Electronic Supplementary Material (ESI) for Green Chemistry.
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Supporting information

Waterborne isocyanate-free polyurethane epoxy hybrid coatings synthesized from sustainable fatty acid diamine

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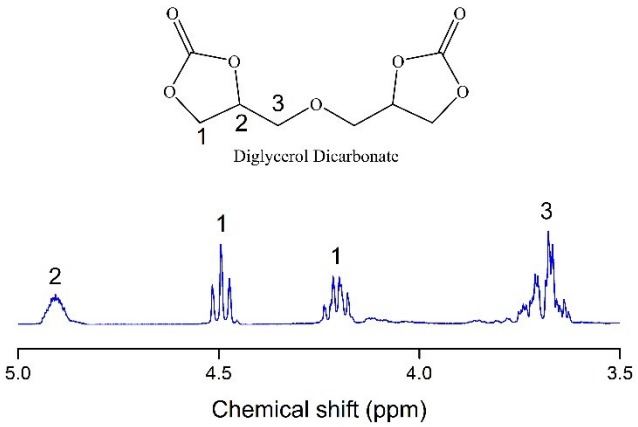


Figure S1. ^{1}H NMR spectra of DGDC.

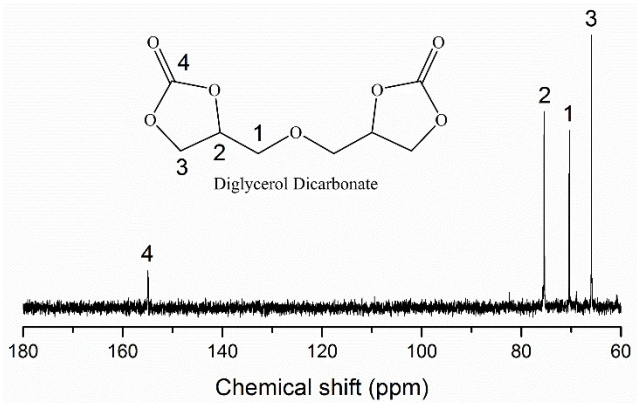


Figure S2. ^{13}C NMR spectra of DGDC.

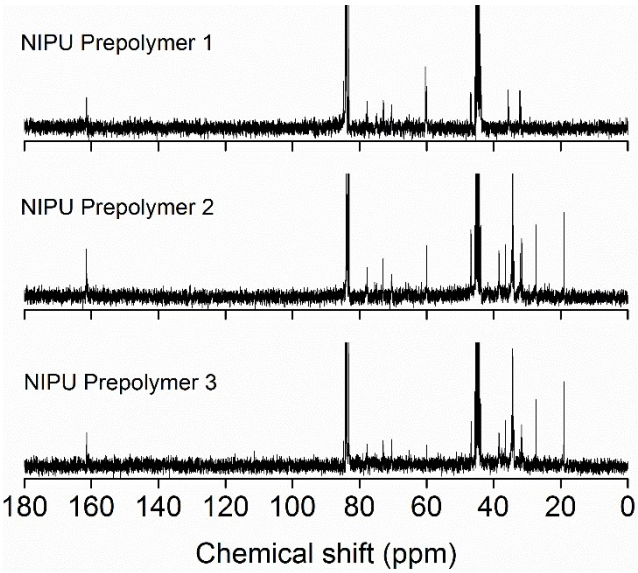


Figure S3. ^{13}C NMR spectra of amine-terminated NIPU prepolymers in DMSO-d_6:$CDCl_3$ (1:1 *v/v*).

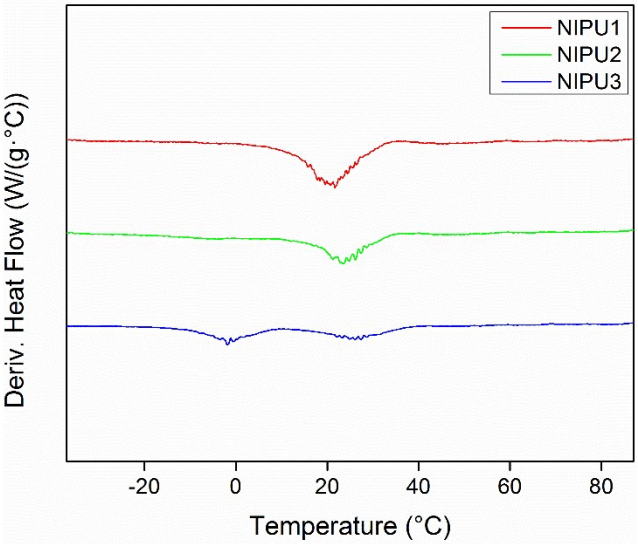


Figure S4. The derivative DSC heat flow curves of waterborne NIPU epoxy hybrid coating films.

