OPINION

from Prof. Dr. Eng. Angel Petrov Anchev
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Department of Materials Science and Mechanics of Materials

on the materials submitted for participation in a competition
for the academic position of „Associate Professor“
in the field of higher education – 5. Technical Sciences
in the professional field – 5.6. Materials Science
specialty – Materials Science and Technology of Engineering Materials.

In the competition for Associate Professor, announced in the State Gazette No. 54/25.06.2024 and on the website of TU-Gabrovo, for the needs of the Department of "Materials Science and Mechanics of Materials" at the Faculty of Mechanical and Precision Engineering, the candidate is Chief Assistant Professor Vladimir Petrov Todorov Ph. D. from TU-Gabrovo.

1. Review of the content and results of the submitted works

The documents with which Chief Assistant Professor Eng. Vladimir P. Todorov Ph. D. participates in the competition for "Associate Professor" comply with the Law for the Development of the Academic Staff in the Republic of Bulgaria, the regulations for its application, and the Regulations for the acquisition of scientific degrees and the holding of academic positions at TU-Gabrovo. The materials include: 1 monograph equivalent to a habilitation thesis titled "Improvement of Mechanical Properties and Performance of Iron-Aluminum Bronze with Beta Transformation", 25 scientific publications in Group "G," of which 3 are in international journals with an impact factor (IF), 3 are in journals indexed in the global SCOPUS database, and 19 are in non-refereed scientific journals, and 2 textbooks on the competition’s topic.

The quantitative indicators of the criteria for holding the academic position of "Associate Professor," according to the Regulations for the acquisition of scientific degrees and holding academic positions at TU-Gabrovo, have been met.
It is important to note the significant number of citations – 42 in scientific journals, refereed and indexed in internationally recognized databases – representing a high attestation of the quality of the candidate's research work.

2. General characteristics of the candidate's activities

2.1. Educational and pedagogical activity (work with students and doctoral candidates)

Chief Assistant Todorov began his career at TU-Gabrovo in 2008 as an assistant in the Department of MEET at the Faculty of Mechanical and Precision Engineering. In 2016, after successfully defending a dissertation in professional field 5.6. Materials Science, he was appointed as "Chief Assistant". V. Todorov has delivered lectures on 6 subjects and practical exercises on 7 subjects included in the curricula of specialties at the Faculty of Mechanical and Precision Engineering.

2.2. Scientific and research activities

Chief Assistant Professor Eng. V. Todorov Ph. D. has participated in 16 projects funded by the national budget, OP "Innovation and Competitiveness," OP "Human Resources Development," and the National Science Fund.

2.3. Implementation activity

The candidate has made a significant contribution to the implementation of some of the applied and research results from the projects in the practical training of students. A valuable asset of his implementation activity is the registered utility model for the production of spheroidal graphite cast iron with enhanced strength characteristics.

3. Contributions (scientific, applied-research, practical) and their significance for science and practice

Based on his materials for the competition, the candidate has defined 18 applied-research contributions with the following distribution:

Improvement of the mechanical properties and performance of iron-aluminum bronze with beta transformation – 5;

Electron beam treatment of dissimilar metals and alloys – 4;

Study of dental composites subjected to photopolymerization – 3;

Investigation of the structure, mechanical properties, and performance of carbide-bainitic spheroidal graphite cast irons – 4;

Improvement of the performance and mechanical properties of medium-carbon low-alloy steels through heat treatment processes – 2.

Additionally, there are 9 practical contributions with the following distribution:

Improvement of the mechanical properties and performance of iron-aluminum bronze with beta transformation – 3;

Study of dental composites subjected to photopolymerization – 1;

Improvement of the performance and mechanical properties of medium-carbon low-alloy steels through heat treatment processes – 2;

Investigation of the structure, mechanical properties, and performance of carbide-bainitic spheroidal graphite cast irons – 3.

I accept the contributions as presented by Chief Assistant Professor V. Todorov and consider them significant and highly relevant to the competition's subject for "Associate Professor." My only remark is related to the definition of the thematic field concerning "electron beam welding of dissimilar metals and alloys" rather than "electron beam treatment."

4. Evaluation of the candidate's personal contributions

From the submitted materials for the competition, the independent scientific works are 4 publications, the monograph, the Ph. D. thesis abstract. In addition, in 6 publications he is in first place, this gives me reason to conclude that the achieved scientific-applied and applied results are to a significant extent the personal work of the candidate.

5. Critical remarks and recommendations

I do not find significant remarks regarding the content of the materials submitted for the competition for Associate Professor. I would recommend that Chief Assistant Professor Eng. V. Todorov Ph. D. continue to publish the results of his research primarily in journals indexed in global databases – SCOPUS and Web of Science.

6. Personal impressions

I know Vladimir Todorov personally as a colleague from the Department of "Materials Science and Mechanics of Materials" and consider him responsible for his duties in the department, both in terms of teaching and his research work.

7. Conclusion

Based on the content of the submitted scientific works and the applied-research and practical contributions contained within them, I propose that the esteemed scientific jury **elect Chief Assistant Professor Eng. Vladimir Petrov Todorov Ph. D.** for the academic position of **"Associate Professor"** in the field of higher education – 5. Technical Sciences, professional field – 5.6. Materials Science, specialty – Materials Science and Technology of Engineering Materials.

Gabrovo
28.10.2024

Member of the Scientific Jury: /signature/
/Prof. Angel P. Anchev Ph. D./