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Supplementary

α,ω-Epoxide, Oxetane and Dithiocarbonate Telechelic Copolyolefins: Access by Ring-Opening Metathesis/Cross-Metathesis Polymerization (ROMP/CM) of Cycloolefins in the Presence of Functional Symmetric Chain-Transfer Agents

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Table, Schemes and Figures captions

Table S1. NMR and FTIR spectroscopic characteristics of the α,ω-diepoxide telechelic P(NB-*co*-CDT) prepolymers and the resulting α,ω-bis(dithiocarbonate) P(NB-*co*-CDT) analogues.

Figure S1. ORTEP representation of the molecular solid-state structure of CTA **2**. Ellipsoids drawn at the 50% probability level. H atoms are omitted for clarity.

Figure S2. ^{1}H NMR spectrum (400 MHz, DMSO-d_6, 25 °C) of CTA **2**; (*: residual solvents δ (ppm) 3.31 H_2O, 1.25, 4.20 ethanol).

Figure S3. $^{13}C\{^{1}H\}$ NMR spectrum (100 MHz, DMSO-d_6, 25 °C) of CTA **2**; (*: residual solvents δ (ppm) 13.9; 61.1 diethylether; 18.6, 56.1 ethanol).

Figure S4. ^{1}H NMR spectrum (400 MHz, DMSO-d_6, 25 °C) of CTA **3**; (*: residual solvent δ (ppm) 3.31 H_2O).

Figure S5. $^{13}C\{^{1}H\}$ NMR spectrum (100 MHz, DMSO-d_6, 25 °C) of CTA **3**.

Figure S6. ^{1}H NMR spectrum (500 MHz, $CDCl_3$, 25 °C) of the copolymer sample prepared by ROMP/CM of COE/NB (50:50) in the presence of **G2**/CTA **1** in CH_2Cl_2 (Table 2, entry 1). (*: residual solvents: δ (ppm) 1.59 H_2O, 0.07 grease).

Figure S7. ^{13}C NMR spectrum (125 MHz, $CDCl_3$, 25 °C) of the copolymer sample prepared by ROMP/CM of COE/NB (50:50) in the presence of **G2**/CTA **1** (Table 2, entry 1). (*: residual solvents: δ (ppm) 1.2 grease).

Figure S8. ^{1}H NMR spectrum (500 MHz, $CDCl_3$, 25 °C) of the copolymer sample prepared by ROMP/CM of NB/CDT (50:50) in the presence of **HG2**/CTA **1** in CH_2Cl_2 (Table 3, entry 3). (*: residual solvents: δ (ppm) 1.53 H_2O, 0.07 grease).

Figure S9. ^{1}H NMR spectrum (500 MHz, $CDCl_3$, 25 °C) of the copolymer sample prepared by ROMP/CM of NB/CDT (50:50) in the presence of **HG2**/CTA **1** in THF (Table 3, entry 4), a) after dialysis in THF, and b) before dialysis in THF (*: residual solvents: δ (ppm) 1.53 H_2O, 0.07 grease).

Figure S10. ^{13}C NMR spectrum (125 MHz, $CDCl_3$, 25 °C) of the copolymer sample prepared by ROMP/CM of NB/CDT (50:50) in the presence of **HG2**/CTA **1** in THF (Table 3, entry 4) (δ (ppm) 0.07 grease).

Figure S11. 2D COSY ^{1}H–^{1}H NMR spectrum (400 MHz, $CDCl_3$, 25 °C) of the copolymer sample prepared by ROMP/CM of NB/CDT (50:50) in the presence of **G2**/CTA **3** (Table 3, entry 8).

Figure S11. 2D COSY ^{1}H–^{1}H NMR spectrum (400 MHz, $CDCl_3$, 25 °C) of the copolymer sample prepared by ROMP/CM of NB/CDT (50:50) in the presence of **G2**/CTA **3** (Table 3, entry 6).

Figure S12. FTIR spectrum of the α,ω-bis(dithiocarbonate) P(NB-*co*-CDT) copolymer sample prepared by dithiocarbonatation of the α,ω-diepoxide telechelic P(NB-*co*-CDT) prepolymer (Table 4, entry 1).

Figure S13. ^{1}H NMR spectrum (500 MHz, $CDCl_3$, 25 °C) of the CNF copolymer isolated from the α,ω-bis(dithiocarbonate) P(NB-*co*-CDT) crude copolymers. (*: δ (ppm) 0.07 residual grease) (Table 4, entry 1).

Table S1. NMR and FTIR spectroscopic characteristics of the α,ω-diepoxide telechelic P(NB-*co*-CDT) prepolymers and the resulting α,ω-bis(dithiocarbonate) P(NB-*co*-CDT) analogues.

