Innovation Center of Faculty of Mechanical Engineering

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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

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**Hotel Mona, Miladina Pecinara 26, Zlatibor, Serbia**

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# CNN TECH 2021

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We particularly wish to thank our sponsor, **The Ministry of Education, Science and Technological development**, Government of the Republic of Serbia.

We are also grateful to companies, **3D Republic**, **Shimatzu**, **Trokuttest, IMW Institute** and **Inter Cert** who have significantly contributed to the organization and realization of the conference.

# PREFACE

Dear Friends and Colleagues, Welcome to CNN Tech 2021 Conference and the fabulous mountain of Zlatibor!

With 90 papers (17 by international authors) and contributions by authors from 12 different countries, International Conference of Experimental and Numerical Investigations and New Technologies CNN Tech 2021 successfully sets the high level for the future conferences. Participation of a large number of domestic and international authors, as well as the diversity of topics, justifies our efforts to organize this conference and contribute to exchange of knowledge, research results and experience of industry experts, research institutions and faculties which all share a common interest in the field in experimental and numerical investigations.

This year CNN Tech 2021 focuses on the following topics:

- Mechanical Engineering,
- Engineering Materials,
- Chemical and Process Engineering,
- Experimental Techniques,
- Numerical Methods,
- New Technologies,
- Clear sky,
- Sustainable Design and New Technologies,
- Advanced Materials and Technology,
- Artificial intelligence and
- Student session.

Apart from a plenty of interesting lectures, the participants will have a chance to lighten up and communicate in friendly and relaxed settings.

Organizing committee of CNN Tech 2021 would like to express gratitude to Ministry of Education, Science and Technological development for financial support of the Conference.

On behalf of the Innovation center of Faculty of Mechanical Engineering, Faculty of Mechanical Engineering and Center for Business Trainings, we wish this to be splendid CNN Tech conference filled with many memorable moments.

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# ASSESSMENT OF SORPTION CAPABILITY OF ALGINATE IMMOBILIZED PEACH STONE PARTICLES FOR LEAD REMOVAL FROM WATER

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**Abstract**

*Fruit waste produced in huge quantities from the food and agriculture industries causes numerous difficulties in landfills due to their high biodegradability. The reuse of this waste is one of the future requirements for accomplish economic and environmental sustainability. Recent studies have shown that with appropriate modifications (chemical, physical or thermal) this material can be used to obtain a high-quality biosorbent to remove pollutants from wastewater. In this paper, peach stone (Prunus Persica L) particles (PS), as a part of fruit industrial organic waste, were immobilized in sodium alginate (PS-A) and utilized to remove lead from water solutions. The PS-A was characterized and analyzed by Scanning Electron Microscopy (SEM) and Fourier-transform infrared spectroscopy-attenuated total reflection (FTIR-ATR); contact pH and pHpzc were done as well. The effect of operating parameters such as contact time, mass to volume ratio, and pH on the performance of Pb removal in the batch reaction system was investigated. The experimental data were fitted by appropriate kinetic models. The results from this paper indicate that PS-A particles have the potential to be applied as an effective adsorbent of lead ions from an aqueous solution.*

**Keywords**

Water purification, lead, sorption, waste biomass, immobilisation

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