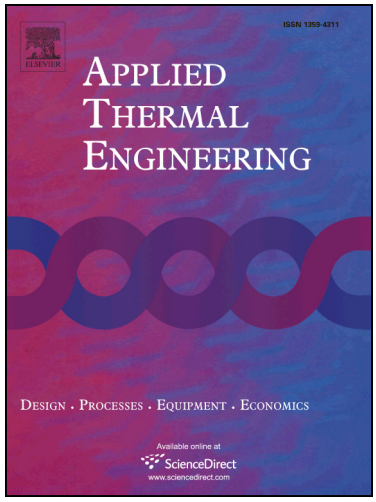
Accepted Manuscript



Research Paper

Evaporation and Crystallization of a Droplet of Desulfurization Wastewater from a Coal-Fired Power Plant

Zhengxing Liang, Li Zhang, Zhongqing Yang, Tang Qiang, Ge Pu, Jingyu Ran

PII: S1359-4311(17)31349-2
DOI: http://dx.doi.org/10.1016/j.applthermaleng.2017.02.113
Reference: ATE 9994

To appear in: *Applied Thermal Engineering*

Received Date: 26 August 2016
Revised Date: 25 December 2016
Accepted Date: 27 February 2017

Please cite this article as: Z. Liang, L. Zhang, Z. Yang, T. Qiang, G. Pu, J. Ran, Evaporation and Crystallization of a Droplet of Desulfurization Wastewater from a Coal-Fired Power Plant, *Applied Thermal Engineering* (2017), doi: http://dx.doi.org/10.1016/j.applthermaleng.2017.02.113

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.

ACCEPTED MANUSCRIPT

Evaporation and Crystallization of a Droplet of Desulfurization Wastewater from a Coal-Fired Power Plant

Zhengxing Liang[1,2], Li Zhang[1,2*], Zhongqing Yang[1,2*], Tang Qiang[1,2], Ge Pu[1,2], Jingyu Ran[1,2]

1. Key Laboratory of Low-grade Energy Utilization Technologies and Systems, Ministry of Education of PRC, Chongqing University, Chongqing, 400044, China

2. College of Power Engineering, Chongqing University, Chongqing, 400044, China

([*]Corresponding Author: Telephone: +86-23-65103114; Fax: +86-23-65103114. E-mail: lizhang@cqu.edu.cn (Li Zhang), zqyang@cqu.edu.cn(Zhongqing Yang))

Abstract: Relationship between evaporation and crystallization characteristics of a droplet of desulfurization wastewater from a coal-fired power plant and some operating conditions was studied experimentally using a thermogravimetric analyzer (TGA) with differential scanning calorimetry (DSC) function and a scanning electron microscope (SEM). The results shows that, between 15 ℃/min and 45 ℃/min, a higher temperature increasing rate leads to higher evaporation and crystallization rates. The increment in the evaporation rate, caused by the same increment of temperature increasing rate, is larger, when the temperature increasing rate is lower. In addition, the final temperatures, ranging from 90 ℃ to 150 ℃, have little impact on the evaporation and crystallization rates of the 0.5 μL droplet. Ultimately, for the droplets,

ACCEPTED MANUSCRIPT

Download English Version:

https://daneshyari.com/en/article/4991267

Download Persian Version:

https://daneshyari.com/article/4991267

Daneshyari.com