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
Serbian Ceramic Society
&
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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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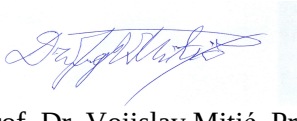

Prof. Dr. Vojislav Mitić, President
Serbian Ceramic Society
World Academy Ceramics' Member

S4.5

Structure–property Relationships in Poly(glycidyl methacrylate-*co*-ethylene glycol dimethacrylate)/clay nanocomposites

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In situ polymerization was used to synthesize poly(glycidyl methacrylate-*co*-ethylene glycol dimethacrylate)/bentonite nanocomposites, by adding various amounts of raw or acid modified bentonite clays of different origin (Bogovina, Serbia and Wyoming, USA) in previously optimized reaction mixture for synthesis of macroporous crosslinked poly(glycidyl methacrylate-*co*-ethylene glycol dimethacrylate) copolymer. Samples were characterized by Attenuated Total Reflectance (ATR) Infrared (IR) spectroscopy, Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), thermogravimetric (TG) and elemental and textural analysis (mercury intrusion porosimetry and low temperature physisorption of nitrogen). The FTIR and TEM confirmed incorporation of acid modified bentoniteinto the copolymer structure and formation of nanocomposites in form of both intercalated and exfoliated nanocomposites. Significant increase of specific surface area, pore volume and porosity of nanocomposites in comparison to copolymer were obtained. The obtained composites retained their macroporosity and might be used in all applications that involve macroporous copolymers and, due to the altered thermal properties, their application may be extended.

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