^{1}H NMR (400 MHz, 23 °C, $CDCl_3$)	(δ ppm)	2.67; 2.86; 3.24; 3.98; 4. 45 (**A61**)	3.59; 4.49; 5.37
	Assignments	a ; a ; b ; c ; c	a'; c' ; b'
	Integrations	1 1 1 1 1	2 2 -[b]
		Figure S9	Figure 5
^{13}C{^{1}H} NMR (100 MHz, 23 °C, $CDCl_3$)	(δ ppm)	38.2 ; 49.6 ; 64.9 ; 166.6	210.9 ; 166.0 ; 87.7 ; 53.6 ; 31.0
	Assignments	a ; b ; c ; d	g' ; d' ; b' ; c' ; a'
		Figure S10	Figure 6
FTIR	(σ cm^{-1})	-	1190 ($\upsilon_{C=S}$) ; 1519 ($\upsilon_{C=O}$) Figure S13

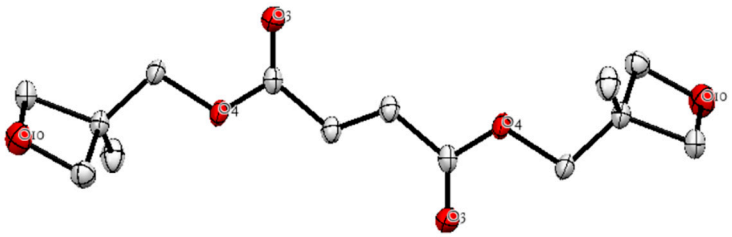


Figure S1. ORTEP representation of the molecular solid-state structure of CTA **2**. Ellipsoids drawn at the 50% probability level. H atoms are omitted for clarity.

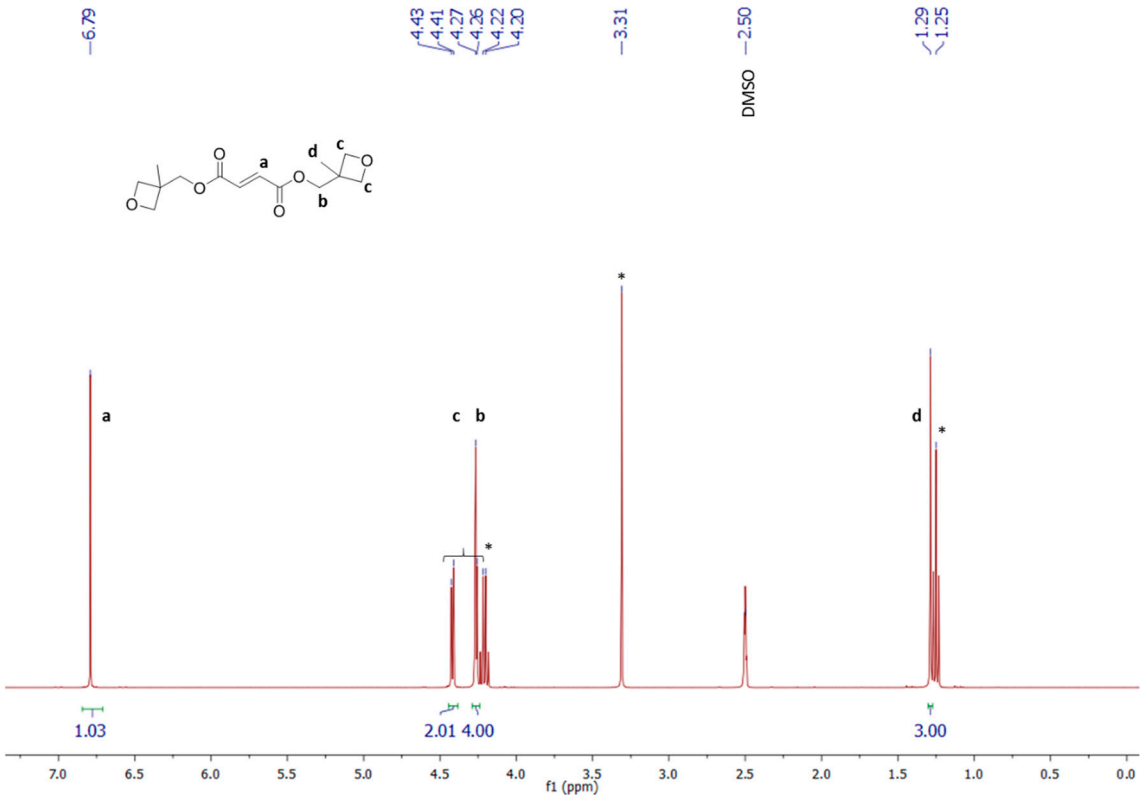
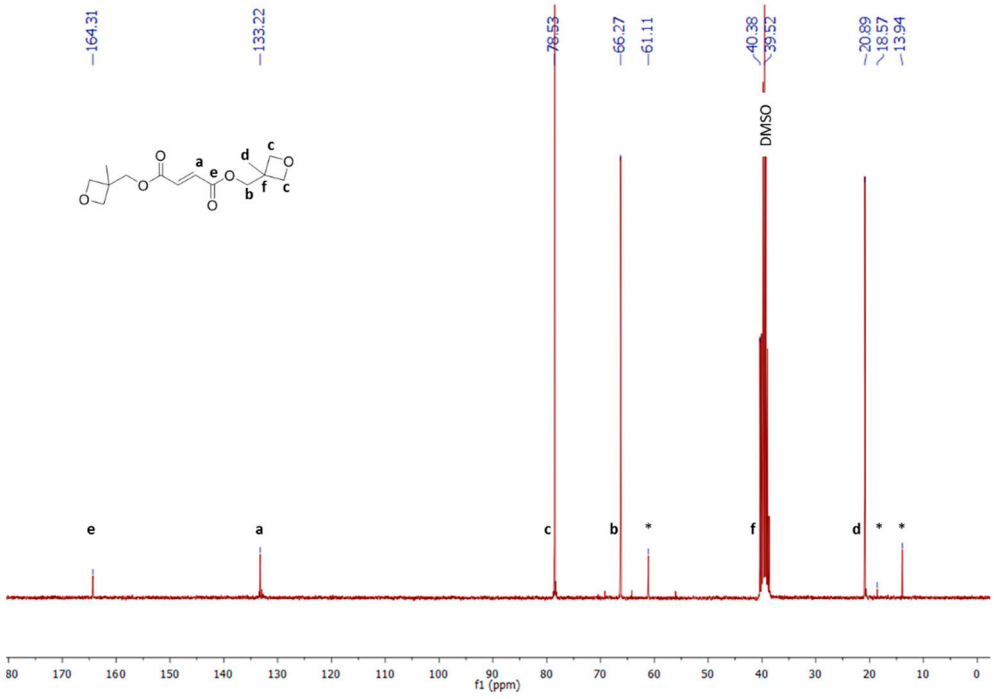


