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AIP Conference Proceedings
Volume 2267, 21 September 2020, Article number 020026-1
3rd International Postgraduate Conference on Materials, Minerals and Polymer, MAMIP 2019;
Penang; Malaysia; 31 October 2019 through 1 November 2019; Code 163181

Tensile and flexural properties of woven carbon-kenaf fiber reinforced epoxy matrix hybrid composite: Effect of hybridization and stacking sequences (Conference Paper) (Open Access)

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Abstract

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Hybrid composites from combinations of synthetic and natural fibers have experienced a considerable interest among researchers due to its excellent characteristics. One of the drivers for this development owing to the ability of synthetic and natural fibers to compensate for the limitation of one another. Thus, the current effort works on the fabrication of hybrid composites from combinations of carbon fiber (C) and kenaf fiber (K) with epoxy resin using the vacuum infusion method. The stacking sequences of fibers were varied to KKKKK, CKCKC, KCKCK, and CCKCC. The effects of hybridization and stacking sequences on mechanical properties of fabricated hybrid composites were examined under tensile and flexural tests. The result shows that the tensile and flexural properties of manufactured hybrid composites were enhanced by introducing hybridization with carbon fiber. The highest tensile were obtained in the CKCKC hybrid sample, whereas, the highest flexural properties were observed in the CCKCC hybrid sample. Besides, tensile fractured and flexural modes of failures were characterized using a scanning electron microscope (SEM) and optical microscope (OM), respectively. © 2020 American Institute of Physics Inc.. All rights reserved.

SciVal Topic Prominence ⓘ

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Prominence percentile: 99.897



Funding details

Funding sponsor	Funding number	Acronym
International Islamic University Malaysia		IIUM
International Islamic University Malaysia		IIUM
Ministry of Higher Education	FRGS 17-033-0599	MOHE

Funding text

The authors would like to express their gratitude to the Ministry of Higher Education (MOHE) of Malaysia for the support through the awarded grant no (FRGS 17-033-0599), Kuliyyah of Engineering International Islamic University Malaysia (IIUM), and also to Research Management Centre (RMC) IIUM for facilitating this project.

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