

SCIENTIFIC STATEMENT

By **Prof. Nelly Vladova Georgieva, PhD**, Department of Biotechnology, University of Chemical Technology and Metallurgy, Sofia

Regarding: The materials submitted for participation in a competition for the academic position „Associate Professor” at the Plovdiv University "Paisii Hilendarski", in Professional area 5. Technical sciences, scientific specialty 5.11 Biotechnology (Ecological and Agro-biotechnology), announced in SG ed. 92 on 18.11.2022 with the only candidate **Assist. Prof. Ivan Zlatkov Iliev, PhD**.

1. General presentation of the submitted documents

The present statement is prepared on the basis of an Order No RD-21-335/15.02.2023 of the Rector of the Plovdiv University "Paisii Hilendarski", and a decision of the scientific jury session of 28.02.2023, I have been appointed as a member of the scientific jury of a competition for the academic position of „Associate Professor” in the Area of higher education: 5. Technical sciences, Professional field: 5.11. Biotechnology (Ecological and Agro-biotechnology), announced for the needs of the Department of Biochemistry and Microbiology at BF of PU. Only one candidate, **assist. prof. Ivan Zlatkov Iliev** from PU "Paisii Hilendarski", submitted documents for participation in the competition.

The scientific interests and presented materials of the candidate are in the field of Biotechnology. The submitted documents are in compliance with the requirements of the Act for the Development of the Academic Staff in Republic of Bulgaria, the Regulations for its implementation, and the Regulations for the conditions and the order for acquiring scientific degrees and holding academic positions in the Plovdiv University "Paisii Hilendarski". They also meet the recommended criteria for academic position of „Associate Professor” in Professional area 5.11. Biotechnology. All submitted documents are structured in a way that fully reflects the scientific research activities of the applicant.

2. General characteristics of the candidate`s activity

Assessment of educational and pedagogical activity

Assist. prof. Ivan Iliev has declared an essential teaching activity in the Department of Biochemistry and Microbiology of PU. A report on his teaching duties from 2017 to 2022 is presented, which include 3112 hours of lectures and practical courses in the BSc program for the disciplines: Biology, Ecology, Ecology of biotechnological processes, Pharmaceutical

biotechnology, Molecular biology, Microbiology and virology, as well as from 2017 to 2022 for 420 hours of lectures and practical courses in the MSc program for the disciplines: Industrial microbiology, Medical biology, Reproductive biology. The Candidate participated in the development of 7 training programs for BSc and MSc, and also he has a research supervision of 8 successfully defended master students. Assist. prof. Ivan Iliev is a co-author of the textbook “Biotechnological processes and equipment” as well as practice book on Microbiology.

Evaluation of the scientific and scientific-applied activity of the candidates

Assist. Prof. Ivan Iliev has presented a total of 32 scientific papers, which do not repeat those for the acquisition of the “PhD” degree. The articles are published in refereed and indexed journals JCR-IF or SJR -25 papers, and 7 articles, published in journals without IF, one textbook, one monograph, one practice book. The scientific publications have been cited 134 times in referred journals, as well as 37 times in nonreferred journals. The results of the research activity were reported at many international and national scientific forums. The points of the scientific papers of the candidate for the contest are:

Indicators of A: Dissertation thesis 50 p. (min. 50)

Indicators of B: habilitation paper 100 p. (min. 100)

Indicators of G: scientific papers 270.7 p. (min. 200)

Indicators of D: cited papers 1414 p. (min. 50)

Indicators of E: projects 113.3 p. (*not required*)

The evaluation, according to the indicators, determined in the Law for the Development of the Academic Staff in the RB by which Assist. Prof. Ivan Iliev participates in the competition, convincingly shows that he meets and exceeds the requirements for position of “Associate Professor”.

Scientific contributions of the presented works of assist. prof. Ivan Iliev can be grouped into four main areas:

A) Assessment of the ecological status of surface waters. The water quality is assessed in 9 complex and economically important dams by physicochemical indicators. For the first time is proven applicability of microbiological indicators as quality elements in the environmental assessment of complex dams according to the abundance of the sanitary indicators total heterotrophic count *E.coli*, fecal coliforms, fecal streptococci. A comprehensive taxonomic analysis of bacterioplankton is performed for the first time by next-

generation sequencing of the 16S rRNA gene in 11 complex and economically important dams in Bulgaria and a similar dominant complex is found in all dams.

B) Molecular biological and physiological analyses of microbiomes in soils and sediments and assessment of bioremediation potential. The structure and metabolic profile of the rhizosphere microbiome of lettuce (*Lactuca sativa* L.) is analyzed for the first time. Using 16S rRNA is found that fertilization strategy has a direct relationship with bacterial taxonomic composition. It is established, that perennial grasses such as perennial ryegrass, crested wheatgrass, tall fescue, bird`s foot trefoil have potential for bioremediation of heavy metal contaminated urban soils. An extracellular protease-producing strain of *Bacillus thuringiensis* is selected. Two soil strains of *Pseudomonas fluorescens* with high production capacity of extracellular lipases are isolated and identified.

C) Development of technologies in the fisheries sector – fish farming technologies and survey of freshwater crayfish populations in Bulgaria and assessment of their economic potential.

D) Contributions in the field of microbial pathogenesis. The studied tobacco extracts demonstrated antimicrobial activity against gram-positive and gram-negative bacteria and yeasts. It is established necessity of constant updating of data on antibiotic resistance and virulence patterns of urogenital infections.

Assist. prof. Ivan Iliev actively participates in research projects – he has participated in 22 national projects funded by variety of sources, mainly by the NSF of the Ministry of Education and Science. He is also a member of Editorial boards of a Journal of BioScience and Biotechnology

3. Critical remarks and recommendations

I have no critical remarks about the materials presented by the applicant.

CONCLUSION

The documents and materials presented by Assis. Prof. Ivan Iliev meet all requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB), the Regulations for the Implementation of the ZRASRB, and the Regulations of PU "Paisii Hilendarski", as well as the Additional requirements for the academic position "Professor", adopted by decision of the Faculty Council in the Faculty of Biology at PU. For his participation in the competition, Assis. Prof. Ivan Iliev has submitted a sufficient number of research papers, other than the materials used in his PhD defence. The

quality of his research papers is undoubtedly very high and contain important fundamental and applied contributions, which have received international recognition through their publication in renowned journals and high citation rates. The researched problems are extremely relevant and will continue to be so in the future, as a large part of the theoretical developments have practical applicability, as well as being directly oriented to the academic work. The research and training qualifications characterise Assis. Prof. Ivan Iliev as a distinguished expert in the field of biotechnology, and the results achieved by him in the educational and research activities fully correspond to all the requirements for the academic position of "Associate Professor".

Based on the review of the presented research accomplishments, their international significance, the basic and applied contributions they contain, as well as the teaching and training activity of Assis. Prof. Ivan Iliev, I find it completely appropriate to give my positive assessment of the Candidate's achievements, and to recommend to the esteemed Scientific Jury to prepare a report-proposal to the Faculty Council of the Faculty of Biology for the election of **Assis. Prof. Ivan Zlatkov Iliev** to the academic position of "**Associate Professor**" at PU "Paisii Hilendarski" in the area of higher education 5. Technical sciences, professional field 5.11 Biotechnology (Ecological and Agro-biotechnology).

04.04.2023

Signature:.....

(prof. Nelly Georgieva, PhD)