STATEMENT

on a competition for the academic position ***"Associate Professor"***
in the professional field "Energy", specialty "Industrial heating technology"
announced in SG **No. 13/07.02.2023**
candidate: **Dr. Eng. Krastin Krasimirov Yordanov**
Member of the scientific jury: **Associate Professor Angel Kostadinov Terziev, Ph.D**

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

The scientific works of the candidate related to the competition are in the professional field of "Energy". The research and scientific-applied activities of Dr. Krastin Yordanov, covers the period from his occupation of AD "Chief Assistant" at TU - Varna until now, and after a thorough analysis of the works it was found that they do not repeat those of previous competitions. The presented reference of the summaries of the scientific works on the competition shows that the scientific research activity of the candidate is focused on modern methods and tools for numerical research and modeling of heat and mass transfer processes in industrial enterprises; waste heat recovery systems; Using innovative approaches and creating algorithms for modeling heat transfer processes through elements with different thermal technical characteristics; Evaluation and analysis of the possibilities of using systems for maintaining the indoor air quality in rooms when using renewable energy sources; Application of algorithms to assess the potential of different renewable energy sources; Analysis of problems related to supply and distribution of natural gas, incl. opportunities to increase energy efficiency at the end user.

According to the competition, Dr. Eng. Krastin Yordanov participated with a total of 36 scientific publications, which are subject to scientific review. According to criterion B, the candidate participates with 10 publications equivalent to a monographic work, which are referenced and indexed in the referred and indexed Scopus and Web of Science databases. The scientific developments presented are in the field of numerical research and analysis of heat and mass transfer processes in industrial facilities. According to indicator D7, the candidate presents 3 scientific works. According to indicator D8, Dr. Eng. K. Yordanov presents 23 scientific publications, which are in the scientific fields cited above.

Scientific works are the result of collective work, as in 4 of them, the candidate is in first place, in 10 he is in second place, and in the rest - in third and lower places. The papers under criterion B are electronically accessible through the indexed databases, which gives me reason to believe that they have become available to the scientific community in the field locally and abroad. The remaining scientific works have been reported and published at prestigious scientific forums and congresses both at home and abroad.

The applicant's research activity is beyond doubt. He was a participant in 6 research projects, part of which was commissioned by TU Varna and 3 projects with national funding through the National Research Foundation. In addition, the candidate worked on a number of engineering problems, with which he undoubtedly increased his qualifications, as evidenced by 6 signed contracts with business representatives.

2. Evaluation of the candidate’s training and activity.

Dr. Eng. Krastin Yordanov has presented a report on the classes he taught at TU - Varna. It can be seen that during the last three academic years, the candidate's classroom employment equals 552 lecture hours. He leads lectures on 6 disciplines (Heat transfer devices; Thermodynamics and heat transfer; Sources and biogas technologies; Thermotechnical measurements; Thermal part of TPP; Thermodynamics and thermal engineering) in scientific degree Bachelor and 3 lecture courses in scientific degree Master (Heat transfer devices, Gas supply systems, Purification of air and gases). Leads laboratory and seminar exercises in 16

disciplines from the Bachelor's degree program and 8 disciplines from the Master's degree program. He participated in the development of 12 study programs both, bachelor's and master's.

I highly appreciate the mobilities carried out by the candidate under the Erasmus program. On the one hand, they have allowed the candidate to present the results of his work or issues on which he is working as a guest speaker, and on the other hand, to exchange experience and create contacts for future collaborations. No less important is the constructed Renewable Energy Sources laboratory, which can be used both for conducting exercises and solving engineering tasks.

3. Basic scientific and scientific-applied contributions.

I accept the claims by Dr. Krastin Yordanov made scientific-applied and engineering-applied contributions. The publications presented according to indicator B1 ÷ B10 (10 in number) are equivalent to habilitation work, since they treat problems related to numerical modeling of heat and mass transfer processes in industrial facilities. I attribute the candidate's contribution to the mentioned developments to the creation of algorithms and software for modeling complex heat transfer processes. In the majority of scientific works according to this criterion, the candidate is in the first place, which gives me reason to consider that the claimed contributions are the personal work of the candidate.

There are several thematic areas to which the presented scientific publications are classified according to criteria D7 and D8. I also consider the contributions of the publications in these groups to be scientific and engineering applied. The creation of waste heat utilization devices (G12 – G17) can be mentioned as main contributions; Creation of methodologies and algorithms for the study of heat and mass transfer processes; Creation of algorithms for using the energy of a renewable source in combination with different integration models. I count the latter among the contributions related to the use of new tools and methods for the analysis of scientific problems.

The candidate has submitted a report on the citations of the scientific works. The presented citations concern three publications of the candidate and are traceable in the Scopus and Web of Science databases. They are in SJR rank journals.

4. Significance of contributions for science and practice.

I believe that the significance of the contributions to science and practice is beyond doubt. A number of experimental studies have been conducted, numerical procedures and algorithms have been created for modeling one of the most complex processes in engineering practice, namely heat and mass exchange. Approaches have also been created in the analysis of integration of different types of RES with a focus on maintaining a indoor air quality in confined spaces. The significant number of contractual relations and those with FNI, incl. and at the national level is solid evidence of the significance of the candidate's contributions.

According to the evidence presented, the legal quantitative indicators for holding the academic position "Associate Professor" have been complied with.

In the table below, information is presented on the minimum requirements for occupying AD "Docent", according to the Regulations for the development of the academic staff of TU - Varna, subject to compliance with the national requirements. It is clear from the table that the applicant exceeds the minimum requirements laid down in the regulations, and for the publication activity, this excess is significant.

№	Group indicators	Minimum requirements, pts	Point numbers of candidate, pts
1.	**Group A**	50	50,0
2.	**Group B**	100	220,0
3.	**Group Г**	200	214,4
4.	**Group Д**	50	60,0
5.	**Group Ж**	30	345,0

5. Critical notes and recommendations.

I assess the observed gaps in the candidate's scientific output as minor and of a mostly technical nature. Impressive is the significant number of scientific publications presented at international scientific forums, as well as those in referenced and indexed databases. One of my recommendations to the candidate is to increase the share of his future scientific works in journals with an impact factor or rank and those of open type (Open access), which will help to disseminate the results of his work, as well as create opportunities for subsequent citations.

CONCLUSION

I personally know Dr. Eng. Krastin Yordanov, both from our joint work on specific engineering tasks, and from his participation in a number of scientific forums at home and abroad.

In view of the above, I can state that the minimum requirements for occupying the academic position "Associate Professor" have been significantly met, according to the requirements of the Law on the Development of the Academic Staff of the Republic of Bulgaria, and it is in accordance with the requirements of the regulations of TU - Varna.

Based on the above, I find it reasonable to propose Chief Assistant Professor Krastin Krasimirov Yordanov, Ph.D., to obtain the academic position "Associate Professor" in professional field 5.4. "Energy" specialty in "Industrial thermal engineering".

Angel Kostadinov Terziev

Digitally signed by Angel Kostadinov Terziev

Date: 02.06.2023г **JURY MEMBER:**

/Assoc. Prof. Angel Terziev/