

Natural fibre-reinforced Thermoplastic starch composites

Abstract

Increasing awareness among the world population of the need to protect the environment has motivated research on agricultural residues. This is due to the abundant sources of agricultural crop wastes that cause handling problems. Agricultural crop residues such as oil palm, pineapple leaf, banana and sugar palm are produced on the scale of billions of tons around the world. They are available in abundance, at low cost, and they are also renewable sources of biomass. Hence natural fibres are potential sources in the design of new green materials associated with polymer matrices. Recently, sugar palm fibre has become the most popular reinforcement material for researchers owing to its high durability. It is important to note that biopolymers that act as a matrix can be produced from the sugar palm tree itself. This chapter reports the preparation of an environmentally friendly composite where the matrix (sugar palm starch) and fibre (sugar palm fibre) are derived from one source, the sugar palm tree. The resulting materials are termed "biocomposites" or "green" composites, and are considered to be totally biodegradable.