

### Supplementary materials

Fig. 1 shows the NMR spectrum of bark extractives using 1% NaOH<sub>(aq)</sub>. Due to the complexity of components, the resolution of NMR spectra is hard to improve.

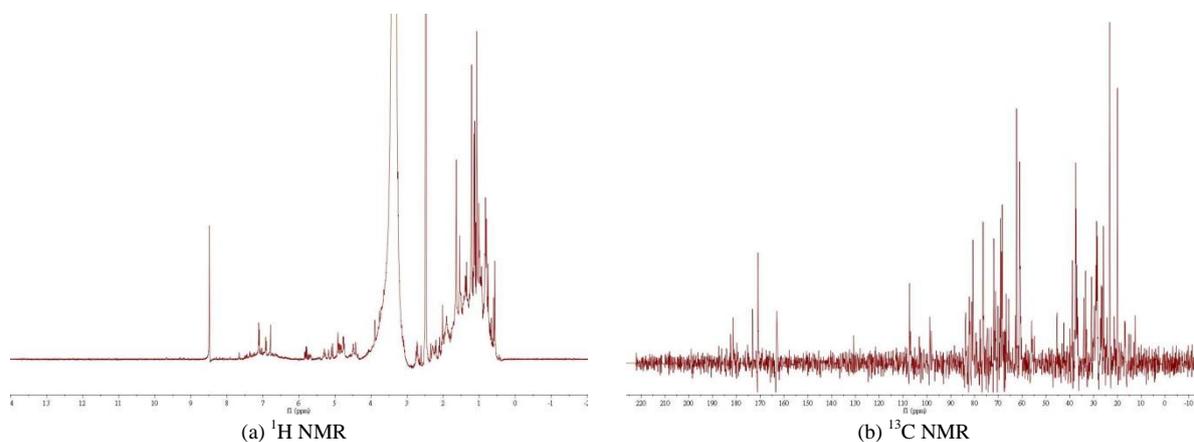


Fig. 1 Liquid state NMR spectrum of the bark extractives

Fig. 2 and 3 show the original DSC plots before any data manipulation and their thermal characteristics were listed in the table 1.

