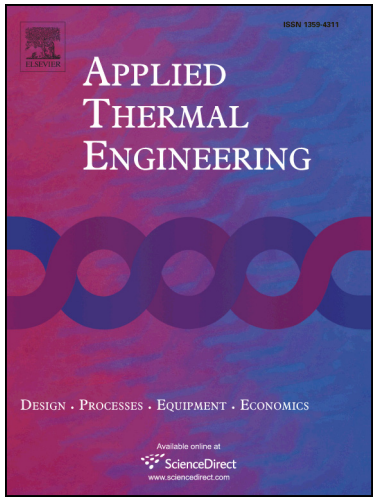

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Thermal properties improvement of Lithium nitrate/Graphite composite phase change materials

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Abstract:

This paper addresses the development and the thermal investigation of new composite materials with improved thermo-physical properties destined for solar thermal energy storage at high temperature. The thermo-physical properties of composites are characterized by using several techniques based on the temperature measurement and the obtained results are compared to the theoritical values calculated by different analytical models. The results of these experiments revealed a clear improvement in the different thermal properties when integrating graphite particles in the composite. In the other hand, a good agreement between experimantal and theoretical values was obtained.

Keywords: Phase Change Material (PCM), salt, graphite waste, latent heat storage, thermal conductivity, thermal diffusivity.