

Comparison of processing and mechanical properties of polypropylene/recycled acrylonitrile butadiene rubber/rice husk powder composites modified with silane and acetic anhydride compound

Abstract

Polypropylene (PP)/recycled acrylonitrile butadiene rubber (NBRr)/rice husk powder (RHP) composites were fabricated with silane and acetic anhydride (Ac) treatment agent. The in situ formed RHP-filled PP/NBRr composites were prepared by melt mixing technique. The mechanical properties of both the treatment methods were investigated with Instron mechanical analysis and Fourier transform infrared. The results indicated that Ac treatment was found to exhibit better mechanical properties of RHP-filled PP/NBRr composites treated with silane. This was due to good compatibility and stronger interaction between anhydride moieties with PP/NBRr

Keywords

Acetic anhydride; Acrylonitrile butadiene rubber; Mechanical properties; Polypropylene; Rice husk powder; Silane