



OPINION

By Prof. Dr.Sci. Neyko Mateev Neykov, NIMH
Member of the scientific jury in the competition for academic position "Professor" in professional direction 5.7 Architecture, Civil Engineering and Geodesy, scientific specialty "Engineering Hydrology, Hydraulics and Water Management" (Development and implementation of tools for river runoff forecasting and forecasting extremal hydrological events)

This review was prepared on the basis of the Order of the Acting Director-General of NIMH № ND-04-9 of 06.02.2024 and the meeting decision of the scientific jury of 09.02.2024 in the Republic of Bulgaria (ZRASRB), the Regulations for its implementation (RAPRASRB) and the NIMH Regulations on ZRARB. The review consists of three parts and a conclusion.

I. Requirements for the applicant

under Art. 29 (1) and Art. 29b of the ZRASRB, Art. 60 of the RAPRDA and Art. 56 (1), (2) and Art. 57 (1) of the NIMH Regulations on ZRARB

Assoc. prof. dr. eng. Snezanka Stoyanova Balabanova graduated from the University of Architecture, Civil Engineering and Geodesy (UACEG), Sofia, in 1981 with a Master's degree in Civil Engineering. In 1981-1982 she worked as a hydrological engineer at NIMH. In 1982-1985 she worked at the Minstroi, Sofia on designing water and sewage pumping stations. In 1986-2012 she worked as a hydrological engineer at NIMH-BAS in the area of hydrological data processing, hydrological and hydraulic modelling, modelling with GIS, hydrological forecasting. In the period 2009-2010 she was enrolled in a free PhD program at the UASG. In 2010 she defended her dissertation on "Operational hydrological modelling of river runoff and GIS resource assessments application" and was awarded by the educational and scientific degree "Doctor of Science" of "Engineering Hydrology, Hydraulics and Water Management". In 2012, she was elected as an Associate Professor in the Hydrological Forecasting Unit of the Forecasting Department. Since 2014 to the present assoc. prof. dr. eng. C. Balabanova has been the Head of this Unit. She has participated in and managed research and operational projects of NIMH research plan on the GIS databases development, mitigation of vulnerability of water resources to climate change, the satellite data usage for the hydrology forecasting and water management.

по ЧЛ.26, АЛ.2, 3, 5, ЧЛ.29(1) т.5 ОТ ЗРАСРБ, ЧЛ. 1а (1) и (2), ЧЛ. 60 (1) т.5, т.6 (4) ОТ ППЗРАСРБ И ПО ЧЛ.2, АЛ.4, ЧЛ. 56 (1) ОТ ПРАВИЛНИКА НА НИМХ ПО ЗРАСРБ;

For this competition Assoc. prof. dr. eng. C. Balabanova presents the following materials: 1) application for participation in the competition; 2) curriculum vitae; 3) list of publications and copies of their full texts in media; 4) reference for fulfillment of the minimum national requirements for the academic position occupation under Art.2. b, items 2, 3, 5, Art.29(1)(5) of the ZRASRB, Art.1a (1) and (2), Art.60 (1) 5, 6 (4) of the

RAPRASRB and Art.2, item 4, item 56 (1) of the NIMH Regulations under the ZRASRB; 5) reference of contributions; 6.1) reference to the citations; and 6.2) NACID journals reference list with impact factor concerning the cited publications.

In my opinion, there are no procedural violations or non-compliance with some of the formal requirements.

II. Requirements for research and development activities

under Art. 29 (1), item 1, item 3, item 4, item 5, item 6, (2) and (3), Art. 29b (1) of ZRASRB, Art. 60 (1), item 3, item 4, item 5, (2) and (4) of the RAPRRSB, art. 56 (1), item 1, item 4, item 5, item 6, item 7, (2), (3) of the NIMH Regulations

Only scientific production is submitted for opinion which does not repeat submitted for obtaining the scientific degree PhD and for acquiring an academic position the associate professor.

