materials

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Supplementary

Surface Structured Polymer Blend Fibers and Their Application in Fiber Reinforced Composite

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Synthesis of Polystyrene

Polystyrene particles with radius of 2–3 mm was synthesized by suspension polymerization with polyvinyl alcohol (PVA) as dispersing agent, benzoyle peroxide (BPO) as the initiator, and $Na_2S_2O_3$ as termination agent. The reaction recipe is shown is **Error! Reference source not found.**. The reaction was conducted at 75 °C, 80 °C, 85 °C, 90 °C and 95 for 1 h, 1.5 h, 2.5 h. 2 h and 1.5 h, respectively.

Table S1. The reaction recipe of suspension polymerization of PS.

PVA (g/100 g styrene monomer)	BPO (g/100 g monomer)	Water (g/100 g monomer)	$Na_2S_2O_3$ (g/100 g monomer)
6	0.7	250	0.2

Rheological Properties

Table S2. Fitted parameters of the three-parameter Bird-Carreau model for PP/PS blends.

Material	η_0 (Pa·s)	n	λ (s)
PP	502	0.89	0.16
PS1	366	0.51	0.61
PS2	545	0.83	0.11
PS3	1578	0.88	0.44

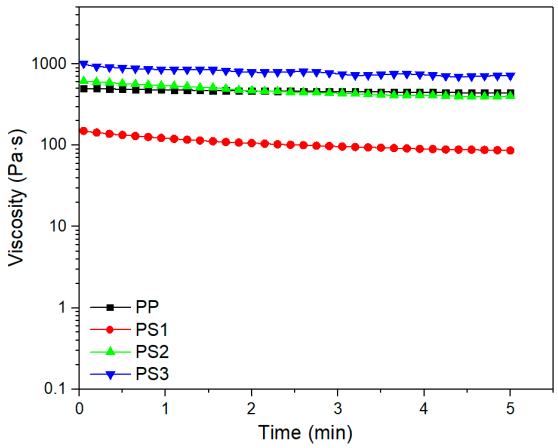

Figure S1. The shear viscosities of polymers as a function of time at 250 °C.

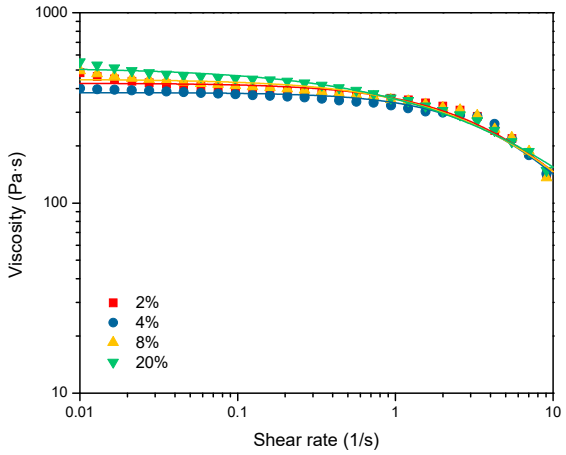

Figure S2. The shear viscosities of polymer blends as a function of shear rate at 250 °C.

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