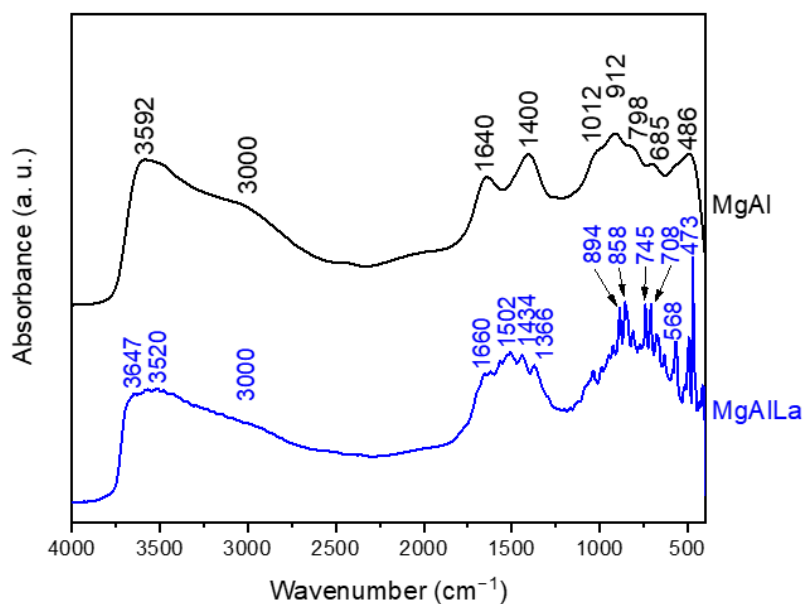
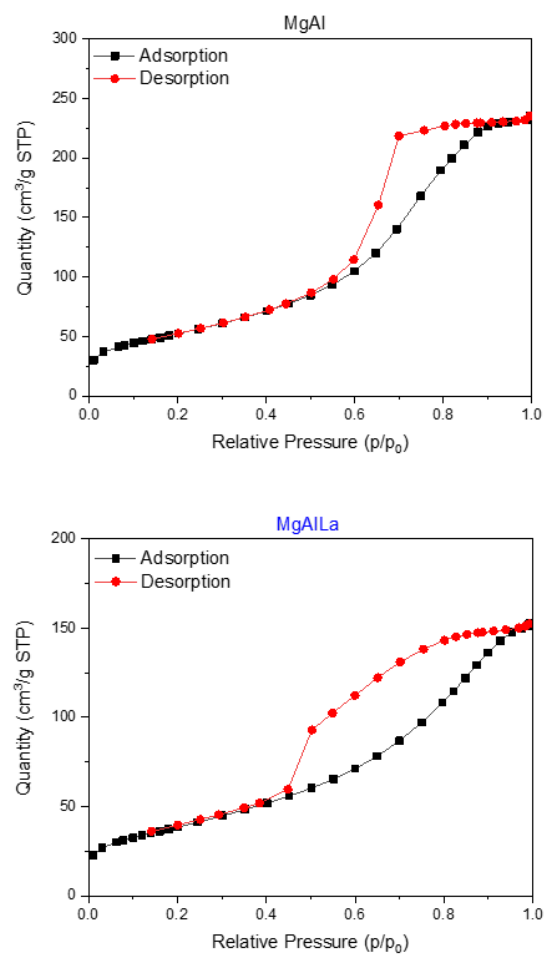


