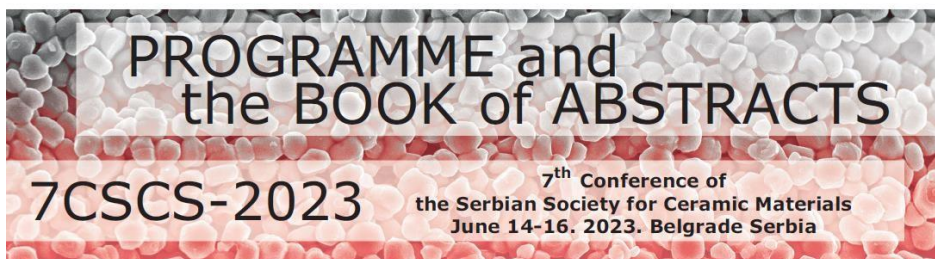


The Serbian Society for Ceramic Materials
Institute for Multidisciplinary Research (IMSI), University of Belgrade
Institute of Physics, University of Belgrade
Center of Excellence for the Synthesis, Processing and Characterization of
Materials for use in Extreme Conditions "CEXTREME LAB" - Institute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



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Branko Matović
Jelena Maletaškić
Vladimir V. Srdić

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**7th Conference of The Serbian Society for
Ceramic Materials**

June 14-16, 2023
Belgrade, Serbia
7CSCS-2023

Edited by:
Branko Matović
Jelena Maletaškić
Vladimir V. Srdić

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SYNTHESIS AND CHARACTERIZATION OF REINFORCED ALUMINA COMPOSITES

J. Maletaškić, A. Luković, J. Erčić, E. Nidžović, M. Prekajski-Djordjević,
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Alumina composite was prepared via simple route. Alumina ceramics that resembles seashells are made of aligned micron-sized monocrystalline platelets joined together by silica secondary phase. SiO₂ was added to improve mechanical properties of composite. The evolution of the phase composition during thermal treatment was investigated by X-ray powder diffraction (XRPD) and thermal analyses. Effect of sintering temperature on mechanical properties, due to the increase of sintering temperature that can produce a higher strength and higher density, was also investigated. SEM observation of composite was also included. Ceramics composites such as this are good candidates for high temperature oxidation atmosphere applications, as they have excellent mechanical and other performance requirements.

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ALUMINUM-BASED COMPOSITES REINFORCED WITH CERAMIC FIBERS

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The modern transportation industry is in high demand for lightweight structural components with exceptional mechanical properties that can be obtained by a cost-effective production process. These specific industrial requirements can be achieved through the attainment of innovative aluminum matrix composites (AMCs) with improved characteristics in accordance with the circular economy. Solid-state recycling is considered a good solution to attain the above-mentioned industrial