Figure S2. ^{1}H NMR spectrum (400 MHz, DMSO-d_6, 25 °C) of CTA **2**; (*: residual solvents δ (ppm) 3.31 H_2O, 1.25, 4.20 ethanol).



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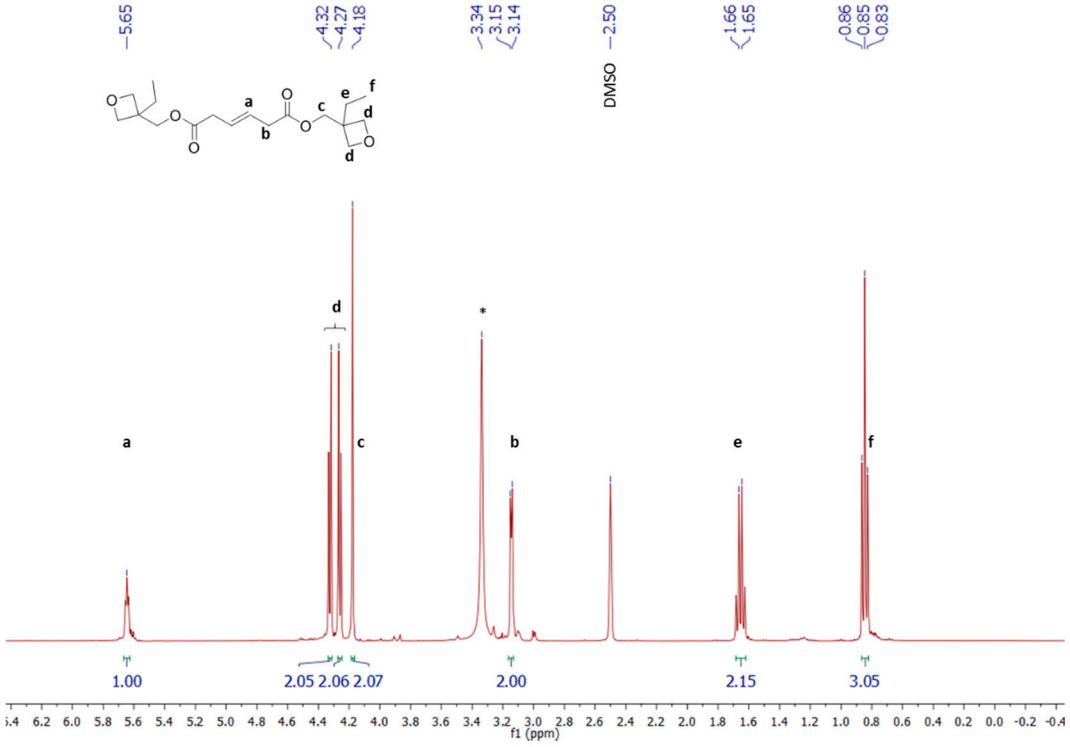

