

BOOK of ABSTRACTS

26th Congress of Chemists and Technologists of Macedonia

26th Конгрес
на Хемичари
и Технологи
на Македонија

20-23 9 2023 OHRID, RN MACEDONIA





Сојуз на хемичарите и технолозите на Македонија
Society of Chemists and Technologists of Macedonia

**26th Congress of
SCTM
with International Participation**

BOOK of ABSTRACTS

**20–23 September 2023
Metropol Lake Resort
Ohrid, N. Macedonia**



Сојуз на хемичарите и технолозите на Македонија

Society of Chemists and Technologists of Macedonia

20–23 September 2023, Metropol Lake Resort, Ohrid

SCIENTIFIC COMMITTEE MEMBERS

President

Prof. Dr. **Jadranka Blazhevska Gilev**, Faculty of Technology and Metallurgy, Ss. Cyril and Methodius University in Skopje, N. Macedonia

Members:

Prof. Dr. **Trajče Stafilov**, Institute of Chemistry, Faculty of Natural Sciences and Mathematics, Ss. Cyril and Methodius University in Skopje, N. Macedonia

Prof. Dr. **Viktor Stefov**, Institute of Chemistry, Faculty of Natural Sciences and Mathematics, Ss. Cyril and Methodius University in Skopje, N. Macedonia

Prof. Dr. **Blažo Boev**, Faculty of Natural and Technical Sciences, Goce Delčev University, Štip, N. Macedonia

Prof. Dr. **Panče Naumov**, Division of Science and Mathematics, New York University (NYU) Abu Dhabi

Prof. Dr. **Radmila Tomovska**, POLYMAT Institute, University of the Basque Country, San Sebastian, Spain

Prof. Dr. **Vesna Rafajlovska**, Faculty of Technology and Metallurgy, Ss. Cyril and Methodius University in Skopje, N. Macedonia

Prof. Dr. **Emilija Fidančevski**, Faculty of Technology and Metallurgy, Ss. Cyril and Methodius University in Skopje, N. Macedonia

ORGANIZING COMMITTEE MEMBERS

President

Prof. Dr. **Biljana Angjusheva**, Faculty of Technology and Metallurgy, Ss. Cyril and Methodius University in Skopje, N. Macedonia

Members:

Assoc. Prof. Dr. **Vojo Jovanov**, Faculty of Technology and Metallurgy, Ss. Cyril and Methodius University in Skopje, N. Macedonia

Iva Dimitrievska, MSc, Faculty of Technology and Metallurgy, Ss. Cyril and Methodius University in Skopje, N. Macedonia

Marija Prosheva, MSc, Faculty of Technology and Metallurgy, Ss. Cyril and Methodius University in Skopje, N. Macedonia

Ivona Sofronievska, MSc, Institute of Chemistry, Faculty of Natural Sciences and Mathematics, Ss. Cyril and Methodius University in Skopje, N. Macedonia

Marinela Cvetanoska, MSc, Institute of Chemistry, Faculty of Natural Sciences and Mathematics, Ss. Cyril and Methodius University in Skopje, N. Macedonia

COORGANIZERS:

**Ministry of Education and Science of N.
Macedonia**



**РЕПУБЛИКА СЕВЕРНА МАКЕДОНИЈА
МИНИСТЕРСТВО ЗА ОБРАЗОВАНИЕ И НАУКА**

Ss. Cyril and Methodius University in Skopje



The 26th Congress of SCTM is a

 **EuChemS**
European Chemical Society

recognized event.

n.b.: Manuscripts submitted to this Congress were not subjected to language or other corrections, except in some extreme cases. Authors are fully responsible for the content of their Abstracts.

Cover: Ladislav Cvetkovski, Faculty of Fine Arts, Ss. Cyril and Methodius University in Skopje, N. Macedonia

CIP - Каталогизација во публикација
Национална и универзитетска библиотека "Св. Климент Охридски", Скопје

54(062)(048.3)

66(062)(048.3)

CONGRESS of SCTM (26 ; 2023 ; Ohrid)

Book of abstracts / 26th Congress of SCTM with international participation 20–23 September 2023 Metropol Lake Resort Ohrid, R. Macedonia. - Skopje : Society of chemists and technologists of Macedonia, 2023. - 231 стр. : граф.прикази ; 21 см

Регистар

ISBN 978-9989-760-19-8

а) Хемија -- Собири -- Апстракти б) Технологија -- Собири -- Апстракти
COBISS.MK-ID 61330181

