Electronic Supplementary Material (ESI) for Green Chemistry.

Supporting information

New insights into the curing of epoxidized linseed oil with dicarboxylic acids

Cheng Ding,[a] Peter S. Shuttleworth,[b] Sarah Makin,[a] James H. Clark[a] and Avtar S. Matharu*[a]

[a]Green Chemistry Centre of Excellence,
Department of Chemistry,
University of York,
York YO10 5DD,
England,
UK.

[b] Departamento de Física de Polímeros,
Elastómeros y Aplicaciones Energéticas,
Instituto de Ciencia y Tecnología de Polímeros, CSIC,
c/ Juan de la Cierva 3, 28006,
MADRID.

**Corresponding Author Email: avtar.matharu@york.ac.uk

Table S1 ΔH_T and T_P of ELO-DCAs systems with different heating rates (5, 10, 15, 20 °C min^{-1}).

Sample	T_P [°C]				ΔH_T [J g^{-1}]			
	5	10	15	20	5	10	15	20
C_6	162.5±0.4	177.8±1.1	185.7±1.3	192.4±0.2	253.2±7.8	254.3±13.4	261.7±16.5	250.3±8.4
C_8	168.8±0.1	181.6±0.9	190.5±0.8	196.2±0.6	235.6±6.7	244.2±6.5	232.0±1.0	230.4±7.5
C_{10}	169.5±1.2	184.8±1.8	191.1±2.4	196.1±0.1	250.8±5.4	248.9±5.0	247.9±4.1	258.5±3.0
C_{12}	169.9±0.5	183.1±2.0	191.9±2.4	197.0±0.7	239.6±8.5	265.7±5.1	270.6±9.0	267.8±8.8
C_{14}	172.8±0.1	186.8±0.2	194.5±0.6	200.2±0.2	213.8±6.4	234.5±10.2	246.0±10.3	249.4±9.1
C_{16}	171.8±1.0	185.5±1.7	194.0±1.9	199.8±0.9	222.7±7.2	239.5±5.9	234.2±8.5	233.3±4.2
C_{18}	170.8±0.6	185.5±1.1	193.6±1.2	200.1±2.2	217.7±3.5	241.3±2.9	237.4±1.0	245.1±8.5
C_{36}	180.9±0.7	196.2±0.4	204.5±1.3	210.3±0.7	170.8±4.9	173.6±2.9	176.3±2.1	170.9±0.5

Table S2 Temperature of the β-relaxation (T_β) taken from the maxima of the Tan δ of the different ELO-DCAs samples tested using a DMA under different frequencies

Sample	1 Hz	3 Hz	7 Hz	10 Hz	20 Hz
C_6	86.1	81.0	77.32	75.2	72.3
C_8	87.3	81.4	78.4	75.5	69.6
C_{10}	86.9	81.7	76.5	75.0	69.0
C_{12}	87.5	80.6	76.1	73.9	67.8
C_{14}	85.5	74.9	72.4	67.7	63.0
C_{16}	87.9	80.4	74.3	72.9	68.5
C_{18}	85.3	80.8	75.4	72.4	69.5
C_{36}	81.7	75.7	72.1	70.0	64.7

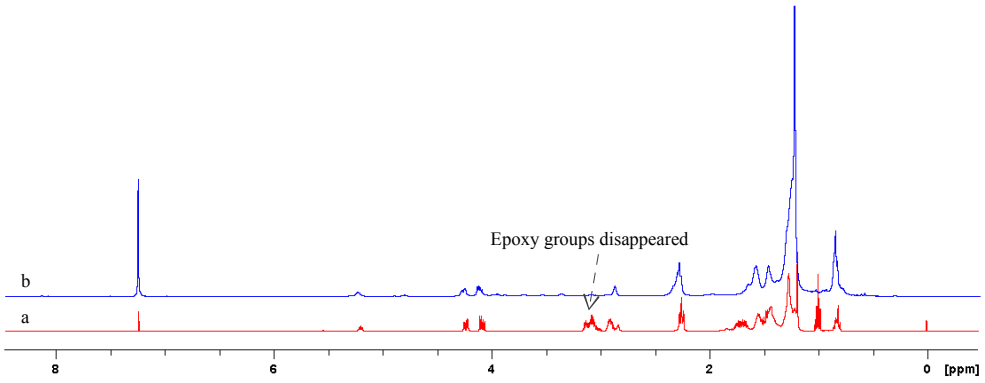

Fig. S1 ^{1}H NMR spectra of (a) ELO and (b) leachate.

