

Enhanced Properties of PC-PDMS Composites Assisted by High Intensity Ultrasound

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A polycarbonate (PC) is a transparent engineering plastic. This amorphous polymer has good properties for high impact resistance, heat resistance, flame retardancy, electrical properties and dimension stability. But PC has some disadvantages. According to previous studies, copolymerization with polydimethylsiloxane(PDMS) oligomer was used to improve the thermal stability, flame retardancy, and low temperature toughness.

In the progress on mixing PC and PDMS, ultrasound is induced. Ultrasound generates macro radicals, and then PC-PDMS copolymer is created. The rheological properties are measured by ARES (TA instrument). Thermal properties of composites are performed on TGA, DSC. Mechanical properties are measured by I-zod impact machine, UTM, and DMA.