

## Supplementary Material

Table S1: Kinetics and thermodynamics parameters value calculated by FWO, KAS and Friedman methods at a heating rate of 5°C /min

Method	FWO				KAS				FRIEDMAN			
Conversion	A (s <sup>-1</sup> )	ΔH (kJ/mol)	ΔG (kJ/mol)	ΔS (J/mol)	A (s <sup>-1</sup> )	ΔH (kJ/mol)	ΔG (kJ/mol)	ΔS (J/mol)	A (s <sup>-1</sup> )	ΔH (kJ/mol)	ΔG (kJ/mol)	ΔS (J/mol)
0.2	$4.92 \times 10^{16}$	193.50	156.18	62.13	$2.72 \times 10^{16}$	190.61	156.25	57.20	$1.52 \times 10^{17}$	199.01	156.04	71.53
0.25	$3.00 \times 10^{16}$	190.98	156.24	57.83	$1.72 \times 10^{16}$	188.26	156.31	53.18	$5.88 \times 10^{17}$	205.48	155.88	82.57
0.3	$4.25 \times 10^{16}$	192.59	156.19	60.59	$2.45 \times 10^{16}$	189.91	156.26	56.00	$2.50 \times 10^{18}$	212.45	155.72	94.44
0.35	$5.65 \times 10^{16}$	193.89	156.16	62.81	$3.27 \times 10^{16}$	191.22	156.23	58.25	$9.81 \times 10^{18}$	219.05	155.56	105.68
0.4	$2.39 \times 10^{17}$	200.84	155.99	74.66	$1.36 \times 10^{17}$	198.11	156.05	70.01	$3.63 \times 10^{19}$	225.37	155.42	116.43
0.45	$7.67 \times 10^{17}$	206.45	155.85	84.23	$4.35 \times 10^{17}$	203.69	155.92	79.53	$2.58 \times 10^{19}$	223.63	155.46	113.47
0.5	$3.38 \times 10^{17}$	202.39	155.94	77.30	$1.95 \times 10^{17}$	199.71	156.01	72.75	$1.87 \times 10^{18}$	210.73	155.75	91.52
0.55	$1.54 \times 10^{17}$	198.50	156.04	70.69	$9.10 \times 10^{16}$	195.92	156.10	66.29	$2.49 \times 10^{17}$	200.82	155.98	74.65
0.6	$5.36 \times 10^{16}$	193.29	156.17	61.80	$3.23 \times 10^{16}$	190.81	156.23	57.57	$3.49 \times 10^{17}$	202.42	155.94	77.36
0.65	$1.41 \times 10^{17}$	197.94	156.05	69.73	$8.39 \times 10^{16}$	195.40	156.11	65.40	$1.20 \times 10^{21}$	242.15	155.06	144.96
0.7	$1.85 \times 10^{21}$	244.12	155.02	148.31	$9.55 \times 10^{20}$	240.88	155.09	142.81	$1.81 \times 10^{31}$	357.16	153.15	339.58
Mean	$1.68 \times 10^{20}$	201.32	155.98	75.46	$8.69 \times 10^{19}$	198.59	156.05	70.82	$1.65 \times 10^{30}$	227.11	155.45	119.29