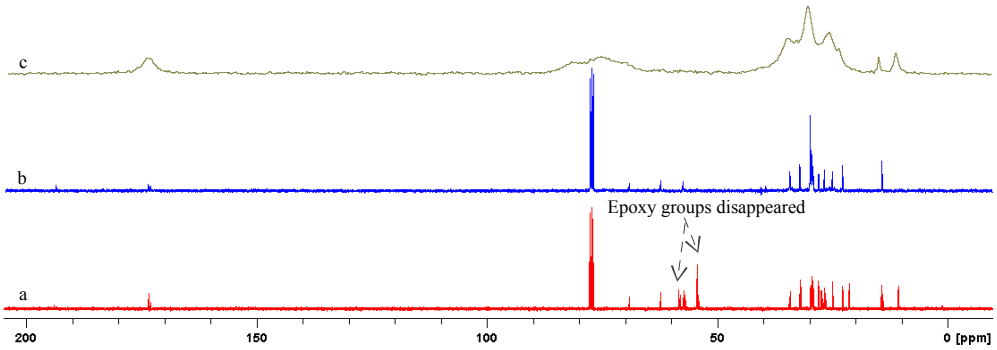

Fig. S2 ^{13}C NMR spectra of (a) ELO, (b) leachate and (c) solid state CP-MAS ^{13}C NMR spectrum of the residue.

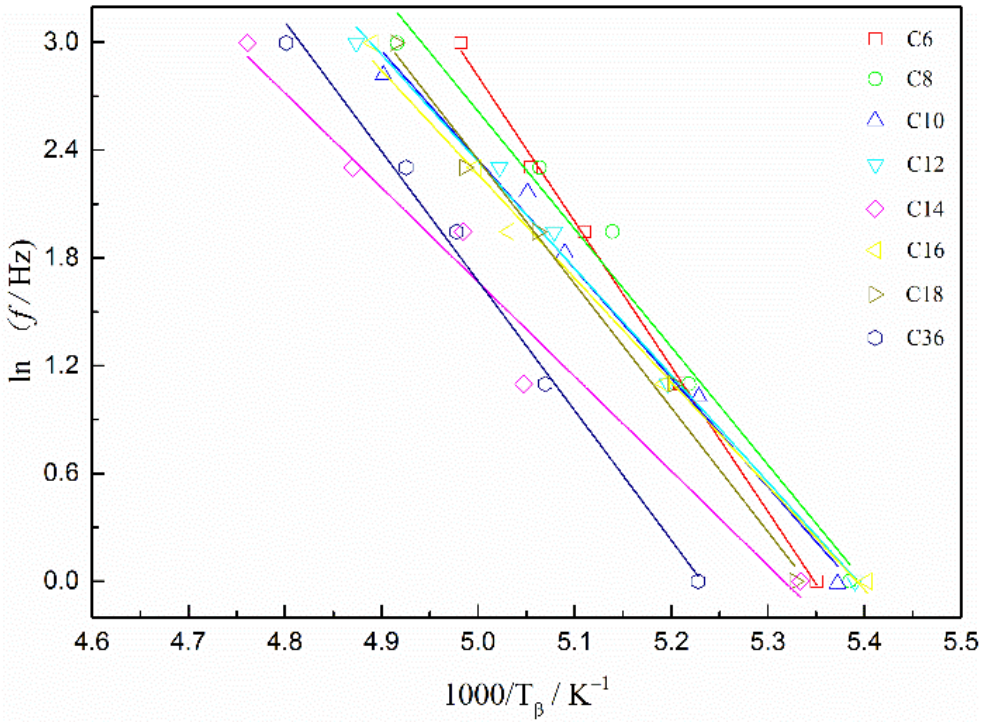

Fig.S3 Arrhenius plot for the β transition.

