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STATEMENT

by **Associate Professor Dr. Aleksandar Todorov Sarafov** (Bulgarian Academy of Sciences, Institute for Research on Climate, Atmosphere and Water, Section "Waters") - member of the Scientific Jury appointed by Order No. 299 of 26 September 2025 of the Director of the Institute of Oceanology, Bulgarian Academy of Sciences, pursuant to Article 4, paragraphs (2) and (3), and Article 25 of the Law on the Development of the Academic Staff in the Republic of Bulgaria; Article 2, paragraphs (2) and (3), and Article 57, paragraphs (1) and (2) of the Regulations for the Implementation of the Law;Article 11, paragraph (4) of the Regulations on the Conditions and Procedure for the Awarding of Scientific Degrees and the Occupation of Academic Positions at the Institute of Oceanology – BAS – Varna;and based on the Decision of the Scientific Council of the Institute of Oceanology – BAS – Varna, recorded in Protocol No. 12 of 17 September 2025, for the conduct of a competition for the academic position "Associate Professor" in: Field of Higher Education: code 4. „Natural Sciences, Mathematics and Informatics "; Professional Field: code 4.4. Earth Sciences, Scientific Specialty: „Geology of the Oceans and Seas"; Research Area: „Geological and Geomorphological Mapping of the Coastal Zone", Scientific Section „ Coastal Zone Dynamics", announced in the State Gazette No. 63 of 1 August 2025, for the sole candidate who submitted documents - **Chief Assistant Professor Dr. Bogdan Kirilov Prodanov**

Presentation of Research Activity

In the list of all publications for the period 2013–2025, the candidate has indicated 48 scientific works, of which 42 are submitted for participation in the competition for the academic position of Associate Professor.

Among them, 15 are peer-reviewed and indexed in internationally recognized scientific databases such as Web of Science and Scopus. Six of these publications are within the quartiles in which the Journal Citation Reports (Web of Science) classifies journals with an impact factor, and nine are with the SJR metric of journals indexed in Scopus. Under indicator **B4** „Scientific publications in journals that are referenced and indexed in internationally recognized databases of scientific information" the candidate includes 7 publications in which he is the leading author, accumulating a total of **120 points**, thus meeting the required standard. Of these, five

publications are in Q2 quartile journals, and two are with SJR but without an impact factor. Three of the articles are published in "Comptes rendus de l'Académie Bulgare des Sciences", two in the reputable journal "Nature Conservation" and two in „SGEM International Multidisciplinary Scientific GeoConference EXPO Proceedings".

Under group **G8** papers are classified as published in internationally peer-reviewed journals included in the Scopus and Web of Science databases — one of them in Q1, and seven with SJR but without an impact factor. The remaining 25 publications have been published in peer-reviewed national and international journals, conference proceedings, and in a monographic edition, where the candidate is the leading author in six of them only. Thus, in total, under sections G7 and G8, Bogdan Prodanov accumulates **264 points**, thereby **exceeding the required** minimum according to this indicator. It is also noteworthy that he played a leading role in the team that developed the "Methodology for Mapping, Determining the Boundaries and Types of Sand Dunes", commissioned by the Ministry of Environment and Water of the Republic of Bulgaria – a work of significant applied and scientific value, though not included among "the publications indexed in international databases". It should also be emphasized that a substantial part of his publications are co-authored with diverse teams of researchers.

The awarded educational and scientific degree "Doctor in Earth Sciences", Diploma No. 000850 of 27 February 2017, satisfies indicator **A** and provides the required **50 points**, in accordance with the Regulations for the Implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria.

Out of all his publications, four have been cited, with a total of 16 citations, all in journals indexed in international scientific databases, which positions him under group **D11** indicators „Citations or reviews in scientific editions indexed in internationally recognized databases, monographs, or collective volumes" with **80 points**, thus also **fulfilling** the national requirements. The predominance of citations in papers with Bulgarian author participation and published in Bulgarian scientific journals in no way diminishes their scientific value.

In summary, the scientific output of Bogdan Prodanov **fully satisfies and exceeds by 28.5%** the minimum national and institutional criteria for holding the academic position of Associate Professor under all indicators of Article 2b of the Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB).

The candidate has declared participation in **35 international and national scientific projects** focused on the study of the **dynamics of ecosystems in the Black Sea**, as well as of the **seabed and coastal zone of Bulgaria**, including research involving **monitoring, mapping, and cartographic work**. These activities demonstrate expertise in various fields such as **coastal protection**, **geoarchaeology**, **anthropogenic pressure**, and **risk geomorphology**. The acquisition of the academic position „Associate Professor" by Bogdan Prodanov will facilitate future project applications, particularly in cases where project leaders are required to be habilitated researchers, although he has already served as a leader of 13 national and 2 international projects. The impressive research activity of Chief Assistant Professor Dr. Prodanov can also be attributed to his personal motivation to maintain his permanent employment in the " Coastal Zone Dynamics" Section of the Institute of Oceanology – BAS, where he has worked since 3 December 2012. **His teaching engagement** as a lecturer with students from the Катедра „Department of Climatology, Hydrology and Geomorphology", Faculty of Geology and Geography, Sofia University „St. Kliment Ohridski", has been during **the last two years**.

