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Preparation of nanocellulose from Jute fiber waste

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The objective of this work was to use the spinning waste in form of short fibres for the preparation of nano size fillers in nanocomposite applications. The present paper concerns with the jute fibres as the source to produce nanocellulose by high energy planetary ball milling process and its potential applications as fillers in biodegradable nanocomposite plastics used in automotives, packaging and agriculture applications. Influence of various milling conditions like nature of milling (i.e. dry or wet), milling time and ball size are studied on the particle size distribution and morphology of jute nanoparticles obtained. Wet milling in the deionised water resulted into particle size refinement below 500 nm with narrow size distribution after 3 hours of milling at the cost of small amount of contaminations introduced from milling media.

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