



OPINION

on the competition for the academic position of "Associate Professor" in the field of higher education 5. Technical sciences, professional field 5.2. Electrical engineering, electronics and automation, scientific specialty "Application of the principles and methods of cybernetics in various fields of science" ("Socially-assistive robotics with elements of artificial intelligence") for the needs of the "Interactive Robotics and Control Systems" section of the Institute of Robotics, Bulgarian Academy of Sciences announced in the State Gazette No. 66 of 12.08.2025.

The opinion was prepared by Prof. Dr. Maya Ivanova Dimitrova, Institute of Robotics at the Bulgarian Academy of Sciences, in my capacity as a member of the Scientific Jury for the competition in accordance with Order No. 130/07.10.2025 of the Director of the Institute of Robotics at the Bulgarian Academy of Sciences, Prof. Dr. August Ivanov.

Only one candidate has submitted documents for participation in the announced competition: Assistant Professor Dr. Paulina Tsvetanova Tsvetkova from the Institute of Robotics-BAS.

1. General description of the presented materials

The documents, submitted by the candidate in the competition, comply with the requirements of the Law for Development of the Academic Staff in the Republic of Bulgaria, the Regulations of Application of the Law for Development of the Academic Staff in the Republic of Bulgaria and the Regulations on the terms and conditions for acquiring scientific degrees and occupying academic positions of the Institute Robotics of the Bulgarian Academy of Sciences.

Dr. Paulina Tsvegkova participates in the competition with 10 titles, indexed in Scopus and WoS, equivalent to a monograph, 10 titles in publications, referenced and indexed in world-renowned databases of scientific information, and 21 publications in non-refereed journals/proceedings. A list of 12 citations in Scopus and WoS is presented, with at least 5 more currently being found in Scopus from the last year. This is an indicator of the perspective and significance of the candidate's works.

2. Candidate details

Dr. Paulina Tsvetkova received a Bachelor's degree in Psychology in 2012 and a Master's degree in English Language and Methodology from Plovdiv University "Paisii Hilendarski" in 2014. She was appointed as a researcher at the Institute of Robotics, Bulgarian Academy of Sciences in 2020. She obtained her PhD degree at the Paisii Hilendarski University of Plovdiv in 2022. Since 2022, she has been an Assistant Professor at the Institute of Robotics - Bulgarian Academy of Sciences. Dr. Paulina Tsvetkova is the head of a project for young scientists and postdoctoral fellows funded by the Bulgarian National Science Foundation and is a participant in a project for fundamental scientific research funded by the Bulgarian National Science Foundation. She actively participates in 2 COST actions related to the topic of this competition.

3. General characteristics of the candidate's scientific works and achievements

The table presents the number of points obtained by indicators for Area 5. Technical Sciences of the candidate Dr. Paulina Tsvetkova after consulting the world-famous databases of scientific information Scopus and WoS:

Indicator Group	Indicator (I)	Minimal Requirements	Number of Points of the Candidate
A	Thesis for the award of the PhD degree	50	50
B	4. Habilitation thesis – scientific publications (no less than 10), which are referenced and indexed in world-renowned databases of scientific information (Scopus) – 10	60/n >100	103,01
Г	7. Scientific publications in publications that are referenced and indexed in world-renowned databases of scientific information – 10	40/n	85,37
Д	8. Scientific publications in non-refereed journals with scientific review or in edited collective volumes – 21	20/n >200	134,80
	12. Citations (or reviews) in scientific publications, referenced and indexed in world-renowned databases of scientific information or in monographs and collective volumes – 12 citations in Scopus	10 >50	120
	Total	>400	493,18

As can be seen from the table, the points of the candidate Dr. Paulina Tsvetkova exceed the minimum national requirements (under Art. 2b, para. 2 and 3 of the Law on the Promotion of Higher Education and Research in the Republic of Bulgaria) for the position of "Associate Professor" in the scientific field and professional direction of the competition.

The scientific papers submitted by the candidate do not repeat those from previous procedures for acquiring a scientific title and academic position. There is no plagiarism proven in accordance with the statutory procedure in the scientific papers submitted for the competition.

4. Content analysis of the candidate's scientific and applied scientific achievements contained in the materials for participation in the competition

The candidate's contributions are mainly in the areas of the development of the theory of assistive robotics in general, the creation of interactive scenarios with robots suitable for children with developmental problems, and systems with conversational Artificial Intelligence (Conversational AI) for speech therapy practice. Some of these studies are of *scientific nature*:

1. Innovative methodology for integrating Conversational Artificial Intelligence (Conversational AI) into socially-assistive robots, including NAO, Pepper and Furhat;;
2. Innovative methodology for fatigue analysis in suggestopedia teachers using EEG and psychological questionnaires;
3. A new approach to implementing psychological screening using a social robot Furhat for automating and adapting tests and conducting them in dialogue with the robot.

A number of contributions have scientific-applied nature, such as:

- Adaptation of survey methods and the Delphi method for the purposes of studying the needs and perspectives of assistive technologies for the purposes of social inclusion of people with intellectual disabilities and autism;
- Adaptation of artificial intelligence methods for image processing and cultural heritage;
- Adapting machine learning methods for better data classification.

5. Personal impressions of the candidate

I know the candidate on a collegial basis within the IRCS section. We have no joint projects or publications.

CONCLUSION

The works submitted by the candidate for the competition fully comply with the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its implementation, the Regulations of the Bulgarian Academy of Sciences and the Regulations of the Institute of Robotics at the Bulgarian Academy of Sciences. Based on the above, I would like to recommend to the Scientific Jury to propose to the Scientific Council of the Institute of Robotics - BAS to elect Dr. Paulina Tsvetanova Tsvetkova for the academic position of "Associate Professor" in the field of higher education 5. 5. Technical Sciences, professional field 5.2. Electrical Engineering, Electronics and Automation, scientific specialty "Application of the principles and methods of cybernetics in various fields of science" ("Socially-assistive robotics with elements of artificial intelligence").

Prepared by:

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