Институт по ФИЗИКОХИМИЯ при БАН
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OPINION

regarding a competition for the academic position

of "associate professor"

in professional field 4.2. Chemical Sciences, specialty "Physical Chemistry," for the needs of the Department "Phase Formation, Crystalline and Amorphous Materials" at the "Acad. R. Kaishev" Institute of Physical Chemistry at the Bulgarian Academy of Sciences

announced in the State Gazette, Issue No. 63, dated July 10, 2026

This opinion was prepared by: Prof. Dr. Ivan Georgiev Georgiev – IICT-BAS, in my capacity as a member of the scientific jury for professional field 4.2. Chemical Sciences, specialty "Physical Chemistry," for the needs of the department "Phase Formation, Crystalline and Amorphous Materials", in the competition pursuant to Order No. 91-RD-09 of August 26, 2026, issued by the Director of the Institute of Physical Chemistry—BAS.

The following individuals submitted applications to participate in the announced competition: Senior Assistant Professor Dr. Nikolay Bozhidarov Yordanov and Dr. Penko Kolev Papazov.

The following candidate has been admitted to the evaluation process: Senior Assistant Professor Dr. Nikolay Bozhidarov Yordanov.

1. Documents Submitted

The documents submitted by the candidate for the competition comply with the requirements of the Law on Scientific Research and Academic Staff (ZRASRB), the Regulations for the Implementation of the Law on Scientific Research and Academic Staff (PPZRASRB), and the Rules Governing the Conditions and Procedures for the Awarding of Academic Degrees and the Appointment to Academic Positions at the Institute of Physical Chemistry—Bulgarian Academy of Sciences (IFH-BAS).

The documents are well-structured and formatted. To participate in the competition, the candidate, Senior Assistant Professor Nikolay Yordanov, submitted a list of a total of 19

publications in specialized international scientific journals. The documents submitted for this competition show that Senior Assistant Professor Nikolay Yordanov meets the requirements of Article 24 of the ZRASRB and Article 53 of the PPZRASRB for holding the academic position of "associate professor."

2. Candidate Information

Nikolay Yordanov earned a master's degree in chemical engineering from the University of Chemical Technology and Metallurgy in Sofia in 2000. From 2000 to 2001, he was a research associate at the Institute for Spectrochemistry and Applied Spectroscopy in Dortmund, Germany, and from 2001 to 2004, he was an assistant at the Institute for Physical Chemistry and Theoretical Chemistry at the University of Duisburg-Essen, Germany. From 2009 to 2022, he was a research assistant at the Institute of Physical Chemistry (IFH) of the Bulgarian Academy of Sciences (BAS). In 2017, he earned his Ph.D. in physical chemistry with a dissertation titled "Analysis and Characterization of Conductive Glass-Forming Systems Using Electrochemical Methods." Since 2022, he has been working as a senior research assistant at the Institute of Physical Chemistry, Bulgarian Academy of Sciences (IFH-BAS).

3. General Description of the Candidate's Scientific Works and Achievements

To participate in the competition, Senior Assistant Professor Nikolay Yordanov has submitted all required documents, lists, and reports.

With regard to meeting the minimum requirements for a candidate in the competition for the academic position of "associate professor" at the Institute of Physical Chemistry—Bulgarian Academy of Sciences (IFH-BAS), he has submitted:

– a defended doctoral dissertation (50 points fulfilled under Group A);

– 4 publications with an Impact Factor (IF) and 1 publication with an SJR (100 points, out of a required 100 points under Group B);

– 13 publications indexed in Web of Science and Scopus and one book chapter (242 points, out of a required 220 points under Group G);

– 83 citations in Web of Science and Scopus (166 points, with 60 points required for Group D);

The submitted publications, citations, and other evidence related to the various indicators were not used to obtain the educational and scientific degree of "Doctor." The candidate has over 3 years of work experience in the position of "senior assistant" at the Institute of Physical

Chemistry—Bulgarian Academy of Sciences (IFH-BAS), thereby fully satisfying the requirement of Article 24, paragraph 1, item 2 of the Law on the Academic Staff of the Bulgarian Academy of Sciences (ZRASRB).

4. A substantive analysis of the candidate's scientific and applied scientific achievements as presented in the materials submitted for the competition

The main contributions in the publications submitted for the competition relate to the construction of a unique sealed vessel for work in argon with a thermo-optical system, demonstrating in detail the effect of the applied synthesis atmosphere on sintered glass-ceramic foams. As a result of sequential thermal treatment in a thermo-optical system, three types of materials were obtained: well-compacted glass-ceramic, autocatalytically glazed glass-ceramic, and glass-ceramic foam. The kinetics of the sintering process were studied by plotting sintering curves and applying an Arrhenius-like method of analysis. The redox nature of the sintered materials and the influence of the oxidation state of the transition metal oxides on the structure and properties of the final products were studied in detail.

5. Critical Comments and Recommendations

I have no critical comments regarding the formatting of the candidate's documents.

6. Personal Impressions of the Candidate

I have come to know the candidate through our work on joint projects and participation in academic forums, and I have an excellent impression of the professionalism and thoroughness of Senior Assistant Professor Nikolay Yordanov's work.

CONCLUSION

Having reviewed the materials and scientific papers submitted for the competition, and based on an analysis of their significance and the scientific and applied scientific contributions they contain, I hereby confirm that the scientific achievements meet the requirements of the Law on the Scientific Research Activity of the Republic of Bulgaria, its Implementing Regulations, and the relevant Regulations of the Bulgarian Academy of Sciences and the Institute of Physical Chemistry for the candidate's appointment to the academic position of "associate professor" in the scientific field and professional discipline of the competition. The candidate meets the minimum national

requirements in the professional field, and no plagiarism has been found in the scientific works submitted for the competition.

Based on the foregoing, I **strongly recommend** that the Scientific Jury propose to the Scientific Council of the "Acad. R. Kaishchev" Institute of Physical Chemistry at the Bulgarian Academy of Sciences to elect Senior Assistant Professor Dr. Nikolay Bozhidarov Yordanov to the academic position of "Associate Professor" in professional field 4.2. Chemical Sciences, specialty "Physical Chemistry," for the needs of the "Phase Formation, Crystalline and Amorphous Materials" section.

November 6, 2026

Opinion prepared by: Prof. Dr. Ivan Georgiev