Sugar palm fiber– reinforced polymer hybrid composites: an overview

ABSTRACT

Hybrid composites of sugar palm fibre and synthetic fibres are gaining acceptance because of flexibility in design that yields material with unique properties. The state of the art in the field of material engineering is to ensure that the synthesised hybrid composite material is balanced in terms of cost, weight, and performance. Flexibility in designing a material with required properties can be achieved through hybridizations, allowing the evolution of new materials with properties tailored for high performance at low cost. This chapter reviews the weaknesses and strengths of various sugar palm fibre hybrid composites by comparing their properties and performance in various applications. Also, the chapter presents an overview of research that has been done in the area of hybridization of sugar palm fibre composites. The focus is on mechanical properties and potential applications in both load-bearing structures and non-structural components. The chapter will also serve as a starting point for further research and development in the field of natural, synthetic, and hybrid composites.

Keyword: SCellulosic fibre; Hybrid composite; Mechanical properties; Polymer matrix; Sugar palm fibre