

## OPINION

on a competition for the academic position of "Associate Professor"  
in professional field 5.4 "Energetics"  
and specialty " Industrial Thermal Engineering ",  
announced in SG No. 13/07.02.2023  
with candidate Ch. Assistant Professor Dr. Eng. Krastin Krassimirov Yordanov  
Member of the scientific jury: Prof. Dr. Eng. Violeta Dimitrova Rasheva

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

The only candidate in the competition Ch. Assistant Professor Dr. Eng. Krastin Yordanov works in the Department of "Heat Engineering" of the Shipbuilding Faculty at the Technical University of Varna. In order to participate in the competition for associate professor, he submitted a reference and relevant evidence of the fulfillment of the minimum requirements of the "Regulations on the terms and conditions for occupying academic positions in the TU - Varna". He participated in 21 scientific conferences, 6 of which were held abroad. His research and applied research activities are focused at the field of the announced competition.

Concerning **the group of indicators A**, 50 points have been fulfilled for the PhD thesis, as well as a copy of the diploma for holding the PhD degree has been applied. Seven scientific papers were published on the subject of the PhD thesis, 3 of them were printed in journals, and the other 4 – were in proceedings of scientific conferences. In three of these 7 papers, the candidate is the only author, in 3 of them he is the first author and in 1 he is the second author, as one of these papers is in English and the remaining 6 - in Bulgarian language. In addition, 5 papers for filling the academic position of "chief assistant" are presented, 1 of them was published abroad, and the remaining 4 – are in Bulgaria. In one of them, the candidate is the only author, and the others are co-authored. A declaration by the author that these publications were not used in the materials presented in the competition for "Associate Professor" has been submitted.

Concerning **the group of indicators B.4**, 220 points are fulfilled with a minimum requirement of 100, as 10 papers (equivalent to habilitation work) have been published in issues, referenced, and indexed in world-famous databases with scientific information. Full text, as well as abstracts in Bulgarian and English of these scientific publications, are presented. All 10 publications are in English and are co-authored with other scientists, and in 5 of them Chief assistant Yordanov is the first author, in 4 – the second author, and in 1 – the third author.

Concerning **the group of indicators Г**, 214,37 points have been fulfilled at minimum requirements of 200, as by indicator Г.7 three papers published in issues indexed in Scopus and bearing 26 points and by indicator Г.8 - 23 papers published in non-referred journals with scientific reviewing or in edited collective works bearing 188,37 points have been submitted. Of the papers under indicator H, 9 are in English, and the remaining 17 are in Bulgarian, in 2 of which the candidate is the only author, in 2 papers he is the first author, in another 9 - the second author, in 10 papers - the third author and in 3 papers - fourth author. Full text of these scientific papers is attached.

Concerning **the indicator Ж.29** "Horarium of lectures held at TU-Varna for the last three years" 345 points have been completed with a minimum of 30 points required.

So presented PhD thesis and papers are focused on the field of the announced competition. A declaration of non-plagiarism has also been submitted.

From the reference for scientific research and applied activity, it can be seen that after occupying the academic position of "assistant", the candidate participated, as a member of the scientific team, in 6 projects with national funding.

### 2. Assessment of the pedagogical training and activity of the candidate

Ch. Assistant Yordanov graduated from a vocational high school in mechanical engineering in the city of Ruse with the qualification "refrigeration technician". He finished his higher education at TU-Varna,

successively defending the "Bachelor" and "Master" degrees in the field of "Thermal Engineering". After completing his education, he worked as a designer in the field of industrial heat engineering for 3 years, gaining good practical experience.

From 07.02.2013 to 20.12.2018, for almost 6 years, the applicant held the academic position of assistant in the Department of "Thermal Engineering" of TU-Varna, after which he was promoted to the position of head assistant from 20.12.2018 in the same department where he works until now. During his work at TU-Varna, the candidate also defended a PhD thesis, and on 21.09.2017 he received a PhD diploma in the scientific specialty "Theoretical heat engineering". During this period of more than 10 years, working as a teacher, he conducted laboratory and seminar exercises and lectures. He has also supervised course projects and theses of students from three faculties. He also participated in the development of 12 curricula, 9 of which are for the Bachelor's degree, and the rest - for the Master's degree. Ch. Assistant Yordanov submitted a report on his academic workload during the last three academic years (2019-2022), from which it is evident that during this period he fulfilled the standard for academic employment adopted by the AC. In total, for the 3 years, he conducted 1632.5 hours, of which 552.4 hours were lectures, 871.3 hours were laboratory exercises, 86.8 hours were seminar exercises and 122 hours were supervision of course works and projects.