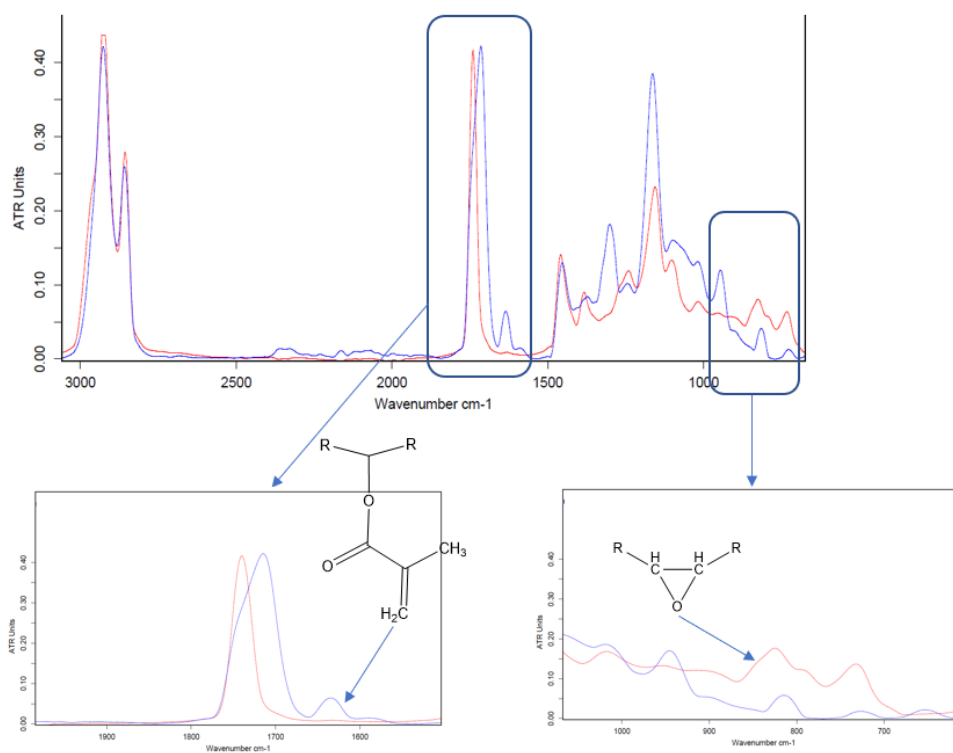
## Supplementary materials of Sustainable ring-opening reactions of epoxidized linseed oil in heterogeneous catalysis



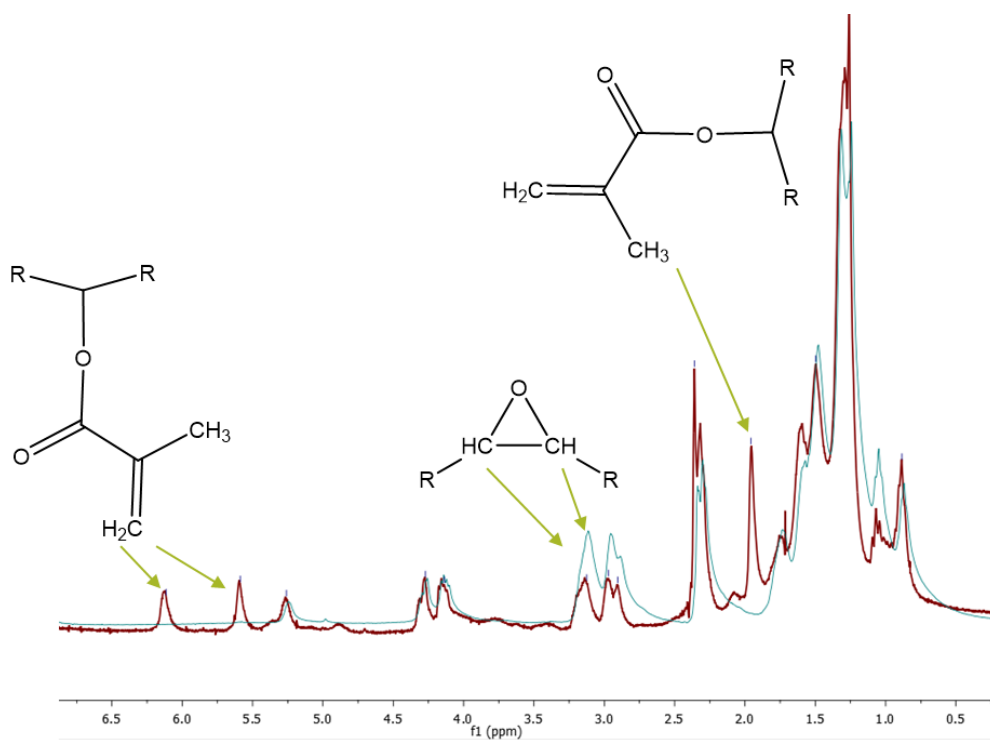
**Figure S1.** The DRIFT spectra of the samples.



