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OPINION

by Prof. Rumen H. Yankov, PhD, Institute for Population and Human Studies – BAS, member of the scientific jury for the competition for the academic position "Associate Professor" in the Area of Higher Education 4. Natural Sciences, Mathematics and Informatics, Professional Field 4.4. Earth Sciences, Scientific Specialty Geology of Oceans and Seas, Scientific Field Geological–Geomorphological Mapping and Monitoring of the Coastal Zone, pursuant to Order No. 299/26.09.2025 of the Director of the Institute of Oceanology – BAS

Information on the Competition Procedure.

The competition for the position of "Associate Professor" was announced in the State Gazette, Issue 63/01.08.2025, for the needs of the Institute of Oceanology – BAS. One candidate applied for participation — Chief Assistant Professor Bogdan Kirilov Prodanov, PhD, Eng. He holds the position of Chief Assistant at the "Coastal Zone Dynamics" Department of the Institute. The candidate submitted the full package of required documents, including the reference sheet demonstrating compliance with the minimum national requirements for holding the academic position of Associate Professor. Based on a report dated 01.10.2025, the appointed committee proposed that Dr. Bogdan Prodanov be admitted to the competition.

This opinion has been prepared and submitted in accordance with the decisions taken at the first meeting of the scientific jury on 10.10.2025. No irregularities were identified in the procedure or in the documentation provided by the candidate.

Information on the Candidate.

Bogdan Prodanov completed a Bachelor's degree in Applied Geophysics at the University of Mining and Geology "St. Ivan Rilski" in 2010, obtaining the professional qualification Engineer-Geophysicist. In 2012, he earned a Master's degree in Applied Geophysics with a specialization in Exploration Geophysics. He was admitted as a full-time doctoral student at the Institute of Oceanology – BAS, "Coastal Zone Dynamics" Department, in 2013. In 2017, he successfully defended his dissertation titled "Geological Basis for Mapping Benthic Habitats on the Bulgarian Continental Shelf in Front of the Avren Coastline" and was awarded the educational and scientific degree Doctor in Earth Sciences. In 2022, Dr. Prodanov completed a Master's programme in Geomorphology at the Faculty of Geology and Geography, Sofia University "St. Kliment Ohridski".

Regarding his professional career, he joined the Institute of Oceanology – BAS in 2012 as a geophysicist. In 2016, he was appointed Assistant at the "Coastal Zone Dynamics" Department, and after earning his doctoral degree, he took the academic position of Chief Assistant.

His educational background and professional development clearly demonstrate his lasting interests and capacity for productive academic advancement in the scientific fields relevant to the present competition.

Publications Submitted for the Competition.

For the competition for Associate Professor, the candidate submitted 40 scientific publications, of which 35 are in English. In section V.4 — corresponding to a habilitation-type

body of work — there are 7 publications in journals indexed in Scopus, including 5 in Quartile 2 (Q2). Section G includes 33 publications, of which 14 appear in journals indexed in leading global scientific databases, including one in Quartile 1 (Q1). The remaining 19 publications are in other peer-reviewed journals.

With the exception of one, all publications are co-authored, reflecting the collaborative character of research and project work within the Institute. In 16 of the publications, Dr. Prodanov is the lead author, which indicates his capacity for teamwork and his role as a sought-after collaborator.

Four of his publications have been cited 16 times in journals indexed in Scopus and Web of Science, exceeding the minimum citation requirements.

Participation in Scientific and Educational Projects.

Chief Assistant Professor Bogdan Prodanov has reported participation in 17 international scientific or educational projects and 18 national projects. In addition, he has served as principal investigator of 10 national and 2 international projects. This level of activity has enabled him to accumulate substantial expert and organizational experience. Most projects relate to scientific and applied research on the Bulgarian Black Sea coast — including mapping, monitoring, environmental assessment, geomorphological changes, and coastal protection.

Scientific and Applied Contributions of the Candidate.

Dr. Prodanov has submitted a comprehensive self-assessment of his research work at the Institute. The evidence provided — publications, project documentation, and supporting materials — offers firm grounds to accept the scientific and applied contributions listed in his report as valid.

