OPINION

on the competition for the academic position of "**Professor**"
in the field of higher education 4. Natural Sciences, Mathematics, and Informatics
professional field 4.2. Chemical Sciences (Physical Chemistry)
announced in the State Gazette, issue 96 of 11.11.2025
for the needs of the Department of Physical Chemistry at the Faculty of Chemistry
at Plovdiv University "Paisii Hilendarski"

The opinion has been prepared by Assoc. Prof. Daniela Tsekova (UCTM, Sofia), in my capacity as a member of the scientific jury for the competition in accordance with Order No. RD-22-52 issued on 09.01.2026 by the Rector of Plovdiv University "Paisii Hilendarski", on the basis of documents provided to me in electronic form.

1. General description of the application

One candidate has been admitted to participate in the announced competition: Assoc. Prof. Nina Dimitrova Dimcheva from Plovdiv University "Paisii Hilendarski".

The set of documents presented by Assoc. Prof. Nina Dimcheva is in accordance with the Regulations for the Development of Academic Staff at Plovdiv University (RDASPU) and includes the following documents: Application form to the Rector for admission to the competition; Curriculum vitae; Diploma of higher education with a master's degree; Diploma of educational and scientific degree "doctor"; Certificate of the academic position "Associate Professor"; List of scientific publications; Copy of scientific publications; Certificate of compliance with the minimum national requirements; Declaration of originality and authenticity of the attached documents; Abstracts of the materials under Article 76 of the RDASPU (in Bulgarian and English); Habilitation report; Self-assessment of original scientific contributions (in Bulgarian and English); List of citations; Certificate of work experience; Report on teaching activities; List of projects participations; List of textbooks/manuals prepared for students; Other documents and attachments.

2. General characteristics of the candidate's activities

Scientometric indicators

Assoc. Prof. Nina Dimcheva participates in this competition with 38 articles, one editorial review, two book chapters, two co-authored manuals, one conference abstract, and one patent. Of the 45 works published between 2006 and 2025, 31 articles published in scientific journals with an impact factor, seven articles, one abstract, and one book chapter are referenced in global scientific databases but do not have an impact factor. The patent for the invention was published in the official bulletin of the Patent Office of the Republic of Bulgaria.

The data provided by the candidate show that the national criteria for the academic position of "Professor" have been met.

Indicators from group **A** (Ind.1, *Dissertation for the academic degree of "Doctor"*) – **50 points**.

Indicators from group **B** (Ind.4, *Habilitation thesis – Publications*) Six publications are presented: 3xQ2, 1xQ1, 1xQ3, and 1 with SJR. **Total number of points – 110,** with a minimum requirement of 100 points

Indicators from group **G** (Inds 7, 8, and 9) **The total number of points is 645**, with a minimum requirement of 200 points. *Ind. 7: 34 publications are presented (9xQ1 (9x25 =225) + 9xQ2 (9x20=180) + 3xQ3 (3x15=45) + 5xQ4 (5x12=60) + 8 (8x10 =80); Ind. 8: 2 collective monographs (2x15=30) and Ind. 9: 1 patent – 25 points.*

Indicators from group **D** (Ind 11, *citations in scientific publications referenced in WoS and Scopus*). 60 citations are presented, corresponding to **120 points**, with a minimum of 100 points.

Indicators from group **E** (Inds 13 to 20) **The total number of points is 248**, with a minimum requirement of 150 points. *Ind. 13: Supervision of a successfully defended doctoral student: 125 points; Inds 14 and 16 Participation/supervision of a national scientific or educational project: 80 points; Ind. 18: Funds attracted from projects led by the candidate: 37.5 points; Ind. 20: Published university textbook used in the university network: 5.7 points.*

The overall scientific research activity of Assoc. Prof. Dimcheva is characterized by high scientific results, with very good dissemination and presentation to the scientific community. According to Scopus and Web of Science (WoS) data, her publications have received over 680 independent citations, with an

h-index of 17 to date, confirming the significant impact of her research on the scientific community.

The analysis shows that for each group of indicators, the candidate meets and in most cases exceeds the required minimums. The total number of points for all groups of indicators is **1163,** with a minimum of 600, which is almost twice as much.

Biographical information about the candidate

Assoc. Prof. Dimcheva was born in 1967. She graduated from the Mathematics High School in Plovdiv and continued her education at the Faculty of Chemistry of Sofia University (1985-1990), where she graduated with a Master's degree in Theoretical Chemistry and Chemical Physics. In 1993 and 1994, she held positions as assistant and senior assistant at Plovdiv University. From 1994 to 2001, Nina Dimcheva was appointed to the position of chief assistant. In 2001, she defended her doctoral thesis on "Enzymatic and electrochemical reactions with enzymes immobilized on carbon materials" and obtained a PhD in physical chemistry. From 2001 to 2006, she held a postdoctoral position at Plovdiv University, and from 2002 to 2003, she was a postdoctoral researcher at Lund University, Sweden. From 2007 to 2008, she was appointed to a postdoctoral position at the University of Bochum, Germany. In 2006, she was appointed Associate Professor of physical chemistry at the Department of Physical Chemistry at Plovdiv University. Since 2018 to Feb 2026, Assoc. Prof. Dimcheva has been Head of the Department of Physical Chemistry at Plovdiv University, and from 2021 to 2025 she was a member of the Permanent Scientific Expert Commission on Chemical Sciences at the Scientific Research Fund – Bulgaria.

