

عنوان مقاله:

The effect of orientation and fiber length on the modulus of natural fiber reinforced composites

محل انتشار:

پنجمین کنگره بین المللی مهندسی شیمی (سال: 1386)

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

In this study, the post processing fiber length and orientation distributions in short natural fiber reinforced polymers have been characterized using a Skyscan 1172 X-ray microtomography, and models that relate the microstructural parameters to the composite modulus have been evaluated. The resulting 3D reconstructed image stacks were analyzed using Image-Pro Plus. Orientation distribution functions of fibers were calculated and also the predicted tensile and flexural moduli were computed using a mixture of Cox's shear lag theory and laminated plate theory. These calculated mechanical properties were compared to the experimental data and the results were found to be consistent.

کلمات کلیدی:

NFRC, Short fibers, Shear lag

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