

R E V I E W

for a competition for the academic position "Associate Professor" in the
professional field "Energy", specialty "Industrial heat engineering"
announced in SG No. 13, 07.02.2023

with candidate **Dr. Eng. Krastin Krasimirov Yordanov**
Member of the scientific jury: **Prof. Dr. Eng. Ilia Krastev Iliev**

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

The research and scientific-applied activity of ch. assistant Ph.D. Eng. Kristin Yordanov, reflected in the publications, projects and other activities in which he participated, is focused primarily on the problems of "industrial heat engineering", which includes research and modeling of heat & mass exchange in various industrial processes, research and modeling of heat recovery devices, research and modeling of the thermal behavior of buildings from traditional and alternative building materials, research and modeling of heat & mass transfer processes in various thermal treatments, research of energy resources for energy production and analysis and evaluation of a natural gas transmission chain. The candidate has submitted 10 publications related to the habilitation work in publications that are referenced and indexed in world-renowned scientific information databases. The candidate has not submitted independent works, but in 5 of the works he is the first author (B4.1); (B 4.2); (B 4.6); (B 4.7) and (B 4.8); and in 4 publications it is in second place (B 4.3); (B 4.5); (B 4.9); (B 4.10).

The publications other than those included in the monographic work, represented by 26 publications, in the order of the authors, are distributed as follows:

- First place in the list of authors - 4 publications - (G8.11); (G8.19); (G8.22); (G8.23)
- Second place from the list of authors - 10 publications - (G7.3); (G8.1); (G8.2); (G8.7); (G8.8); (G8.12); (G8.13); (G8.16); (D.8.18); (G8.20);
- Third place from the list of authors - 11 publications - (B4); (G8.3); (G8.4); (G8.6); (G8.9); (G8.10); (G8.14); (G8.15); (G8.17); (G8.20); (G8.21);
- Fourth and another place from the list of authors - 3 publications - (G7.1); (G7.2); (G8.5);

The presented data convincingly show that Dr. Eng. K. Yordanov has the ability to develop and present scientific works himself, as well as to actively participate in collective developments.

Ch. Assistant Professor Kristin Yordanov actively participates in scientific research projects. According to the submitted reference, the candidate has participated in 6 projects under FNI and 2 national scientific research projects. This gives me a reason to give a high rating to the scientific research activity of Dr. Krastin Yordanov. In addition, the candidate has also implemented a significant number of projects related to the design and technical supervision of pressure equipment; he increased his qualification in several courses for acquired designer legal capacity, work with a thermal imaging camera, thermal conductivity analyzer, application of statistical methods in scientific research, etc.

2. Assessment of the candidate's pedagogical training and activity.

Dr. Eng. Krastin Yordanov is an established teacher at the Naval Faculty of TU-Varna. From the presented reference it is clear that for the last three years he has been giving lectures on the disciplines "Heat exchange devices"; "Thermodynamics and heat transfer"; "Sources and technologies of biogas"; "Thermal measurements"; "Thermal part of the TPP"; "Thermodynamics and heat engineering"; "Gas supply systems"; "Cleaning of air and gases" and laboratory and seminar exercises as follows: "Heat exchangers"; "Thermodynamics and heat transfer"; "Heat engineering"; "Heat supply and gas supply "; "Computer Systems for Engineering Design"; "Sources and technologies of biogas"; "Thermal measurements"; "Fuel technology and technologies"; "Refrigeration Equipment"; "Refrigerators and refrigeration installations"; "Heat economy"; "Technologies for converting solar energy into heat and electricity"; "Geothermal and

hydrokinetic facilities and installations for the production of energy from biomass"; "Thermodynamics and thermal engineering" and "Heat power engineering".

He is the supervisor of 6 graduates for the acquisition of the educational and qualification degree "Bachelor-Engineer" and 2 graduates for the acquisition of the educational-qualification degree "Master-Engineer". All these data convincingly prove that the candidate for AD "associate professor" has mastered the entire spectrum of disciplines in the field of industrial heat engineering. The candidate for " *Associate Professor* " has a significant contribution in participating in the development of study programs. According to the presented reference, he has developed 13 study programs in the following disciplines: Computer systems for engineering design, OKS "Bachelor"; Heat exchangers, OKS "Bachelor"; Heat exchangers for systems with renewable energy sources, OKS "Bachelor"; Heat and power engineering, OKS "Bachelor"; Heat and power engineering, OKS "Bachelor"; Refrigeration equipment, OKS "Bachelor"; Thermodynamics and heat transfer, OKS "Bachelor"; Thermodynamics and heat transfer, OKS "Bachelor"; Thermotechnical measurements and management; Digital tools for design in the industry, OKS "Master"; Workshop on digital tools for design in the industry, OCS "Master"; Digital technologies in the industry, OKS "Master".

