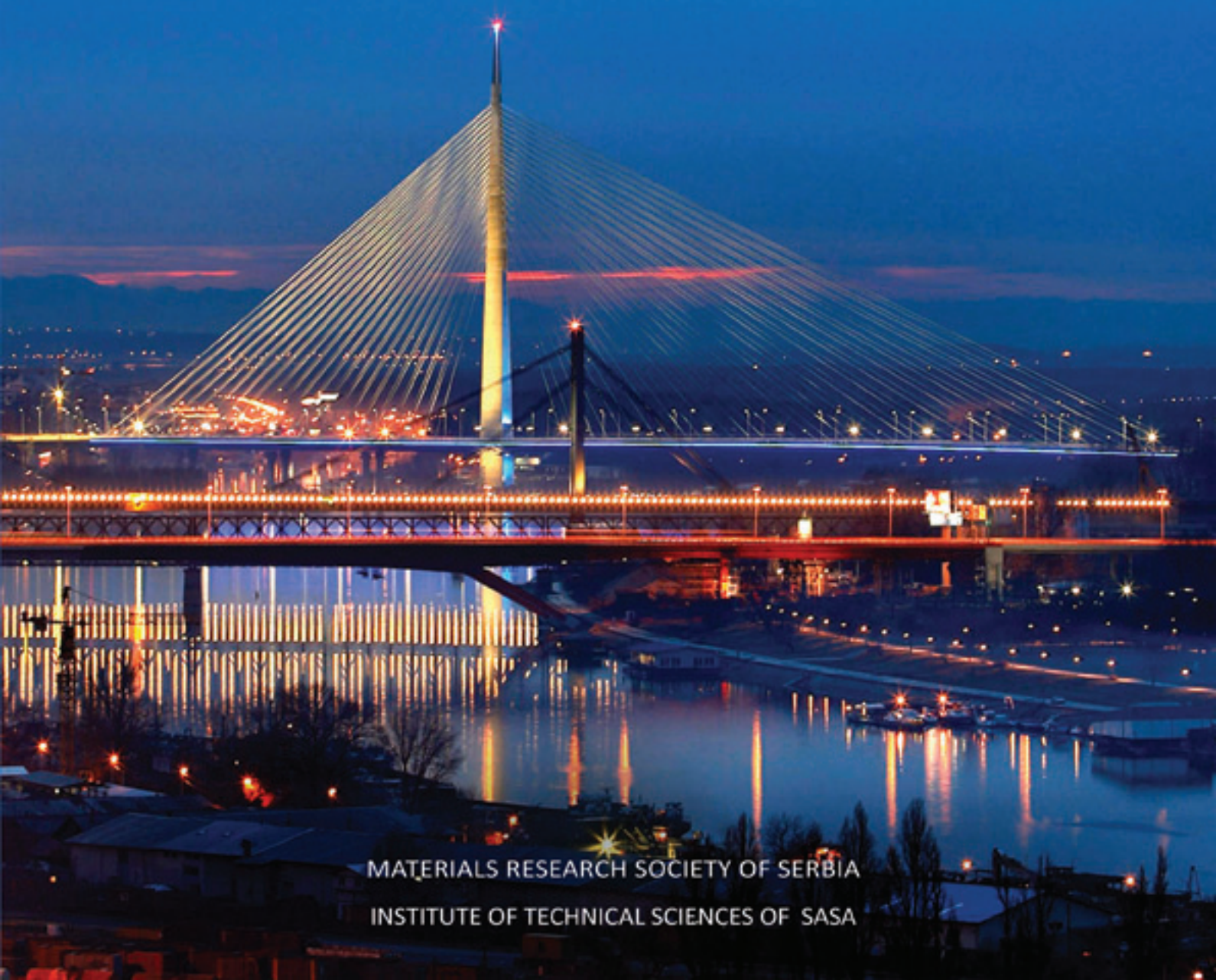


TWELFTH YOUNG RESEARCHERS' CONFERENCE MATERIALS SCIENCE AND ENGINEERING

December 11-13, 2013, Belgrade, Serbia
Serbian Academy of Sciences and Arts, Knez Mihailova 36

