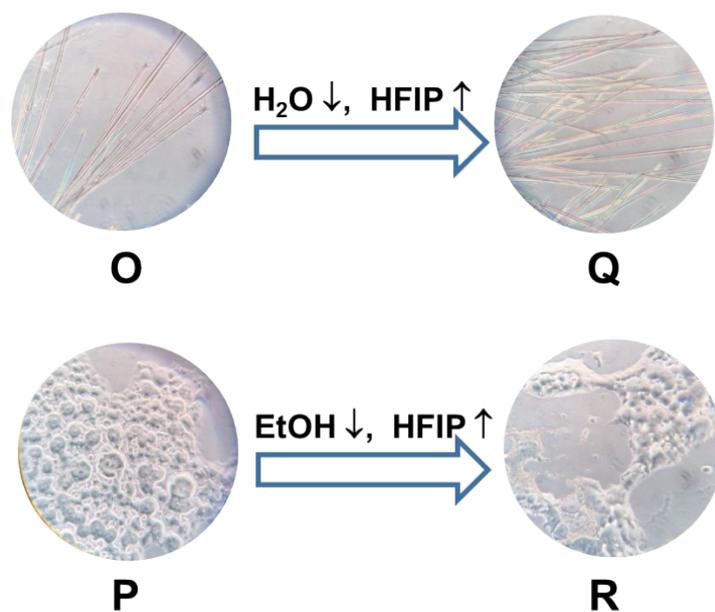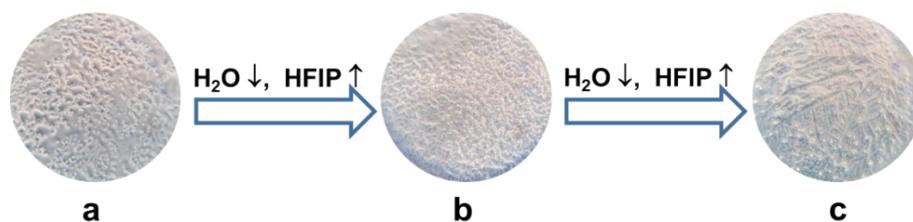
Figure S4. Representative optical micrographs of the DP1 assemblies formed using conditions O-R (see Table S1).

Table S2. Conditions used to study the self-assembly of TFA·DP1 on PEDOT.

Peptide concentration	Solvent, Cosolvent mixture (v/v %)	Label
0.5 mg/mL	2 % HFIP, 98 % H_2O	A
	40 % HFIP, 60 % H_2O	B
	80 % HFIP, 20 % H_2O	C
2.0 mg/mL	2 % HFIP, 98 % H_2O	D
	2 % HFIP, 98 % EtOH	E
	40 % HFIP, 60 % H_2O	F
	40 % HFIP, 60 % EtOH	G
	80 % HFIP, 20 % H_2O	H
	80 % HFIP, 20 % EtOH	I
4.0 mg/mL	2 % HFIP, 98 % EtOH	J
8.0 mg/mL	2 % HFIP, 98 % EtOH,	K

Figure S5. Representative optical micrographs of the TFA·DP1 assemblies formed using conditions a-c (see Table S2).
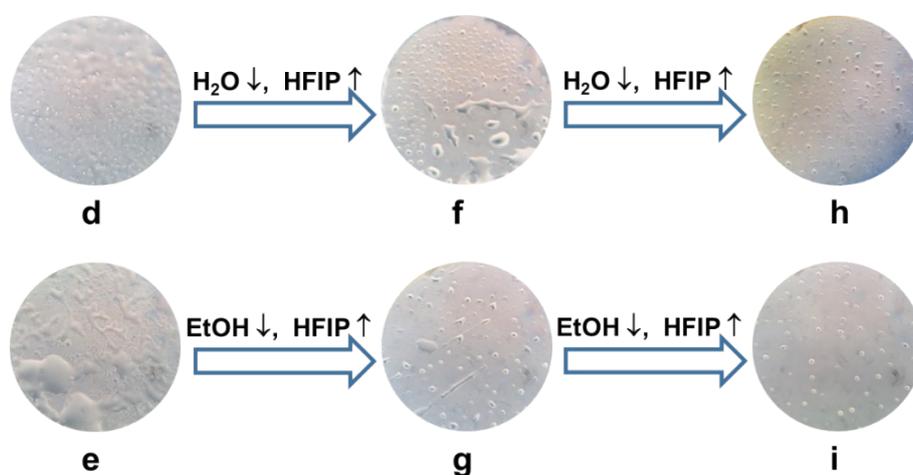