The candidate uses English and Russian in his work. He also has good digital skills, working with a number of computer programs. Ch. Assistant Yordanov has carried out 8 mobilities under the Erasmus program for the period 2016-2022 in Romania, Spain, Greece, and Turkey, 1 of them for the purpose of teaching, and the rest - for the purpose of training. From 2012 until now, the candidate has increased his professional qualification by completing 8 professional training courses. He is a member of the KIIP as a designer with limited designer's legal capacity. He is also a member of the governing bodies of TU-Varna and the Shipbuilding Faculty - AS, OS, and FS, as well as in 2 professional organizations.

All this speaks of the good preparation and the high level of the candidate's educational and pedagogical activities.

### **3. Main scientific and applied contributions**

The subject of the candidate's scientific research, reflected in the papers equivalent to a habilitation work, is directly related to the study and modeling of heat and mass transfer in various processes in industry and buildings. The contributions of these papers are defined as scientific-applied and applied contributions.

Thematically, the results of the remaining papers are systematized in the following areas: research and modeling of heat recovery devices (5 papers); research and modeling of the thermal behavior of buildings from traditional and alternative building materials (2 papers); research and modeling of heat and mass exchange processes during various heat treatments (16 papers); energy production resource exploration (2 papers) and natural gas transmission chain analysis and evaluation (1 paper). The contributions of these publications are also classified as scientific-applied and applied.

I accept the candidate's proposal to define the contributions as scientific-applied and applied, and I think that they are correctly divided into separate groups. Since Ch. Assistant Krastin Yordanov has not submitted a separation protocol for the scientific works in co-authorship, I consider that their contributions are an equal work for all co-authors.

Attached are data on citations of the scientific works presented in the competition, with 3 cited publications with a total of 6 citations in the Scopus and WoS scientific databases.

### **4. Significance of contributions to science and practice.**

In general, the scientific works presented by the candidate are characterized by their focus on improving energy efficiency or using renewable energy in various processes in buildings or industrial systems. All this is relevant and useful in the context of the EU's efforts to prevent the looming threat of global warming by reducing harmful emissions and increasing the use of renewable energy sources.

The submitted reference for scientific and applied developments of the candidate shows that he participated in the construction of a RES laboratory and in the improvement of the material base of TU-

Varna with other devices and installations, as well as in the development of a methodology for conducting scientific research and laboratory exercises. Ch. Assistant Yordanov has provided evidence of 6 additional employment contracts with a number of companies for design work related to the construction of various heat engineering facilities.

With his scientific and teaching work, the candidate is well known in the academic and scientific community, having participated with papers in a number of scientific conferences in Bulgaria and abroad, and participated in teams for joint scientific research and projects. The citations of his papers in the world's scientific databases speak for his authority among scientific circles and the importance of his research.

#### **5. Critical remarks and recommendations.**

References provided in the electronic version are not signed and stamped by TU-Varna; The attached documents indicate a number of disciplines in which the candidate gave lectures, but no specific discipline with 30 hours of lectures from the "Bachelor's College" is specified, as required by the regulations of TU-Varna.

### **CONCLUSION**

After I got acquainted myself with the documents submitted for the competition, with the significance of the scientific works and the contributions contained in them, with the overall pedagogical, scientific research, and applied scientific activity of the candidate, I believe that they fully meet the requirements of ZRASRB, PPZRASRB and the "Regulations on the terms and conditions for occupying academic positions in the TU - Varna" and I find it reasonable **to propose** Ch. Assistant PhD Eng. Krastin Krasimirov Yordanov to take the academic position of "Associate Professor" in the professional direction 5.4. Energy, in the scientific specialty "Industrial Thermal Engineering".

**Date: 08.06.2023**

**JURY MEMBER: .**

**/ Prof. Dr. Eng. V. Rasheva /**

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