Preparation and properties of biodegradable films from Sterculia urens short fiber/cellulose green composites

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Abstract

The development of commercially viable “green products”, based on natural resources for the matrices and reinforcements, in a wide range of applications, is on the rise. The present paper focuses on Sterculia urens short fiber reinforced pure cellulose matrix composite films. The morphologies of the untreated and 5\% NaOH (alkali) treated S. urens fibers were observed by SEM. The effect of 5\% NaOH treated S. urens fiber (5, 10, 15 and 20\% loading) on the mechanical properties and thermal stability of the composites films is discussed. This paper presents the developments made in the area of biodegradable S. urens short fiber/cellulose (SUSF/cellulose) composite films buried in the soil and later investigated by the (POM), before and after biodegradation has taken place. SUSF/cellulose composite films have great potential in food packaging and for medical applications.