POL P-5	<u>T. Skalar</u> , P. Štukovnik, M. Marinšek Characterization of the Thermal Behaviour of a Paraffin-based Phase Change Material	167
POL P-6	<u>Škugor Rončević</u> , B.-M. Kukovec, M. Buzuk, M. Buljac, N. Vladislavić and J. Dugeč An Electrochemical Dopamine Sensor Based on a Cobalt(II) Coordination Polymer, {[Co(1,2-Bpe)₂(H₂O)₂]²⁺]_N-Modified Electrode	168
POL P-7	<u>S. Maletić</u> , D.D. Cerović, I. Petronijević, M. Milić and N. Jović Orsini Interfacial Polarization and Dielectric Properties of Epoxy/Graphite Flakes Composites	169
POL P-8	<u>P. Miladinova</u> , and P. Najdenova-Marinova The Synthesis and Photostability of Some New 1,8-Naphthalimide Derivative for Fluorescent Polymers	170
POL P-9	<u>K. Młynarczyk</u> , B. Podkościelna, M. Jaszek Study of the Structure and Antimicrobial Properties of Composites based on (met)acrylates	171
POL P-10	<u>M. Prosheva</u> , A. Toteska and J. Blazevska Gilev Synthesis of Lignin-Based Polymer Coatings by Miniemulsion Polymerization	172
POL P-11	<u>M. Prosheva</u> , B. Ozmen-Monkul, G. Gumus, D. K. Taskin, R. Tomovska, and J. Blazevska Gilev Determination of the Optical Band Gap Energies of rGO/Metal Phthalocyanine/Polymer Nanocomposites	173
POL P-12	<u>M. Prosheva</u> , M. Sencheva Petrevska and V. Dimova Prediction of the Refractive Index of Polymers Using QSAR	174
POL P-13	<u>M. Kubin</u> and A. Bužarovska Nanocomposite PVDF/ZnO Piezoelectric Foams	175
POL P-14	<u>I. Stefanović</u> , E. Džunuzović, A. Dapčević, B. Marković, T. Tadić, S. Bulatović, and J. Džunuzović Viscoelastic Properties of Polycaprolactone Based Polyurethane Networks	176
POL P-15	<u>B. Marković</u> , I. Stefanović, T. Tadić, Z. Sandić, S. Bulatović, A. Nastasović and A. Onjia Kinetic and Isotherm Non-Linear Study of Cr(VI) Sorption onto Amino-Modified Macroporousgma Based Copolymer	177
POL P-16	<u>T. Tadić</u> , B. Marković, V. Pavlović, S. Bulatović, A. Nastasović, and A. Onjia Synthesis and Characterization of Magnetic Molecularly Imprinted Polymer for Aniline Recognition	178
POL P-17	<u>A. Puszka</u> , K. Mikon and J. Sikora Investigation of the Effect of Introducing Siloxane Groups into the Polymer Chain on Selected Properties of Polyurethane Materials	179
POL P-18	<u>M. Prosheva</u> , A. Toteska and J. Blazevska Gilev UV Protective Polymer Coatings Based on Lignin Filler	180

POL P-16

Synthesis and Characterization of Magnetic Molecularly Imprinted Polymer for Aniline Recognition

T. Tadić,^{a,*} B. Marković,^a V. Pavlović,^b S. Bulatović,^a A. Nastasović,^a and A. Onjia^c

^aUniversity of Belgrade, Institute of Chemistry, Technology and Metallurgy, Belgrade, Serbia

^bUniversity of Belgrade, Faculty of Agriculture, Belgrade, Serbia

^cUniversity of Belgrade, Faculty of Technology and Metallurgy, Belgrade, Serbia

*tamara.tadic@ihm.bg.ac.rs

Aniline, the main representative of aromatic amines, occurs in a large number of industries, such as the production of textiles, plastics, medicines, pesticides, rubber, and varnishes.¹ Due to practicality and efficiency, a molecularly imprinted polymers (MIPs) can be used as sorbents for removing aniline.² In this study, magnetic molecularly imprinted polymer was synthesized via suspension copolymerization while characterization was performed by various methods in order to obtain an efficient sorbent for the aniline removal from an aqueous solution. Fourier transform infrared spectroscopy (FT-IR) confirmed characteristic vibrational bands which suggested successful synthesis of MIP, nitrogen gas adsorption-desorption measurements as well as mercury porosimetry have shown that the most dominant pores were mesopores, while scanning electron microscopy with energy dispersive X-ray spectroscopy (SEM-EDX) confirmed a 3D spherical porous structure with all the expected elements.

Keywords: molecularly imprinted polymers; MIPs; aniline; aromatic amine; characterization

Acknowledgement: This research has been financially supported by the Ministry of Science, Technological Development and Innovation of Republic of Serbia (Contact No: 451-03-47/2023-01/200026 and 451-03-47/2023-01/200135 and 451-03-47/2023-01/200116).

References:

1. Anjalin, M.; Kanagathara, N.; Suganthi, B., A brief review on aniline and its derivatives, *Mater. Today*, **2020**, *33*, 4751–4755. DOI: 10.1016/j.matpr.2020.08.358
2. Tadić, T.; Marković, B.; Radulović, J.; Lukić, J.; Suručić, L.; Nastasović, A.; Onjia, A., A Core-Shell Amino-Functionalized Magnetic Molecularly Imprinted Polymer Based on Glycidyl Methacrylate for Dispersive Solid-Phase Microextraction of Aniline, *Sustainability*, **2022**, *14*(15), 9222. DOI: 10.3390/su14159222