

OPINION

by **Assoc. Prof. Dr. Hyusein Yemendzhiev**

Regarding the materials submitted for participation in the competition for the academic position of **Associate Professor** in 4. Natural Sciences, Mathematics and Informatics, professional field 4.3 Biological Sciences, scientific discipline Microbiology, announced in the State Gazette, issue 21 of 14.03.2025, for the needs of the Department of Biotechnology, Laboratory of Bioremediation and Biofuels, Institute of Microbiology - Bulgarian Academy of Sciences

The sole candidate in the announced competition is Dr. Venelin Neychev Hubenov, who, since 2012, has consecutively held the academic positions of Assistant and Assistant Professor (for the past 4 years) in the Department for which needs this competition is announced. The set of materials submitted by the candidate fully complies with the requirements specified in the national and internal regulations regarding the development of the academic staff.

Dr. Venelin Hubenov is a specialist in Environmental Biotechnology, with academic qualifications obtained consecutively at the Burgas State University (Bachelor's) and the Faculty of Biology at Sofia University (Master's). In 2015, he defended his PhD in Microbiology with a topic focused on the anaerobic digestions of organic waste streams with production of biogas. The scientific output and overall professional activity provided by Dr. Hubenov for the purposes of this position competition demonstrates solid research experience in this particular scientific area, indicating a consistent and long-standing research interest, particularly in specific microbial degradation processes, their optimization and energy recovery. The main insights span several interrelated directions, characterized by interdisciplinarity, high scientific relevance, and practical applicability.

The key highlights are:

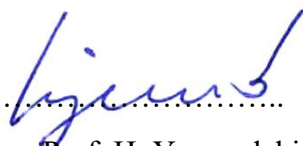
- Optimization and improvement of lignocellulosic waste per-treatment methods (such as ultrasound and microwaves) to increase biogas yield;
- Development of two-stage anaerobic cultivation systems with immobilized microbial cultures capable to recover higher levels of energy compared to traditional approaches;
- Metagenomic studies of microbial communities responsible for hydrogen and methane synthesis during anaerobic digestion process, with identification of key Bacteria and Archaea species involved in the utilization of various substrates (agricultural waste, algal biomass, food industry waste, etc.);

- Application of residual liquid fractions obtained after anaerobic digestion as a substrate component for algal biomass production;
- Evaluation of the anaerobic digestion as a potential part of the integrated waste and energy management in the context of piloted space missions.

Dr. Hubenov's scientific activity demonstrates interdisciplinarity and a focus on real-world challenges. His work makes a substantial contribution to the development of sustainable technologies in terms of the circular economy and bio-economy concepts.

After reviewing the submitted materials and documents, I believe the requirements for occupying the academic position of Associate Professor are met, and I give my positive assessment of the candidacy of Dr. Venelin Hubenov.

24.06.2025


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Assoc. Prof. H. Yemendzhiev