



**Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION IX
New Frontiers in Multifunctional Material Science and Processing**

**Serbian Ceramic Society
Institute of Technical Sciences of SASA
Institute for Testing of Materials
Institute of Chemistry Technology and Metallurgy
Institute for Technology of Nuclear and Other Raw Mineral Materials**

PROGRAM AND THE BOOK OF ABSTRACTS

**Serbian Academy of Sciences and Arts, Knez Mihailova 35
Serbia, Belgrade, 20-21. September 2021.**

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that compositions remained unaltered, which clearly indicates to their stability and reliability that is required for their application as sealants for IT-SOFC components. In addition, this research shows the possibility of forming a cost-effective, environmentally-friendly and high-efficient sealant for application in IT-SOFC by incorporating waste materials in its composition, without significant negative effects on its performance and main properties.

P

Synthesis of spherical SBA-15 silica particles without the use of additional cosurfactant

Maja Kokunešoski¹, Zvezdana Bašćarević², Svetlana Ilić¹, Ana Valenta-Šobot¹, Ana Grce¹,
Milica Pošarc-Marković¹, Aleksandra Šaponjić¹

¹Vinča Institute of Nuclear sciences, Institute of National Importance for the Republic of Serbia, University of Belgrade, Mike Petrovića Alasa 12-14, Vinca, 11000 Belgrade, Serbia

²Institute for Multidisciplinary Research, University of Belgrade, Kneza Višeslava 1, 11030 Beograd, Srbija

The synthesis of SBA-15 material with spherical particles is performed by the template method by using only a surfactant Pluronic P₁₂₃ under acidic conditions. In the synthesis of SBA-15 with spherical particles, an HCl solution was used after specialised chemical treatment of clay purification. The dominant presence of the spheres with diameters up to around 2 μm was confirmed by the scanning electron microscopy (SEM) method. In contrast, the Energy-dispersive X-ray spectroscopy (EDS) confirmed that the spheres consisted only of SiO₂ in composition. In addition to the methods mentioned above, X-ray diffraction (XRD), and Fourier-transform infrared spectroscopy (FTIR) methods were used to characterise SBA-15 materials. Application of HCl solution after chemical treatment of clay purification represents the application of technology in the synthesis of spherical SBA-15.