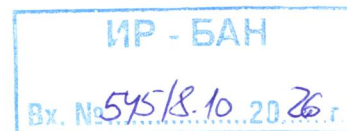


OPINION



by

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Section "Interactive Robotics and Control Systems"

Institute of Robotics – Bulgarian Academy of Sciences

on the materials submitted for appointment to the academic position of

"Professor" at the Institute of Robotics of the Bulgarian Academy of Sciences

Field of Higher Education: 5. "Technical Sciences"

Professional Field: 5.1. "Mechanical Engineering"

Scientific Specialty: "Robots and Manipulators" (Metrology of Mobile Robots – Methods, Models, Assessment and Optimization of Mobile Collaborative Service Robots)

Scientific Organization: Institute of Robotics, Bulgarian Academy of Sciences

Scientific Unit: Section "Robotic and Mechatronic Intelligent Systems"

Announcement in the State Gazette: No. 51 of 05.06.2026, p. 111

1. PROCEDURAL INFORMATION

In the competition for the academic position of "Professor", announced in the State Gazette, No. 51 of 05.06.2026, p. 111, and on the website of the Institute of Robotics of the Bulgarian Academy of Sciences for the needs of the RMIS Section, the only candidate who submitted documents is Assoc. Prof. Nina Foteva Valchkova, PhD. At present, the candidate holds the academic position of Associate Professor and is Acting Head of the RMIS Section at the Institute.

By Order No. 107/11.08.2026 of the Deputy Director of the Institute of Robotics – BAS, I was appointed a member of the Scientific Jury for the competition. At the first meeting of the Scientific Jury, held on 12.08.2026, it was decided that I should prepare an opinion on the competition.

For the competition, Assoc. Prof. Nina Foteva Valchkova, PhD, submitted the materials required by the applicable regulations, which were provided to me electronically. Subsequently, these materials were supplemented. At this stage, I have not identified any formal violations of the procedure, nor any improperly used results of others (plagiarism) in the candidate's submitted scientific works.

2. BIOGRAPHICAL INFORMATION ABOUT THE CANDIDATE

The sole candidate in the competition, Assoc. Prof. Nina Foteva Valchkova, PhD, Eng., completed her higher education at "Angel Kanchev" University of Ruse, majoring in "Mechanical Engineering Technology and Metal-Cutting Machines". Following graduation, she successively worked at the Research Institute of Robotics – Stara Zagora as Research Associate III Degree, at ITR – BAS as Research Associate III Degree, at the Institute of Mechanics – BAS as Research Associate II Degree, at CLME – BAS as Research Associate I Degree, at ISIR – BAS and at IR – BAS as Chief Assistant Professor. In 2013, she defended her PhD dissertation in the scientific specialty "Robots and Manipulators" at IR–BAS, and in 2018 she was elected Associate Professor

in the same specialty at IR-BAS. Her research interests are in the fields of robotics, mechatronics and intelligent control systems.

The candidate has participated in and led a number of national and international projects, supervised a doctoral student who successfully defended their dissertation, and chaired the Organizing Committee of the International Scientific and Technical Conference “Robotics and Mechatronics”. She has participated in scientific juries for awarding the educational and scientific degree “Doctor” and for appointment to academic positions, as well as in committees for evaluating scientific research of young researchers.

Assoc. Prof. Valchkova has carried out diverse scientific-organizational and scientific-administrative activities as Chair of the General Assembly and member of the Scientific Council of IR-BAS, representative of IR-BAS in the General Assembly of BAS, and Acting Head of the RMIS Section at IR-BAS.

3. GENERAL DESCRIPTION OF THE SUBMITTED MATERIALS

The candidate, Assoc. Prof. Nina Valchkova, PhD, participates in the competition for the academic position of “Professor” with a monograph and a list of publications. A check in the NACID Register of Academic Positions and Dissertations shows that the monograph and publications do not duplicate the works submitted for the acquisition of the educational and scientific degree “Doctor” and for appointment to the academic position of “Associate Professor”. The candidate has not submitted statements specifying the scientific contribution of individual authors to the publications; therefore, I accept that the authors have made equal contributions.

3.1. Materials for group “B”

To meet the minimum requirements for Group “B”, the candidate has submitted a habilitation work – a single-author monograph entitled “Metrology of Mobile Robots in Healthcare”, comprising 337 pages and published by the BAS Academic Publishing House “Prof. Marin Drinov” in 2026.

3.2. Materials for group “G”

To meet the minimum requirements for Group “G”, the candidate has submitted a total of 17 publications, of which the candidate is sole author in 3 publications, first author in 9, and second author in 5. Of these:

- 7 scientific publications are referenced and indexed in internationally recognized scientific databases, one with Q3 and SJR and four with Q4 and SJR.
- 10 scientific publications are in non-referenced peer-reviewed journals or edited collective volumes.

