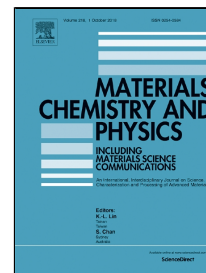


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Low-cost, shape-stabilized fly ash composite phase change material synthesized by using a facile process for building energy efficiency

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Abstract

With increasing building energy consumption, the use of phase change materials (PCMs) to store energy becomes particularly important. However, relatively complex packaging technology, high cost and unstable thermal performance constrain the use of PCMs in the field of building energy efficiency. In this study, co-soluble hydrous salt/fly ash composite PCMs (FA composite PCMs) were prepared by straight dipping using the relatively inexpensive sodium sulfate dehydrate ($\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$) as the primary phase change energy storage agent and solid waste fly ash (FA) as a carrier material. The FA composite PCMs were fabricated with an optimal mass ratio of

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