

REVIEW

in a competition for the academic position of "Associate Professor" in the professional field 5.2 TN "Electrical Engineering, Electronics and Automation" scientific specialty "Application of the principles and methods of cybernetics in various fields of science", from IICT BAS, announced in SG no. 45 of 28.05.2021,

with candidate: Dr. Eng. Stanislav Dimitrov Gyoshev
Member of the scientific jury: Prof. Dr. Todor Dimitrov Neshkov

1. **General provisions and biographical data of the applicant**

Dr. Eng. Stanislav Dimitrov Gyoshev participated in the competition with 36 scientific publications, apart from those used in other procedures. He was born on May 27, 1988. After completing a doctorate and obtaining an educational and scientific degree "Doctor" in one of the most prestigious scientific and technical institutions IICT of BAS, headed by famous scientist Prof. Dimitar Karastoyanov, he entered IICT of BAS. In 2017 he was elected chief assistant. He was a programmer at the IICT of BAS. A number of publications are related to research, simulation and optimization of the operation of automated and robotic systems. The groups of indicators from group A give 50 points, group B 159.23 points, at required 100, group D 292.94 / 220 / points, from group D are 171/60 / points and from group E are 244/20 / points.

The analysis of the presented materials shows that the requirements of ADAPRB and the regulations for its application are covered, as well as the additional requirements of IICT-BAS.

2. **General description of the submitted materials for participation in a competition**

Most papers are published in: scientific collections in our country - 21; scientific collections abroad - 15 pcs. They are in the field of competition. There are 28 citations, mostly abroad and on prestigious forums. Stanislav Dimitrov Gyoshev has worked on research and development. He is the leader of a development. All works are from the nomenclature scientific specialty of the announced competition. No documents confirming the results of his work have been submitted. However, his participation is convincing and I am particularly pleased to note that the candidate's scientific and applied work is also directly linked to potential industry problems.

3. General characteristics of the research and scientific-applied activity of the candidate

I evaluate the research and pedagogical preparation of the candidate and his work as a researcher at the level of the requested scientific title in the conditions of BAS on the basis of the following:

- After completing a doctorate and obtaining an educational and scientific degree "Doctor", the candidate continuously improves his qualification through successfully completed courses for various skills and work. The candidate is very fluent in English.
- He has actively participated in the conduct and organization of numerous conferences, seminars and forums with high-level international participation.

4. Main scientific and applied scientific contributions

I accept all the contributions presented in the applicant's report and evaluate them positively. They can be assessed as **scientific-applied** as follows:

- Methods for 3D digitalization and 3D modeling of objects of cultural and historical heritage have been developed, and he has participated in the application of the developed methods, which are presented in exhibitions and galleries abroad.
- Innovative technologies for testing the wear resistance of thin surface coatings have been proposed.
- Innovative technologies for high-speed briquetting of metal waste from various materials have been studied.
- In the field of non-destructive testing, the internal structure of objects and details has been studied. Based on the research, the influences of different modes of operation of ablation lasers have been determined, the defects in the production of parts have been minimized.

The indicated scientific-applied contributions can be referred to the groups: proving with new means of significant new aspects of already existing scientific fields, problems, theories, hypotheses; creating new classifications, methods, constructions, technologies and obtaining confirmatory facts, constructions and methods and enriching the existing knowledge with practical application.

There are a large number of other unreported applied and methodological contributions in the presented works. According to the candidate, 4 of his works are cited in Scopus.

5. Significance of contributions to science and practice

I believe that in terms of volume and quality the research and scientific-applied activity of the candidate fully satisfies the requirements of

ADAPRB and the regulations for its application. The quantitative indicators of BAS and IICT for holding the academic position "Associate Professor" are covered.

The scientific-applied and applied contributions contained in the works of the candidate are essential for the development and enrichment of the theory and practice of digitalization of the cultural-historical heritage, new materials and technologies and the automation of the discrete production. All this leads to the recognition of the authority of the candidate among the scientific circles at home and abroad.

6. Critical remarks and recommendations

I have no critical remarks with which to challenge the main scientific-applied and applied contributions of the candidate.

Critical remarks can be made regarding some omissions in the design of some of the publications - in some works certain Bulgarian literary sources are not cited and probably not used, when quoting websites the date of use is not indicated.

In general, the preparation of the documents does not suffer from significant omissions and incompleteness.

The importance of the issue and the results obtained in some studies give me reason to recommend the candidate to make publications in refereed foreign journals and I recommend that they be independent. I also recommend active participation in prestigious national and international projects related to industrial technologies and their application.

7. Personal impressions and opinion of the reviewer

I have known Dr. Stanislav Dimitrov Gyoshev since I was a student. I have followed his growth as a researcher and I have personal impressions of his competence. He is a thorough and precise researcher, competent and responsible organizer and implementer with proven capabilities. Has the skills to work in a team and create a creative environment for the transfer of experience and knowledge. I recommend active work in the Bulgarian Society of Robotics and Automation, as well as in IEEE, section Robotics and Automation and IFAC in the committees on Mechatronics, Low Cost Automation and others.

CONCLUSION

Based on my acquaintance with the materials of the competition and my personal impressions of the research and pedagogical activities of the candidate, the relevance and significance of the achieved scientific-applied and applied contributions, I confidently recommend **Dr. Eng. Stanislav**

Dimitrov Gyoshev to take the academic position of "Associate Professor" in the scientific specialty "Application of the principles and methods of cybernetics in various fields of science" at the IICT Institute of BAS.

13.09.2021

