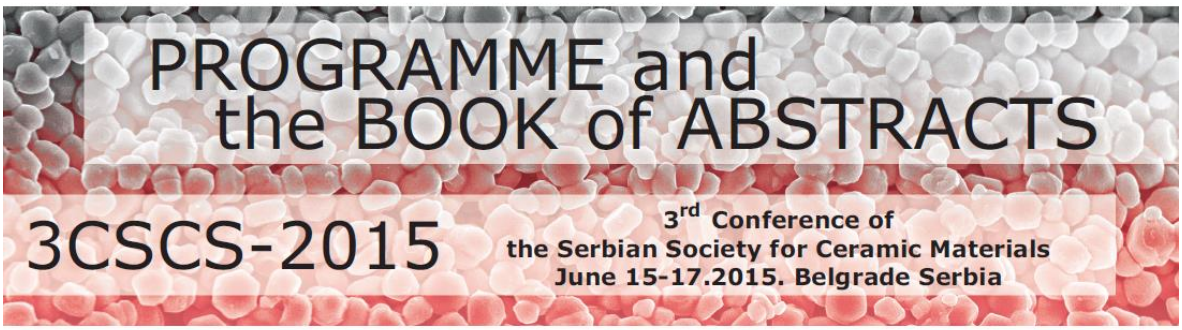
The Serbian Society for Ceramic Materials
The Academy of Engineering Sciences of Serbia
Institute for Multidisciplinary Research - University of Belgrade
Institute of Physics - University of Belgrade
Vinča Institute of Nuclear Sciences - University of Belgrade



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TWO STEP SINTERING OF THE $ZnTiO_3$ NANOPOWDER

Zorka Z. Vasiljevic[1], D. Vasiljevic-Radovic[2], Maria V. Nikolic[3], Nebojsa Labus[1]

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Metastabile nanopowder $ZnTiO_3$ pressed into cylindrical compacts at 200 MPa was submitted to conventional heating with isothermal holding at 931^{o}C for 10 minutes, 25 minutes and 40 minutes. Same compacts were heated with two-step sintering schedule with maximal 912^{o}C and isothermal holding at 896oC, for approximately the same holding times as with isothermal. Shrinkage during heating was monitored with dilatometric device, while microstructure was determined with atomic force microscopy. XRD patterns were collected for the most prominent samples. Sintered specimens microstructure showed differences introduced during last sintering stage by two heating schedules.

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TAILORING THE MICROSTRUCTURE OF Mn-Zn FERRITE TO ELECTRONIC PROPERTIES

Obrad S. Aleksic[1], Predrag Milutinov[2], Maria V. Nikolic[1], Nelu Blaz[2], Miloljub D. Lukovic[1], Zorka Z. Vasiljevic[3], Smilja Markovic[3], Ljiljana D. Zivanov[2]

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Commercial Mn-Zn ferrite powder was milled in a planetary ball mill for 30-240 minutes. Particle size distribution in the milled powders was analyzed using a laser particle size analyzer and correlated with XRD and SEM analysis of the milled powders. Green disc and torroid samples were sintered in air in the temperature interval 800 -1300^{o}C for 2 hours. SEM/EDS, AFM/MFM analysis of the sintered samples and measurements of their electrical properties such as DC resistance up to 500 MHz enabled establishment of a correlation between the microstructure and properties in the high-frequency range.