

Supporting information

**Simultaneously toughening and strengthening cyanate ester resin with better dielectric properties through building nanostructures in crosslinked network using polyimide-*block*-polysiloxane rod-coil block copolymers**

Yayi Ye, Li Yuan, Guozheng Liang\*, Aijuan Gu\*

State and Local Joint Engineering Laboratory for Novel Functional Polymeric Materials  
Jiangsu Key Laboratory of Advanced Functional Polymer Design and Application  
Department of Materials Science and Engineering  
College of Chemistry, Chemical Engineering and Materials Science  
Soochow University, Suzhou, 215123, China

\*To whom all correspondence should be addressed

Tel: +86 512 65880967

Fax: +86 512 65880089

Email: lgzheng@suda.edu.cn (Guozheng Liang), ajgu@suda.edu.cn (Aijuan Gu),

Table S1 Characteristic parameters of TG curves of PI-b-PSi and homopolymers

PI-b-PSi	T <sub>di</sub> (°C)	Yc at 800°C (wt%)
PI-b-PSi1	482	46.6
PI-b-PSi2	461	20.6
PI	459	42.5
PSi	91	1.5
CE	444	39.5

Table S2 Changes in  $T_g$  of CE resins with the addition of different modifiers

Modifier	Content (wt%)	Change of $T_g$ (%)
Pristine-MWCNT <sup>58</sup>	2	-1
Functionalize-MWCNT <sup>58</sup>	2	+1
MWCNT <sup>59</sup>	1	+11.2
	1.5	+12.4
	2	+12.0
Silicate <sup>60</sup>	1	+1.4
	2	+0.7
	4	-7.5
	8	-10
Layered silicate <sup>61</sup>	1	+7.9
	2.5	+23.9
	5	+27.9
Nanoclay <sup>62</sup>	2	-18.2
	4	-36.4
Polyarylether sulfone <sup>4</sup>	5	-1
	10	-2.7
Hyperbranched Poly(phenylene oxide) <sup>42</sup>	10	-5.7
	15	-15.3
Hyperbranched polysiloxane <sup>63</sup>	5	-1.3
	10	-3.7
	15	-9
Poly(phenylene oxide) <sup>64</sup>	5	0
	10	-2
	15	-4.7
Polyetherimide <sup>65</sup>	10	-2.2
Polysulfone <sup>65</sup>	10	0

“+” means increase; “-” means decrease.