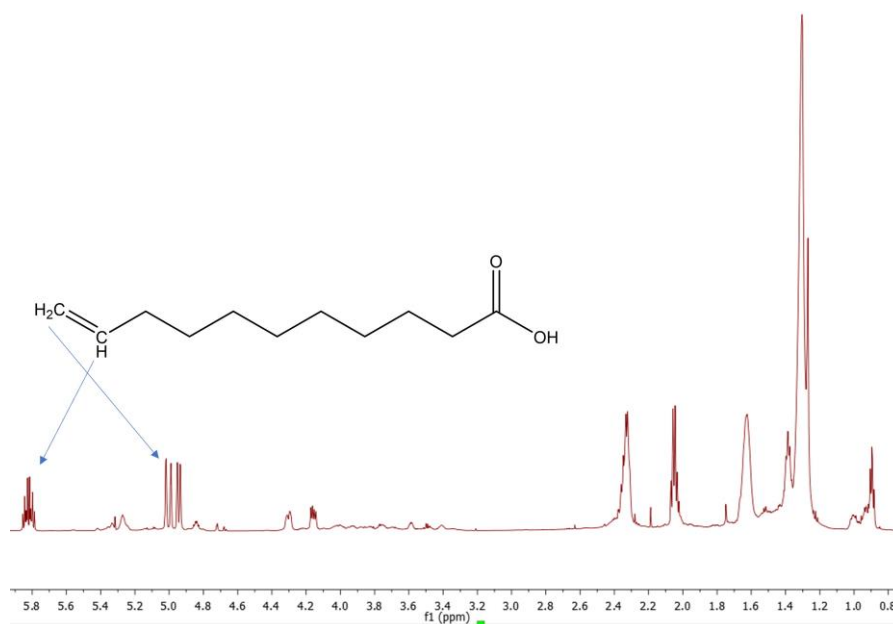
**Figure S2.** The BET isotherms of the investigated samples.



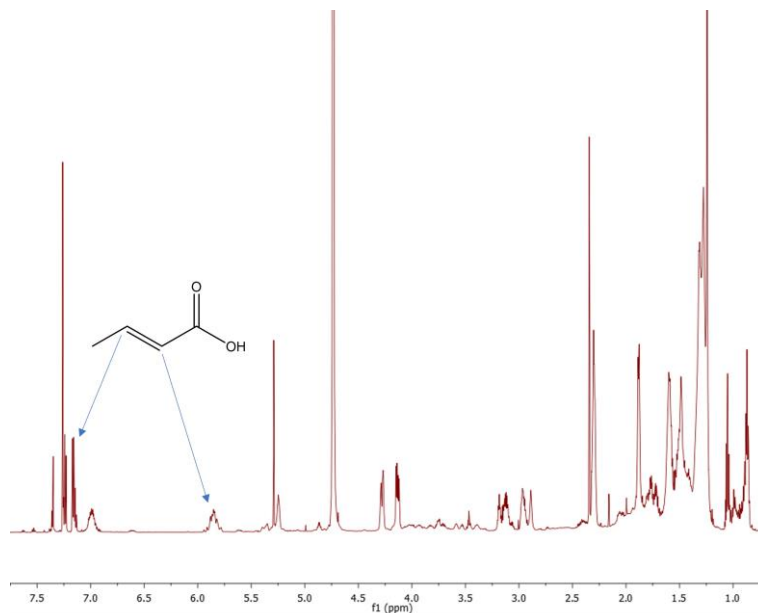
**Figure S3.** The superimposed FTIR spectra of ELO (red) and the reaction product of ELO with MA (blue).



