

# Effect of Banana Fibre on Flexural Strength of Reinforced Concrete

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**Abstract:** Polymer nanocomposites are one of the important application areas of nanotechnology, as well as naturally derived organic nano phase materials of special interest. Recent years has seen the uses of eco-friendly composites due to its light weight and moderate strength. The potential of nanocomposites in various sections of research and application is promising and attracting increasing investments. The present investigation deals with the synthesis and characterization of banana nanofibers reinforced polymer composites. In this work, nanofibers are extracted from the stem of banana tree and undergoes chemical treatment and mechanical milling process. High energy ball milling is used for preparation of nanofibers to the required dimensions.

The most important factor in finding good fiber reinforcement in the composites is the strength of adhesion between matrix polymer and fiber. Due to the presence of hydroxyl groups and other polar groups in various constituents of banana, the moisture absorption is high, which leads to poor wettability and weak interfacial bonding between fibers and the more hydrophobic matrices. Therefore, it is necessary to impart a hydrophobic nature of the fibers by suitable chemical treatments in order to develop composites with better properties.

**Keywords:** Concrete, Banana fibers, Nano silica, Recycled Concrete

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