



**Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION VII
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, 17-19. September 2018.**

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Book title:

Serbian Ceramic Society Conference -
ADVANCED CERAMICS AND APPLICATION VII
Program and the Book of Abstracts

Publisher:

Serbian Ceramic Society, Belgrade, 2018.

Editors:

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Dr Lidija Mančić
Dr Nina Obradović

Technical Editors:

Ivana Dinić
Marina Vuković

Printing:

Serbian Ceramic Society, Belgrade, 2018.

Edition:

130 copies

CIP - Каталогизacija у публикацији - Народна библиотека Србије, Београд
666.3/.7(048)
66.017/.018(048)

SRPSKO keramičko društvo. Conference Advanced Ceramics and Application : New Frontiers in Multifunctional Material Science and Processing (7 ; 2018; Beograd)

Program ; and the Book of Abstracts / Serbian Ceramic Society

Conference Advanced Ceramics and Application VII : New Frontiers in Multifunctional Material Science and Processing, Serbia, Belgrade, 17-19. September 2018 ; [organized by] Serbian Ceramic Society ... [et al.] ; [editors Vojislav Mitić, Lidija Mančić, Nina Obradović]. - Belgrade : Serbian Ceramic Society, 2018 (Belgrade : Serbian Ceramic Society). - 106 str. : ilustr. ; 30 cm

Tiraž 130.

ISBN 978-86-915627-6-2

a) Керамика - Апстракти b) Наука о материјалима - Апстракти c) Наноматеријали - Апстракти

COBISS.SR-ID 267569676



Dear Colleagues,

We have great pleasure to welcome you to the Advanced Ceramic and Application Conference VII organized by the Serbian Ceramic Society in cooperation with the Institute for Testing of Materials, Institute of Technical Sciences of SASA, Institute of Chemistry Technology and Metallurgy and Institute for Technology of Nuclear and Other Raw Mineral Materials.

Advanced Ceramics today include many old-known ceramic materials produced through newly available processing techniques as well as broad range of the innovative compounds and composites, particularly with plastics and metals. Such developed new materials with improved performances already bring a new quality in the everyday life. The chosen Conference topics cover contributions from a fundamental theoretical research in advanced ceramics, computer-aided design and modeling of a new ceramics products, manufacturing of nanoceramic devices, developing of multifunctional ceramic processing routes, etc. Traditionally, ACA Conferences gather leading researchers, engineers, specialist, professors and PhD students trying to emphasize the key achievements which will enable the wide spread use of the advanced ceramics products in High-Tech industry, renewable energy utilization, environmental efficiency, security, space technology, cultural heritage, etc.

Serbian Ceramic Society has been initiated in 1995/1996 and fully registered in 1997 as Yugoslav Ceramic Society, being strongly supported by American Ceramic Society. Since 2009, it has continued as Serbian Ceramic Society in accordance to the Serbian law procedure. Serbian Ceramic Society is almost the only one Ceramic Society in the South-East Europe, with members from more than 20 Institutes and Universities, active in 16 sessions, by program and the frames which are defined by the American Ceramic Society activities.

This year, the conference is dedicated to the memory of Academician Momčilo M. Ristić (1929-2018), Honorary President of the Serbian Ceramic Society and founder of Material Science in our country.

Prof. Dr Vojislav Mitić,
President of the Serbian Ceramic Society
World Academy Ceramics Member
European Academy of Sciences & Arts Member

Prof. Dr Olivera Milošević,
President of the General Assembly of the Serbian
Ceramic Society
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Conference Topics

Basic Ceramic Science & Sintering – *in memoriam Momčilo M.Ristić, academician*

Optical, Glass & Electro Ceramics

Nano & Bio Ceramics

Modeling & Simulation

Advanced Ceramics

Heritage, Arts & Design

Guide on Science Writing

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Exchange office „Hulk“, LMB Soft, Niš (Serbia), SCAN doo. Preddvor (Slovenia),
Voda Vrnjci (Serbia) and Turistička organizacija Beograd

Acknowledgements:

The Conference Organizers are grateful to the
Ministry of Education and Science of the Republic of Serbia
for financial support, as well as to the
Serbian Academy of Sciences and Arts,
European Academy of Sciences and Arts,
American Ceramics Society,
Institute of Technical Sciences of SASA,
Archeological Institute of SASA,
Institute of Physics UB,
Vinča Institute of Nuclear Sciences - Laboratory of Physics (010),
Electrical Engineering Institute Nikola Tesla
High School-Academy for Arts and Conservation.

conjugated nanomaterials. This strategy has great potential in biomedical applications and drug development.

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Alumina-Ni composites obtained by sol-gel method as adsorbents of azo dyes

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The disposal of waters contaminated with azo dyes into natural aquatic recipients can be regarded as very harmful. Since dyes have a high degree of chemical and photolytic stability adsorption can be regarded as appropriate method for dye removal. Porous alumina composites are well known as efficient and inexpensive adsorbents of different pollutants. In this paper, the alumina powders, pure and doped with 40 mass % nickel, were synthesized by sol-gel method and calcined at 500 °C, 900 °C and 1100 °C in order to obtain mesoporous structures with a high specific surface area, well adaptable to adsorption application. The obtained composites were tested as adsorbents of textile azo dye Acid Yellow 99 (AY99). The adsorption was monitored with respect to contact time, using AY99 initial concentrations of 50 mg dm⁻³, mass of adsorbent $m_{\text{ads}}=50$ mg and volume of dye solution $V=50$ cm³. The adsorption study showed that the adsorption capacity of samples decreased with temperature of calcination and nickel content. The study confirmed the feasibility of using alumina composites as adsorbents for the azo dyes.

Acknowledgements: This work was supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia (Projects III 45001 and ON 172015).

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Preparation and optical properties of ZnS/Poly (methyl methacrylate) nanocomposite

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Nanocomposites derived from nano-scale inorganic/organic particles that are dispersed in a polymer matrix homogeneously have attracted considerable attention [1-3]. The diverse properties of numerous polymers to choose from are well documented, including both plastics and elastomers, which are the main two types of polymers. Organic/inorganic hybrid materials offer highly interesting and versatile applications when incorporated with a polymer. Among the inorganic/polymer nanocomposites, metal sulfides/polymer nanocomposites have been researched