

## عنوان مقاله:

Role of covalent bond formation in morphology and properties of PP/PP-g-PS binary blends

## محل انتشار:

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## خلاصه مقاله:

PP-g-PS copolymer is a typical compatilizer used in polypropylene and polystyrene immiscible blends. PP-g-PS copolymers with different side chain lengths were synthesized, and their thermal and mechanical properties were characterized by differential scanning calorimetry (DSC), polarizing optical microscopy (POM) and dynamic mechanical analysis (DMA), respectively. The DSC and POM results show that the introduction of PS side chain dramatically accelerates the crystallization rate of the PP main chain due to the covalent bond in the PP and PS copolymer. Furthermore, the copolymers become more rigid as the PS component content increases. Blend of PP with PP-g-PS copolymer was prepared to investigate the compatibility between PP and PS. The properties of five PP/PP-g-PS binary blends were characterized by DSC, DMA, scanning electron microscopy (SEM) and mechanical testing. Well dispersion of PS and small PS particle size are detected in the binary blends. The formation of covalent bond between PP and PS also increases the compatibility and interfacial adhesion between these two phases.

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## کلمات کلیدی:

Polypropylene; polypropylene-graft-polystyrene; binary blends; covalent bond; morphology

## لینک ثابت مقاله در پایگاه سیویلیکا:

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