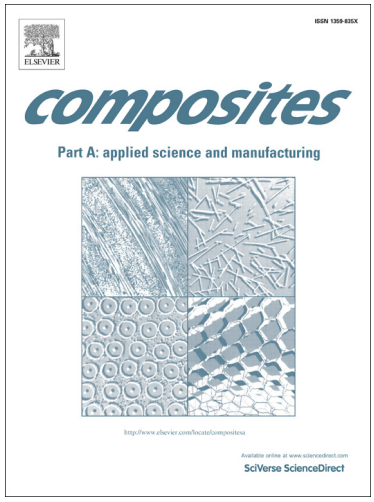


Review

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# A review of recent developments in natural fibre composites and their mechanical performance

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**Abstract**

Recently, there has been a rapid growth in research and innovation in the natural fibre composite (NFC) area. Interest is warranted due to the advantages of these materials compared to others, such as synthetic fibre composites, including low environmental impact and low cost and support their potential across a wide range of applications. Further benefits include low density, low machine wear and friendly fracture, such that their fractured edges are softer than for synthetic fibre composites. Much effort has gone into increasing their mechanical performance to extend the capabilities and applications of this group of materials. This review aims to provide an overview of the factors that affect the mechanical performance of NFCs and details achievements made with them.

**Keywords:** B. Mechanical Properties

## Introduction

Interest in NFCs is growing for many reasons including their potential to replace synthetic fibre reinforced plastics at lower cost with improved sustainability; their advantages and disadvantages are summarised in Table 1 [1]. Further background is also available in recent review articles [2, 3].

The main factors affecting mechanical performance of NFCs are:

- fibre selection – including type, harvest time, extraction method, aspect ratio, treatment and fibre content,
- matrix selection,
- interfacial strength,
- fibre dispersion,
- fibre orientation and