Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION VII
New Frontiers in Multifunctional Material Science and Processing

Serbian Ceramic Society
Institute of Technical Sciences of SASA
Institute for Testing of Materials
Institute of Chemistry Technology and Metallurgy
Institute for Technology of Nuclear and Other Raw Mineral Materials

PROGRAM AND THE BOOK OF ABSTRACTS

Serbian Academy of Sciences and Arts, Knez Mihailova 35
Serbia, Belgrade, 17-19. September 2018.

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Structural and crystallochemical characterization of thermal tretment of ion exchange natural zeolites

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There has been intense activity over the last three decades in the area of preparation of various ceramic materials using synthetic or natural zeolites as a precursors. Aqueous ion exchange can be preformed to incorporate a variety of other metals, typically alkali and alkaline earth for the Rn^+ cation. For this investigation was used the two naturale HEU type zeolite from different deposit. Thermally induced phase transformation of Pb, Ca and K-exchange is followed in the range from room temperature to 1300 ºC. The frameworks collapse into amorphous intermediate products after heating between 600 and 650 °C. Prolonged heating of the intermediate product over 900 °C results directly in formation of alumosilicate phases anorthite or structure of celsian. The crystale phases of alumosilicate in temperature range between 700 and 1300 °C was investigated by X-ray powder analyses.

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Optomagnetic Imaging Spectroscopy for material characterization

Branislava Jeftic[1], Marija Tomic[2], Jovana Sakota Rosic[1], Lidija Matija[1], Djuro Koruga[3]

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Optomagnetic Imaging Spectroscopy is a novel method for characterization of different types of materials. It is a nanophysical technique based on the interaction between visible light and valence electrons within the sample material. By Optomagnetic Imaging Spectroscopy it is possible to obtain magnetic properties of the sample material by convoluting the sample spectra in RGB color channels from the digital image of the sample when material is exposed to white diffuse light and white light under the Brewster's angle. The method was used for the characterization of nanophotonic filters – filters made using fullerene thin film deposition technique in vacuum from gaseous phase on the glass substrate, polymer materials for contact lenses with different concentrations of nanomaterials, and biological materials. We are presenting and discussing results and strategies for future applications of this fast and easy to use method which has already shown great performance and accuracy in previous studies.