Figure S6. Representative optical micrographs of the TFA·DP1 assemblies formed using conditions d-i (see Table S2).
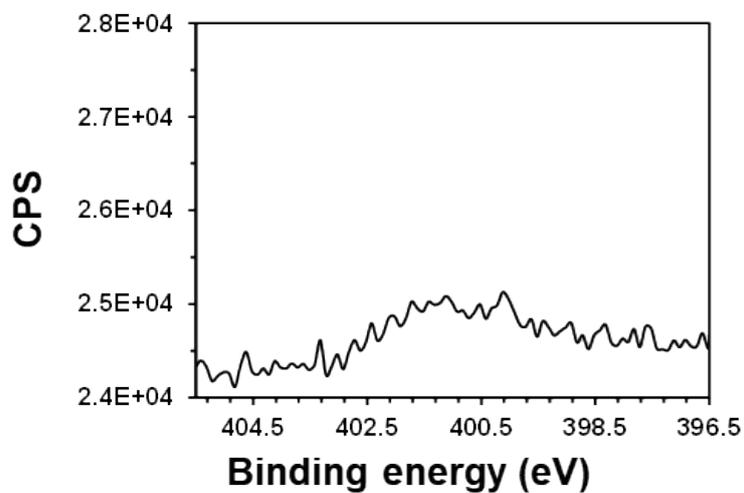

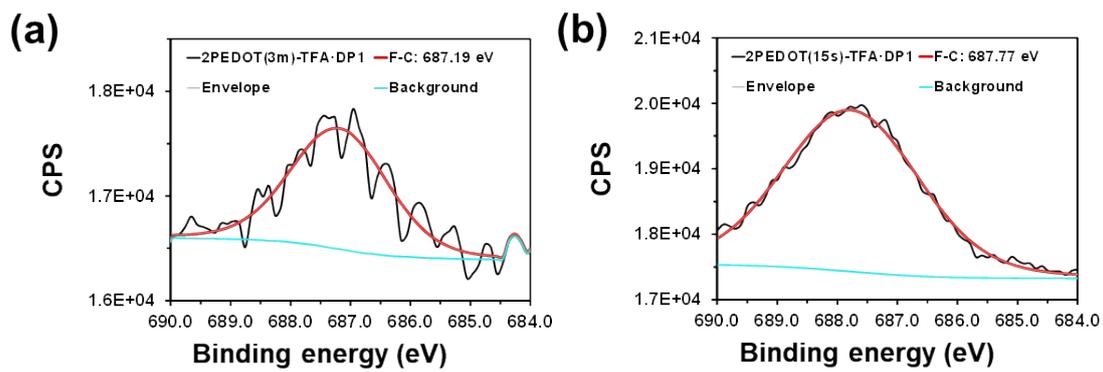**Figure S7.** N 1s high-resolution XPS spectrum for 2PEDOT(3m).

