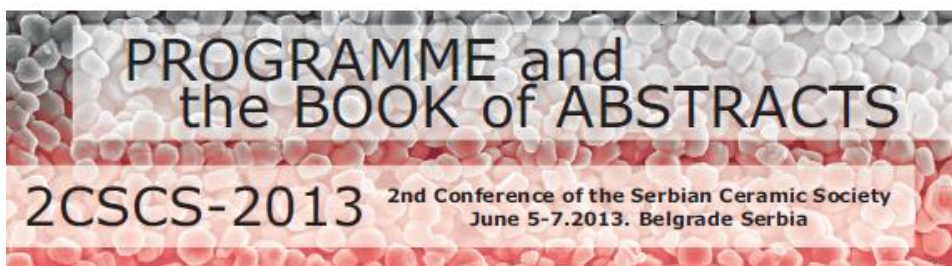


The Serbian Ceramic Society
The Academy of Engineering Sciences of Serbia
Institute for Multidisciplinary Research - University of Belgrade
Institute of Physics - University of Belgrade
Vinča Institute of Nuclear Sciences - University of Belgrade



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Zorica Branković

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P-3

CLAY AS A SOURCE FOR LOW CRYSTALLINITY IRON OXIDE SYNTHESIS

Aleksandra Šaponjić, Maja Kokunešoski, Branko Matović, Biljana Babić,
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Clay was chemically treated by aqueous solution of hydrochloric acid (weight ratio of 1:1) following the heat treatment at 600 °C for 2 h. Low crystallinity iron (III) oxide was obtained from the filtrate using ammonium hydroxide as a precipitating agent.

The influence of temperature and type of drying methods on the particle size, chemical composition and crystallinity of the obtained iron (III) oxide powder was investigated. The precipitate was dried in a four different means: at 120 °C, 30 °C, at room temperature in vacuum and at -20 °C under reduced pressure. The study of resulting powders included: crystalline phase identification by X-ray analysis, particle-size determination by DLS (dynamic light scattering) technique, determination of specific surface areas by BET, and microstructural analysis using SEM.

P-4

CHARACTERIZATION OF THE NEW CERAMIC MATERIALS OBTAINED BY THERMALLY INDUCED PHASE TRANSFORMATION OF THE K-LTA ZEOLITE

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The method of the thermal treatment of cation-exchanged zeolites (ZTIT) has proven to be suitable for the synthesis of the alkaline earth and alkaline framework aluminosilicates. In this work, we present the results of the thermally induced phase transformations of K-exchanged LTA zeolites to feldspathoid structure i.e. mineral kalsilite. The phase conversions that occurred in the range from room temperature to 1300 °C were investigated by thermal analysis (DTA/TGA), X-ray powder diffraction (XRD) and SEM/EDAX analyses. Also, we investigated the XRD pattern line broadening and the influence of the potassium cations to the microstructure parameters. The crystal structure and microstructural parameters were refined using the Rietveld method.

Keywords - ceramics, ZTIT synthesis, X-ray powder diffraction, kalsilite.