

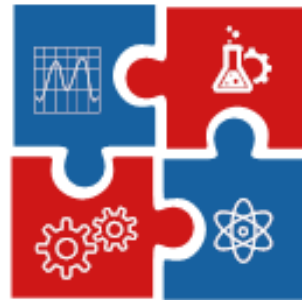
**Innovation Center of
Faculty of Mechanical
Engineering**



**Faculty of Mechanical
Engineering, University
of Belgrade**



**Center for Business
Trainings**



CNN TECH

**„International Conference of Experimental and
Numerical Investigations and New Technologies“**

Sponsored by:

**MINISTRY OF EDUCATION, SCIENCE AND TECHNICAL DEVELOPMENT
OF THE REPUBLIC OF SERBIA**

**Programme
and
The Book of Abstracts**

29 June – 02 July 2021

Zlatibor, Serbia

**„International Conference of Experimental and Numerical
Investigations and New Technologies“**

CNN TECH 2021

29 June – 02 July 2021

Hotel Mona, Miladina Pecinara 26, Zlatibor, Serbia

<http://cnntechno.com>

Programme and The Book of Abstracts

Organised by:

Innovation Center of Faculty of Mechanical Engineering
Faculty of Mechanical Engineering, University of Belgrade
Center for Business Trainings

Sponsored by:

Ministry of Education, Science and Technical development of the
Republic of Serbia

Title:	International Conference of Experimental and Numerical Investigations and New Technologies – CNN TECH 2021 PROGRAMME AND THE BOOK OF ABSTRACTS
Publisher:	Innovation Center of Faculty of Mechanical Engineering Kraljice Marije 16, 11120 Belgrade 35 tel: (+381 11) 3302-346, fax 3370364 e-mail: cnntechno@gmail.com web site: http://cnntechno.com , http://www.inovacionicentar.rs
Editors:	Dr Goran Mladenovic, Associate Professor Dr Martina Balac, Senior Scientific Researcher Dr Aleksandra Dragicevic, Scientific Researcher
Technical editor	Dr Goran Mladenovic, Associate Professor
Cover page:	Dr Goran Mladenovic, Associate Professor
Printed in:	Innovation Center of Faculty of Mechanical Engineering Kraljice Marije 16 11120 Belgrade 35 tel: (+381 11) 3302-346
Circulation:	100 copies. The end of printing: June 2021.

ISBN: 978-86-6060-077-8

Copyright© 2021 International Conference of Experimental and Numerical Investigations and New Technologies – **CNN TECH 2021**

“International Conference of Experimental and Numerical Investigations and New Technologies”

CNN TECH 2021

SCIENTIFIC COMMITTEE:

Milos Milosevic, Serbia (chairman)	Tozan Hakan, Turkey
Nenad Mitrovic, Serbia (co-chairman)	Nikola Momcilovic, Serbia
Aleksandar Sedmak, Serbia	Traussnigg Udo, Austria
Hloch Sergej, Slovakia	Gordana Bakic, Serbia
Drazan Kozak, Croatia	Katarina Colic, Serbia
Nenad Gubelj, Slovenia	Peter Horňak, Slovakia
Monka Peter, Slovakia	Róbert Huňady, Slovakia
Snezana Kirin, Serbia	Martin Hagara, Slovakia
Samardzic Ivan, Croatia	Jovan Tanaskovic, Serbia
Martina Balac, Serbia	Aleksa Milovanovic, Serbia
Mládková Ludmila, Czech Republic	Marija Durkovic, Serbia
Johanyák Zsolt Csaba, Hungary	Tsanka Dikova, Bulgaria
Igor Svetel, Serbia	Ján Danko, Slovakia
Aleksandra Mitrovic, Serbia	Ognjen Pekovic, Serbia
Valentin Birdeanu, Romania	Jelena Svorcan, Serbia
Danilo Nikolic, Montenegro	Suzana Filipovic, Serbia
Goran Mladenovic, Serbia	Darko Kosanovic, Serbia
Bajic Darko, Montenegro	Nebojsa Manic, Serbia
Tasko Manski, Srbija	Zorana Golubovic, Serbia
Luis Reis, Portugal	Vera Pavlovic, Serbia
Zarko Miskovic, Serbia	

ORGANIZING COMMITTEE:

Nenad Mitrovic (chairman)	Dragana Perovic
Milos Milosevic (co-chairman)	Aleksandra Joksimovic
Aleksandar Sedmak	Beti Kostadinovska Dimitrovska
Martina Balac	Tsanka Dikova
Vesna Miletic	Isaak Trajkovic
Igor Svetel	Toni Ivanov
Goran Mladenovic	Snezana Kirin
Aleksandra Mitrovic	Igor Stankovic
Aleksandra Dragicevic	Ivana Vasovic Maksimovic
Zarko Miskovic	Nina Obradovic
Katarina Colic	Andreja Stojic
Milan Travica	Ivana Jevtic



LEAD SORPTION FROM WASTEWATERS BY INVASIVE ACER NEGUNDO L. BIOMASS

I.Mikavica^{1*}, T.Sostaric¹, A.Antanaskovic¹, D.Randelovic¹, J.Petrovic¹, G.Jovanovic¹, Z.Lopicic¹

¹Institute for Technology of Nuclear and Other Mineral Raw Materials, Franchet d'Esperey Boulevard 86,
11000 Belgrade, Serbia

*Corresponding author e-mail: i.mikavica@itnms.ac.rs

Abstract

Due to the tendency of spreading out of its natural habitat and posing a menace to the surrounding species and biodiversity of the area under its influence, Acer negundo L. is known as the deciduous invasive tree species. Even though it is considered harmful for ecosystems, the biomass of this invasive species can be utilized for the purpose of wastewater remediation. A negundo leaf biomass (AN) was investigated for its adsorption potential to bind the lead ions from an aqueous solution. The lead was selected for the sorption experiments, as it is a well-known pollutant often found in various industrial effluents. Acer negundo L. leaves were collected from the protected area of the outstanding natural landscape "Veliko ratno Ostrvo" in Belgrade. Experiments were carried out in a batch system under specific operational conditions. Precise amounts of sorbent were added in the Pb (II) solutions of known initial concentrations, and the optimal operational parameters were further evaluated. Parameters such as lead concentration, pH value, contact time, and sorbent dosage were tested and optimized for increasing the adsorption performance of the obtained sorbent. Maximum Pb (II) uptake occurred at pH 3,5 and sorbent dosage of 2 g/L. Very fast adsorption was noticed by the kinetic study, with equilibrium state achieved after the initial 2 min of sorbent (A. negundo)-sorbate (1 mol/L Pb (II) solution) contact. Obtained data were subjected to equilibrium modeling by using Langmuir and Freundlich equations. Maximum adsorption capacity reached 101,5 mg/g. According to these results, sorbent prepared from Acer negundo leaf powder has an outstanding potential to be applied for lead removal from contaminated waters..

Keywords

Acer negundo L., sorption, lead, wastewater treatment

Acknowledgement

This work was supported by the Ministry of Education, Science and Technology Development of the Republic of Serbia (Contract number 451-03-9/2021-14/200023).