Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION XI
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, 18-20. September 2023.

Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION XI
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, 18-20th September 2023.

Book title: Serbian Ceramic Society Conference - ADVANCED CERAMICS AND APPLICATION XI Program and the Book of Abstracts

Publisher:
Serbian Ceramic Society

Editors:
Dr. Nina Obradović
Dr. Lidija Mančić

Technical Editors:
Dr. Adriana Peleš Tadić
Dr. Jelena Živojinović

Printing:
Serbian Ceramic Society, Belgrade, 2023.

Edition:
120 copies

CIP - Каталогизација 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 (11 ; 2023 ; Beograd)

Program ; and the Book of abstracts / Serbian Ceramic Society Conference Advanced Ceramics and Application XI New Frontiers in Multifunctional Material Science and Processing, Serbian Academy of Sciences and Art Serbia, Belgrade,18-20.September 2023. ; [editors Nina Obradović, Lidija Mančić]. - Belgrade : Serbian Ceramic Society, 2023 (Belgrade : Serbian Ceramic Society). - 90 str. : ilustr. ; 30 cm

Tiraž 120.

ISBN 978-86-905714-0-6

а) Керамика -- Апстракти б) Наука о материјалима -- Апстракти

COBISS.SR-ID 122849545

Conference Programme Chairs:
Dr. Nina Obradović SRB
Dr. Lidija Mančić SRB

Scientific Committee

Academician Antonije Đorđević
Academician Zoran Popović
Academician Velimir Radmilović
Dr. Nina Obradović
Dr. Lidija Mančić
Prof. Dr. Reuben Jin-Ru Hwu
Prof. Dr. Hans Fecht
Prof. Dr. Vladimir Pavlović
Prof. Dr. Bojan Marinković
Dr. Takashi Goto
Dr. Steven Tidrow
Dr. Snežana Pašalić
Dr. Nebojša Romčević
Dr. Zorica Lazarević
Dr. Aleksandra Milutinović–Nikolić
Dr. Predrag Banković
Dr. Zorica Mojović
Dr. Nataša Jović Jovičić
Dr. Smilja Marković
Prof. Dr. Branislav Vlahović
Prof. Dr. Stevo Najman
Dr. Sanja Stojanović
Prof. Dr. Nebojša Mitrović
Dr. Suzana Filipović
Dr. Darko Kosanović
Dr. Milena Rosić

Organizing Committee

Dr. Nina Obradović
Dr. Lidija Mančić
Academician Antonije Đorđević
Dr. Ivana Dinić
Dr. Marina Vuković
Dr. Suzana Filipović
Dr. Anja Terzić
Dr. Milica V. Vasić
Dr. Maja Pagnacco
Dr. Dalibor Marinković
Prof. Dr. Nebojša Mitrović
Prof. Dr. Vesna Paunović
Prof. Dr. Vera Petrović
Dr. Milica Marčeta Kaninski
Dr. Darko Kosanović
Dr. Jelena Vujančević
Dr. Jelena Živojinović
Dr. Adriana Peleš Tadić
Dr. Nebojša Potkonjak
Dr. Marko Perić
Dr. Magdalena Radović
Dr. Miloš Lazarević
Dr. Stanko Aleksić
M. Sci. Isaak Trajković

Sponsors:

Analysis - Lab equipment,
Turistička organizacija Beograda, Inovacioni centar Mašinskog fakulteta,
Institut za ispitivanje materijala,
Institut za tehnologiju nuklearnih i drugih mineralnih sirovina

P26

Ciprofloxacin adsorption onto Co/chitosan-derived carbon/smectite nanocomposite obtained by the hydrothermal synthesis

Gordana Stevanović, Nataša Jović-Jovičić, Sanja Marinović, Tihana Mudrinić, Zorica Mojović, Predrag Banković, Marija Ajduković

University of Belgrade – Institute of Chemistry, Technology and Metallurgy, Department of Catalysis and Chemical Engineering, Njegoševa 12, 11000 Belgrade, Republic of Serbia

Nowadays, environmental pollution caused by antibiotics attracts extensive attention. Adsorption has been successfully applied in the treatment of wastewater loaded by pharmaceutics, while diverse natural and eco-friendly materials have been recognized as promising adsorbents. In this work smectite clay from Bogovina (Serbia) and biopolymer chitosan (derived from waste of crustaceans) were used as eco-friendly starting materials for the adsorbent synthesis. The combination of transition metal, carbon materials, and clay minerals represents a useful way to develop functional nanocomposites with benefiting synergistic properties of all components.
Simple, one-step hydrothermal procedure conducted at 180 ℃ for 24h was applied for synthesis of cobalt/smectite/chitosan-derived carbon (H_Co/C-S) nanocomposite. The sample was characterized using XRPD, FTIR, and low-temperature N_2-physisorption analysis and tested as adsorbent of ciprofloxacin (CPX). The effects of temperature, initial pH, and CPX concentration on the adsorption process were investigated. The adsorption results were fitted by Langmuir, Freundlich, and Sips adsorption isotherms. Additionally, CPX adsorption was described by appropriate kinetics and thermodynamic parameters. It was found that temperature increase had the beneficial effect on CPX adsorption, while investigated adsorbent was efficient in a broad pH range (4-8). The H_Co/C-S adsorbent was found to be efficient in the removal of CPX antibiotic.
Acknowledgment:This work was financially supported by the Ministry of Science, technological Development and Innovation of the Republic of Serbia (Grant No. 451-03-47/2023-01/200026).

P27

Modelling of Ar^+ ions in CF_4 gas

Željka Nikitović, Zoran Raspopović

Institute of Physics, University of Belgrade, Pregrevica 118, 11080 Belgrade, Serbia

Understanding plasma distribution, characteristics and phenomena is important for the development and optimization of semiconductor device manufacturing plasma equipment, such as etching and deposition tools. For this reason, plasma simulation is currently being utilized at every stage of equipment design, development and improvement. The cross section sets obtained by applying Denpoh-Nanbu theory to Ar^+ on CF_4 collisions were found to be in general qualitative and in part quantitative agreement with data from the literature. The Monte Carlo technique was applied to perform calculations of transport parameters. Calculated cross sections can be used to obtain transport coefficients, specially mean energy, reduced mobility