

REVIEW

By Prof. Dr. Polina Pavlishina, Sofia University “St. Kliment Ohridski”, FGG, Department of Geology, Palaeontology and Fossil Fuels

Member of the scientific jury regarding the competition for the academic position of **Professor** in Professional field 4.4. Earth Sciences (Palaeontology and Stratigraphy)

General Information

This review has been prepared in accordance with the decision of the First Meeting of the Scientific Jury, approved by Order No. RD-13-6/10.02.2026 of the Rector of the University of Mining and Geology “St. Ivan Rilski”, held on 11 March 2026. The review complies with the requirements of the Law for the Development of the Academic Staff in the Republic of Bulgaria, its implementing regulations, as well as the internal rules of the University of Mining and Geology.

The competition for the academic position of Professor was officially announced in the State Gazette, issue No. 1 of 6 January 2026, with Assoc. Prof. Dr. Boris Vladimirov Valchev as the sole candidate. The documents submitted by the candidate meet all legal and institutional requirements.

Professional Biography

Assoc. Prof. Dr. Boris Valchev graduated in Geology from Sofia University “St. Kliment Ohridski” in 1996, obtaining a Master’s degree with a specialization in Paleontology and Stratigraphy. In 2002, he was awarded a PhD in Earth Sciences in the same field of Palaeontology and Stratigraphy. His entire academic career has been closely associated with the University of Mining and Geology “St. Ivan Rilski”, where he began as an Assistant Professor in 2001, subsequently advanced to Chief Assistant, and in 2012 was elected Associate Professor. Since 2020, he has served as Dean of the Faculty of Geological Exploration.

Publication Activity

The candidate’s publication record is substantial and indicative of sustained scientific productivity. He has authored a total of 96 scientific publications, including three related to his PhD dissertation and 36 produced prior to his habilitation to Associate Professor. For the present competition, **he has submitted 57 publications published between 2012 and 2025**, which appear in peer-reviewed scientific journals, university proceedings, and conference volumes. These works address key topics such as the taxonomy and paleoecology of small planktonic and benthic foraminifera, the stratigraphy of Paleogene sedimentary sequences, geological modeling, and geological heritage. A total of 27 publications are indexed in Scopus and Web of Science, including, among others, papers published in journals of quartiles Q2, Q3, and Q4, which attests to the international visibility of his research. In 29 of the publications Dr. Valchev is the first author, in 15 he is the second author, and in the remaining 13 he appears as third or subsequent co-author. This distribution highlights his ability to lead and conduct independent research, with the candidate serving as first author in a substantial proportion of the publications, but also his active participation in interdisciplinary teams.

Scientific Contributions

The publications presented by Assoc. Prof. Valchev represent significant contributions to Palaeontology and Stratigraphy, covering a wide range of topics. In the field of *foraminiferal taxonomy and palaeoecology*, the publications (B.4.1; B.4.2) present new data on planktonic and benthic foraminifera from Paleogene sedimentary sequences in the Republic of North Macedonia, including the identification of several species reported for the first time in the region. In publication (B.4.4), the candidate presents results from studies of Eocene small benthic foraminifera from boreholes in the Burgas coal basin, describing 20 species, 16 of which are reported for the first time in Bulgaria, and providing taxonomic revisions of selected taxa. A further important contribution to paleoecology is presented in publication (G.7.16), where morphogroup analysis of benthic foraminifera is applied through the integration of morphological characteristics with inferred life habits and feeding strategies, demonstrating its effectiveness as a tool for paleoenvironmental reconstruction.

In the field of *lithostratigraphy and geological modeling*, the candidate's contributions are represented in publications (B.4.3; B.4.5; B.4.6; B.4.7; B.4.8; G.7.19; G.7.20; G.7.21; G.7.23; G.7.24; G.7.25; G.7.26; G.7.27), which analyze Paleogene lithostratigraphic units in Northeastern Bulgaria, including the Varna Plateau, the Avren Plateau, the Gornochiflik Horst, and the Dolnokamchiyski Basin. Based on borehole data and seismic profile interpretation, these studies refine the spatial distribution and chronostratigraphical range of lithostratigraphic units. Of particular importance is publication (B.4.3), where, for the first time, three lithostratigraphic units belonging to the Dvoynitsa Formation are identified in the onshore part of the Dolnokamchiyski Basin. These contributions are related to the study of the lithostratigraphy of the Paleogene system in Northeastern Bulgaria and the application of modern methods for three-dimensional geological modeling.

Methodological contributions are also evident in the publications of Dr. Valchev, particularly in publications (G.7.20; G.7.21; G.7.23; G.7.24; G.7.25; G.7.26; G.7.27), where integrated approaches combining borehole data, seismic interpretation, and lithological analysis are applied for three-dimensional geological and chronostratigraphic modeling. In addition, publications (G.7.33; G.7.34; G.7.35) demonstrate the application of geographic information systems (GIS) and digital databases for the documentation and analysis of geological sites and fossil localities, contributing to improved systematization and accessibility of geological information. Such research enables better systematization of geological information and supports research related to geoconservation and the management of the geological heritage.

