



polymers



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Bio and Synthetic Based Polymer Composite Materials

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For decades, synthetic fibers have been the leading commodity in the composites industry. However, synthetic fibers have many disadvantages, as they are non-biodegradable. Since synthetic fibers have many shortcomings, researchers have had growing interest in producing polymers that incorporate natural fibers. Natural fibers are becoming more common as a viable option due to the harmful environmental and health consequences of synthetic fibers. Concerns about the environment and the rising greenhouse effect, as well as increasing interest in the use of sustainable materials, has motivated researchers to investigate biocomposite materials. In today's manufacturing environment, natural fiber composites are playing a prominent role in many vital applications, such as in wings of wind turbines, bicycle frames, automobile interiors, seat cushions, door panels. The great interest in natural fiber composites is due to their high performance, biodegradability, nonabrasive light weight, and low cost. Moreover, the widespread adoption of natural fibers and biopolymers as green materials is being motivated by the rapid depletion of petroleum supplies, as well as by a growing recognition of global environmental issues associated with the use of traditional plastics. The successful application of biopolymers and the promise of alternative pathways with a reduced carbon footprint arising from the use of green materials bodes well for the future design and development of ever more sophisticated green materials.



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