



Federation of European
Microbiological Societies

FEMS Online Conference on Microbiology

28 – 31 October 2020

ELECTRONIC ABSTRACT BOOK

in association with
the Serbian Society
of Microbiology





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ANALYSIS OF MICROBIAL COMMUNITY IN MICROBIAL FUEL CELL SYSTEM

K. Joksimović¹, A. Žerađanin¹, G. Gojgić-Cvijović¹, N. Lugonja¹, J. Avdalović¹, S. Miletić¹, V. Beškoski²

- 1 Univeristy of Belgrade, Institute of Chemistry, Technology and Metallurgy, Belgrade, Serbia
- 2 University of Belgrade- Faculty of Chemistry, Belgrade, Serbia

Background

Microbial fuel cells (MFCs), although firstly described in the XIX century, are currently in the early stages of research and are emerging technology. MFCs are a type of biological fuel system that converts chemical energy into electricity using catalysts such as microorganisms. They are considered an eco-friendly method because, at the same time, they can remove pollutants and generate energy that can be used for various purposes.

Objectives

The aim of this study was to analyse microbial community present in a sample of river sediment used in MFC processes.

Methods

The following groups' of total microorganisms represented in the river sediment were determined: total chemoorganoheterotrophs (TC), total anaerobic chemoorganoheterotrophs (TAC), sulphate-reducing bacteria (SRB), yeast and molds (YM) and hydrocarbon degrading bacteria (HD).

Results

The most represented group of microorganisms present in the sediment belongs to aerobic bacteria. Their role is related to the processes that operate on the cathode part of the MFC system. Anaerobic and sulfate-reducing bacteria were present in slightly smaller numbers and processes of their metabolism were contributing to the functioning of the anode compartment. Knowing the complexity of the processes occurring in the MFCs, it is not surprising that various groups were present in significant number.



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