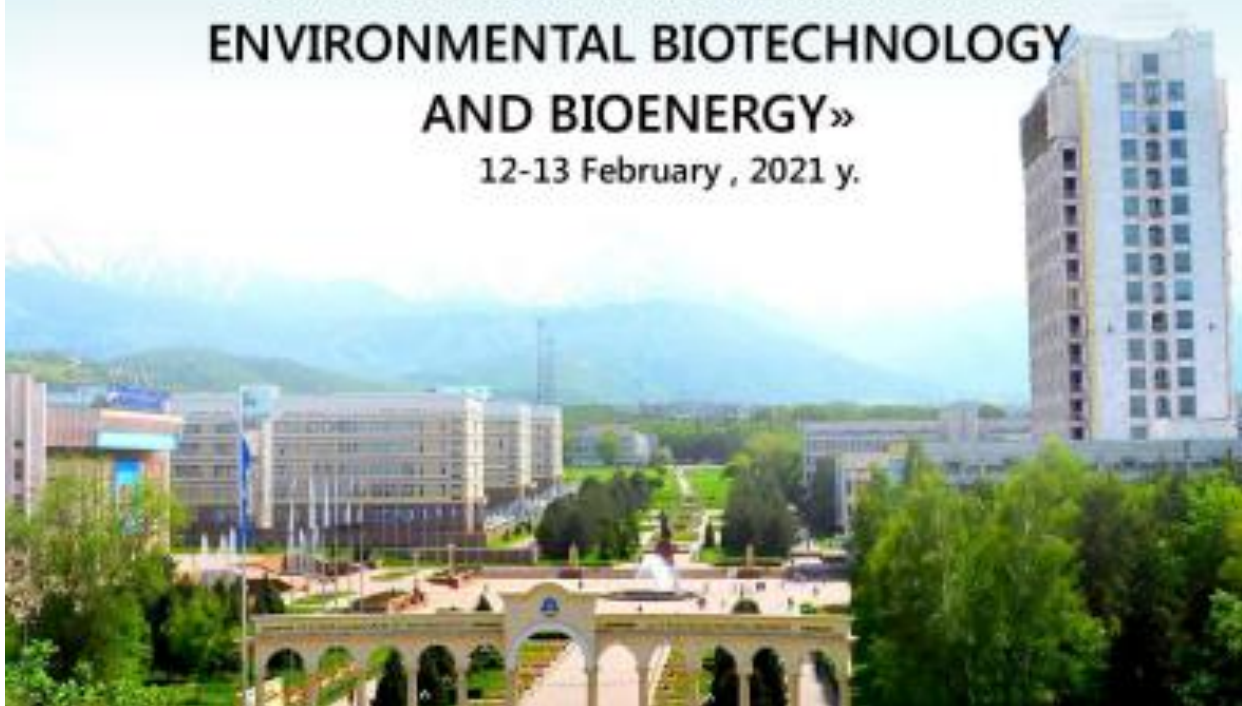


**AL-FARABI KAZAKH NATIONAL UNIVERSITY
FACULTY OF BIOLOGY AND BIOTECHNOLOGY**



MATERIALS
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«ASPECTS AND INNOVATIONS OF
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AND BIOENERGY»

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"Aspects and innovations of environmental biotechnology and bioenergy"

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MICROBIAL COMMUNITY STRUCTURE AND ITS FUNCTIONAL IMPLICATIONS IN COAL-CONTAMINATED SITES

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Abstract. Coal is one of the most abundant and cheapest fossil fuels in the world, but its traditional combustion leads to environmental pollution. In this regard, the problem of finding new biotechnological methods of coal processing is relevant. The microbial community plays a central role in regulating coal-contaminated sites. The main aim of this article is to provide a brief overview of the coal microbiology and its importance in coal processing. In this review, we highlighted the coal microbial community structure and functional diversity with emphasis on the current advances of plant growth-promoting bacteria (PGPB), together with coal-derived humic substances (HS), demonstrating their potential benefits. The number of studies reporting the combined application of PGPB and HS is surprisingly small. Therefore, this area is an open niche for research.