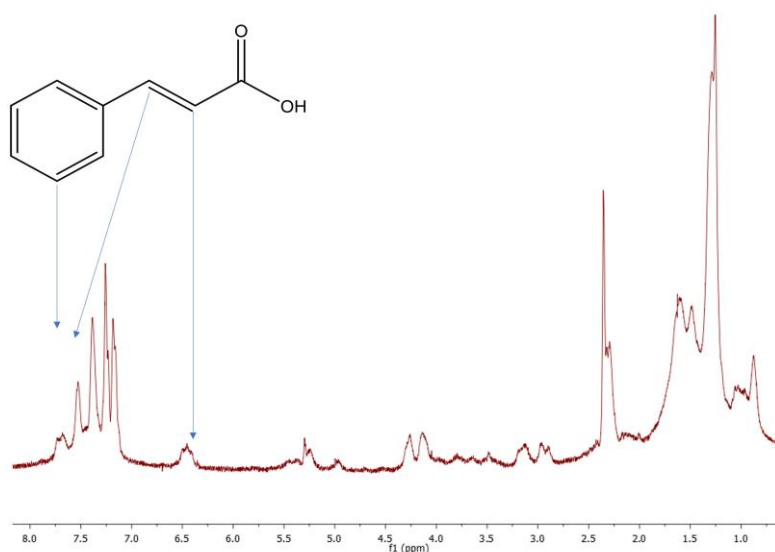
**Figure S4.** The stacked  $^1\text{H}$  NMR spectra of ELO (teal) and partially methacrylated epoxidized linseed oil (brown).



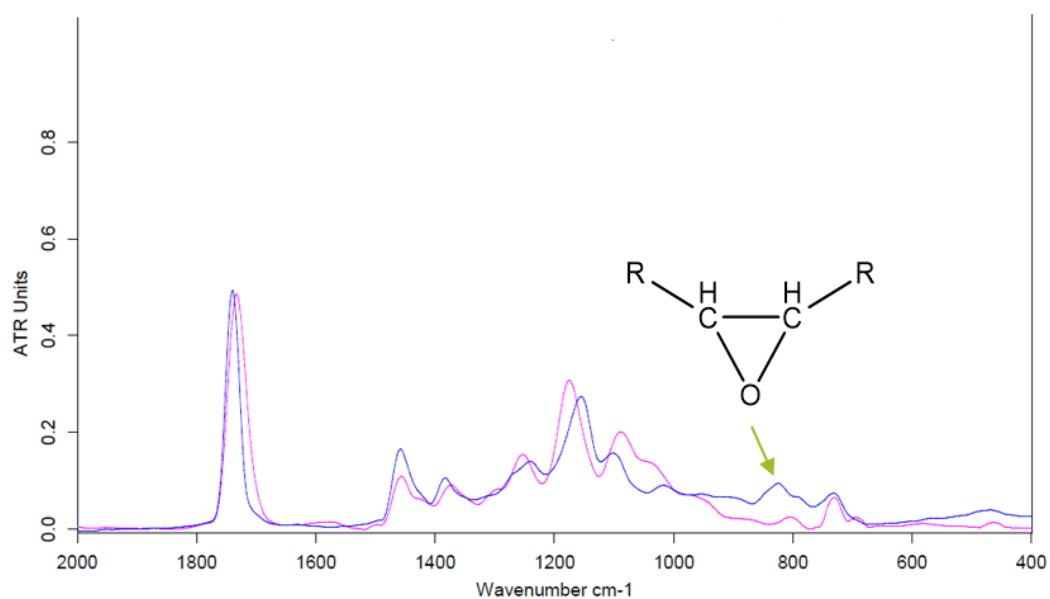
**Figure S5.** The  $^1\text{H}$  NMR spectrum of ELO functionalized with undecylenic acid. Spectral data: 0.90 (t, terminal  $-\text{CH}_3$  from all fatty acids except linolenic acid), 1.03-0.95 (m, terminal  $-\text{CH}_3$  from linolenic acid), 1.28-1.20 (m,  $-\text{CH}_2-$  from all alkyl chains), 1.57-1.44 (m,  $-\text{CH}_2-\text{CH}_2-\text{COO}$ ), 2.26 (t,  $-\text{CH}_2-\text{COO}$  acyl group), 4.10-4.23 (m,  $-\text{CH}_2-\text{O}-\text{CO}-$ , glycerol protons in  $\alpha$  positions), 4.90-5.02 (dd,  $\text{CH}_2=\text{CH}-$  from the undecylenic double bond), 5.20 (m,  $-\text{CH}-\text{O}-\text{CO}-$ , glycerol proton from  $\beta$  position), 5.80 (m,  $\text{CH}_2=\text{CH}-$  from the undecylenic double bond).



