Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION

Serbian Ceramic Society
Institute of Technical Sciences of SASA

PROGRAM AND THE BOOK OF ABSTRACTS

Serbian Academy of Sciences and Arts, Knez Mihailova 35
May 10-11th, 2012, Belgrade, Serbia

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ADVANCED CERAMICS AND APPLICATION

Organized by
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&
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Dear Colleagues and friends,

We have great pleasure to welcome you to the Advanced Ceramic and Application Conference organized by the Serbian Ceramic Society in cooperation with the Institute of Technical Sciences of SASA.

This conference brings together researchers from academia and industry to present the latest advances in synthesis and characterization in the field on new ceramic structures. Chosen conference topics open the new frontiers in designing of advanced ceramic materials, since they cover fundamental theoretical research, modeling and simulation, controlled nanostructured materials synthesis and optimization of the consolidation process, which all together should provide device miniaturization and better perspective in energy-materials-information integration process.

General conference topics include:

- Basic Ceramic Science
- Multifunctional Ceramics
- Nanostructural Ceramics
- Bio- and Opto- Ceramics
- Constructive and Eco- Ceramics
- Magnetic and Amorphous Materials
- Composite Materials, Catalysis and Electrocatalysis
- Artistic Ceramic and Design

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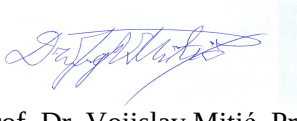

Prof. Dr. Vojislav Mitić, President
Serbian Ceramic Society
World Academy Ceramics' Member

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Amino-modified Poly(glycidyl methacrylate) Based Nanocomposites: Textural Properties and Application

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Crosslinked macroporous poly(glycidyl methacrylate-*co*-ethylene glycol dimethacrylate) and copolymer nanocomposite with acid modified bentonite clay were prepared by radical suspension copolymerization and functionalized with diethylene triamine. Both samples were characterized by elemental and textural analysis (mercury intrusion porosimetry). The incorporation of the acid modified clay into the copolymer matrix lead to the increase of porosity, total pore volume and particularly specific surface area, while the process only slightly altered the acid–base properties. The obtained amino-functionalized nanocomposite was tested as 4-nitrophenol (4-NP) sorbent. The influence of pH, sorption time and initial 4-nitrophenol (4-NP) concentration on sorption efficiency of synthesized samples was studied. Since the pH_{PZC} of the functionalized copolymer and the functionalized composite was the same, and the amount of amino groups was slightly higher for the copolymer, the enhanced sorption properties can be ascribed to improved textural properties of composite, particularly the increased specific surface area. The isotherm data were best fitted with Langmuir model, while the sorption dynamics obeyed the pseudo-second-order kinetic model. The results in this study show great potential for designing functionalized macroporous glycidyl methacrylate copolymers and their acid modified bentonite composites as promising sorbents in 4-nitrophenol removal from wastewaters.

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