OPINION

by Assoc. Prof. Dr. Milen Peychev Todorov,
Burgas State University "Prof. Dr. Assen Zlatarov"

on the materials submitted for participation in a competition for the academic position of Associate Professor in Higher Education Area 4. Natural Sciences, Mathematics and Informatics, Professional Field 4.2 Chemical Sciences, Scientific Specialty "Inorganic Chemistry", announced by BSU "Prof. Dr. Assen Zlatarov" in the State Gazette, – No. 89 of 24 October 2025. Applicant is Chief assistant Eng. Dencho Ivanov Mihov, PhD.

Biographical Information

Since January 2023, Eng. Dencho Ivanov Mihov has held the academic position of Chief assistant at the Department of Chemistry, Faculty of Natural Sciences, at BSU "Prof. Dr. Assen Zlatarov". In his teaching activities, he delivers lectures and practical classes to students in the courses "Inorganic chemistry", "General chemistry", and "Applied chemistry", as well as seminar classes in "Stoichiometric calculations" and "Inorganic chemistry."

In 2023 he obtained the educational and scientific degree Doctor (PhD) in Professional Field 4.2 Chemical Sciences, Scientific Specialty "Inorganic Chemistry." His scientific interests are in the field of experimental and theoretical investigation and characterization of selenium-containing compounds.

Candidate's Research Activity

The research activity is focused on selenium-containing compounds, with the presented results from the conducted studies being consistently developed within professional field 4.2 and combining theoretical investigations with practical results.

According to the submitted documents, the candidate participates in the competition with 12 scientific works — two monographs, one book based on the doctoral dissertation, and nine publications in international journals indexed in Scopus and Web of Science.

The scientific results and the focus is thematically structured and concentrated in the following directions:

1. Experimental study of solubility isotherms of ternary water–salt systems of the type: M_2SeO_4 – $MeSeO_4$ – H_2O (where M = Li, Na, K, Rb, Cs, NH_4 and Me = Mg, Mn, Fe, Co, Ni, Cu, Zn, Cd).
2. Experimental determination of water activity at different component concentrations in binary selenate solutions, and calculation of osmotic coefficients and activity coefficients.
3. Thermodynamic modelling of equilibrium in ternary water–salt selenate systems.
4. Characterization of double selenate salts.

A considerable number of citations in international scientific journals are presented, which demonstrates scientific visibility and sustained interest in the research results. According to the provided documents, the candidate presents 10 documents, 52 citations, and an h-index of 7 in Scopus. In comparison with the minimum requirements, the candidate has achieved 599 points with a minimum requirement of 550 points, meeting the requirements for each indicator.

The candidate has participated in four scientific projects, in three of them as a team member, and in one as project leader.

Assessment of Teaching Activity

According to the submitted documents on teaching workload, the candidate demonstrates high teaching engagement, fulfilling his annual individual workload plan. He teaches in the educational and qualification degrees Bachelor, Professional Bachelor, and Master in courses such as Inorganic chemistry, General chemistry, and Stoichiometric calculations.

His teaching activity also includes supervision of graduating students, with four successfully defended diploma theses. The candidate has participated in the development and updating of curricula for the courses "Stoichiometric calculations" and "Medical and cosmetic chemistry."

Main Scientific and Applied Scientific Contributions

I accept the scientific and applied contributions formulated by the candidate. These may be summarized as follows:

- Experimental study of solubility isotherms in ternary water–salt systems
- Experimental determination of water activity in binary selenate solutions at different component concentrations
- Thermodynamic modelling of equilibrium in ternary water–salt selenate systems
- Characterization of double selenate salts
- Probabilistic assessment of the possibilities for application of double salts of selenic acid

Notes and Recommendations

The candidate's scientific output is thematically coherent and presents scientific results subordinated to logically connected research related to the experimental and theoretical investigation and characterization of selenium-containing compounds.

Due to the lack of information regarding participation in scientific events—which is not mandatory - I would recommend broader dissemination of the obtained results, which would be beneficial for the scientific community.

This recommendation does not diminish the overall positive assessment of the candidate's scientific and teaching activity.

Conclusion

The presented indicators concerning the teaching, research, and project activities of Chief assistant. Eng. Dencho Ivanov Mihov, PhD comply with the requirements of the Act on the Development of the Academic staff in the Republic of Bulgaria, its implementing regulations, and the internal regulatory documents of BSU "Prof. Dr. Assen Zlatarov".

On this basis, and following an overall assessment of his scientific, project, and teaching activities, I propose that Chief assistant Eng. Dencho Ivanov Mihov, PhD to be elected to the academic position of Associate Professor in Field 4. Natural Sciences, Mathematics and Informatics, Professional Field 4.2 Chemical Sciences, Scientific Specialty "Inorganic Chemistry."

Assoc. Prof. Dr. Milen Iordanov