3.3. Materials for group “D”

To meet the minimum requirements for Group “D”, the candidate has submitted a list of 12 citations of 9 works in peer-reviewed publications (D12), 8 citations of 6 works in monographs and collective volumes (D13), and 21 citations of 18 works in non-referenced journals (D14).

3.4. Materials for group “E”

To meet the minimum requirements for Group E, the candidate declares supervision of one doctoral student who successfully defended their dissertation (E17), two participations in a national scientific or educational project (E18), one leadership of a national scientific or educational project (E19), and one leadership of an international scientific or educational project under the National Recovery and Resilience Plan (NRRP). Funding attracted through projects led by the candidate is also declared (E21).

It should be noted that Dr. Valchkova participated in a completed international project under the “Marie Skłodowska-Curie” programme, which is not included in the table of minimum requirements.

3.5. Summary of the minimum national requirements

Regarding the information described in Sections 3.1, 3.2 and 3.4, I have the following comments:

- Publication No. 4 is not yet visible in Scopus; therefore, it carries 4 points for the candidate (as a non-referenced publication) instead of 8 points;
- Publication No. 8 has two authors; therefore, it carries 10 points for the candidate instead of the 5 points indicated;
- The NPVU project is not an international project but a national project with European funding; therefore, the points under indicator E are reduced by 20 (for leadership of a national scientific project).

The summary of the minimum national requirements by groups of indicators for the academic position of Professor in the Field of Higher Education: 5. “Technical Sciences”, after taking into account the above comments, is as follows:

GROUP INDICATORS	Minimum national requirements	Corrected candidate points
A	50	50
B	-	-
B	100	100
Г	200	233
Д	100	183
E	150	214,53

The analysis of the results in the table shows that Dr. Valchkova exceeds the minimum national requirements for the Field of Higher Education: 5. “Technical Sciences”. The submitted works are in the highly topical field of modelling, control, optimization and application of mobile collaborative service robots for medical, social and industrial purposes. The candidate uses contemporary approaches and methods for solving scientific problems and achieving the set objectives.

4. SCIENTIFIC, SCIENTIFIC-APPLIED and APPLIED CONTRIBUTIONS

The candidate has formulated and described in detail the nature of her contributions and the effects of their implementation. Nine scientific contributions, ten scientific-applied

contributions and eight applied contributions have been proposed. The contributions are related to the fields of system design, parametric synthesis, intelligent control, multisensory perception, energy supply, medical applications, high-mobility platforms, and metrological support of mobile robotic systems. The application of the results may be useful in highly topical areas such as healthcare, autonomous field medical stations, high-mobility robots, and hybrid energy systems with hydrogen fuel cells.

SIGNIFICANCE OF THE CONTRIBUTIONS FOR SCIENCE AND PRACTICE

I consider the contributions to be relevant and significant for enriching and advancing the thematic area in which the candidate works. They are aimed at the development of autonomous and collaborative robots with a high degree of safety, reliability and energy efficiency. To a large extent, the described contributions have been used in the implementation of research projects related to the topic of the competition, in the training of doctoral students and students, in the development of laboratory exercises, and in the formulation of new project proposals. This ensures the sustainability of the results and has a positive impact on the development of scientific capacity in the field of mobile and collaborative robotics. The contributions are substantiated by works published and cited in peer-reviewed and indexed, internationally renowned databases.¶

5. FINAL REMARKS AND RECOMMENDATIONS

The candidate's work would benefit if the contributions were summarized and systematized in such a way as to outline more comprehensively the candidate's overall contribution to the development of the scientific field.

Based on the scientific output presented in the competition materials, I consider Assoc. Prof. Nina Valchkova, PhD, Eng., to be a highly qualified scientist with significant contributions and authority in her field of research. I positively assess the candidate's scientific, scientific-applied and applied activities. This activity meets the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB), the Regulations for its Implementation, the Internal Rules for the Development of Academic Staff at IR-BAS, and the Regulations on the Conditions and Procedure for Acquisition of Scientific Degrees and Appointment to Academic Positions at BAS.

6. CONCLUSION

In conclusion, **I recommend that the Scientific Council of IR-BAS elect Assoc. Prof. Nina Valchkova, PhD, Eng., to the academic position of "Professor" in Professional Field 5.1. "Mechanical Engineering", Scientific Specialty "Robots and Manipulators" (Metrology of Mobile Robots – Methods, Models, Assessment and Optimization of Mobile Collaborative Service Robots), for the needs of the RMIS Section at IR-BAS.**

9 October 2026

Sofia

Member of the Scientific Jury:

/Prof. D.Sc. Snezhanka Kostova/