Author's Accepted Manuscript

Immobilization of hospital waste incineration ashes in glass-ceramic composites

Pawe Stoch, Małgorzata Ciecińska, Agata Stoch, Łukasz Kuterasiński, Ireneusz Krakowiak



 PII:
 S0272-8842(17)32179-X

 DOI:
 https://doi.org/10.1016/j.ceramint.2017.09.238

 Reference:
 CERI16409

To appear in: Ceramics International

Received date: 20 July 2017 Revised date: 29 September 2017 Accepted date: 29 September 2017

Cite this article as: Pawe Stoch, Małgorzata Ciecińska, Agata Stoch, Łukasz Kuterasiński and Ireneusz Krakowiak, Immobilization of hospital waste incineration ashes in glass-ceramic composites, *Ceramics International*, https://doi.org/10.1016/j.ceramint.2017.09.238

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

Immobilization of hospital waste incineration ashes in glass-ceramic composites

Paweł Stoch¹, Małgorzata Ciecińska¹, Agata Stoch², Łukasz Kuterasiński³, Ireneusz Krakowiak⁴

¹AGH - University of Science and Technology, Faculty of Materials Science and Ceramics, Mickiewicza

30, 30-059 Krakow, Poland

² Institute of Electron Technology Krakow Division, Zablocie 39, 30-701 Krakow, Poland

³ Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences,

Niezapominajek 8, 30-239 Krakow, Poland

⁴ Warsaw University of Technology, Faculty of Automotive and Construction Machinery Engineering,

Narbutta 84, 02-524 Warsaw, Poland

Corresponding author

Paweł Stoch

AGH - University of Science and Technology, Faculty of Materials Science and Ceramics, Mickiewicza

30, 30-059 Krakow, Poland

e-mail: pstoch@agh.edu.pl

tel.: +48 12 617 34 89

Abstract

In the paper process of sintering of hospital incineration ash as a counterpart of low-level active waste with borosilicate glass frit is presented. It is shown that low porosity glass-ceramic waste-form can be obtained at a temperature range of 850°C-900°C. In the sinter, the main crystal phases are wollastonite and aegirine-augite pyroxenes which have a large isomorphous capacity of binding hazardous elements. The crystal phases are fully encapsulated by the glass that provides additional

Download English Version:

https://daneshyari.com/en/article/7889230

Download Persian Version:

https://daneshyari.com/article/7889230

Daneshyari.com