

OPINION



Regarding the competition for the academic position of „Associate Professor“ in the professional field „5.1. Mechanical Engineering“, study discipline „Materials Technology“ announced SG no. 2 of 05.01.2024

with candidate: Assist. Prof. Eng. Tatyana Mitkova Mechkarova PhD

Member of the scientific jury, Assoc. Prof. PhD Eng. Georgi Kanchev Lyutskanov

1. General characteristics of the candidate's research and applied scientific activity.

In the competition for the academic position „Associate Professor“ in the field of higher education 5. Technical sciences, professional direction 5.1. Mechanical engineering, study discipline: “Materials Technology” announced in the State Gazette number 2/05.01.2024, Assist. Prof. Eng. Tatiana Mitkova Mechkarova PhD is the only candidate.

The documents proposed for evaluation by Assist. Prof. Eng. Tatiana Mitkova Mechkarova PhD, satisfy all procedural requirements, according to the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its Application and the Regulations for the Terms and Conditions for Acquiring Scientific Degrees and Tenure in academic positions at the Technical University – Varna.

Assist. Prof. Eng. Tatyana Mitkova Mechkarova PhD, participated in the competition with 48 scientific papers and publications, of which 11 are publications in scientific publications, referenced and indexed in world-renowned databases with scientific information and 37 nos. in non-refereed journals or in edited collective volumes.

The first 11 pcs. publications are united as equivalent to a monographic work on the topic: "Investigation of the structure and properties of materials by various technological processes", systematized in the following directions:

- link between the structure and mechanical properties of materials - 3 pcs.;
- Influence of technological regimes on the structure of metals - 2 pcs.;
- Modeling and analysis of the stressed state in the study of fatigue strength with a gradient structure - 2 pcs.;
- Research and computer modeling of various technological processes - 2 pcs.;
- Computer modeling and research of research equipment and equipment - 2 pcs.

The remaining 37 publications are systematized in the following areas:

- Research and analyze the structures and mechanical properties of objects in order to specify their technological parameters during welding or restoration and implementation in industry - 7 pcs. (in Bulgarian and English);
- Research and analyze the structures and mechanical properties of objects in order to specify their technological parameters during processing and implementation in industry - 13 pcs. (in Bulgarian in English);
- Research and analysis of heat transfer processes during welding - 2 pcs. (in Bulgarian in English);
- Research and analysis of the processes of the stressed state during welding - 1 pc.;

- Research and modeling of various processes, simulation analyzes for plasticity, flow rate and temperature distribution of metals - 6 pcs. (in Bulgarian in English);
- Experimental-statistical studies with regression analyzes of various processes - 6 nos. (in Bulgarian in English);
- Modeling and analysis of the stressed state in fatigue strength research - 3 pcs.

The presented scientific production fully covers the minimum national scient metric indicators for occupying the academic position of „Associate Professor“ at the NACID. The data are indicated in table 1.

Table 1

Group of indicators	Contents of indicators	Minimum requirements for the academic position Assoc. Prof., points	Candidate's points on the individual indicators
A	Indicator 1	50	50
B	Indicator 2	-	-
B	Indicator 3 or 4	100	145
Г	Sum of the indicator from 5 to 11	200	301
Д	Sum of the indicator from 12 to 15	50	180
Е	Sum of the indicator from 16 to end	-	-

2. Evaluation of the pedagogical preparation and activity of the candidate

Assist. Prof. Eng. Tatyana Mitkova Mechkarova, PhD, has been an assistant in the Department of Materials Science and Technology of the Technical University of Varna since 2007.

Conducts lectures, seminars and laboratory classes for regular and part-time students from the Faculty of Shipbuilding and Mechanical Technology of the Technical University of Varna. Leads course projects with students from the same faculties.

According to the report presented for the period 2020 – 2023, the candidate spent 403 hours – lectures, 638 hours – laboratory exercises, 33 hours – control works and course projects with bachelors. There are 10 successfully defended graduates.

