Electronic Supplementary Material (ESI) for Polymer Chemistry.

Supporting Information

Controllable confinement nano-reinforced organic-inorganic cyanate ester resin with optimal modulus and dielectric properties trade-offs

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S1. Experimental

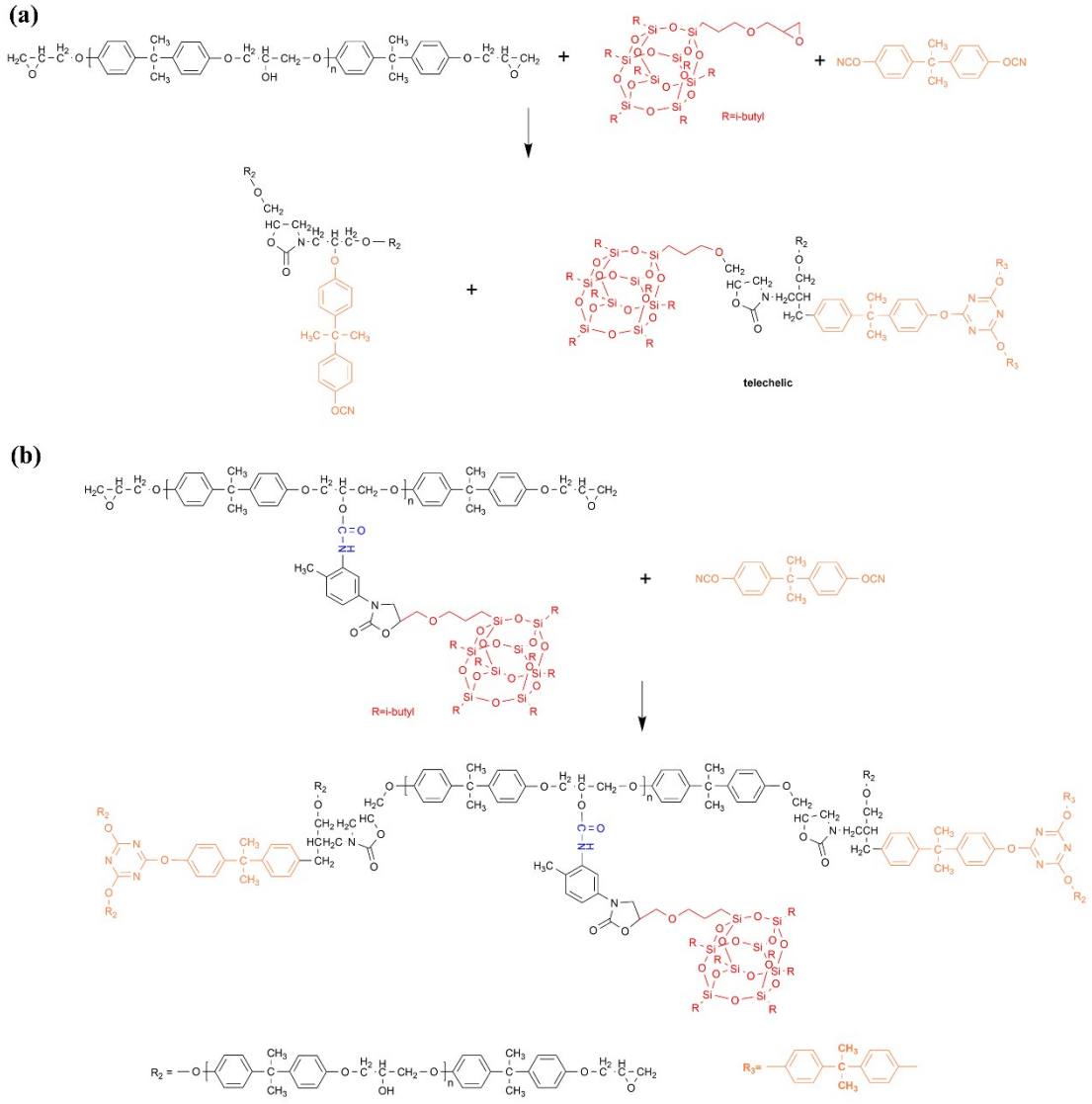

Fig. S1. Reaction mechanism of preparation of (a)TCEP; (b) PCEP.