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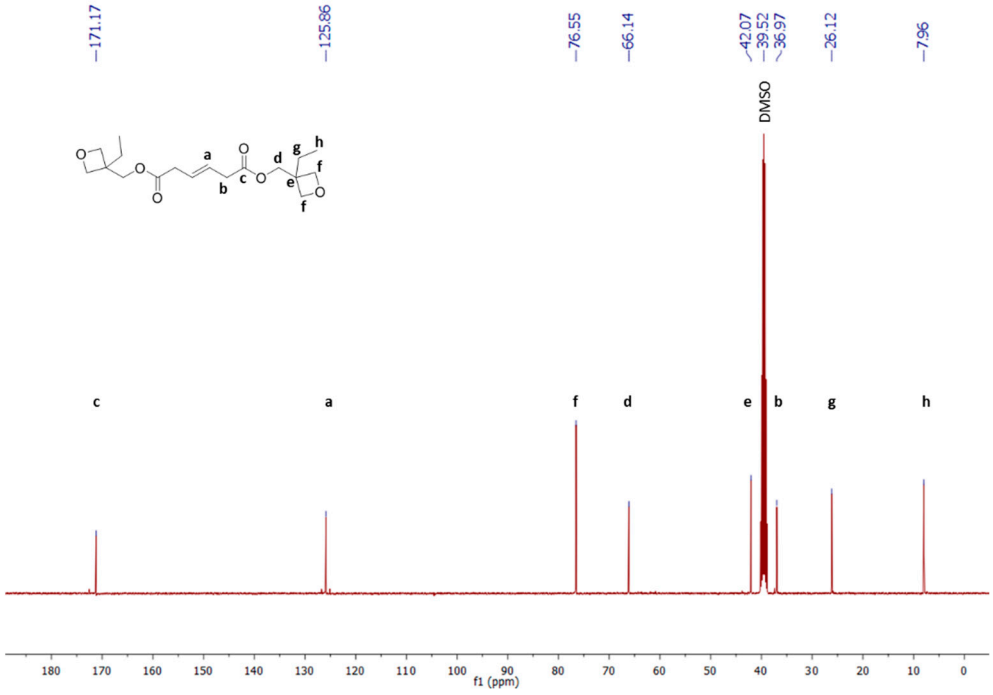


Figure S5. ^{13}C{^{1}H} NMR spectrum (100 MHz, DMSO-*d*$_6$, 25 °C) of CTA **3**.