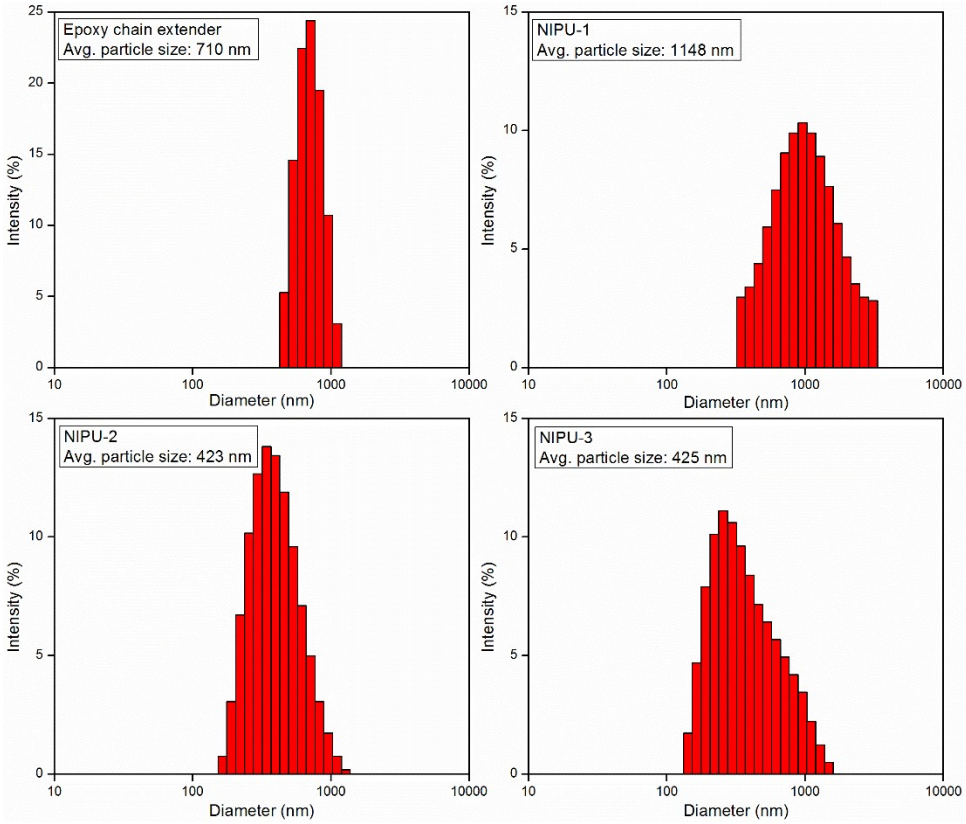


Figure S5. The particle size distribution of waterborne epoxy chain extender and waterborne amine-terminated NIPU prepolymers.

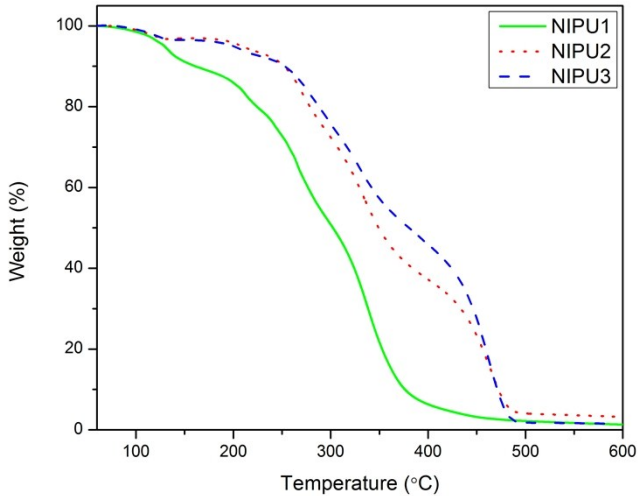
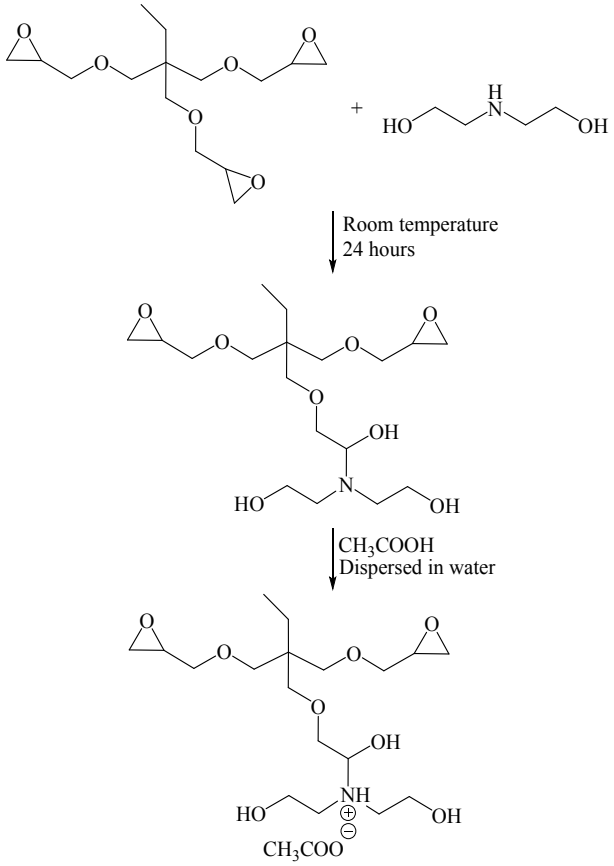


Figure S6. The TGA traces of waterborne NIPU films.



Scheme S1. Synthesis of waterborne epoxy chain extender.

Table S1. General coating properties of waterborne NIPU coatings

	Solvent resistance	Pendulum hardness (s)	Pencil hardness	Impact resistance (kg/cm)
NIPU1	100+	19	B	30
NIPU2	100+	14	2B	80+
NIPU3	100+	14	2B	80+
Commercial coating	100+	30	H	80+