Electronic Supplementary Material (ESI) for RSC Advances.
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ELECTRONIC SUPPLEMENTARY INFORMATION

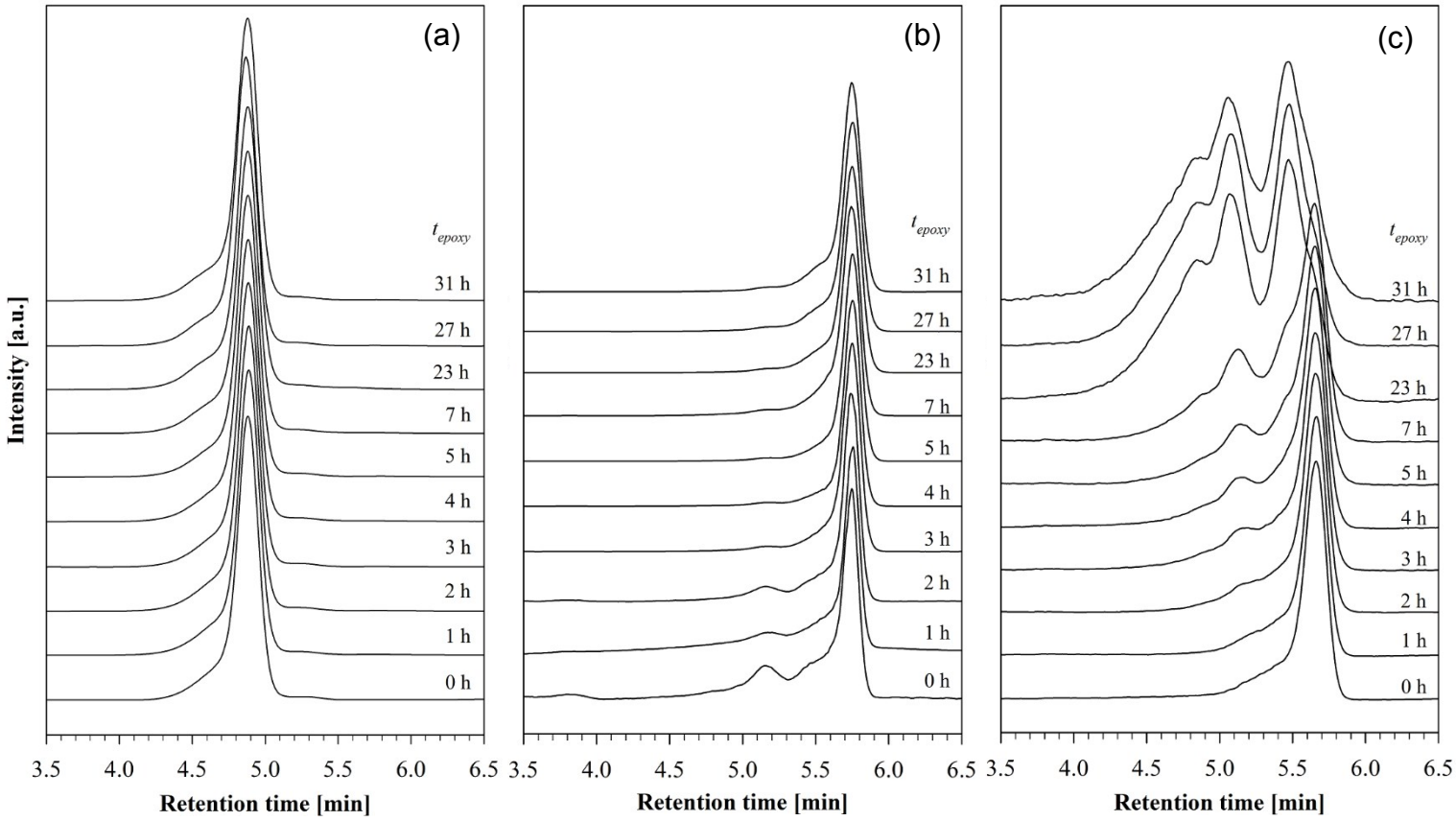
1. The equations used to calculate thermodynamic parameters of epoxidation of CanO and its derivatives.

