Patent Search

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Abstract:

The present invention introduces an innovative composite material tailored for the construction and automotive sectors. Comprising natural fibers, specifically sourc plants like flax, hemp, jute, and kenaf, this material is bound within a resin matrix, ensuring optimized tensile strength, durability, and longevity. The fibers undergo sp treatments to mitigate traditional limitations, such as moisture absorption. Notably, this invention presents a sustainable and eco-friendly alternative to conventional materials, offering potential weight reductions in automotive applications and superior insulation in construction, while also promising enhanced biodegradability at lifecycle. Accompanied Drawing [FIGS. 1-2]

Complete Specification

Description:[001] The present invention relates generally to composite materials and, more specifically, to natural fiber-reinforced composites designed for applicat the construction and automotive industries. The composites are characterized by their environmentally-friendly nature, sustainable sourcing, lightweight properties enhanced mechanical performance suitable for various structural and non-structural applications within the mentioned industries.

BACKGROUND OF THE INVENTION

[002] The following description provides the information that may be useful in understanding the present invention. It is not an admission that any of the informati provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[003] Further, the approaches described in this section are approaches that could be pursued, but not necessarily approaches that have been previously conceived pursued. Therefore, unless otherwise indicated, it should not be assumed that any of the approaches described in this section qualify as prior art merely by virtue c inclusion in this section.

[004] In recent decades, the increasing global emphasis on sustainability and environmental consciousness has sparked interest in the development and utilization materials that are both eco-friendly and capable of meeting or surpassing the performance of conventional materials. Historically, the construction and automotive industries have heavily relied on synthetic, petroleum-based materials, such as fiberglass-reinforced polymers, due to their strength, durability, and cost-effectivene However, the production of these materials is often energy-intensive and generates significant environmental pollution. Additionally, as these materials are not biodegradable, end-of-life disposal becomes a significant concern, leading to further environmental degradation.

[005] Natural fibers, derived from renewable plant sources such as flax, hemp, jute, and kenaf, have been recognized for their potential as reinforcements in compo

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