



Available online at www.sciencedirect.com



Energy Procedia

Energy Procedia 74 (2015) 1282 - 1288

## International Conference on Technologies and Materials for Renewable Energy, Environment and Sustainability, TMREES15

## Characterization by thermal analysis of natural kieselguhr and sand for industrial application

Hazem Meradi<sup>a\*</sup>, L'Hadi Atoui<sup>b</sup>, Lynda Bahloul<sup>a</sup>, Khaled Boubendira<sup>a</sup>, Abdelhak Bouazdia<sup>a</sup>, Fadhel Ismail<sup>c</sup>

> <sup>a</sup>Welding and NDT Research Center (CSC). BP 64 Cheraga - Algeria <sup>b</sup>Department of *Metallurgy* and Materials Engineering, University of Annaba, Algeria <sup>c</sup>Department of Process Engineering, University Badji Mokhtar of Annaba, Algeria

## Abstract

Kieselguhr also known diatomite is a silica-based mineral, usually light in color (white if pure). It is very finely porous and very low in density. It is composed mainly of silica as career sand. The aim of this study was to characterize the kieselguhr and sand for together use in industry for various applications. Both products come of Sig deposit (West Algeria). The results of simultaneous analyses by Thermogravimetric Analysis and Differential Scanning Calorimetry (TGA-DSC) for kieselguhr and sand sample shows almost identical peaks except for the peak which appears at 574° C which corresponds to the transformation of quartz sand that does not appear in the Kieselguhr sample because of its amorphous character and higher exothermic peak at 574° C approximately.

© 2015 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/). Peer-review under responsibility of the Euro-Mediterranean Institute for Sustainable Development (EUMISD)

Keywords: Kieselguhr, diatomite, sand, thermal analysis, DSC, TGA

\* Corresponding author. Tel.: +(213) 661697553; fax: +(213)38875982 . E-mail address: meradi213@yahoo.com