The Serbian Ceramic Society
Vinča Institute of Nuclear Sciences, University of Belgrade
Institute for Multidisciplinary Research, University of Belgrade
Institute of Physics, University of Belgrade

PROGRAM AND THE BOOK OF ABSTRACTS

1st Conference of the Serbian Ceramic Society

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1CSCS-2011

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CHARACTERIZATION OF SINTERED MAGNESITE MICROSTRUCTURAL AND XRD ANALYSIS

Maria Čebela, Ana Radosavljević Mihajlović, Vesna Maksimović, Branko Matović

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"Sintered magnetite", the basic raw material for production of refractory materials based on magnesium oxide, is heated at a temperature of 1500-1600 ° C. The samples were investigated through their phase conversions at this temperature range. All the changes were monitored by optical microscope and XRD analyses. Microstructure examination was carried out in the cross section. In order to quantify the grain size and to determine the value of the intercept L_3 which is equivalent to the average grain size, line method was used. The results indicate the presence of MgO phase. Bond phase along the grain boundary were observed.

HYDROTHERMALLY ASSISTED COMPLEX POLYMERIZATION METHOD FOR BST POWDER SYNTHESIS

Jovana Ćirković[1], Katarina Vojisavljević[1], Maja Šćepanović[2], Goran Branković[1], Zorica Branković[1]

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Barium strontium titanium oxy-carbonate $(Ba_{0.8}Sr_{0.2})_2Ti_2O_5 \cdot CO_3$, which is common intermediate phase in synthesis of barium strontium titanate (BST), has been obtained by hydrothermal treatment of BST citric precursor solution, previously prepared by complex polymerization method (CPM). The thermally induced phase evolution from oxy-carbonate to pure BST was followed using DSC, SEM, X-ray diffraction analysis and Raman spectroscopy at various temperatures up to 1200°C. The proposed synthesis route has been proven as a better and faster method for $(Ba_{0.8}Sr_{0.2})_2Ti_2O_5 \cdot CO_3$ powder preparation as compared to conventional CPM route. The method was found efficient for production of high purity crystalline BST powders, with small grain size and good dielectric properties at temperatures $T \geq 700°C$.