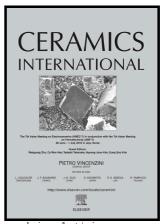
Author's Accepted Manuscript

Effect of Cr₂O₃ on the crystallization behavior of synthetic diopside and characterization of Cr-doped diopside glass ceramics

Shuai Zhang, Yanling Zhang, Tuo Wu



ww.elsevier.com/locate/ceri

PII: S0272-8842(18)30545-5

DOI: https://doi.org/10.1016/j.ceramint.2018.02.231

CERI17633 Reference:

To appear in: Ceramics International

Received date: 5 January 2018 Revised date: 28 February 2018 Accepted date: 28 February 2018

Cite this article as: Shuai Zhang, Yanling Zhang and Tuo Wu, Effect of Cr₂O₃ on the crystallization behavior of synthetic diopside and characterization of Crdiopside ceramics, Ceramics International, doped glass https://doi.org/10.1016/j.ceramint.2018.02.231

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 galley proof before it is published in its final citable 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

Effect of Cr₂O₃ on the crystallization behavior of synthetic diopside and characterization of Cr-doped diopside glass ceramics

Shuai Zhang Yanling Zhang* Tuo Wu

State Key Laboratory of Advanced Metallurgy, University of Science and Technology Beijing, Beijing 100083, China. anusciilà

gangtiemoni@163.com zhangyanling@metall.ustb.edu.cn wutuo90@163.com

*Corresponding author.

ABSTRACT

Diopside is the main crystalline phase in silicate materials such as ceramics and glass-ceramics. Herein, the effect of Cr₂O₃ on the microstructure and crystallization behavior of synthetic diopside, as well as the solubility of Cr₂O₃ in diopside is discussed. Samples were prepared by the melting method and characterized by X-ray diffraction, scanning electron microscopy, energy dispersive spectrometry, and confocal laser scanning microscopy. Results show that the maximum achievable solubility of Cr₂O₃ in diopside is between 1 and 3% by weight, and that the magnesiachrome spinel formed by Cr₂O₃ can act as a nucleating agent for the diopside phase. Glass ceramics was prepared by synthesis slag which simulates the chromium-containing waste. The activation

Download English Version:

https://daneshyari.com/en/article/7886898

Download Persian Version:

https://daneshyari.com/article/7886898

<u>Daneshyari.com</u>