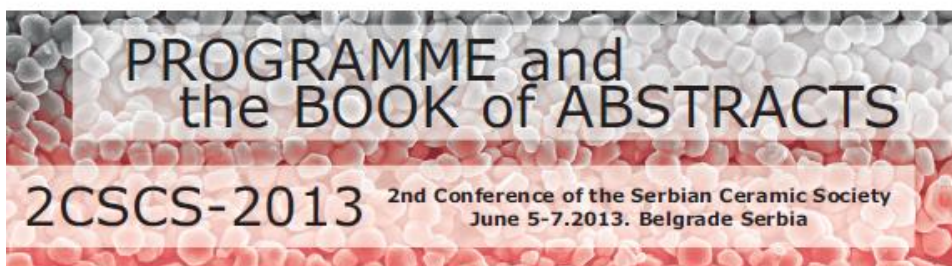


The Serbian Ceramic Society
The Academy of Engineering Sciences of Serbia
Institute for Multidisciplinary Research - University of Belgrade
Institute of Physics - University of Belgrade
Vinča Institute of Nuclear Sciences - University of Belgrade



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Snežana Bošković
Vladimir V. Srdić
Zorica Branković

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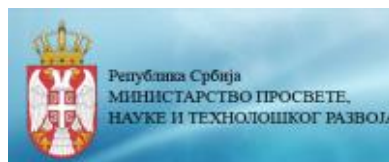
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**STRUCTURAL AND MICROSTRUCTURAL
CHARACTERIZATION OF BST CERAMICS OBTAINED BY
HYDROTHERMALLY ASSISTED COMPLEX
POLYMERIZATION METHOD**

Jovana Ćirković, Tatjana Srećković, Katarina Vojisavljević,
Zorica Branković, Goran Branković

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Barium strontium titanate powder $Ba_{0.8}Sr_{0.2}TiO_3$ (BST) has been obtained by hydrothermal treatment of precursor solution containing titanium citrate, previously prepared by complex polymerization method, and barium and strontium acetates. The powders were calcined at 700°C, pressed into pellets and further sintered at 1280°C using different times (from 1 to 32 h). The phase compositions of sintered samples were followed using X-ray diffractometry and EDS analysis. Microstructural properties were investigated using scanning electron microscopy. It was found that BST sintered samples contained a two-phase structure. Sintered samples underwent an abnormal grain growth, whereby some grains grow faster than the other due to the presence of two-phase structure.

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**FUNCTIONALIZATION OF THE TITANATE NANOTUBES
WITH A SILANE COUPLING AGENT**

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In order to develop new nanosized filler compatible with the thermoplastic polymer Nylon-11, trititanate nanotubes (TTNTs) were synthesized by standard alkaline hydrothermal treatment of a TiO_2 anatase powder in 10 M NaOH at 120 °C for 24 h. After the synthesis, the as-obtained nanopowder was washed differently (either with water or HCl), in order to prepare TTNTs with high and low sodium contents. Chemical functionalization of TTNTs was performed with 3-aminopropyltriethoxysilane (APTES) coupling agent using two different reaction