OPINION

by Prof. Dr. Stefan Leonidov Tsakovski
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regarding the materials submitted for participation in a competition
for the academic position of **"Professor"** at **Paisii Hilendarski University of Plovdiv,**

in field of higher education 4. Natural Sciences, Mathematics and Informatics,
professional field 4.2. Chemical Sciences (Physical Chemistry)

In the competition for "Professor", announced in the State Gazette, issue 96 of 11.11.2025, and on the website of Paisii Hilendarski University of Plovdiv, for the needs of the Department of Physical Chemistry at the Faculty of Chemistry, Assoc. Prof. Dr. Nina Dimitrova Dimcheva from Paisii Hilendarski University of Plovdiv has been admitted to participate.

1. General presentation of the procedure and the candidate

Subject:

By Order No. RD-22-52 of 09.01.2026 of the Rector of **Paisii Hilendarski University of Plovdiv**, I was appointed as a member of the scientific jury in a competition for the academic position **"Professor"** at the University in the field of higher education **4. Natural Sciences, Mathematics and Informatics**, professional field **4.2. Chemical Sciences (Physical Chemistry)**, announced for the needs of the Department of Physical Chemistry at the Faculty of Chemistry.

The admitted candidate Assoc. Prof. Dr. Nina Dimitrova Dimcheva from the same University has submitted documents for participation in the competition. The candidate has submitted all required documents and their review shows that they comply with the requirements of the Academic Staff Development Act of the Republic of Bulgaria and the Regulations for the Development of the Academic Staff of Paisii Hilendarski University of Plovdiv.

Assoc. Prof. Dimcheva participates in the competition with 38 articles, one editorial review, two book chapters, two co-authored manuals, one conference abstract and one patent. I accept for review the 45 submitted works (published during the period 2006–2025), as they have not been included in previous competitions for the candidate's academic advancement and are relevant to the subject of the competition.

Nina Dimcheva completed her higher education in 1990 at the Faculty of Chemistry of Sofia University St. Kliment Ohridski (Master's degree with specialization in Theoretical Chemistry and

Chemical Physics). In 2001, she defended a doctoral dissertation entitled "Enzymatic and electrochemical reactions with enzymes immobilized on carbon materials" and obtained the educational and scientific degree Doctor, specialty Physical Chemistry (01.05.05). Her academic career development is connected with the Faculty of Chemistry at Paisii Hilendarski University of Plovdiv, where she successively held the positions of Assistant, Senior Assistant (1993–1994), Chief Assistant (1994) and Associate Professor (2006) in the Department of Physical Chemistry. During this period Assoc. Prof. Dimcheva completed research specializations at Ruhr University Bochum, Germany, and Lund University, Sweden.

2. General characteristics of the candidate's activity

Evaluation of teaching activity

From the submitted report on teaching workload it is evident that Assoc. Prof. Dimcheva has delivered 8 lecture courses, mainly in the fields of Physical Chemistry, Electrochemistry and Catalysis. It should be noted that for three of them (Electrochemical Methods for Analysis, Biocatalysis and Bioelectrochemistry, English for Chemists) the candidate has developed the curricula according to which they are taught. In addition, Assoc. Prof. Dimcheva has conducted seminars and laboratory exercises for 6 lecture courses. Her teaching workload during the period 2019–2025 significantly exceeds the required minimum. Furthermore, Assoc. Prof. Dimcheva has supervised or co-supervised five PhD students and 17 diploma (Master's thesis) students.

Evaluation of the scientific and applied research activity of the candidate

In the competition for the academic position "Professor", Assoc. Prof. Dr. Nina Dimcheva participates with 40 scientific articles published during the period 2006–2025. They are distributed according to the indicators of the national academic evaluation system as follows: 6 publications in indicator group B (all indexed in Web of Science and Scopus, according to the requirements) and 34 in indicator group G. According to journal quartiles 10 publications are in Q1 journals, 12 in Q2, 4 in Q3, 5 in Q4 and 9 in journals with SJR without Impact Factor. It can be concluded that the results have been published in recognized and established journals, which is a testament to the quality of the research. Three of the publications are from 2025, which well demonstrates the candidate's current scientific activity. The candidate's significant personal contribution to the presented results in collaborative research is evident from her leading role in many publications: in 20 publications she is first author and/or corresponding author. Assoc. Prof. Dimcheva has 60 citations of the publications included in the competition, all in journals indexed in Web of Science and Scopus. This indicates that her research has attracted significant interest within the scientific community. The candidate has participated in 11 research projects, serving as principal investigator of one of them. Assoc. Prof.

Dimcheva is also a co-author of a patent concerning a bio-electrocatalytic method for quantitative determination of L-ascorbic acid.

Based on the submitted statement of original scientific contributions, the habilitation work, and the publications included in the competition, I estimate Assoc. Prof. Dimcheva's research as interdisciplinary with both scientific and applied character. It should also be noted that the candidate actively collaborates with numerous research groups in Bulgaria and abroad. These elements of interdisciplinarity and cooperation characterize Assoc. Prof. Nina Dimcheva as a modern and promising scientific researcher.

The scientific research of Assoc. Prof. Dimcheva is mainly in the field of materials science, specifically in the development of electrochemical biosensors. I accept the scientific contributions presented in the author's report and the habilitation thesis as original and correctly formulated, summarizing them as follows:

1. Surface modification aimed at creating electrocatalysts used in electrochemical sensors and biosensors for the quantitative determination of biologically significant compounds.
2. Development of methodologies for enzyme immobilization on both modified and unmodified electrode surfaces in order to create highly selective and sensitive electrochemical biosensors for quantitative analysis of biologically significant organic compounds in complex matrices
3. Construction of bioelectrocatalysts applied in biochemical energy sources.

3. Critical remarks and recommendations

I would recommend that Assoc. Prof. Dimcheva include multivariate statistical methods more actively in her future research. Methods such as principal component analysis (PCA), least squares methods, and others could be useful both in sensor optimization and in their calibration.

CONCLUSION

The materials submitted for the competition meet and exceed the requirements of the Academic Staff Development Act of the Republic of Bulgaria, its implementing regulations, and the relevant regulations of Paisii Hilendarski University of Plovdiv.

The materials submitted for the competition, as well as my personal impressions of Assoc. Prof. Nina Dimcheva, give me grounds to conclude that she is an established researcher with high academic standards and significant scientific achievements, whose academic position is of essential importance for the development of the Department of Physical Chemistry at the Faculty of Chemistry of Paisii Hilendarski University of Plovdiv.

Based on the above, I give a positive evaluation and recommend that the esteemed Scientific Jury prepare a report proposing to the Faculty Council of the Faculty of Chemistry

the election of Assoc. Prof. Dr. Nina Dimitrova Dimcheva to the academic position "Professor" at Paisii Hilendarski University of Plovdiv, in the field of higher education 4. Natural Sciences, Mathematics and Informatics, professional field 4.2. Chemical Sciences (Physical Chemistry).

06.03.2026 **Prepared by**:

(Prof. Stefan Tsakovski)