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**ELECTRONIC
ABSTRACT BOOK**

We thank the pharmaceutical, lab and biomedical industry partners from Serbia, the South East Europe region and worldwide for their recognition of the importance of the event, their participation and their support.

We hope that you enjoyed the content and all the other aspects of the Conference. If you missed anything, you can catch up by watching the recordings, presentations or have a detailed look at the posters.

We warmly wish you health, love and happiness and are looking forward to the new encounters, coming up next: FEMS 2023 Congress in Hamburg, FEMS 2024 Conference in Tallinn and numerous events of the SSM in Serbia and South East Europe region.

Sincerely



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**1776 / MICROBIOLOGICAL DEGRADATION AND TRANSFORMATION
OF COMPLEX REFINERY WASTE CAUSED BY VIOLENT
DESTRUCTION OF INSTALLATIONS****05****Keywords:** *bioremediation, toxic metals, total petroleum hydrocarbons***Tanja Jednak Berić** / nan, *Serbia***Tanja Jednak Berić** / Faculty Of Chemistry, University Of Belgrade, Belgrade, *Serbia***Mila Ilić** / University of Belgrade, Institute of Chemistry, Technology and Metallurgy, Belgrade, *Serbia***Jelena Avdalović** / University of Belgrade, Institute of Chemistry, Technology and Metallurgy, Belgrade, *Serbia***Jelena Milić** / University of Belgrade, Institute of Chemistry, Technology and Metallurgy, Belgrade, *Serbia***Branimir Jovančičević** / Faculty of Chemistry, University of Belgrade, Belgrade, *Serbia***Miroslav Vrvic** / BREM Group Ltd., Belgrade, *Serbia***Srdan Miletic** / University of Belgrade, Institute of Chemistry, Technology and Metallurgy, Belgrade, *Serbia***BACKGROUND**

In this study, we examined the model waste formed on the base of that in the NATO campaign in Serbia in 1999, where a refinery in Pančevo (RiP) city was bombed. A huge amount of material which contained crude oil and its derivatives, hydrodesulphurization catalyst (HDSc) that contained toxic metals molybdenum and cobalt was generated.

OBJECTIVES

The aim of this research was to investigate if a consortium of the microorganisms (CMOs) used in the process of bioremediation of soil contaminated with the sludge of the residual heavy fuel oil (SoRHFO) can change the chemical form of heavy metals from waste HDSc.

METHODS

We used the model mixture of pollutants that should fit the waste derived from RiP (SoRHFO and HDSc) and it also contained wood sawdust and river sand. Quantities of components of interest (total petroleum hydrocarbons–TPH, Co, and Mo) were taken to ensure that all of them were in the hazardous waste category.

The experiment was performed in polyvinyl-chloride containers (approx. 65 kg of the substrate) as pilot-plant and was treated with different conditions.

The CMOs was isolated from original refinery waste. Microorganisms were identified from them.

During the experiment, different parameters were analyzed.

RESULTS

It is noticed that the content of different fractions (hydroxides, sulfides, etc.) of examined toxic metals is transformed during time by microbiological interaction. Through the process, we observed a level of TPH degradation. High microbial activity is expressed in the transformation of the sand to clay, and the degradation of lignocellulose material.

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