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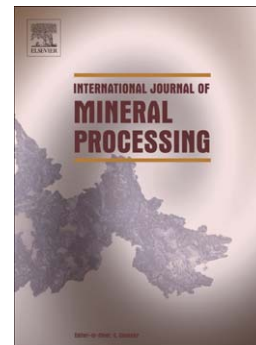
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Zijie Ren, Huimin Gao, Hongquan Zhang, Xi Liu

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Effects of Fluxes on the Structure and Filtration Properties of Diatomite Filter Aids

By Zijie REN¹, Huimin GAO^{1,*}, Hongquan ZHANG², Xi LIU¹

¹ School of Resources and Environment Engineering, Wuhan University of Technology, Wuhan 430070, China

² School of Materials Science and Engineering, Wuhan University of Technology, Wuhan 430070, China

* Corresponding author

Prof. Huimin GAO

NO.122 Luoshi Road

Hongshan, Wuhan 430070, China

E-mail: gaohuimin1958@126.com

Phone number: +86- 27- 87882128

Abstract:

Diatomite filter aids were prepared using raw diatomite and various fluxes. The effects of composition, amount and granularity of the flux on the micro-structure and filtration performance of the diatomite filter aids were studied. Filter aids with high flow rate and filtrate clarity were successfully obtained when 7 wt. % of Na₂CO₃ flux was employed. It was shown that opal in the diatomite was converted to cristobalite in the presence of flux at 1000 °C, being similar to the formative process of silicate glass. The additive alkali ions from the flux are believed to partially break Si-O-Si chains of the opal at a high temperature and then recombine the broken structure to a hexatomic ring mesh structure during the cooling process, which is significant to control the phase composition for preparation of diatomite filter aids.

Keywords: diatomite, filter aids, flux, cristobalite, structure, filtration property

1. Introduction

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