

Kenaf fibres as reinforcement for polymeric composites: a review

ABSTRACT

In a view to reduce the cost of production and the harmful destruction of our environment, so many research work has been conducted and still ongoing as to the possibility of using natural fibres that are wholly degradable in combination with biodegradable thermoplastic materials. This has shown significant result so far and this effort needs to be further consolidated so that our environment can be safe and saved from destruction. It is for this reason that this paper is geared through reviewing studied and published results and brings out converging problems associated with biodegradable composite and partially degradable ones so that these associated problems can be tackled in further research. This review however will focus on Kenaf; a very important natural fibre with robust mechanical properties. Good number of journal papers have been reviewed here that touch on cultivation of kenaf and its consequent effect, chemical treatment of natural fibres, matrix combinations, processing techniques, environmental effects on composite, critical fibre length, some works done on Malaysian cultivated kenaf and use of coupling agents to improve linkages between fibre and polymeric matrixes. Most of the studies so far discussed tend to arrive at the problem of wettability of the composites which inhibits further increase in fibre loading and consequent fibre pull-out. Various areas of further study have been highlighted to tackle the aforementioned problems in composite production.

Keyword: Fibre; Kenaf; Polyethylene; Processing; Wettability