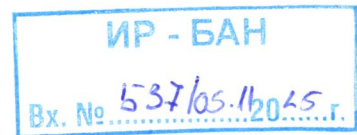


OPINION



On the competition for occupying the academic position of “Associate Professor” in the professional field **5.1. Mechanical Engineering**, scientific specialty “**Robots and Manipulators**” (*Applications of Service Robotics and Control Systems with Elements of Artificial Intelligence*) announced in State Gazette No. 61 of 29.07.2025, p. 214, for the needs of the **RandMIS Section, National Laboratory of Robotics and Artificial Intelligence (NLRAI)**

Candidate: Georgi Tsvetanov Angelov, PhD, Chief Assistant Professor

Member of the Scientific Jury: Eng. Avgust Yordanov Ivanov, PhD, Professor

Grounds for preparing the opinion: Order No. 118/29.09.2025 of the Director of the Institute for appointment of the scientific jury and Decision of the scientific jury, Protocol No. 1/02.10.2025 from the first meeting of the jury.

1. General Characteristics of the Research, Applied-Scientific, and Teaching Activities of the Candidate

From the submitted documents and materials it is evident that the candidate completed higher education – Master’s degree in *Engineering Physics* in 2001 at Sofia University “*St. Kliment Ohridski*”. He defended his PhD in 2018 at the Institute of Robotics – BAS. From 2017 to 2019 he worked as an Assistant Professor at the Institute, and since 2019 he has held the position of Chief Assistant Professor. He is the Head of the National Laboratory of Robotics and Artificial Intelligence at the *Institute of Robotics “St. Apostle and Evangelist Matthew”* of the Bulgarian Academy of Sciences. His scientific interests are in the field of service robotics and control systems with elements of artificial intelligence, integrating conceptual models, practical implementations, and educational innovations. Chief Asst. Dr. Angelov has participated in the CybSPEED Project, funded by the European Commission under the MARIE CURIE programme No. 77720 (2.7 million BGN). He actively contributes to two Centers of Competence:

- QUASAR No. BG05M2OP001-1.002-0006 (13.5 million BGN)
- “Leonardo da Vinci” No. BG05M2OP001-1.002-0010-C04 (23.5 million BGN)

He is a lead researcher in two other projects:

- FNI KP-06-H57/8 (170 thousand BGN)
- BG-RRP-2.017-0011-C01 under the Recovery and Resilience Plan – 44/05.12.2024 (444 thousand BGN).

Between 2006 and 2016 he participated in the teams of ten national scientific projects as project leader, key expert, and developer (see CV). Awards: Gold Medal from the *International Autumn Fair – 2008, Plovdiv*, for the series “*PIXEYE IP Surveillance Cameras*.”

Upon additional inquiry, the candidate provided documentation regarding his teaching activity. He has taught courses in *Programming, Database Design, and System Administration* within various IT companies. He has also been involved in the training and supervision of educational initiatives within the Youth Robotics Club – Sofia, and has supervised diploma projects of students from the *Technological School of Electronic Systems – Sofia* and the *Faculty of Physics at Sofia University “St. Kliment Ohridski.”*

2. Quantitative Characteristics of the Candidate’s Scientific Output

Chief Asst. Georgi Angelov participates in the competition for *Associate Professor* with the monograph “**Modern Applied Service Robotics**”, Robotic Publishing, 2025, ISBN 978-619-93266-0-2, and ten scientific publications in journals and proceedings indexed in internationally recognized databases. One of the publications is single-authored; two are co-authored papers where the candidate

is corresponding author; the remaining seven are co-authored in research teams. Three papers are published in *Comptes Rendus de l'Académie Bulgare des Sciences*; four were presented at international conferences in Bulgaria, and three at conferences in Spain, Croatia, and Turkey. Fourteen additional publications appear in non-indexed but peer-reviewed journals or edited volumes. Four of these are dual-authored (three with the candidate as leading author, one as corresponding author); ten are multi-authored, two of which were presented at conferences in Spain.

Abstracts in both Bulgarian and English are provided for all publications submitted to the competition.

Citations: Seven citations are presented, covering four of the candidate's papers. Three papers are cited once each, and the last one four times. All citing papers are indexed in *Scopus*.

The presented works are clearly the personal contribution of Chief Asst. Dr. Angelov.

They are visible at the national level and recognized by the international research community. Ten of the publications and all cited works are indexed in *Scopus*.

The publication and research activity of Chief Asst. Dr. Georgi Tsvetanov Angelov fully meets the **minimum national requirements** for the academic position of *Associate Professor* in the professional field 5.1 Mechanical Engineering, specialty "Robots and Manipulators (Applications of Service Robotics and AI Control Systems)," and **exceeds** the criteria for indicators "G" and "D."

