Title:
Comparative Study on the Energy Absorption Capability of Natural Kenaf/Epoxy Reinforced Composite Tubes with Different Lengths

Journal:
Advanced Structured Materials, Volume 174, 2022.

Document Type:
Book Chapter

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Full text link:
Publisher : https://www.springerprofessional.de/en/comparative-study-on-the-energy-absorption-capability-of-natural/23113860

Scopus preview:
https://www.scopus.com/record/display.uri?eid=2-s2.0-85131315866&doi=10.1007%2f978-3-031-01488-8_24&origin=inward&txGid=bf65a10ffd8b67736a5acdd5c31299db

Abstract:
The main aim of the current study is to investigate the energy absorption response of natural fiber/epoxy composite tubes with different shapes. Three different circular lengths, i.e., 50, 100, and 150 mm were investigated experimentally subjected to axial compression tests. Hand lay-up methods were used to prepare the composite shapes. The results showed that the length factor is significantly affected on the energy carrying capacity of circular tubes reinforced by natural kenaf fiber. Furthermore, the composite tube with a length equal to 100 mm showed higher energy absorption capability with the value of 27.42 J/kg as well as average crashing load and crash force efficiency compared to other tubes.