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(57) Abstract :
ABSTRACT A NOVEL NATURAL FIBER COMPOSITES WITH ENHANCED THERMAL CONDUCTIVITY The use of plant fibres for potential applications such as building, automobile, marine, and aerospace have received huge attention due to the high cost, complicated manufacturing process, non-recyclability, and non-biodegradability of the synthetic fibres. In this chapter, the thermal properties of the natural fibre-based polymer composites were reviewed. The thermal analysis (TA) techniques are used to measure materials' responses during heating or cooling and to study the interrelationship between physical property of the materials and temperature. The popular TA techniques are thermogravimetric analysis (TGA), differential scanning calorimetry (DSC), dynamic mechanical analysis (DMA), and thermomechanical analysis (TMA). This chapter discusses TGA, DSC, and DMA of various natural-fibre based hybrid composites as they provide information on the thermal stability, thermal transitions, and viscoelastic properties of the composites, respectively. The thermal properties of the composites depend on various parameters such as type of natural fibre, fibre treatment, hybridization with synthetic fibres and nanofillers, distribution of fibres, and interfacial interaction between the fibre and the polymer.

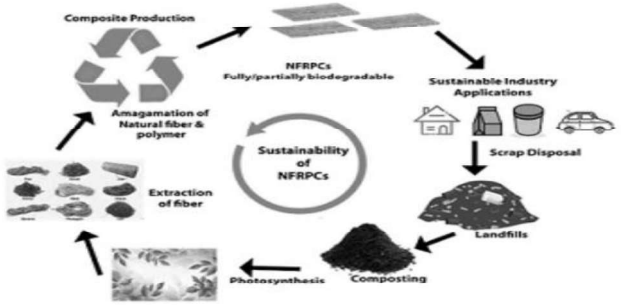

Fig.1: depicts natural fiber reinforced polymer composites.

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