

Natural fiber reinforced poly(vinyl chloride) composites : a review.

ABSTRACT

Materials from renewable resources – also called biomaterials or ‘green’ materials – are presently gaining in importance worldwide. In these times of continuous increases in the price of crude oil and discussion of carbon dioxide (CO₂) emissions, conventional plastics have reached a price level and a questionable image which promotes the search of alternatives. Natural fibers are a renewable natural resource and are biodegradable, which is an important characteristic for components that must be disposed of at the end of their useful life. They are recyclable and can be easily converted into thermal energy through combustion without leaving residue. In this study, we will discuss the natural fiber reinforced polyvinyl chloride composites, reinforcing effect, plasticization effect along with modification by coupling agents, properties, and applications based on composite materials. Also, the polyvinyl chloride-based composite materials with specific emphasis on effect of coupling agent, foamed polyvinyl chloride composites, and the effect of natural fiber reinforcement on its material properties will be reviewed. One of the best alternatives is natural fiber reinforced plastics composites. These are composites that are typically filled or reinforced with plant fibers, as well as plastics such as polyvinyl chloride or recently, even bioplastics.

Keyword: Polyvinyl chloride; Natural fiber; Composite; Coupling agent.