



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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THE CLAY MINERALS FROM GREDA DEPOSIT

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The term "clay" refers to natural materials composed of fine minerals, which in their composition contain water molecules, which give it the property of plasticity, which is lost by drying processes. The basic physical and chemical characteristics of clay are low permeability, the possibility of cation exchange, thermal structural stability, swelling processes. These characteristic properties appear as a consequence of the crystal structure, in which the layers of SiO₄, tetrahedra, extend infinitely in two dimensions. In this paper are presented the basic structural and crystallochemical properties of clay from Greda deposit.

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Preparation and Characterization Of Active Carbon Microspheres Obtained From Fructose And Adsorption Application

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A carbon-rich solid product has been synthesized by hydrothermal treatment from fructose with phosphoric acid (H₃PO₄) at temperature of 250°C and pH value of 0.65. The concentration of the precursor was constant, i.e. 2M of fructose in form of aqueous solution. The formation of the carbon-rich solid material through the hydrothermal carbonization of fructose is the consequence of dehydration reactions. Obtained carbon material is made of spherical micrometer-sized particles with the diameter in the 4-7 μm. The structure and surface chemical properties of obtained material were characterized by scanning electron microscopy (SEM), Fourier-transform infrared (FTIR) spectra. Investigation of surface area was determined by gravimetric McBain method where adsorption and desorption isotherms of N₂ were measured on carbon material at -196 °C. Adsorption of Methylene Blue (MB) onto prepared carbon material were conducted by changing concentration of MB from 200-500 mg/dm³ from aqueous solutions of investigated dye. Kinetic results were determined by a pseudo second-order equation.