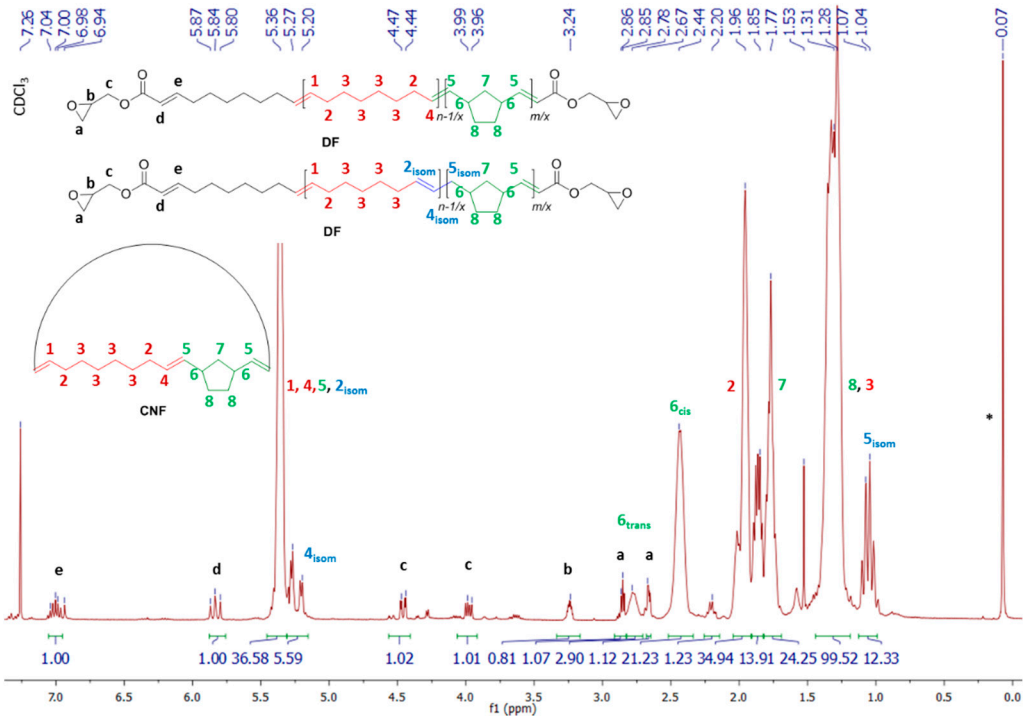
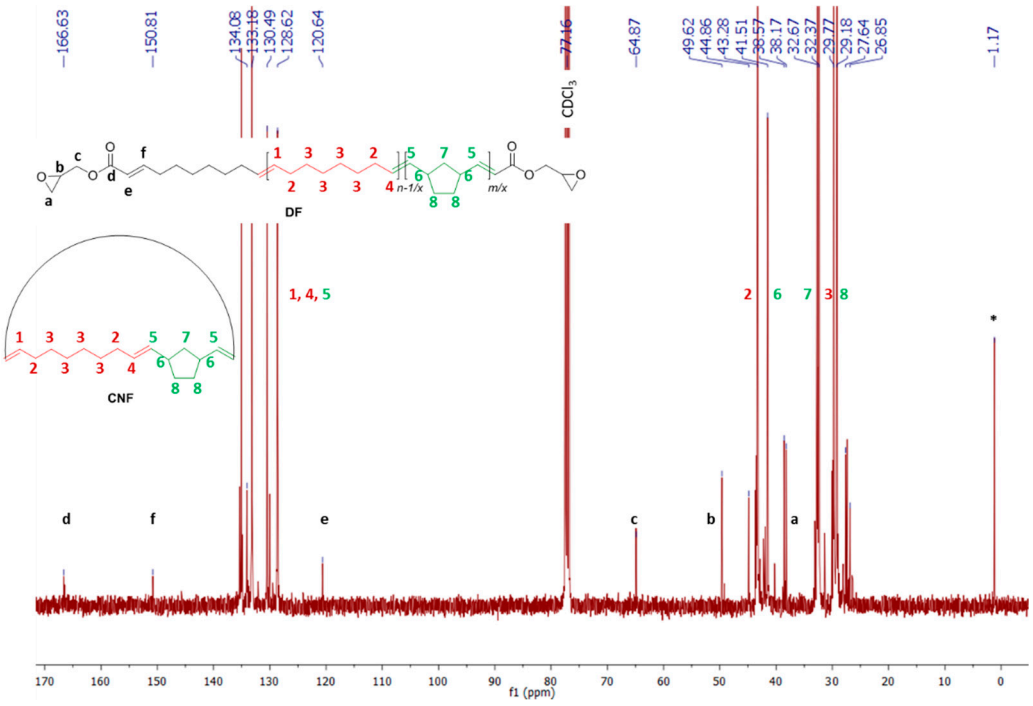


Figure S6. ^{1}H NMR spectrum (500 MHz, $CDCl_3$, 25 °C) of a copolymer sample prepared by ROMP/CM of COE/NB (50:50) in the presence of **G2**/CTA **1** in CH_2Cl_2 (Table 2, entry 1). (*: residual solvents: δ (ppm) 1.59 H_2O, 0.07 grease).



