

Accepted Manuscript

Characterization of Carbon Nanotube Enhanced Interlaminar Fracture Toughness of Woven Carbon Fiber Reinforced Polymer Composites

M.S. Chaudhry , A. Czekanski , Z.H. Zhu

PII: S0020-7403(17)31613-2
DOI: [10.1016/j.ijmecsci.2017.06.016](https://doi.org/10.1016/j.ijmecsci.2017.06.016)
Reference: MS 3744



To appear in: *International Journal of Mechanical Sciences*

Received date: 21 June 2016
Revised date: 10 May 2017
Accepted date: 13 June 2017

Please cite this article as: M.S. Chaudhry , A. Czekanski , Z.H. Zhu , Characterization of Carbon Nanotube Enhanced Interlaminar Fracture Toughness of Woven Carbon Fiber Reinforced Polymer Composites , *International Journal of Mechanical Sciences* (2017), doi: [10.1016/j.ijmecsci.2017.06.016](https://doi.org/10.1016/j.ijmecsci.2017.06.016)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Highlights

- The inter-laminar fracture toughness of carbon fiber reinforced polymer composites was enhanced using nano-particle reinforcements.
- An easy and inexpensive procedure is presented to fabricate such composites system by utilizing the versatile structural properties of carbon nanotubes.
- Scanning electron microscopy revealed that the adopted methodology for transferring CNT's resulted in a homogenous distribution in an epoxy matrix.
- A significant enhancement of up to 30 % in inter laminar strength was achieved by the addition of structural reinforcements.
- Optimum loading at 1.0 g/m² resulted in the greatest improvement in resisting inter ply delamination.
- At higher loading the strengthening effect is seen to decline resulting in even lower strength as compared to the neat specimen.

Download English Version:

<https://daneshyari.com/en/article/5015875>

Download Persian Version:

<https://daneshyari.com/article/5015875>

[Daneshyari.com](https://daneshyari.com)