

SHORT JUTE FIBER REINFORCED POLYPROPYLENE COMPOSITES: EFFECT OF COMPATIBILISER, IMPACT MODIFIER AND FIBER LOADING

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The jute–PP granules were made in a K-mixer and molded using Injection Molding Machine to produce ASTM test pieces. In general it was found that increase in toughness was always with decreasing tensile/flexural properties. However, the extent of increase/decrease depends on the type of modifier, its dose and its compatibility with the jute–PP system. Variation of notched / unnotched Izod impact strength, flexural strength/modulus and tensile strength/modulus with different impact modifiers at 0,4,9 and 14 wt.% are shown graphically. Effect of impact modifier on% compatibiliser was also analyzed and found that both impact and tensile properties showed increasing trend with the compatibiliser but reverse was true for the flexural properties. Effect of impact modifier on fiber loading, however, showed different results. There was increase in impact strength with rise in fiber loading. Tensile and flexural properties were found to optimize at 40% fiber loading. Interface studies were carried out by field emission scanning electron microscope (FESEM) to investigate the fiber surface morphology, fiber pull out and fiber polymer interface.

CELLULOSIC/SYNTHETIC FIBRE REINFORCED POLYMER HYBRID COMPOSITES: A REVIEW

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Present review deals with the recent development of cellulosic/cellulosic and cellulosic/synthetic fibres based reinforced hybrid composites. Hybrid composites made up of two different cellulosic fibres are less common compare to cellulosic/synthetic fibre, but these are also potentially useful materials with respect to environmental concerns. Hybrid composites fabrication by cellulosic fibres is economical and provide another dimension to the versatility of cellulosic fibre reinforced composites. As a consequence, a balance in cost and performance could be achieved through proper material design as per directive of Europe states by 2015. Recent studies relevant to hybrid composites have cited in this review. This work intended to present an outline of main results presented on hybrid composites focusing the attention in terms of processing, mechanical, physical, electrical,thermal and dynamic mechanical properties. Hybrid composites are one of the emerging fields in polymer science that triumph attention for application in various sectors ranging from automobile to the building industry.