3. Main Scientific and Applied Contributions

Chief Asst. Dr. Georgi Angelov claims six scientific contributions:

1. Creation of a new educational specialty in Robotics. Development of a national educational standard, curriculum, syllabi, and examination program for Bulgaria's first specialty "*Robot Programmer*." (Related publications: national standard, curricula, examination program, monograph.)
2. Conceptual model and practical software system for controlling educational service robots. Methodology for building a programming framework enabling learners to train directly without additional application software. (Publications: G7.5, G7.7, Monograph.)
3. Conceptual model and practical user interface for control of service robots with an integrated web-based programming editor, tailored to educational requirements. (Publications: G7.5, G7.7, G8.2, G8.12, Monograph.)
4. Development of cyber-physical systems for educational purposes involving service robots, teachers, and students in a networked environment. (Publications: G7.4, G7.5, G8.1, G8.9, G8.10, G8.14, Monograph.)
5. Design of environmentally sustainable energy systems in robotics. Conceptual model of a charging system for production and storage of green hydrogen applicable to powering service robots. (Publications: G7.1, G7.2, G7.8, G8.4, G8.13.)
6. Development of interfaces for service robots with elements of artificial intelligence aimed at natural human-machine interaction. (Publications: G8.2, G8.3.)

The candidate also reports three applied-scientific contributions:

1. Design and development of an automated, computer-controlled electrochemical impedance spectrometer (EIS) used to study bilayer phospholipid membranes as models of biological cell membranes. (Publications: G7.9, G7.10.)
2. Creation of an innovative series of educational service robots, named *Bebot* (Beginner Bot) and *Maxibot*, for use in STEM education and social pedagogy. (Publications: Monograph (Chapter 6), G7.4, G7.7, G7.8, G8.12.)
3. Development of the high-tech transport-logistics robot "*Spartak*," distinguished by innovative architecture, modern control and drive systems, and adaptability to diverse working environments. (Publications: G7.9, G7.10.)

I accept the substance of the above-stated contributions. They are sufficient in both number and significance for conferral of the academic position of *Associate Professor*.

4. Extent to Which the Presented Works and Contributions Are the Personal Achievement of the Candidate

Of the twenty-five works submitted for the competition, two are single-authored (No. G7.1 and the monograph in English); in four (Nos. G8.1, G8.2, G8.3, G8.12) the candidate is first author; in the remaining works he is a co-author on equal footing. Therefore, I conclude that the submitted scientific works and contributions are the personal achievement of the candidate. The requirements of NACID and the *Act on the Development of Academic Staff in the Republic of Bulgaria* (ZRASRB) — Art. 2b, paras. 2 and 3, and Art. 2b, para. 5 of the Implementing Regulations — are fulfilled for the position of *Associate Professor* in professional field 5.1 Mechanical Engineering.

5. Personal Impressions

I have known Chief Asst. Dr. Georgi Angelov since his appointment at the Institute of Robotics – BAS and through our joint work in the Centers of Competence QUASAR and “Leonardo da Vinci.” I am convinced that, as a researcher, specialist, and leader, he possesses the necessary professional and personal qualities.

With the successful completion of this competition, the *Institute of Robotics “St. Apostle and Evangelist Matthew” – BAS, Sofia* will gain an exceptionally capable specialist, researcher, and organizer.

I have no joint publications or research with Chief Asst. Dr. Angelov. No claims or disputes from third parties regarding authorship, contributions, or intellectual property are known to me in relation to the materials presented in this competition.

6. Critical Remarks and Recommendations

No significant omissions were found in the candidate's works, and I have no critical remarks regarding the submitted materials. I would recommend that the candidate in future focus on publishing his research in high-impact international outlets, and to take an active role in the training of doctoral students at the Institute of Robotics – BAS.

CONCLUSION

The presence of a monograph, the presented publications and citations, the scientific and applied contributions, as well as the candidate's research, applied, and organizational activities and the broad dissemination of his results, give me full grounds to **confidently propose that Chief Asst. Dr. Georgi Tsvetanov Angelov be appointed to the academic position of “Associate Professor”** in the scientific field 5 Technical Sciences, professional field 5.1 Mechanical Engineering, specialty “Robots and Manipulators (Applications of Service Robotics and Control Systems with Elements of Artificial Intelligence),” for the needs of the **Institute of Robotics at the Bulgarian Academy of Sciences.**

Date: 23 October 2025

Signature:

/ Prof. Dr. ~~Av~~gust Ivanov /