1. **Scientific publications.** The list of scientific papers submitted by Assoc. Prof. S. Balabanova contains 34 titles. The numbering of the publications is in separate order for each of the groups indicator B, D and E according to Table 2 of NIMH Regulations on ZRASRB.

The publications with the numbers [1,2,3,4,5,6,7,8,9,10,11,12] to the group of indicators B, sub-indicator 4 are published in peer-reviewed journals and the proceedings of international conference referenced and indexed in world-renowned scientific information databases. These publications form the "habilitation thesis" for participation in the competition. The total number of points on this indicator is 133.19.

The publications with the numbers [1,2,3,4,5,6] to the group of indicators G, sub-indicator 7 are published in peer-reviewed journals and the proceedings of international conference referenced and indexed in world-renowned scientific information databases. The total number of points on this indicator is 113.33.

The publications with the numbers [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16] to the group of indicators G, sub-indicator 8 are published in non-refereed peer-reviewed journals or edited conference proceedings. The total number of points on this indicator is 107.1.

2. **Citations of scientific publications.** The publications of assoc. prof. Balabanova are cited 83 times, 66 of which in scientific journals as Environmental Research and Risk Assessment, International Journal of Disaster Risk Reduction, Journal of Hydrology, Journal of Flood Risk Management, Journal of Hydrologic Engineering, Water Resources Research, Natural Hazards and Earth System Sciences, which are refereed and indexed in world-renowned databases of scientific information or in edited collective volumes. The total number of points on indicator D, sub-indicator 12 is 660, whereas concerning sub-indicator 14 of citations in non-

refereed peer-reviewed journals is the total number is 34, generally the total number of points is 694.

3. **Group of indicators E.** Assoc. prof. S. Balabanova has: a) been a scientific advisor of 3 PhD students, who have been awarded by the educational and scientific degree of Doctor, the number of points under sub-indicator 17 is 120; b) participated in 3 national and 5 international scientific projects, the number of points on sub-indicators 18 and 19 is 130; c) led 6 national and 2 international scientific and educational projects and contributed to attracting significant financial resources, the number of points on sub-indicators 20, 21 and 22 is 230. Generally, a total of 480 points under indicator E.

From the presented information and the number of points on the individual indicators given in the "Summary Table" it can be seen that the candidate assoc. prof. S. Balabanova clearly fulfils the minimum national requirements for the academic position of "Professor" at NIMH.

4. **Research and applied activities.** The research of assoc. prof. S. Balabanova is in the field of modelling and forecasting of river runoff, risk assessment of floods on the territory of Bulgaria from extreme weather events, water balance assessments and development of GIS databases.
5. **Contributions.** The contributions are clearly formulated and reflect the main results and findings within the publications of assoc. prof. S. Balabanova

III. Opinions, recommendations and notes

I have not identified any essential errors, inaccuracies or omissions in the materials presented in both completion documents and candidate's publications.

Conclusion

The examination of the submitted materials for the competition did not reveal any violations in the procedure. All the requirements are met to Art. 29 (1), (2), (3), Art. 29b (2), (3) of ZRASRB, Art. 60 (1) (2) and (4) and Art. 61 (1), (3) of the PPZRASRB Art. 56 (1), items 1, 4, 5, 6, 7, (2), (3) of the NIMH Regulations on ZRASRB.

The scientific publications of Assoc. prof. dr. eng. S. Balabanova have been referenced in the world-renowned databases of scientific information Scopus and Web of Science and have received recognition, which is referred to by positive quotations from foreign authors. The results achieved, the contributions to hydrology and practice applications give me reason to claim that assoc. prof. dr. eng. S. Balabanova is well recognized specialist in the field of hydrology. I believe that her scientific activity is highly appreciated and I suggest to the members of the Distinguished Jury assoc. prof. dr. eng. Sneza Stoaynova Balabanova to be awarded the academic title "Professor".

Scientific Jury Member:

Prof. Dr.Sc. N. Neykov