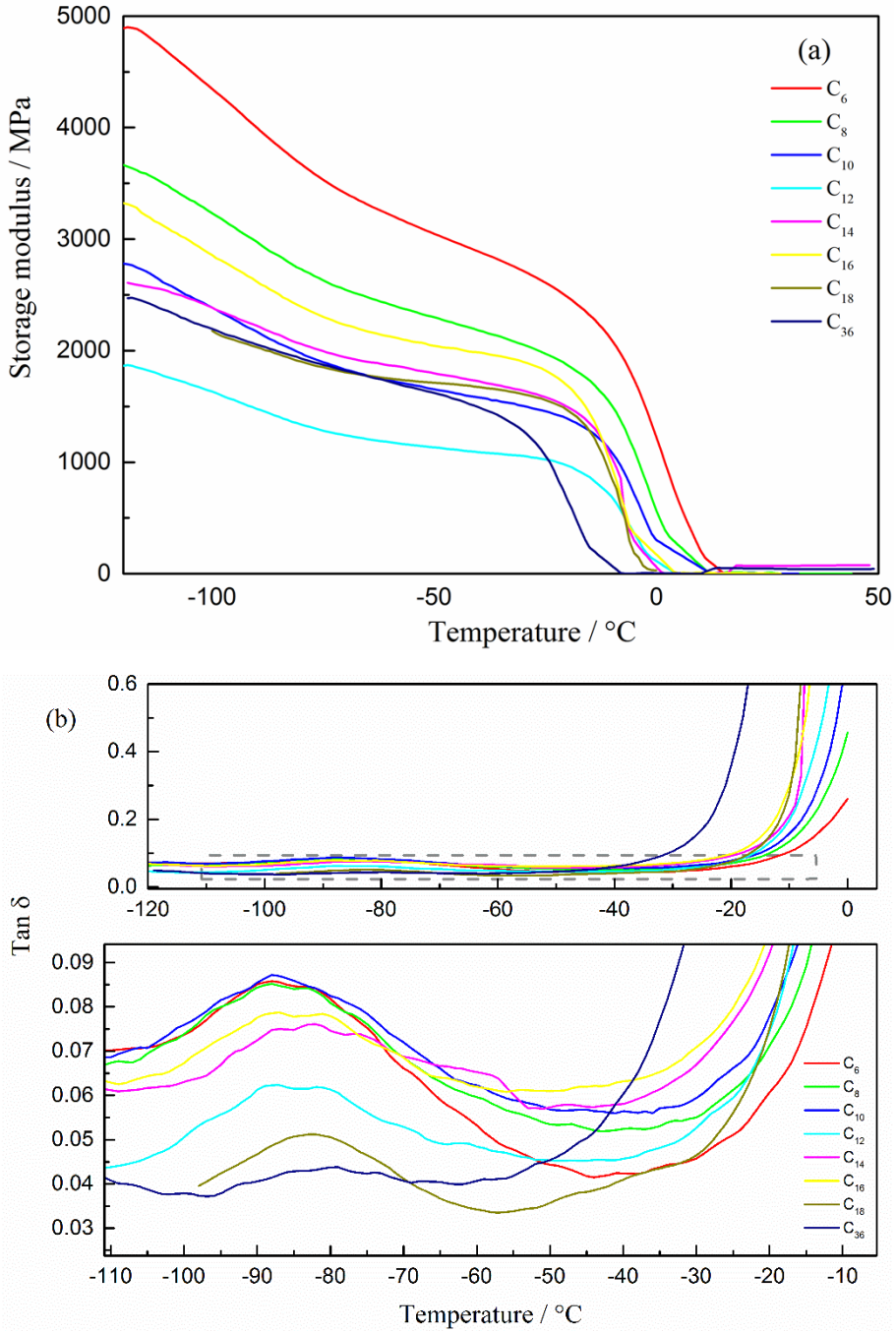

Fig. S4 Storage modulus (a) and tan δ (b) versus temperature for cured samples tested at 1 Hz.