

Potential of Using Agricultural Waste Composites as Thermal Insulation Material

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Abstract

A huge amount of waste is produced every day in our world and it is thrown away without giving them any new use. Agricultural wastes generated as a result of obtaining, processing, and consuming plant and animal products constitute a remarkable large part of this waste amount. Today, these wastes are used in the production of composites, and the composites produced from these wastes give positive results in durability, flexibility, and thermal insulation. Composite materials which are combination of different materials to create a new material with discrete properties than its ingredients have gained great importance with the increment of product variety thus the property requirement. In production process, it is now always possible to fulfill the requirements of the design with conventional engineering materials. Since composite materials have the ability of being tailorable they have been started to be used in many different application areas. Recently, the usage of such composite materials in the automotive field has been evaluated. In this review, the usage of composites produced from different agricultural wastes in thermal insulation has been examined. A detailed review of the past and recent research activities have been documented. The literature survey revealed that agricultural wastes can be a good candidate to be used as reinforcement or filler material in composites for thermal insulation purposes. (The authors would like to thank the Cukurova University Scientific Research Project Coordination (FBA-2021-13692) for financial support to this project.)