PROGRAM AND THE BOOK OF ABSTRACTS



MATERIALS RESEARCH SOCIETY OF SERBIA
INSTITUTE OF TECHNICAL SCIENCES OF SASA

Twelfth Young Researchers' Conference
Materials Science and Engineering

December 11-13, 2013, Belgrade, Serbia
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Program and the Book of Abstracts

Materials Research Society of Serbia
Institute of Technical Sciences of SASA

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Dr. Smilja Marković

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Aim of the Conference

Main aim of the conference is to enable young researchers (post-graduate, master or doctoral student, or a PhD holder younger than 35) working in the field of materials science and engineering, to meet their colleagues and exchange experiences about their research.

Topics

Nanostructured materials
New synthesis and processing methods
Materials for high-technology applications
Biomaterials

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Results of the Conference

Beside printed «Program and the Book of Abstracts», which is disseminated to all conference participants, selected and awarded peer-reviewed papers will be published in journals “Tehnika – Novi Materijali” and “Processing and Application of Ceramics“. The best presented papers, suggested by Session Chairpersons and selected by Awards Committee, will be proclaimed at the Closing Ceremony.

XI/1

Novel membrane adsorbers incorporating cross-linked poly(glycidyl methacrylate-co-2-acrylamido-2-methylpropane sulfonic acid)

Tanja Tomković¹, Filip Radovanović¹, Aleksandra Nastasović¹,
Dana Vasiljević-Radović¹, Antonije Onjia²

¹University of Belgrade, Institute for Chemistry, Technology and Metallurgy, Njegoševa 12, Belgrade, ²University of Belgrade, Vinča Institute of Nuclear Sciences, P.O. Box 522, Belgrade, Serbia

Membrane adsorption has started to replace fixed bed chromatography for separation and purification of small quantities of valuable species in biotechnology and related areas. Membrane functionalization is usually required to introduce affinity groups for these applications. In this work novel membranes adsorbers were prepared by combining liquid phase inversion with photopolymerization of the solution comprising polyethersulfone, glycidyl methacrylate, sodium salt of 2-acrylamido-2-methylpropane sulfonic acid and a cross-linker. Membranes were characterized using SEM, AFM, FTIR, titration and water permeability measurements. Dynamic adsorption of Toluidine blue as a model dye was used to demonstrate suitability of these novel membranes for membrane adsorption.

XI/2

Molybdenum sorption by porous copolymer

Bojana M. Ekmešić¹, Danijela D. Maksin², Jelena P. Marković²,
Z. M. Vuković³, Antonije E. Onjia², Aleksandra B. Nastasović¹

¹University of Belgrade, Institute of Chemistry Technology and Metallurgy, Department of Chemistry, Njegoševa 12, Belgrade, ²University of Belgrade, Vinča Institute of Nuclear Sciences, P.O. Box 522, Belgrade, ³University of Belgrade, Institute of Chemistry Technology and Metallurgy, Department of Catalysis and Chemical Engineering, Njegoševa 12, Belgrade

Although being essential for biological functions, molybdenum high concentrations (>5 ppm) in wastewater and groundwater cause an environmental problem, so its removal becomes greatly significant. In this study, Mo(VI) sorption ability of amino-functionalized macroporous copolymer (PGME-deta) from aqueous solutions was investigated. Batch Mo(VI) sorption was investigated by varying pH, initial concentration and temperature. The Mo(VI) ions concentration was monitored by inductively coupled plasma atomic emission spectroscopy (ICP-OES). Sorption kinetics data were fitted to seven chemical-reaction and particle-diffusion models. Thermodynamic parameters revealed spontaneous and endothermic nature of Mo(VI) sorption by PGME-deta. Best fit of equilibrium data was obtained for Langmuir isotherm.