

The Serbian Society for Ceramic Materials
Institute for Multidisciplinary Research (IMSI), University of Belgrade
Institute of Physics, University of Belgrade
Center of Excellence for the Synthesis, Processing and Characterization of
Materials for use in Extreme Conditions "CEXTREME LAB" - Institute of
Nuclear Sciences "Vinča", University of Belgrade
Faculty of Mechanical Engineering, University of Belgrade
Center of Excellence for Green Technologies, Institute for Multidisciplinary
Research, University of Belgrade
Faculty of Technology and Metallurgy, University of Belgrade

PROGRAMME and the BOOK of ABSTRACTS

6CSCS-2022

6th Conference of
the Serbian Society for Ceramic Materials
June 28-29. 2022. Belgrade Serbia

Edited by:
Branko Matović
Aleksandra Dapčević
Vladimir V. Srdić

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materials, due to the differences in phasic composition, solubility and mechanical properties.

O-3

INFLUENCE OF Yb³⁺ CONCENTRATION ON STRUCTURAL AND LUMINESCENT PROPERTIES OF Tm³⁺ DOPED SrGd₂O₄

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Here, samples of SrGd₂O₄ doped with different concentration of Yb³⁺ (2, 4, 6 at.%) ions and constant concentration of Tm³⁺ (1 at.%) were prepared. For preparation of samples, combustion method assisted with glycine as a fuel and citric acid as a chelator was chosen. All samples were heated in the furnace at 500 °C for 1.5 h and additionally thermally treated for 2.5 h at 1000 °C. X-ray diffraction (XRD) revealed that all peaks are assigned to the pure orthorhombic lattice of SrGd₂O₄, space group *Pnma* (JCPDS Card No.:01-072-6387). Field emission scanning electron microscopy (FE-SEM) showed agglomerated spherical particles with size around 150 nm. Energy dispersive spectroscopy confirmed uniform distribution of constitutive elements through the samples. Up-conversion emission properties were evaluated from photoluminescent emission spectra and intensity dependence on excitation power after excitation at 980 nm. Dominant blue emission with appropriate transition ¹G₄ → ³H₆ is detected in all samples, for which three photons are required.