$$\Delta H = E_a - RT \qquad \text{* MERGEFORMAT (1)}$$

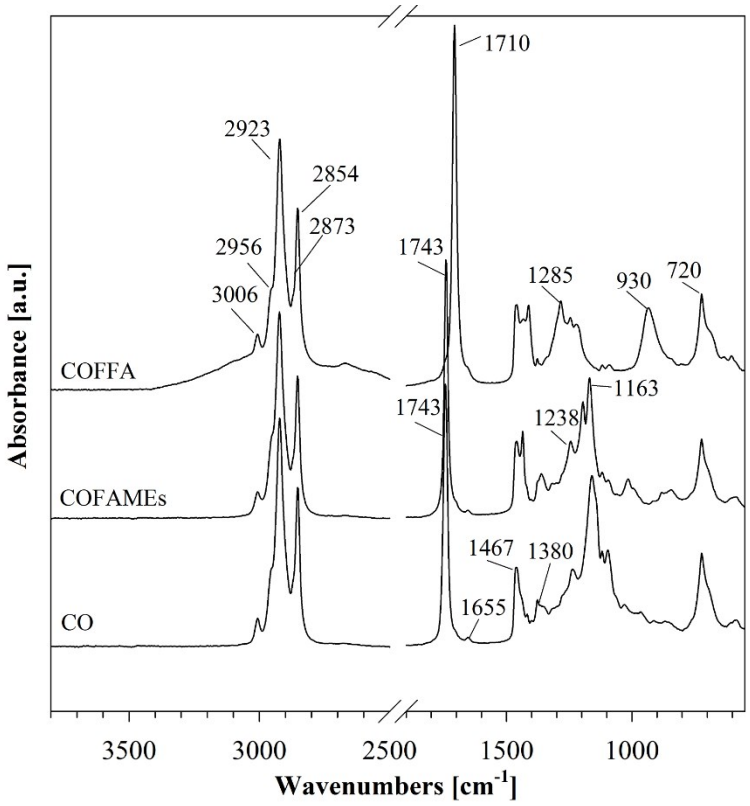
$$\Delta S = (\ln \frac{k_{EP}}{T} - \ln \frac{k_B}{h} + \frac{\Delta H}{RT})R \qquad \text{* MERGEFORMAT (2)}$$

$$\Delta G = \Delta H - T\Delta S \qquad \text{* MERGEFORMAT (3)}$$

where k_{EP} is the epoxidation rate constant; k_B is the Boltzmann constant; h is Plank's constant; T is the absolute temperature and R is the gas constant.