Dr. Eng. K. Yordanov participated in 8 mobilities carried out under the Erasmus program for the period 2016-2022, and during one mobility the author gave lectures on "fuels and fuel processes"; aa through the other mobilities ch. Associate Professor Yordanov got acquainted with the training methods, as well as testing and visits to scientific research bases. The author made a personal contribution to the modernization of the material and technical base of the department, in particular the RES Laboratory.

I believe that the educational and teaching work of Ch. Assistant Professor Kristin Yordanov fully meets the requirements for employment at AP *Associate Professor*.

3. Basic scientific and scientific-applied contributions.

The candidate has submitted a reference to the scientific-applied and applied contributions. The author has divided the contributions into two groups: In the first group, contributions relating to a total of 10 publications are united as equivalent to a monographic work on the topic "Research and modeling of heat transfer and mass transfer in various industrial processes" – (B.4.1), (B.4.2), (B.4.3), (B.4.4), (B.4.5), (B.4.6), (B.4.7), (B.4.8), (B.4.9), (B.4.10). I accept the evaluation for three scientific-applied and one applied principle. I have no doubt that the contributions are the work of the candidate, because in 50% of the publications he is the first author of the articles. As for the second group of publications, which includes 26 articles, the works are divided into 5 thematic directions. In the same reference, 5 scientific-applied contributions and 4 applied contributions are presented, which I accept as correctly distributed and formulated.

I know the candidate Dr. Eng. Kristin Yordanov from his participation in a number of international conferences at Bulgaria and abroad. He has a very good command of English and Russian languages, which enables him to monitor scientific exchange, work on important international projects, participate in international scientific events, and create a modern educational base. He has high competence, which is why he maintains solid international contacts. He knows how to work in a team and transfer his experience. Dr. Eng. Kristin Yordanov is highly responsible in his professional activity as a researcher and teacher.

4. Significance of contributions to science and practice.

The candidate in the competition for the academic position of "*associate professor*" Dr. Eng. Krastin Krasimirov Yordanov has submitted all the necessary documents, according to the Regulations for the terms and conditions for holding academic positions in TU-Varna and the Regulations for the implementation of the Law on the Development of the Academic Staff in Republic of Bulgaria.

The coverage of the minimum national requirements for AD "docent" candidates by groups of indicators is as follows:

Indicator A : Received diploma for ESD "Doctor" No.TUV-NS-2017-095/26.02.2020, (50 points)

Indicator B : Habilitation work - scientific publications in publications that are referenced and indexed in world-renowned databases with scientific information (Web of Science and Scopus). 10 scientific publications are presented (220 points);

Indicators I7 : Scientific publications in publications that are referenced and indexed in world-famous databases with scientific information (Web of Science and Scopus), outside of the habilitation work. Three papers were published: (26 points);

Indicators I8 : Scientific publications in non-refereed peer-reviewed journals or in edited collective volumes. 23 posts submitted (188.37 points)

Total points for indicator D (214.37 points).

Indicators II : Citations or reviews in scientific publications, referenced and indexed in world-famous databases with scientific information or in monographs and collective volumes (Web of Science and Scopus) (min 60 points). 6 citations of 3 papers are presented (60 points). In the evidentiary part, bibliographic data for the citing publication and a reference to the relevant database are indicated.

Indicators III : Schedule of lectures given at TU-Varna for the last three years (345 points).

When comparing the presented materials with the minimum requirements for holding AP "Associate Professor" in professional areas according to PZRASRB and PUZAD of TU-Varna, it follows that the minimum requirements for holding AP "Associate Professor" are significantly exceeded. The candidate covers a total of 889.37 points out of 430 compulsory points.

5. Critical notes and recommendations.

In the analysis of the presented materials, of course, omissions can also be pointed out, but they are not essential, which is why, for this reason, I cannot change my completely positive assessment of the candidate. It is noteworthy that the author presented a significant number of publications indexed in the Scopus database, the Hirsch index is 4. Despite the significant number of publications in the world database, the author has only 15 citations. For the future, I recommend that the candidate should direct his efforts towards the publication of scientific works in more prestigious journals with a high impact factor and publications, which will lead to an increase in the Hirsch index.

CONCLUSION

The presented materials meet the requirements of the RASRB, the Regulations for its application, and the internal Regulations for the terms and conditions for holding academic positions at the Technical University - Varna. Based on my acquaintance with the presented scientific works, their importance, and the contributions contained in them, I find it reasonable to propose Ch. Assistant Professor Kristin Krasimirov Yordanov, Ph.D., to take the academic position "Associate Professor" in the professional field 5.4. Energy, specialty "Industrial heat engineering".

Date: 8.06.2023

JURY MEMBER:

(Prof. Dr. Ilia Iliev)