From a certificate of acquired qualifications, she has:

1. Welding certificate Reg. No: 1764-74/ 08.09.2023
2. Member of KIIP - regional college Varna part Technology of mechanical engineering and equipment construction with a certificate of full design legal capacity - reg. number №16151 with protocol decision of the Board of KIIP 151/12.10.2018
3. Certificate of professional qualification TEACHER in the specialty "Mechanical engineering and technologies" - series C-00, №052527 / reg. №291 15.11.2002;
4. Completed three-month course 01.03 - 05.05. 2012 in Donbas, State Specialized Enterprise, Chernobyl NPP, Initial Training Center
Course: Increased danger; Certificate No: 0158/12
Course: Emergency Response; Certificate No: 0159/1

The above gives me reason to consider that she is a very well-prepared teacher and has sufficient pedagogical training to occupy the academic position of „Associate Professor“.

3. Main scientific and scientific-applied contributions

The research and scientific activity of Assist. Prof. Eng. Tatyana Mitkova Mechkarova, PhD, is in the field of Materials Science and Engineering Materials Technology.

In the competition for the academic position „Associate Professor “Assist. Prof. Eng. Tatyana Mitkova Mechkarova, PhD presented 11 equal publications of a monographic work on the topic "Researching the structure and properties of materials".

The following contributions can be cited from the publications:

Scientific and applied contributions:

1. 3D simulation models based on the finite element method were developed;
2. An algorithm was developed for computer simulation of processes related to multi-cycle fatigue and the influence on the initiation and development of cracks.

Applied Contributions

1. Experimentally obtained values for mechanical characteristics and structures of welding joints, which will be used in the design of machines and equipment from the chemical, oil and gas industry;
2. From research related to polymer matrix composite materials, the interrelationship between the composition of the matrix and the type of reinforcing phase has been found to obtain optimal mechanical properties that can be used in the construction of elements of light shipbuilding and the chemical industry.

The scientific-applied and applied contributions are the personal work of the candidate for the competition for the academic position „Associate Professor “.

In addition, I would like to add the candidate's participation in 9 scientific research and applied scientific projects.

I believe that Assist. Prof. Eng. Tatiana Mitkova Mechkarova PhD is a qualified scientific specialist, has extensive practical experience and has very good theoretical knowledge in the field of engineering materials technology. Her scientific publications and reports have been presented at various scientific forums and published in specialized scientific publications ("Intelligent information technologies for industry", UPB Scientific Bulletin, Series D: Mechanical Engineering, etc.).

4. Significance of contributions for science and practice

The scientific publications and reports presented in the competition are the personal work of the candidate, which is also confirmed by the fact that in 17 publications he is the sole author or is in the first place. I have no doubt about the significance of the contributions in the scientific works of Assist. Prof. Eng. Tatyana Mitkova Mechkarova, PhD, which is also evident from the presented citations. The research is up-to-date and can be widely used both in the learning process and in practice.

5. Critical remarks and recommendations

With the clear idea that the candidate fully meets the requirements of the Technical University - Varna for the academic position "Associate Professor" to Assist. Prof. Eng. Tatiana Mitkova Mechkarova, PhD, I have the following recommendation:

- The publication activity should be aimed at publications with international information systems referencing and indexing, due to the trends for the development of scientific requirements and reporting of the activity of the scientific personnel in Bulgaria.

I have no critical remarks.

CONCLUSION

Assessing the overall activity of the candidate Assist. Prof. Eng. Tatyana Mitkova Mechkarova, PhD, based on the presented scientific production and pedagogical activity, I find that she meets all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its application and the Regulations for the conditions and procedures for acquiring scientific degrees and holding academic positions at the Technical University - Varna.

I consider it justified to propose to the colleagues of the Scientific Jury, Assist. Prof. Eng. Tatyana Mitkova Mechkarova, PhD, to occupy the academic position „Associate Professor “in the professional direction 5.1. Mechanical Engineering, subject: „Materials Technology“.

April 15.2024
Varna

MEMBER OF THE
(As:

Заличена информация
по Регламент (ЕС)
2016/679

10v)