

Utilization of biodegradable composite materials for enhancement of building energy efficiency



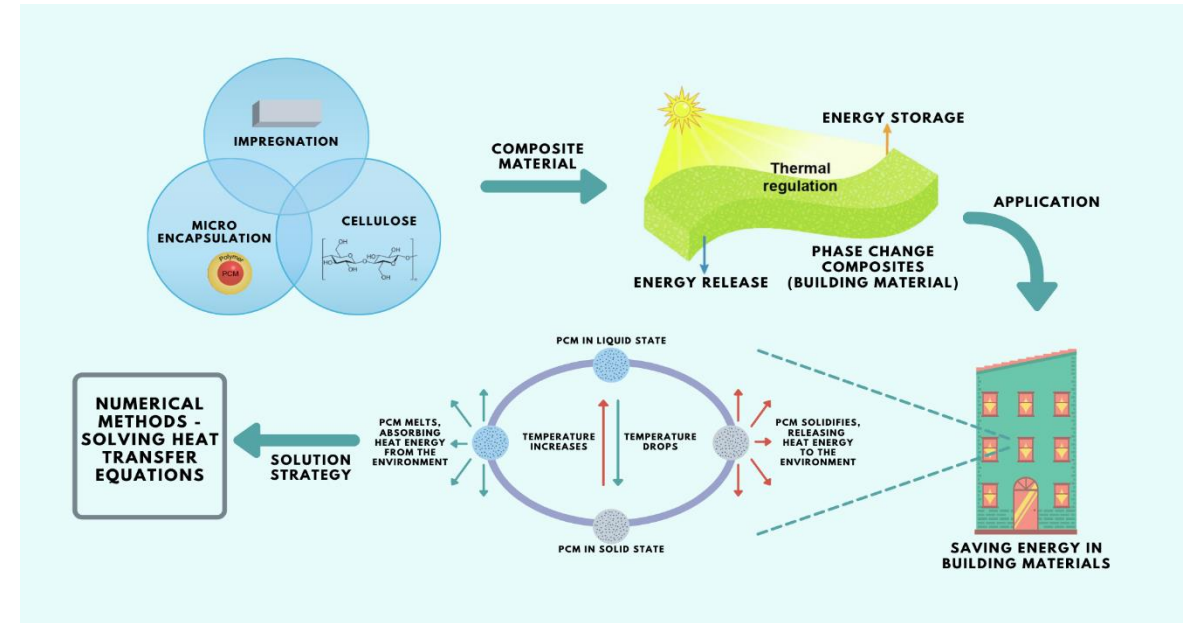
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Presently, cement is used in construction materials that cause the majority of CO₂ emission leading to Global warming. Concrete which has cement as an integral part causes damage to the most fertile layer of the earth, the topsoil. Concrete is used to create hard surfaces which contribute to surface runoff that may cause soil erosion, water pollution, and flooding. Therefore, biodegradable composite materials which are alternate to cement will be most beneficial to the environment. Besides this biodegradable composite materials when proportionately mixed with certain materials having higher thermal energy retaining capabilities can help in passive energy saving applications. It is worth mentioning here that the passive energy saving capabilities of these materials are due to their appreciable latent heat storage capabilities. In the present work, series of composite materials will be fabricated by blending various types of hydrophilic cellulose with certain high thermal energy storage materials to demonstrate their application in saving energy for building materials without compromising on the strength of the constructions.