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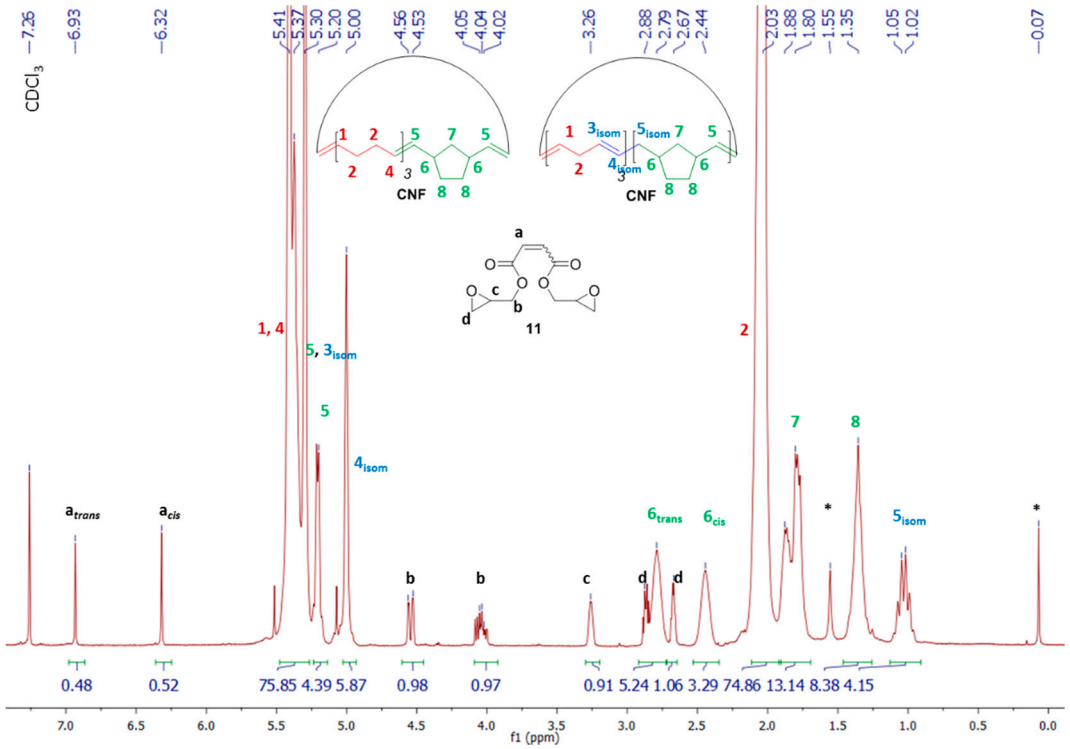

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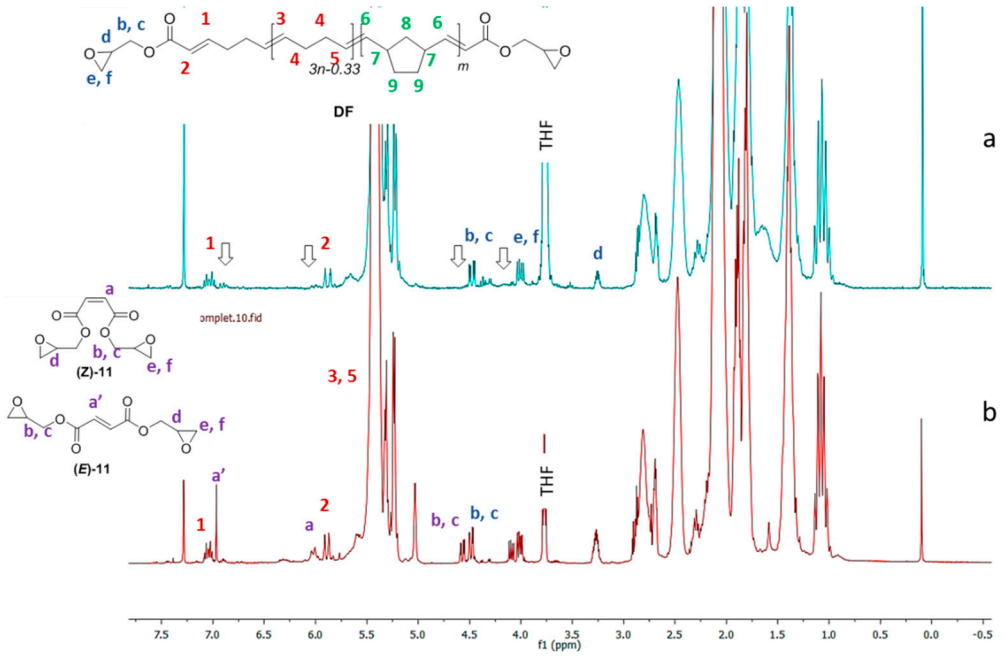

