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Effect of stacking sequences on mechanical properties of kenaf hybrid composites (Conference Paper)

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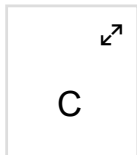
Abstract

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In the current project, Kenaf fiber (K) and carbon fiber (C) with epoxy resin were utilized to form carbon- kenaf hybrid composites using a vacuum infusion technique. The volume fraction of fiber and thickness of a hybrid composite was fixed at 40 vol.% and 3 mm, respectively. Four different sequences were introduced in the current project including CCCCC, KKKKK, KCKCK, and CKCKC. Mechanical testing such as tensile and flexural tests were performed according to ASTM D3039 and ASTM D790, respectively. Scanning Electron Microscope (SEM) and Optical Microscope (OM) were used to identify modes of failures in both tensile and flexural tests of carbon/ kenaf hybrid composites. The hybrid CKCKC sample displayed a higher value in tensile strength (264.23 MPa), tensile modulus (11.06 GPa), flexural strength (438.51 MPa) and flexural modulus (25.13 GPa) as compared than KCKCK hybrid sample. © 2020 Trans Tech Publications Ltd, Switzerland.

Chemistry database information ⓘ

Substances



Author keywords

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Indexed keywords

Engineering controlled terms: Graphite fibers Hemp Scanning electron microscopy Tensile strength Tensile testing

Engineering uncontrolled terms: Current projects Flexural modulus Flexural tests Hybrid composites Modes of failure Optical microscopes Stacking sequence Vacuum infusion

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1 Dhakal, H.N., Zhang, Z.

The use of hemp fibres as reinforcements in composites

(2015) *Biofiber Reinforcements in Composite Materials*, pp. 86-103. Cited 18 times.

<http://www.sciencedirect.com.ezproxy.um.edu.my/science/book/9781782421221>

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doi: 10.1533/9781782421276.1.86

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2 Hassan, F., Zulkifli, R., Ghazali, M.J., Azhari, C.H.

Kenaf fiber composite in automotive industry: An overview [\(Open Access\)](#)

(2017) *International Journal on Advanced Science, Engineering and Information Technology*, 7 (1), pp. 315-321. Cited 13 times.

ijaseit.insightsociety.org

doi: 10.18517/ijaseit.7.1.1180

[View at Publisher](#)

3 Anand, P., Rajesh, D., Senthil Kumar, M., Saran Raj, I.

Investigations on the performances of treated jute/Kenaf hybrid natural fiber reinforced epoxy composite

(2018) *Journal of Polymer Research*, 25 (4), art. no. 94. Cited 23 times.

doi: 10.1007/s10965-018-1494-6

[View at Publisher](#)

4 Begum, K., Islam, M. A.

Natural Fiber as a substitute for Synthetic Fiber in Polymer Composites: A Review

(2013) *Research Journal of Engineering Science*, 2 (3), pp. 46-53. Cited 77 times.

5 Ali, Z.A., Nahian, K.M., Islam, A.M.

Effect of Fiber Content and Post Stress on Moisture Absorption of Jute Polyester Composite

(2018) *4th Intl. Conf. on Structure, Processing, and Properties of materials*