**Figure S6.** The  $^1\text{H}$  NMR spectrum of ELO functionalized with crotonic acid. Spectral data: 0.90 (t, terminal  $-\text{CH}_3$  from all fatty acids except linolenic acid), 1.03-0.95 (m, terminal  $-\text{CH}_3$  from linolenic acid), 1.28-1.20 (m,  $-\text{CH}_2-$  from all alkyl chains), 1.57-1.44 (m,  $-\text{CH}_2-\text{CH}_2-\text{COO}$ ), 1.76-1.67 (m,  $-\text{CH}_2-$  between epoxy rings), 1.90 (d,  $-\text{CH}_3-\text{CH}=\text{CH}-$ ), 2.26 (t,  $-\text{CH}_2-\text{COO}$  acyl group), 2.91 (m,  $\text{CH}$  marginal protons from the unreacted epoxy ring), 3.10 (m,  $\text{CH}$  internal protons of the unreacted epoxy ring), 4.10-4.23 (m,  $-\text{CH}_2-\text{O}-\text{CO}-$ , glycerol protons in  $\alpha$  positions), 5.20 (m,  $-\text{CH}-\text{O}-\text{CO}-$ , glycerol proton from  $\beta$  position), 5.85 (m,  $\text{CH}_3-\text{CH}=\text{CH}-$ ), 7.15 (m,  $\text{CH}_3-\text{CH}=\text{CH}-$ ).



**Figure S7.** The  $^1\text{H}$  NMR spectrum of ELO functionalized with cinnamic acid. Spectral data: 0.90 (t, terminal  $-\text{CH}_3$  from all fatty acids except linolenic acid), 1.03-0.95 (m, terminal  $-\text{CH}_3$  from linolenic acid), 1.28-1.20 (m,  $-\text{CH}_2-$  from all alkyl chains), 1.57-1.44 (m,  $-\text{CH}_2-\text{CH}_2-\text{COO}$ ), 1.76-1.67 (m,  $-\text{CH}_2-$  between epoxy rings), 2.26 (t,  $-\text{CH}_2-\text{COO}$  acyl group), 2.91 (m,  $\text{CH}$  marginal protons from the unreacted epoxy ring), 3.10 (m,  $\text{CH}$  internal protons of the unreacted epoxy ring), 4.10-4.23 (m,  $-\text{CH}_2-\text{O}-\text{CO}-$ , glycerol protons in  $\alpha$  positions), 5.2 (m,  $-\text{CH}-\text{O}-\text{CO}-$ , glycerol proton from  $\beta$  position), 6.45 (d,  $-\text{CH}=\text{CH}-\text{Ph}$ ), 7.40 (m,  $-\text{CH}=\text{CH}-\text{Ph}$ ), 7.40-7.50 aromatic signals.



**Figure S8.** The superimposed FTIR spectra of ELO (blue) and the reaction product of ELO with butyric anhydride (pink).