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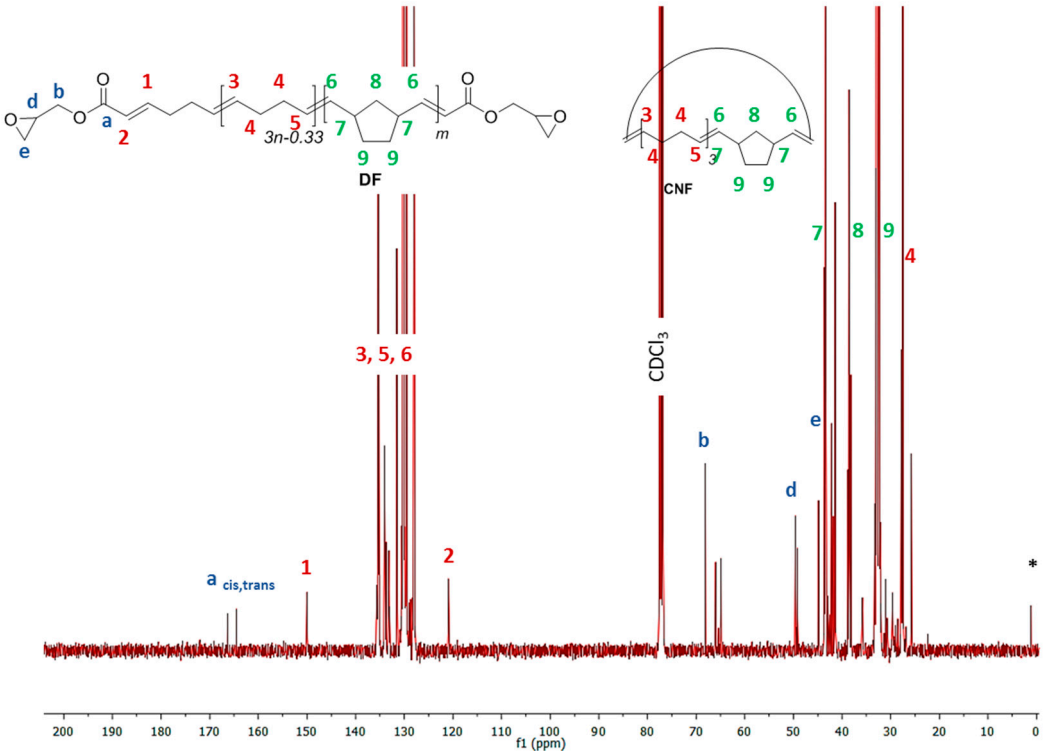

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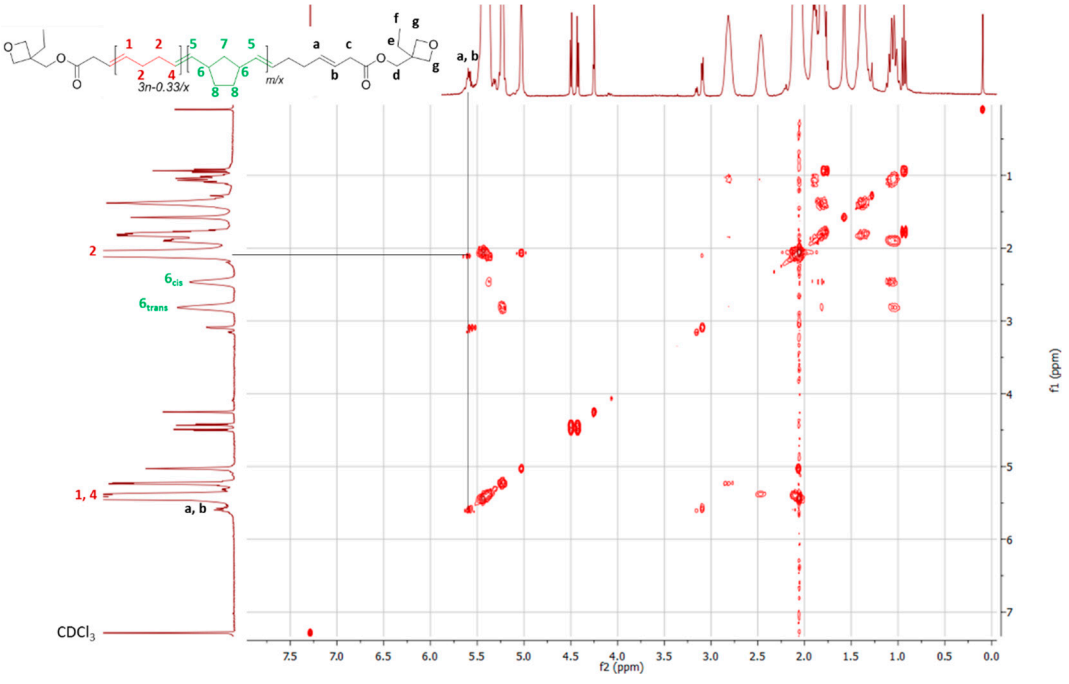

