

عنوان مقاله:

The effect of silane modification on morphology and properties of ABS/SGF composites

محل انتشار:

دوازدهمین کنگره ملی مهندسی شیمی ایران (سال: 1387)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

acrylonitrile-butadiene-styrene(ABS) / short glass fiber(SGF) composites were prepared. The effect of fiber volume fraction on the properties of composites was investigated, and test results were compared with theoretical equations. SEM micrographs confirmed the reports in other studies that the adhesion between ABS and neat glass fiber is poor. Silane coupling agents with different rganofunctional groups were used to improve the interface. The role of these coupling agents was studied by comparing processability, mechanical and physical properties of the composites containing different silane-treated glass fibers. It seems that using coupling agents specially those with more effective functional groups reduces the deviation of properties from theory. The affinity of different functional groups to ABS as well as the strength of chemical and physical bandings formed during the reaction of silane modification, decides the effectiveness of the relative coupling agent. By properties and morphology analysis we concluded that Tricholorovinyle Silane seems to be the best coupling agent between others, for this composite. This conclusion is supported by the theoretical possibility

کلمات کلیدی:

composite, adhesion, coupling agent

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