

Potential materials for food packaging from nanoclay/natural fibres filled hybrid composites.

ABSTRACT

The increasing demand for new food packaging materials which satisfy people requirements provided thrust for advancement of nano-materials science. Inherent permeability of polymeric materials to gases and vapours; and poor barrier and mechanical properties of biopolymers have boosted interest in developing new strategies to improve these properties. Research and development in polymeric materials coupled with appropriate filler, matrix-filler interaction and new formulation strategies to develop composites have potential applications in food packaging. Advancement in food packaging materials expected to grow with the advent of cheap, renewable and sustainable materials with enhanced barrier and mechanical properties. Nanoparticles have proportionally larger surface area and significant aspect ratio than their micro-scale counterparts, which promotes the development of mechanical and barrier properties. Nanocomposites are attracting considerable interest in food packaging because of these fascinating features. On the other hand, natural fibres are susceptible to microorganisms and their biodegradability is one of the most promising aspects of their incorporation in polymeric materials. Present review article explain about different categories of nanoclay and natural fibre based composite with particular regard to its applications as packaging materials and also gives an overview of the most recent advances and emerging new aspects of nanotechnology for development of hybrid composites for environmentally compatible food packaging materials.

Keyword: Food packaging; Nanoclay; Natural fibres; Hybrid composites.