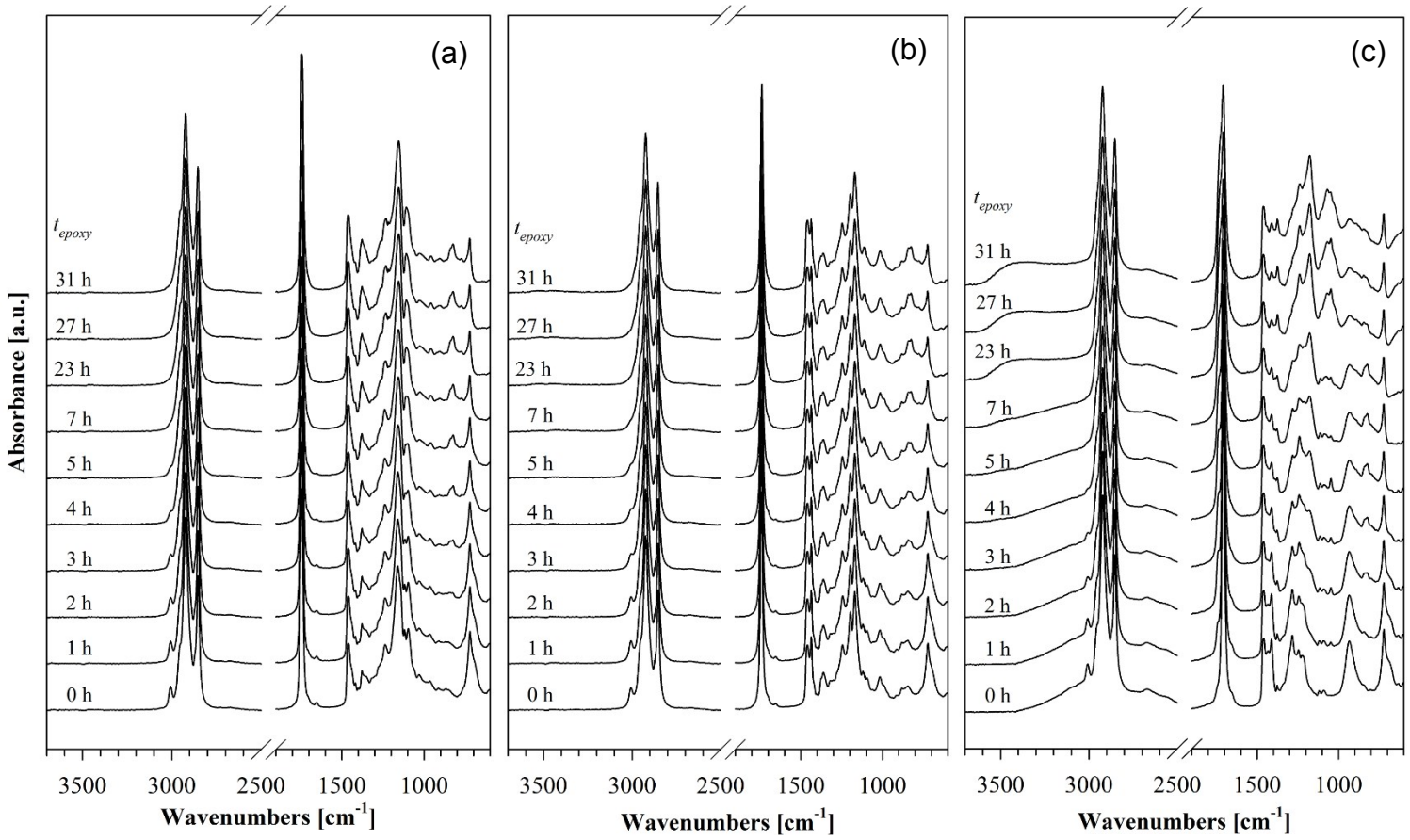
2. Figure 1: Size exclusion chromatography of (a) CanO, (b) CanFAME and (c) CanFFA at different stages of the epoxidation process. Epoxidation reactions were carried out at 60 °C.



3. Figure 2: ATR-FTIR spectra of CanO, CanFAME and CanFFA

4. Table 1. Band locations and assignments for the various vibrational modes for CanO, CanFAME and CanFFA.

Band location (cm^{-1})	Assignments	References
3500-2500	O–H stretching vibration of the carboxylic acid (CanoFFA)	41
3006	C–H stretching vibration of the *cis*-double bond (C=C–H)	41-44
2956, 2873	asymmetric and symmetric stretching modes of $-CH_3$ groups	44, 46
2923, 2854	asymmetric and symmetric stretching modes of $-CH_2$ groups	44, 46
1743	C=O stretching modes of the triglycerides	44, 46
1710	C=O stretching of carboxylic acid functional groups	47
1655	C=C stretching vibrations	42, 46
1467	bending vibrations of $-CH_2$ and $-CH_3$ groups	45, 46
1380	bending vibrations of $-CH_3$ groups	45, 46
1238, 1163	stretching vibration of the C–O ester groups	43, 46
1285	C–O stretching vibrations	46
930	out-of-plane O–H vibrations	41
720	$-CH_2$ rocking vibrations and stretching vibrations of *cis*–olefins	46



5. Figure 3: ATR-FTIR spectra of (a) CanO, (b) CanFAME and (c) CanFFA at different times of epoxidation. Epoxidation of products were carried out at 60 °C.