

## Accepted Manuscript

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

Mohamed Lachheb, Ali Adili, Fethi Albouchi, Foued Mzali, Sassi Ben Nasrallah

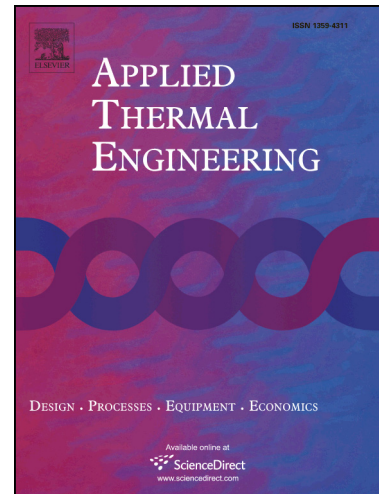
PII: S1359-4311(16)30475-6  
DOI: <http://dx.doi.org/10.1016/j.applthermaleng.2016.03.167>  
Reference: ATE 8035

To appear in: *Applied Thermal Engineering*

Received Date: 30 December 2015

Accepted Date: 31 March 2016

Please cite this article as: M. Lachheb, A. Adili, F. Albouchi, F. Mzali, S.B. Nasrallah, Thermal properties improvement of Lithium nitrate/Graphite composite phase change materials, *Applied Thermal Engineering* (2016), doi: <http://dx.doi.org/10.1016/j.applthermaleng.2016.03.167>



This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

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

Mohamed Lachheb<sup>1\*</sup>, Ali Adili<sup>2</sup>, Fethi Albouchi<sup>1</sup>, Foued Mzali<sup>1</sup>, Sassi Ben Nasrallah<sup>1</sup>

<sup>1</sup>Ecole National d'Ingénieur de Monastir. Laboratoire des Etudes des systèmes Thermiques et Energétiques (LESTE), Avenue Ibn El Jazzar, *Route* de Kairouan, 5019 Monastir, Tunisie.

<sup>2</sup>Centre de Recherches et des Technologies de l'Energie. B.P. 95. Hammam-Lif 2050. Tunisie. Laboratoire d'Energétique et des Procédés Thermiques (LEPT).

\* E-mail: lachheb\_med@yahoo.fr

### 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 theoretical 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 experimental and theoretical values was obtained.

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

Download English Version:

<https://daneshyari.com/en/article/7048284>

Download Persian Version:

<https://daneshyari.com/article/7048284>

[Daneshyari.com](https://daneshyari.com)