His professional activity encompasses a broad range of tasks requiring deep expertise, innovative approaches, and conceptual originality. In the most general terms, these include: mapping geomorphological features and habitats in the coastal zone and continental shelf in a GIS environment, including the production of large-scale digital terrain models; development of a geo-database integrating archival materials and modern data acquired through remote sensing methods; studies of geomorphological and lithological conditions and processes in the coastal zone and shelf; research and expert assessment of geomorphological, hydrometeorological, and anthropogenic risks affecting coastal systems.

The results of this multifaceted work are reflected in his scientific publications. Through a combination of remote sensing techniques and classical geological and geomorphological methods, large-scale thematic maps have been developed to represent modern morphostructures of both the subaerial and submarine coastal slopes in the northern Bulgarian shelf and the Strandzha segment (publications V.4.1, V.4.2, V.4.6, V.4.7, G.7.13).

Further contributions to advancing empirical knowledge include his work on monitoring the geo-ecological state of the coastal zone, particularly regarding micro-waste pollution (V.4.4, G.7.1), as well as his research on dune habitats and mechanisms of their degradation (V.4.5). New dune systems have been identified and mapped in highly endangered urbanized stretches of the coastline (V.4.5, G.7.11). He has also conducted assessments of ecosystem losses resulting from coastal infrastructure projects.

Dr. Prodanov has made significant contributions to the multidisciplinary study of coastal lakes along the Bulgarian Black Sea, as well as to integrated ecosystem assessments conducted within the framework of Natura 2000 research projects (G.7.2, G.7.7, G.7.8, G.7.15, G.7.22, G.7.25). He has also participated in geoarchaeological investigations, including the identification and field verification of archaeological sites in the coastal zone and on the continental shelf (G.7.5, G.7.28, G.7.30, G.7.31, G.8.1).

Of particular importance are his methodological contributions in expanding the Institute's research capacity through the acquisition and use of advanced scientific equipment ensuring high-quality and consistent data collection. He is a proven specialist in the systematization and interpretation of data obtained through high-tech methods. His work in introducing aerial photogrammetry using unmanned aerial vehicles for detailed relief modeling in the coastal zone is especially noteworthy. The resulting data have been widely applied in geomorphological, ecological, and hydrological studies (V.4.3, V.4.4, V.4.5, V.4.6, V.4.7, G.7.1, G.7.5, G.7.6, etc.).

An important applied contribution is his work on geospatial analysis for defining reference conditions under the requirements of the EU Water Framework Directive (G.7.10, G.7.17). These studies provide a scientific basis for sustainable marine environmental management and support the Ministry of Environment and Water in implementing Bulgaria's Marine Strategy.

The candidate is also actively involved in comprehensive research on coastal flood risks carried out by the Institute of Oceanology – BAS (G.7.18, G.7.21, G.7.23, G.7.26, G.7.32). These studies yield practical results that support strategic planning of measures for coastal protection and climate adaptation. Dr. Prodanov's algorithm for geological–geomorphological mapping has been included in the official Methodology for the Mapping, Boundary Determination, and Classification of Sand Dunes under the Black Sea Coastal Development Act (DNR-1, V.4.5). This establishes the geomorphological approach as an important long-term applied contribution to environmental policy, cadastral practice, and administrative management along the Bulgarian Black Sea coast.

Conclusion.

The submitted scientific publications and project activity fully correspond to the scientific field announced in the competition: Geological–Geomorphological Mapping and Monitoring of the Coastal Zone. The scientific output of Dr. Prodanov exceeds the mandatory minimum requirements set by the Law on the Development of the Academic Staff in the Republic of Bulgaria and the associated regulations.

In view of the undisputed scientific qualities and contributions of Chief Assistant Professor Bogdan Kirilov Prodanov, PhD, Eng., I express a positive opinion supporting his appointment to the academic position of Associate Professor at the Institute of Oceanology – BAS, and I will vote in favour at the final meeting of the scientific jury.

18 November 2025