S2. Results and discussion

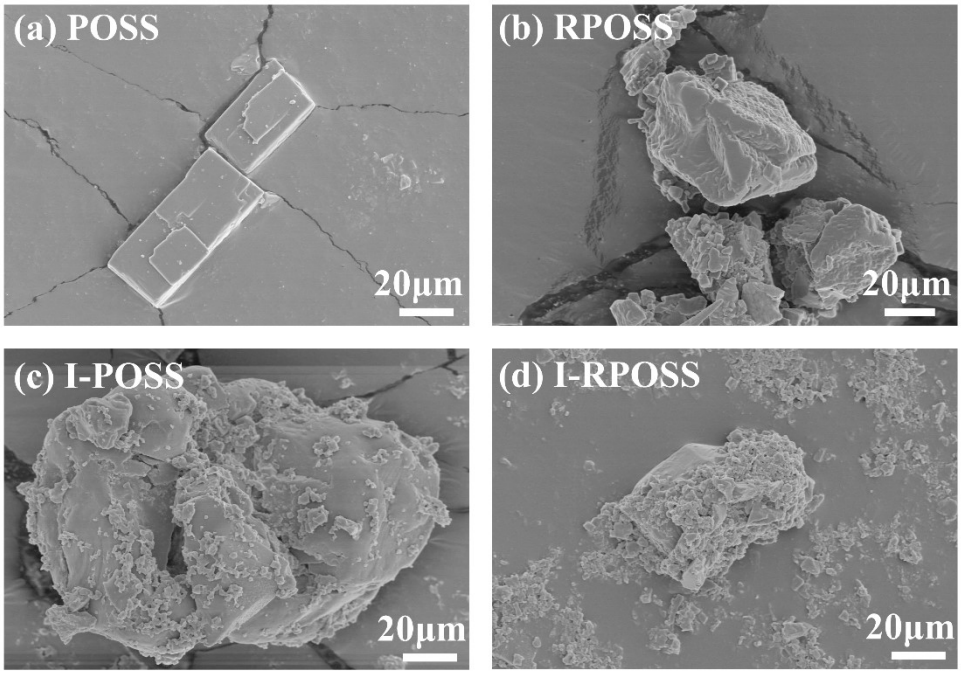

Fig. S2. SEM micrographs showing particle morphology of (a) POSS, (b) RPOSS, (c) I-POSS and (d) I-RPOSS.

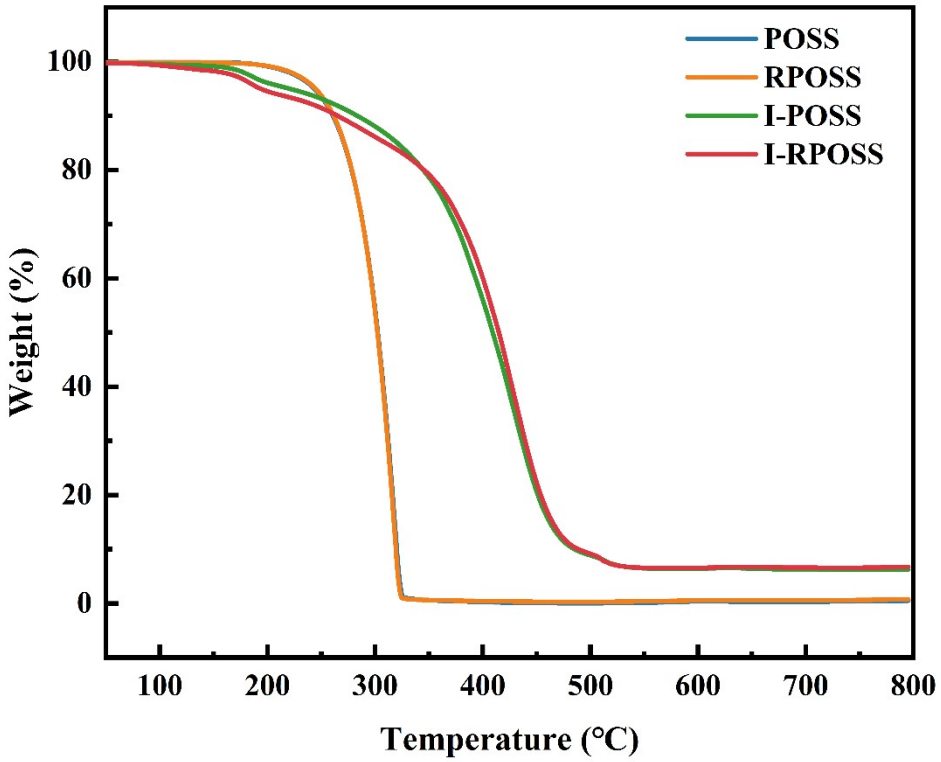

Fig. S3. TGA curves of POSS, RPOSS, I-POSS, I-RPOSS.

Table S1 The comprehensive properties of the CE/EP, nanofillers modified CE.

Modified systems		Tensile modulus (MPa)	Tensile strength (MPa)	T_g (℃)	Dielectric constant (ε)	Dielectric loss ($tan\delta$)	Ref.
Pure CE/EP		3413	68.11	250.4	3.34 (1 MHz)	0.012 (1 MHz)	-
Nanofillers modified CE	I-RPOSS/CE/EP	4033	63.99	271.2	3.27 (1 MHz)	0.0081 (1 MHz)	this work
	MWCNT/BECy /DGEBF	3356	91.25	-	-	-	[1]
	POSS/Cy-OCN/DGEBA	3176	78.40	255.0	2.27 (1 MHz)	0.0033 (1 MHz)	[2]
	[HPyr][BF4]/DCBE	3074	65.40	217.0	-	-	[3]
	MoS_2/BECy /PSF	3632	65.70	-	2.87 (10 GHz)	0.0106(10 GHz)	[4]
	MMT/BADCy	3450	10.80	264.5	-	-	[5]
	MWCNT/ BECy	2914	64.00	-	-	-	[6]

Reference

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