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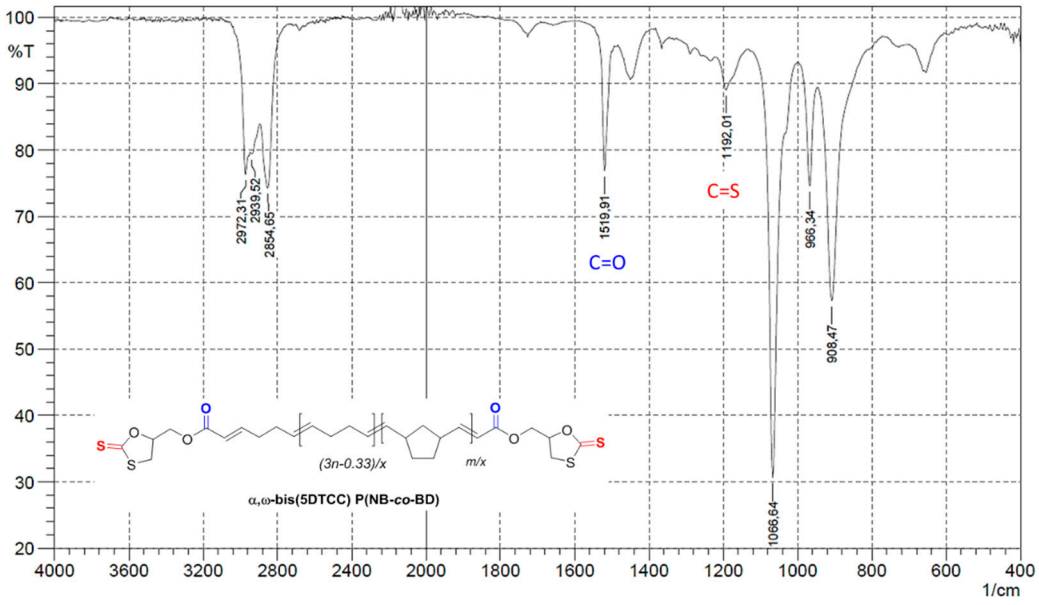

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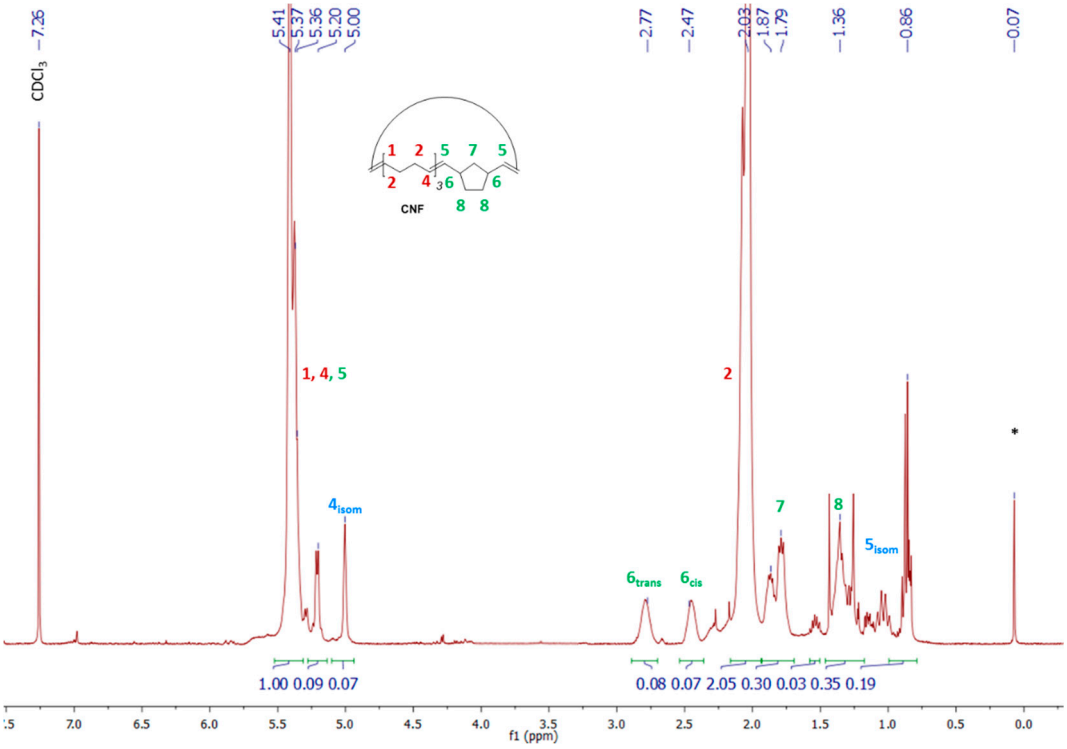

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