

Synthesis and characterization of polycarbonate-polysiloxane copolymers with improved flame retardancy

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A hydroxyl terminated polydimethyl siloxane with a branched chain structure (Br-PDMS) was synthesized. And a branched polycarbonate-polysiloxane copolymer (Br-Si-PC) was obtained by interfacial polymerization of 2,2-bis(4-hydroxyphenyl) propane (BPA) and Br-PDMS. Br-Si-PCs were characterized by employing a ¹H nuclear magnetic resonance and an Ubbelohde viscometer. It was shown that the flame-retardancy of polycarbonate (PC) was improved by the introduction of Br-PDMS. The transparency and the impact resistance at low temperature of Br-Si-PC were compared with those of commercial Si-PC and general PC via a transmittance test, the UL 94 flammability test, an impact strength test, and a differential scanning calorimetry.