Figure S8. F 1s high-resolution XPS spectrum for (a) 2PEDOT(3m)-TFA·DP1 and (b) 2PEDOT(15s)-TFA·DP1 electrodes.
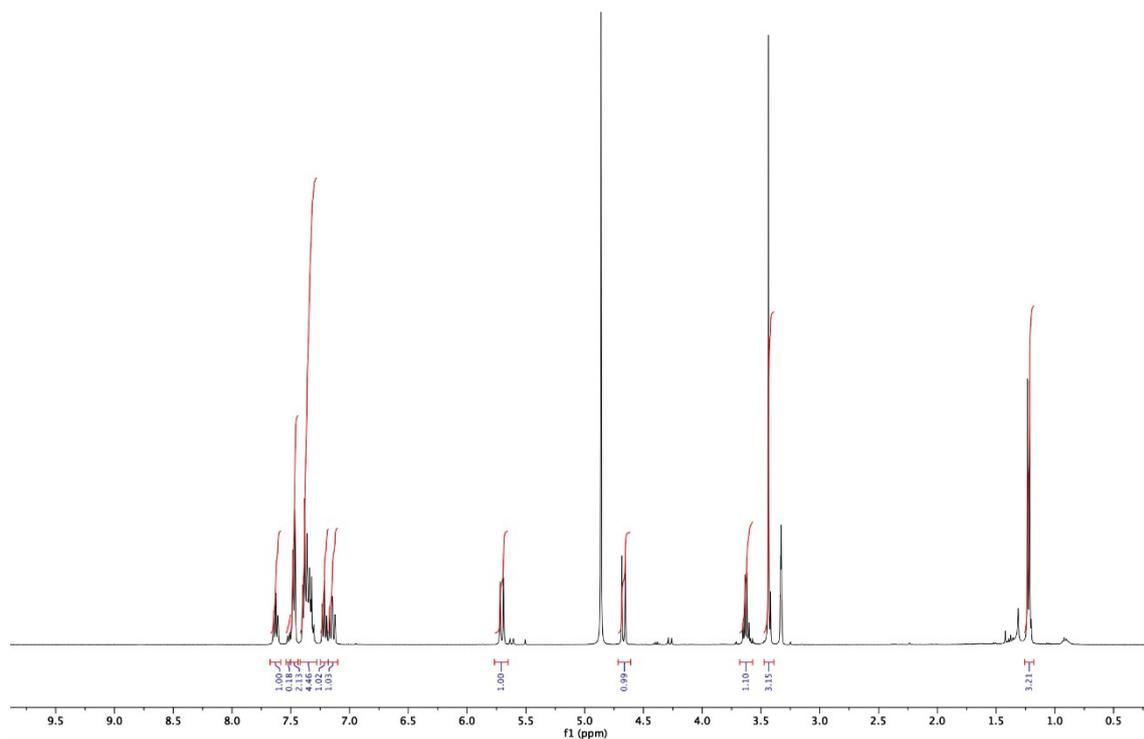
NMR characterization of TFA·DP1
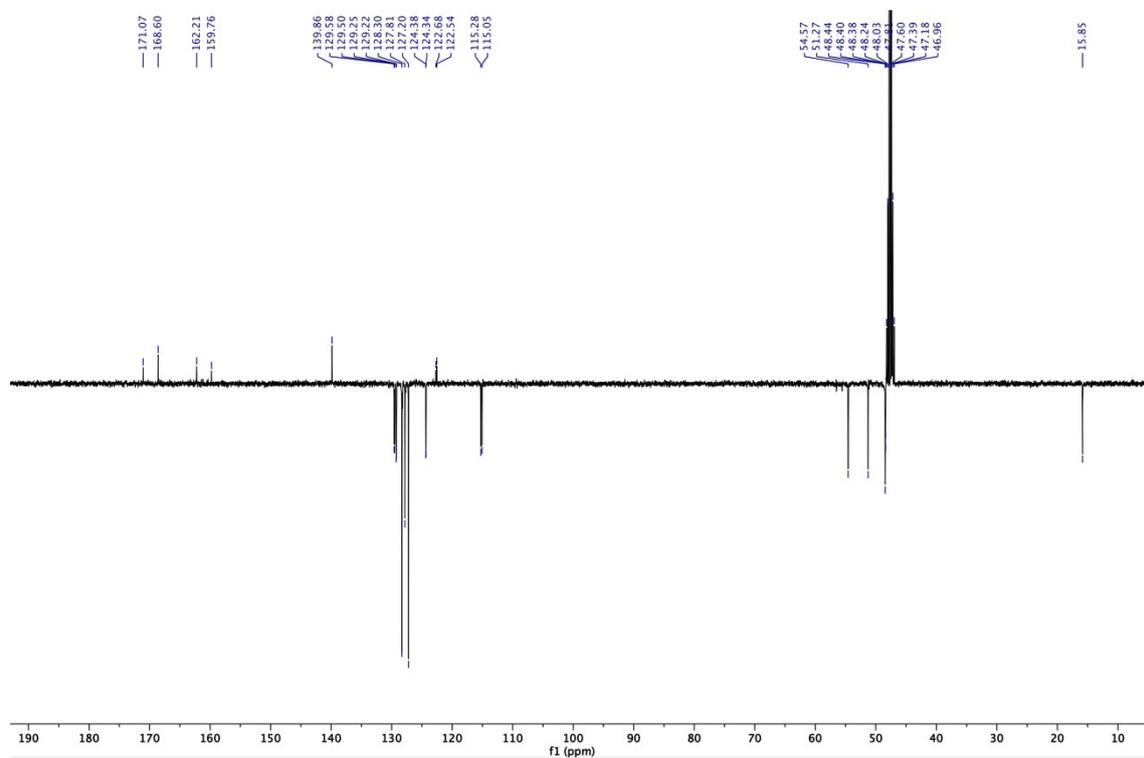