The professional experience gained by Assoc. Prof. Dimcheva to date demonstrates not only her development, but is also clear evidence that she already holds positions corresponding to the rank of "Professor."

Teaching and lecturing

As noted in the biographical data, candidate Assoc. Prof. Nina Dimcheva has been actively involved in teaching and lecturing at Plovdiv University "Paisii Hilendarski" for many years.

The enclosed statement shows that over the past five years she has conducted over 400 teaching hours per year in the form of lectures, seminars, and laboratory exercises in the disciplines of "Physical Chemistry," "Electrochemical Methods of Analysis," and the optional subject "Biocatalysis and Bioelectrochemistry" for various bachelor's and master's programs at the Faculty of Chemistry at Plovdiv University.

Assoc. Prof. Nina Dimcheva is a co-author of a total of two manuals intended for the training of students in master's and bachelor's courses at Plovdiv University. She has been the sole supervisor of one and co-supervisor of three doctoral students who have defended their theses. She is currently the sole supervisor of a doctoral student enrolled in 2025. These activities highlight the dynamism of Assoc. Prof. Dimcheva's creative processes, as she constantly works with young people, passing on her experience and creating new contemporary teaching approaches.

Scientific contributions

The thematic focus of Assoc. Prof. Nina Dimcheva's research activity is in the field of developing new materials and, more specifically, applying electrochemical approaches to create new materials for use in the construction of biosensors and biocatalysts. The scientific contributions presented by the candidate highlight the interdisciplinary nature of her research. The results supporting these contributions can be broadly classified into the following interrelated areas:

1. Electrocatalysis. Modification of surfaces for the creation of electrocatalysts for use in electrochemical sensors and biosensors. In this direction, new methods have been developed for the electrochemical deposition of micro- and nano-sized structures from monometallic (Rh, Au, Os) and bimetallic samples (Pd-Pt, Pd-Au, Pt-Mn, etc.) on porous and smooth electrode surfaces. The resulting electrode catalysts have been characterized using modern techniques (SEM, AFM, etc.) and their electrocatalytic activity has been investigated. Correlations between the method of preparation, the characteristics of the deposited structures, and their electrocatalytic activity have been established.

2. Heterogeneous biocatalysis and bioelectrochemistry This includes the development of methods for immobilizing enzymes on unmodified and modified electrode surfaces to create highly selective electrochemical biosensors for the quantitative determination of biologically significant compounds (metabolites, vitamins, antioxidants, neurotransmitters, etc.) and for the

construction of bioelectrocatalysts used in biochemical energy sources (biofuel cells). The following have been developed: An electrocatalytic electrode based on glassy carbon for determining the peroxide value of vegetable fats with a high degree of reliability of results; Two types of electrochemical biosensors using the enzyme laccase as a bioreceptor and characterized in the presence of dopamine, epinephrine, etc., it has been established that the signal strongly depends on the structure of the organic compounds; Four types of first-generation electrochemical biosensors—for glucose, xanthine, urea, and pesticides—through appropriate immobilization of enzymes (acetylcholinesterase, xanthine oxidase, glucose oxidase, and urease) on catalytic electrodes: Three types of third-generation electrochemical biosensors through immobilization on electrode surfaces of the enzymes catalase, ascorbate oxidase, laccase, and the protein myoglobin, in which they are electrochemically active. A series of articles has evaluated the corrosion resistance of coatings deposited on steel or titanium alloys using cyclic voltammetry or electrochemical impedance methods.

In summary, it can be said that the scientific contributions of Assoc. Prof. Nina Dimcheva's achievements are clearly both fundamental and applied in nature, integrating electrochemical approaches from classical chemical schemes to modern bioelectrochemical setups and devices. This is a very broad scientific field requiring both knowledge in various branches of science and dedication in order to combine, apply, and develop new approaches and achieve new results.

Critical remarks

I have no critical comments on the materials presented. I know Assoc. Prof. Dimcheva personally and, in my opinion, she has demonstrated that she possesses both the professional and personal qualities corresponding to the scientific and teaching degree of "Professor." I am convinced that she will continue to develop and deepen her scientific research and teaching activities at a high level, as she has done so far.

3. Conclusion

The documents and materials presented by Nina Dimitrova Dimcheva meet the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria (LDASRB), the Regulations for the Implementation of LDASRB, and the relevant Regulations of Paisii Hilendarski University. The scientific works submitted in the competition were published after the candidate acquired the academic position of "Associate Professor." The candidate has also presented a Declaration of Authenticity. No evidence of plagiarism has been found, and the scientific works demonstrate originality, independence, and correct citation of the sources used. The candidate's publications contain original scientific and applied scientific contributions that have received international recognition.

Based on everything said so far, I believe that my positive assessment is fully justified and I recommend that the esteemed members of the Scientific Jury vote positively for Assoc. Prof. Nina Dimitrova Dimcheva to take up the academic position of "Professor" in the field of higher education 4. Natural Sciences, Mathematics, and Informatics, professional direction 4.2. Chemical Sciences, specialty "Physical Chemistry."

9.03 2026 г. **Prepared by**: .....

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Daniela Tsekova