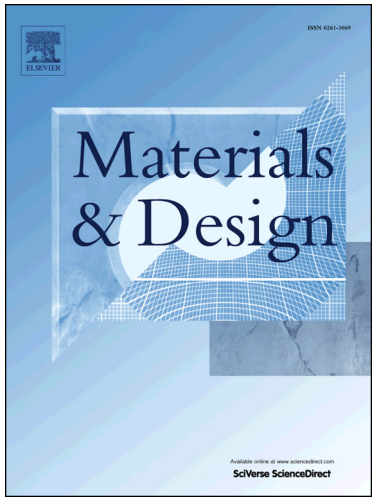

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Effect of Layering Sequence and Chemical Treatment on the Mechanical Properties of Woven Kenaf-Aramid Hybrid Laminated Composites

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Abstract

This work aims to evaluate the effect of layering sequence and chemical treatment on mechanical properties of woven kenaf-Kevlar composites. Woven kenaf-Aramid hybrid laminated composites fabricated through hand lay-up techniques by arranging woven kenaf and Kevlar fabrics in different layering sequences and by using treated kenaf mat. To evaluate the effect of chemical treatment on hybrid composites, the woven kenaf mat was treated with 6% sodium hydroxide (NaOH) diluted solution and compared mechanical properties with untreated kenaf hybrid composites. Results shows that the tensile properties of hybrid composites improved in 3-layer composites compared to 4-layer composites. Hybrid composite with Kevlar as outer layers display a better mechanical properties as compared to other hybrid composites. Tensile and flexural properties of treated hybrid composites are better than non-treated hybrid composites. The fractured surface of hybrid composites was investigated by scanning electron microscopy. This study is a part of