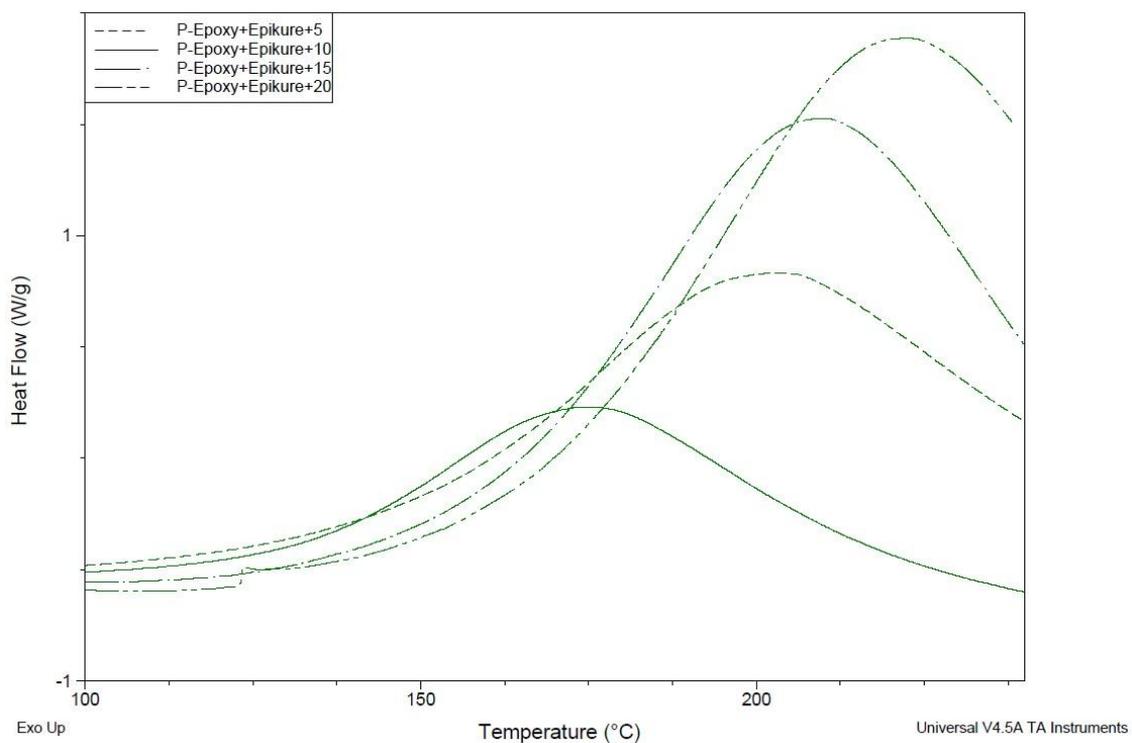


Fig. 2 DSC dynamic scans of P-Epoxy resins with amine curing agent at the heating rates of 5, 10, 15 and 20 °C min<sup>-1</sup>

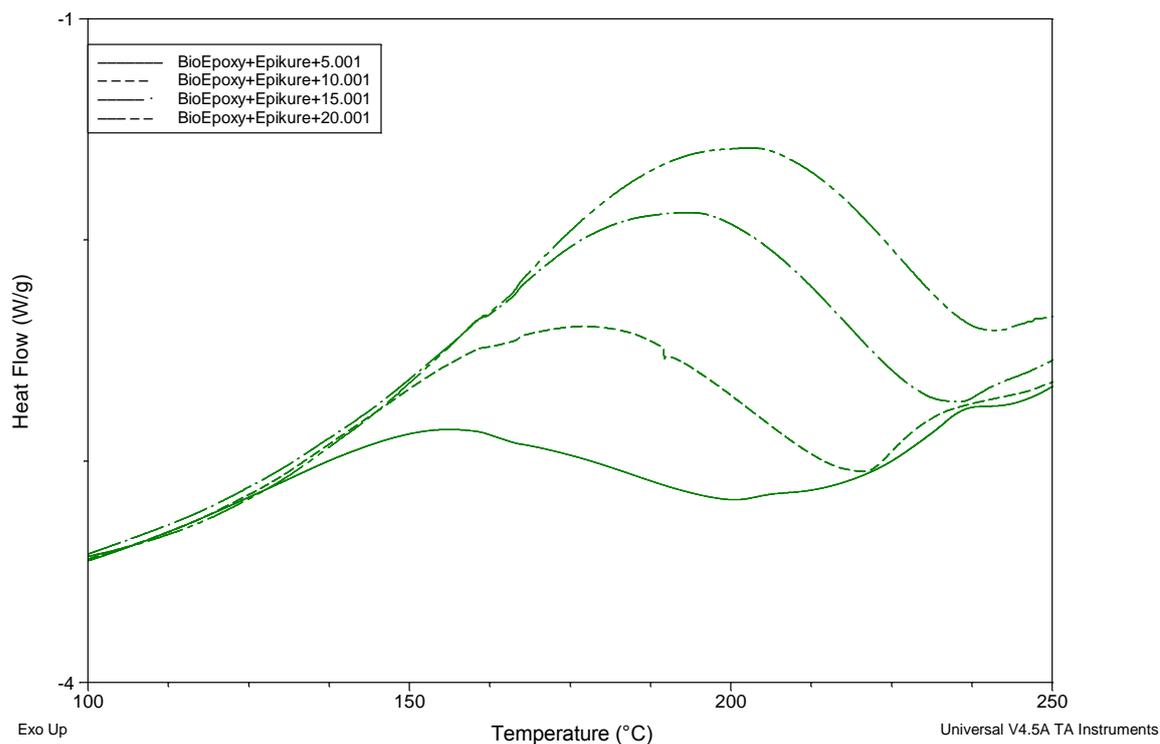


Fig. 3 DSC dynamic scans of E-Epoxy resins with amine curing agent at the heating rates of 5, 10, 15 and 20  $^{\circ}\text{C min}^{-1}$

Table 1 Thermal characteristics of samples from the dynamic DSC analysis

Epoxy resins	Heating rate ( $^{\circ}\text{C/min}$ )	Onset temperature ( $^{\circ}\text{C}$ )	Peak temperature ( $^{\circ}\text{C}$ )	Kissinger Activation energy (kJ/mol)
P-Epoxy	5	130.7	174.9	52.0 kJ/mol
	10	141.5	195.2	
	15	157.2	210.2	
	20	164.0	215.9	
E-Epoxy	5	104.3	156.2	42.3 kJ/mol
	10	116.3	177.1	
	15	129.8	192.9	
	20	133.2	203.0	