The applied contributions of the candidate's research are reflected in a broad range of publications from group G, including (G.7.1; G.7.2; G.7.5; G.7.6; G.7.9; G.7.10; G.7.12; G.7.13; G.7.14; G.7.15; G.7.17; G.7.18; G.7.28; G.7.31; G.7.32; G.7.33; G.7.34; G.7.35; G.7.37), which focus on the identification, characterization, and evaluation of geological heritage sites across Bulgaria, including regions such as Strandzha, the Vratsa Balkan, Ponor Mountain, and the Western Stara Planina. These studies emphasize the scientific, educational, and cultural value of geosites and support their conservation and promotion through geotourism and public engagement. In recent years, this line of research has also led to the development of modern tools, including GIS-based systems and interactive databases for fossil localities of high scientific and museum value. These contributions are the result of collective work and efforts, yet they play a significant role in the systematization of the geological heritage information and in supporting its scientific study, management, and promotion.

Personal Contribution of the Candidate in Co-authored Publications

The analysis of the candidate's role in collaborative publications indicates a clearly identifiable and often leading contribution, particularly in studies where he is listed as first author, reflecting his involvement in defining research objectives, developing methodologies, interpreting results, and preparing manuscripts.

Participation in Research Projects

Assoc.Prof. Boris Valchev's research activity is further demonstrated by his participation in 24 research projects, including 7 as project leader, 16 as a participant in national projects, and also 1 international project. The projects he has led are primarily related to the study and documentation of geological heritage, geoconservation, and the development of scientific periodicals. As a participant, he has worked in research teams on projects focused on the study of Cretaceous–Paleogene sedimentary sequences, Quaternary geological processes, geoinformation applications in geology, and the sustainable management of natural resources.

The candidate's active involvement in scientific projects indicates a solid capacity for leading research, as well as for effective integration within research teams.

Citation Analysis of Scientific Publications

The citation record indicates a satisfactory level of scientific visibility. The total number of reported citations within the competition is 54, distributed as follows: 38 citations in scientific publications that are refereed and indexed in international databases (Web of Science and Scopus), 2 citations in scientific monographs and edited volumes, and 14 citations in reviewed scientific publications that are not indexed in international databases. The largest share is represented by citations in journals refereed and indexed in the Web of Science and Scopus databases. These citations appear in established international journals, including *Marine Micropaleontology*, *Marine and Petroleum Geology*, *Journal of African Earth Sciences*, *Palaeogeography*, *Palaeoclimatology*, *Palaeoecology*, *Journal of Systematic Palaeontology*, *Quaternary Research*, and *Micropaleontology*. The publications that have received the strongest recognition are those related to the taxonomy and paleoecology of small foraminifera, lithostratigraphy, and geological modeling. The candidate's h-index is 1 according to Scopus and 4 according to Web of Science.

Teaching and Educational Activity

Boris Valchev has an active and outstanding teaching record at the Faculty of Geology and Prospecting of the University of Mining and Geology "St. Ivan Rilski", where he gives undergraduate lecture courses in Paleontology, Paleontology and Stratigraphy, Historical Geology, Field Geology, Geological Heritage, and Visualization of Geological Information, as well as a master's course entitled "GIS Documentation and Management of Protected Areas". He is also actively involved in conducting practical courses and field training in these disciplines. As part of his teaching activities, he has supervised 23 graduate students. Under his supervision, one PhD student has also successfully completed his PhD thesis.

Evaluation of compliance with the minimum national requirements for the scientific field

Based on the submitted report on compliance with the minimum national and institutional requirements, it is evident that Assoc. Prof. Boris Valchev **fully meets and significantly exceeds** the required indicators for holding the academic position of “Professor” in professional field 4.4. Earth Sciences, scientific specialty “Paleontology and Stratigraphy”.

In Group A, the candidate fully meets the requirement with 50 points, with the minimum required being 50 points. In Group B, he has achieved 140 points, compared to a minimum requirement of 100 points. In Group G, he documents 317 points, with a minimum required of 200 points. In Group D, related to citations, 224 points are reported, with a minimum requirement of 100 points. Particularly convincing are the results in Group E, where the candidate has 370 points compared to a minimum required of 150 points, reflecting his active project involvement, leadership, and scientific-organizational activities.

Conclusion

Assoc. Prof. Boris Valchev is a distinguished and dedicated lecturer with extensive and diverse teaching experience. His education, overall academic career and scientific contributions fully correspond to the professional field and scientific specialty of the competition. His research activity is characterized by consistency, originality, thematic diversity, and methodological precision, with a clear application of both classical and integrated methods, as well as modern approaches to the interpretation of geological data. His publications have evident scientific value and have received recognition within the scientific community.

Assoc. Prof. Dr. Boris Valchev **fully meets all the requirements** of the Law on the Development of Academic Staff in the Republic of Bulgaria and its implementing regulations at the University of Mining and Geology “St. Ivan Rilski” for receiving the academic position of “Professor”. **This provides sufficient grounds for me to give a positive evaluation and to strongly recommend the appointment of Assoc. Prof. Dr. Boris Valchev to the academic position of “Professor” in professional field 4.4. Earth Sciences, scientific specialty “Palaeontology and Stratigraphy”.**

Date: 02.04.2026

Reviewer:
Prof. Dr. Polina Pavlishina

