

The relationship between manufacturing and design for manufacturing in product development of natural fibre composites

ABSTRACT

In this chapter, a study of design for manufacturing of natural fibre composites is presented. Initially, the link between design for manufacturing and manufacturing itself is discussed in the context of natural fibre composites. An account of the manufacturing processes to produce products from natural fibre composites is given. Various activities of design for manufacturing of natural fibre composites in various industries are reviewed. Design for sustainability, a recent topic within design for manufacturing or concurrent engineering, in relation to natural fibre composites is discussed and reviewed. Current work on development of packaging materials from sugar palm fibre reinforced biopolymer composites encompassing materials selection of biopolymers and some testing is discussed. Finally, a case study on the application of design for sustainability guides for a natural fibre composite product is presented.

Keyword: Design for manufacturing; Manufacturing; Natural fibre composites; Design for sustainability; Concurrent engineering