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## Mechanical performance and moisture absorption of unidirectional bamboo fiber polyester composite (Conference Paper)

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### Abstract

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Bamboo fibers as a natural fiber offer numerous advantages such as high specific strength over synthetic fiber when used as reinforcing fiber for polymer composites. Yet the hydrophilic nature of bamboo fibers with high moisture absorption results in incompatibility in between bamboo fibers and unsaturated polyester resin. An experimental study was carried out to investigate the effects of alkali treatment of bamboo fiber on the mechanical properties and water sorption properties of polyester composite. The result revealed that, the bamboo fiber polyester composite with 5% Alkali treated bamboo fiber possesses the highest mechanical properties. Besides, Alkali treated fibers composite showed a significant reduction in moisture uptake compared to untreated fibers, where composite with 7% Alkali treated showed the lowest moisture uptake. © 2018 Trans Tech Publications, Switzerland.

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