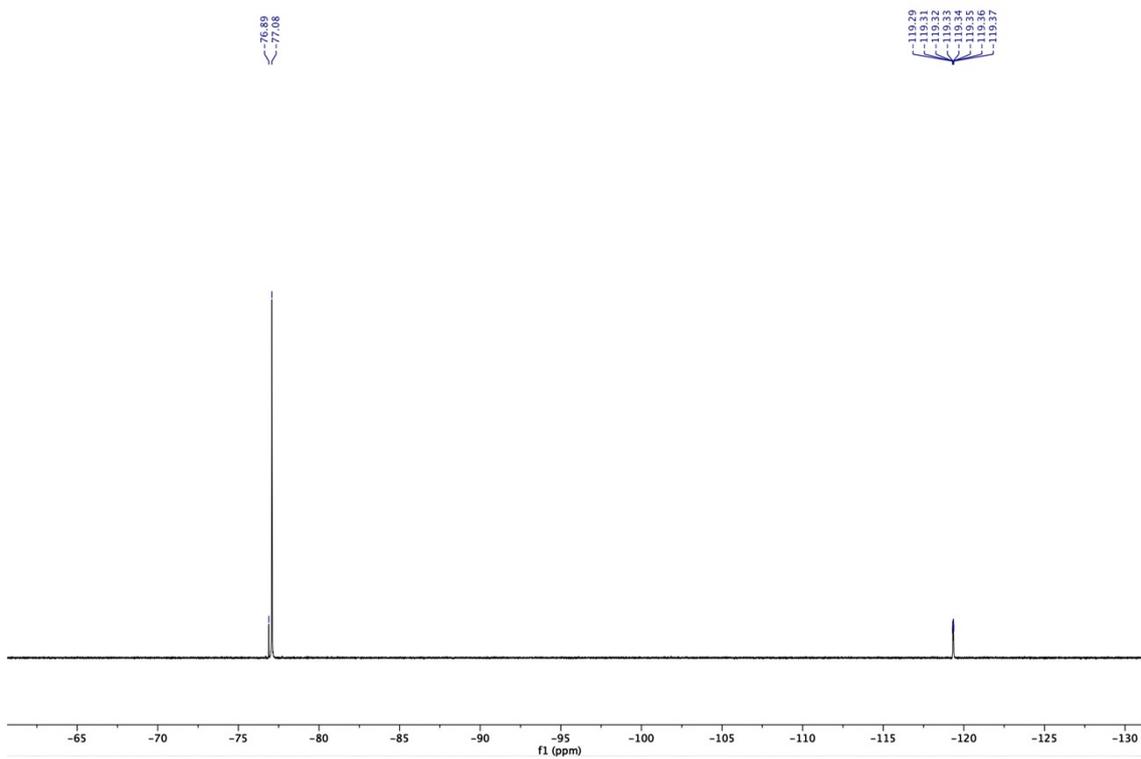**Figure S9.** ^{1}H NMR spectra of **TFA·DP1**

Figure S10. ^{13}C NMR spectra of **TFA·DP1**

Figure S11. ^{19}F NMR spectra of **TFA·DP1**