Институт по ФИЗИКОХИМИЯ при БАН
Вх. №251
Дата: 03.11.2026 г.

POSITION

Call for applications for the academic position of "Associate Professor" in professional direction 4.2. Chemical Sciences, for the scientific specialty "Physical Chemistry," for the needs of the "Phase Formation, Crystal and Amorphous Materials" section; announced by the Institute of Physical Chemistry "Rostislaw Kaischew" - BAS, issue No.63, dated July 10,2026.

candidate: Nikolai Bozhidarov Yordanov, Dr., Chief assistant

(Name, academic degree, academic position)

Member of the scientific jury: Georgi Vyacheslavovich Avdeev, PhD, Associate Professor

(Name, academic degree, academic position)

1. **General overview of the candidate's scientific research and scientific application activities**

The candidate submitted a certificate of compliance with the requirements of the Institute of Physical Chemistry "Rostislaw Kaischew" - BAS for appointment to an academic position as an associate professor. This certificate confirms that the applicant meets all legal requirements and institutional standards. On criterion A, 50 out of 50 required points were achieved. On criteria B and C, the applicant demonstrated performance equivalent to 100 and 240 points respectively. Based on criterion D, the minimum required score is 60, and the applicant submitted evidence of 160 points, significantly exceeding the established criteria for this position. All this data confirms the applicant's scientific qualifications and relevant experience for the position they are applying for.

2. **Key scientific and science-based applied contributions**

The candidate's scientific work, as outlined in the report on the basic contributions, encompasses the preparation, phase and structural characterization, and potential application of glass-ceramic foams. The research conducted can be divided into several areas:

- Research was carried out on the preparation process of various types of glass-ceramic materials, developed both using special foaming additives and without such technological components.

-The properties of self-glazing foam materials synthesized from industrial waste materials generated as a result of large-scale metallurgical activities have been thoroughly investigated.

-In addition, a comprehensive scientific study has been conducted on the direct influence of the atmosphere in which the technological process is carried out, through a comparative analysis of the environment with and without the presence of free oxygen.

- The influence of pressure during the preliminary pressing of glass powders on the final degree of compaction and the density of the finished glass-ceramic products has been experimentally determined.

All of these studies have been accompanied by a systematic analysis of the long-term thermal stability and the specific mechanical properties of the resulting composites subjected to various temperature regimes and heating cycles.

The contributions made by the candidate are undisputed and original. In four of the five publications included as equivalent to habilitative work, the candidate ranks first. The hypotheses proposed by the candidate enrich existing knowledge and theories; if they can be applied in practice, they would generate economic and social benefits.

3. **Analysis of the candidate's scientific contributions in Bulgarian and global literature.**

The candidate's scholarly contributions have garnered positive feedback and notable citation rates, reflecting recognition from the scientific community. To date, the candidate has authored 18 scholarly works, accumulating 172 citations across diverse sources. This academic record results in an h-index of 6, serving as a robust indicator of the quality of their research. Notably, one publication within the qualification portfolio, where the candidate serves as the first author, warrants particular mention. This study investigates the integration of a CaF_2 foaming additive into the batch composition of foaming materials and has received 39 citations. Such

a citation count demonstrates significant interest in the development and underscores its potential for future applied research.

4. **Critical comments and recommendations for the candidate's scientific publications.**

I have none

CONCLUSION

The review of the materials submitted for the competition has not identified any procedural violations. I believe that the candidate's contributions are original and significant. The requirements set out in Article 24(1), points 1, 3, 4, and 5; (2); and Article 26(1) of the ZRASRB, Article 53(1), points 1, 3, 4, and 5; and Article 54 of the PPZRASRB, Article 54, points 1, 4, and 5; points 6; and Article 55(3), point 2 of the Regulations of the Institute of Physical Chemistry "Rostislaw Kaischew" – BAS under the ZRASRB have been met.

Based on my review of the candidate's documents in accordance with Articles 27(3) and 27(4) of the ZRASRB, I hereby grant a positive recommendation for the selection of Dr. Eng. Nikolai Bozhidarov Yordanov for appointment to the position of "Associate Professor" at the Institute of Physical Chemistry "Rostislaw Kaischew" – BAS.

Date: 02.11.2026 г.

MEMBER OF THE SCIENTIFIC JURY:

Associate Professor Dr. Georgi Avdeev