

STATEMENT

in a competition for the academic position of "Associate Professor" field of higher education 5. Technical sciences professional field 5.2. Electrical engineering, electronics and automation specialty "Application of the principles and methods of cybernetics in various fields of science", announced in State Gazette No. 57 / 09.07.2021 for the needs of the section "Cyber-physical systems" of IICT-BAS
candidate: Assistant Professor Dr. Denis Safidinov Chikurtev
Member of the Scientific Jury: Prof. Dr. Dimitar Nedelchev Karastoyanov

1. General provisions and biographical data

The only candidate in the competition is Dr. Denis Safidinov Chikurtev. He was born on January 19, 1990. He graduated from the Technical University - Sofia in 2014 as an engineer (master) in "Automation, Information and Control Engineering". He defended his doctoral dissertation in 2017 at the Institute of Information and Communication Technologies - BAS on "Research and management of service robots to support humans." From 2019 until now is assistant professor at IICT-BAS. The professional and organizational activity of the candidate is determined by the fact that from 2015 until now Dr. Chikurtev has been a co-author in 37 publications on the topic of the competition, of which 18 SCOPUS referred and 8 of the publications are with SJR. A total of 13 citations are given: 7 in refereed publications, 1 in a monograph and 5 in non-peer-reviewed. He has participated in 4 research projects (1 European and 3 national), of which he has led 1. He currently participates in 4 other ongoing national projects (NSF, NIF and 2 NSP).

The competition for "Associate Professor" was announced by the Scientific Council of IICT-BAS, for the needs of the Section "Cyber-Physical Systems" - State Gazette, No 57 of 9.7.2021

2. General description of the submitted materials

Dr. Denis Safidinov Chikurtev participated in the competition for "Associate Professor" with a list of 37 publications. Of these, 10 + 8 are articles in publications that are referenced and indexed in world-famous databases of scientific information - Scopus / WoS. The remaining 19 are presented in unrefereed journals or in edited collective volumes. 8 of the publications with the participation of Dr. Chikurtev are with SJR. A list with a total of 13 citations of a total of 6 articles is given. 7 of the citations are in editions, referenced and indexed in a world-famous database with scientific information - Scopus. There is 1 citation in the monograph. 5 citations in unrefereed publications are also given.

The applicant has also submitted a list of 4 projects in won competitions with his participation as a member of the team: 1 under the European project ACOMIN, 1 contract with NSF, 1 contract with BAS and 1 under Operational Program, 1 of which Dr. Chikurtev is the head. .

The structural characteristics of scientific publications give grounds for the following conclusions and assessments:

• *The candidate participates in the competition for "associate professor" with a sufficient number of papers, fulfilling the requirements of the Law and the additional requirements of IICT-BAS.*

- *The presented works are dedicated to scientific and applied problems in the field of the announced competition.*
- *There are both independent and co-authored scientific papers, which shows the ability to work both as a team and independently.*

3. General characteristics of the research and applied research activities of the candidate

The presented 10 + 8 + 19 articles / reports by Dr. Denis Chikurtev are on the topic of the competition. The articles and reports address the following groups of problems: Innovative methods and tools for monitoring, communication and control in mobile and service robots ", with two subtopics:

1. Methods, interfaces and communication systems for remote control of service robots
2. Methods for control of mobile robots and manipulators.

4. Research and applied contributions of the candidate

I find several groups of contributions in different areas - *development of models, methods and algorithms for positioning, communication, management and safety in service and mobile robots*

A. 10 referenced publications:

1. Methods, interfaces and communication systems for remote control of service robots - study of methods for human-robot interaction, research and development of a communication system for remote control and access to robots, development of a graphical interface for robot control.

Publications - 1, 2, 6, 7, 8

2. Methods for control of mobile robots and manipulators - study of a method for control of a manipulator, through iterative control and computer vision, study of a method for control of mobile platforms of different types, through regulators and feedback on speed and odometry.

Publications - 3, 4, 5, 9, 10

B. 8 referenced and 19 non-referenced publications:

Constructions, sensors and software for service and mobile robots have been developed.

I consider the contributions to be mainly of a scientific-applied nature. There are scientific and / or applied elements in separate contributions.

I evaluate the candidate's contributions positively and as corresponding to the requirements of the normative documents under this item.

5. Significance of contributions to science and practice

The presented scientific and applied contributions of the candidate have a great social significance. The developed, researched and simulated hardware and software for monitoring and control in service and mobile robots are important for the development and enrichment of the theory and practice of robotic systems.

From the presented 37 publications and 13 citations it can be considered that the contributions of Dr. Denis Chikurtev have gained the necessary fame in the scientific community at home and abroad.

6. Critical remarks and recommendations

I have no critical remarks with which to challenge the main scientific and applied contributions of the candidate. The high level of some of the obtained results has enabled their publication and citation in SJR publications.

Critical remarks can be made about some omissions in the design of several publications, as well as in the design of the entire material.

In summary, the most significant gaps in the materials for participation in the competition are:

- The problems and the results of the list of projects by won competitions with the participation of Dr. Chikurtev as a member and leader of the teams are not described in detail,

- It would be good to protect some of the scientific and applied solutions and results achieved with patent applications,

Despite the critical remarks and omissions (which are not essential for the overall assessment), I believe that the formulated decisions and contributions are proof that the candidate is fully prepared for the academic position of "associate professor".

CONCLUSION

I consider that in terms of volume and quality the research and scientific-applied activity of the candidate **satisfies the requirements of ZRASRB and PPZRASRB**. The quantitative indicators of the IICT-BAS Regulations for holding the academic position of "Associate Professor" are covered, most of which are exceeded. Therefore, I give my **positive vote** for the academic position of "Associate Professor" by Dr. Denis Safidinov Chikurtev.

The application meets the requirements of ZRASRB, PPZRASRB and other internal regulations. This gives me reason to confidently propose to the Distinguished Members of the Scientific Jury to vote for the award of Dr. Denis Safidinov Chikurtev to the academic position of "Associate Professor" in the section "Cyber-Physical Systems" in specialty "Applying the principles and methods of cybernetics in different fields of science ", professional field 5.2. Electrical engineering, electronics and automation, field of higher education 5. Technical sciences.

October 11, 2021
Sofia

Member of the Scientific Jury:

(Prof. Dr. *Dimitar Karastoyanov*)