Evaluation of Scientific Achievements

The research conducted by Dr. Prodanov on marine coastal exogenous processes and landforms, based on a solid theoretical foundation and supported by original field and experimental data, distinguishes his scientific work through the establishment and analysis of the following:

- changes in the dynamics of landslide processes (B.4-1) and relationships between beach slope gradients and sediment sizes (G.7-26) within the coastal profile of the sea;
- variations in the retention capacity of riparian (longoz) forests with respect to riverine and marine flooding (G.7-2), (G.7-27), and in the degree of eutrophication (G.7-7);
- alterations in the oligohaline estuarine character of the Durankulak Basin (G.7-8) (Г.7-8);

- the response of the coastal zone to extreme events (G.7-18), (G.7-21), (G.7-23), and the dynamics of the Black Sea ecosystem and the Bulgarian coastal zone (G.7-32);
- coastal sectors with anthropogenically modified hydromorphology (G.7-10), areas with technogenic transformation (G.7-14), and the land–sea interaction explored through integrated geoarchaeological and historical–geographical approaches (G.7-28), (G.7-31), (G.8-1);
- reduction of the spatial extent of habitat types on the natural seabed (B.4-7) and bottom forms with specific and/or composite genesis (B.4-2), (G.7-20);
- current state of the macrozoobenthos (G.7-15) and population–biological characteristics of mullet species (G.7-22), (G.7-25);

  and mapping of:
- snapshots of the coastal zone (B.4-3), sedimentary biotopes (G.7-13), distribution of marine litter along Bulgarian beaches (G.7-1), beach–dune systems (B.4-4), (G.7-9), (G.7-11);

  as well as classifications of:
- primary and secondary dunes (B.4-5), cliffed and accumulative coasts (B.4-6), (G.7-19), landscape mosaic diversity along the Bulgarian Black Sea coast (G.7-4), (G.7-12), (G.7-16), coastal exposure to wave impact (G.7-17), and lithological characteristics of bottom sediments (G.7-24)

  moreover, his works involve the creation of three-dimensional digital terrain models of the seabed relief (G.7-3), (G.7-30), of the coastal zone (G.7-29), of the surface of the Nesebar Peninsula and its adjacent aquatory (G.7-5), and of Bolata Bay, accompanied by geomorphological and landscape GIS analyses (G.7-6).

In the report on his original scientific contributions, the candidate provides a detailed description of the new knowledge presented in the publications included in his application for the competition. He formulates scientific contributions in research directions developed within the „Coastal Zone Dynamics“ Section of the Institute of Oceanology – BAS, which are systematized on the basis of the referenced scientific works, as follows:

1. In geological–geomorphological mapping and cartographic studies of:

- coastal dunes along the Bulgarian Black Sea coast, classified according to geomorphological characteristics, identifying dune systems and assessing the physical loss of dune habitats (B.4-5), (G.7-9), (G.7-11), (B.4-4), (G.7-1). Based on the spatially detailed investigation of dune habitats, the section „Other scientific works with the participation of the candidate" includes the scientifically substantiated „Methodology…", for which Chief Assistant Professor Dr. Prodanov is the first author. Developed through the application of a geomorphological approach, this is a standardized procedure for dune landform mapping, officially **adopted as mandatory** by Order No. RD-57/17.01.2024 of the Minister of Environment and Water, to be applied in all future procedures under the Law on the Development of the Black Sea Coast in both cadastral and administrative practice (DNR-1);

- the submarine coastal slope – preparation of a geomorphological map at a scale of 1:10,000, distinguishing two successive landslide cycles, which prove regressive sea-level stages (B.4-1;

- the submarine and subaerial coastal slopes – preparation of a morphostructural map at scales 1:5,000 (land) and 1:10,000 (underwater), delineating geological and tectonic units, structural terraces, and rock extensions of headlands from the land surface to below sea level (B.4-6); snapshot mappings of the coastal zone (B.4-3), (G.7-29), and geomorphological and landscape mapping (G.7-6);

- the seabed – development of a geomorphological map differentiating 55 distinct morphological forms according to the geomorphological setting, updating and enriching the content of earlier small-scale schemes (1:100,000 and 1:200,000) from the previous century (B.4-2); creating a typology of degraded or modified submarine forms and quantifying the absolute loss of habitat area (B.4-7).

2. In spatio-temporal studies of anthropogenic pollution affecting beach–dune systems through macro-litter accumulation (B.4-4), (G.7-1) and in the geo-ecological assessment of coastal lakes (G.7-2), (G.7-7), (G.7-8), (G.7-15), (G.7-22), (G.7-25).

3. In the analysis of geological–geomorphological conditions in the context of hydrodynamic processes and risks related to marine phenomena, aimed at forecasting the response of the coastal zone (G.7-18), (G.7-21), (G.7-23), (G.7-26), (G.7-32).

4. In competent field–experimental expertise and application of remote and geophysical methods, the results obtained by Dr. Prodanov have been integrated into team-based hydromorphological, ecological, hydrological, and archaeological research of the coastal zone and continental shelf, such as (G.7-10), (G.7-17), (G.7-7), (G.7-27), (G.7-28), (G.8-1), (G.7-5), (G.7-30), (G.7-31).

Conclusion

The analysis of the research activity of Chief Assistant Professor Dr. Bogdan Kirilov Prodanov demonstrates significant scientific and applied contributions, through which the theoretical knowledge is further developed and the methodological tools for solving geomorphological problems are refined and improved, in full compliance with the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the National Evaluation and Accreditation Agency (NACID), and the Regulations on the Conditions, Procedure and Evaluation Indicators of the Institute of Oceanology – BAS, for the academic title of Associate Professor. Without hesitation, I declare before the members of the Scientific Jury that I **support the election of Bogdan Kirilov Prodanov as Associate Professor** and **vote in favor with full conviction**.

Sofia, 17 November 2025