

## STATEMENT

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by Assoc. Prof. PhD Tsvetan Ivanov Dimitrov from Ruse University "Angel Kanchev" Razgrad branch, on the materials submitted for participation in a competition for the academic position of "professor" in professional field 5.1. Mechanical engineering, scientific specialty 02.01.25 "Machines and equipment for the chemical, oil, gas and oil refining industries" In the competition for professor, announced in the State Gazette, issue 45/17.06.2022 and on the website of the University "Prof. Dr. Asen Zlatarov", as a candidate participates Assoc. Prof. Dimitar Rusev Rusev, PhD from University "Prof. Dr. Asen Zlatarov", Burgas.

### 1. Brief biographical data

Assoc. Prof. PhD Dimitar Rusev Rusev was born on 24.11.1958. In 1985 completed his higher education as a master's degree in the specialty Designing machines and apparatus for the chemical industry at the Moscow Institute of Chemical Engineering, Moscow (Russia). In 1990, he defended his thesis for the PhD degree on the topic "Investigation of some basic problems of the operation of the balanced layer at pressures other than atmospheric" at the University "Prof. Dr. Asen Zlatarov" in the field of higher education 5. "Technical sciences", 5.1. "Mechanical Engineering", Scientific specialty "Machines and equipment for the chemical, oil, gas and oil refining industries". During the period 1990-1992, he was III-degree fellow at University "Prof. Dr. Asen Zlatarov", and from 1992-1995 he was deputy Director of ZMM Burgas. In 1995 Dimitar Rusev returns to the University "Prof. Dr. Asen Zlatarov", where he successively held the academic positions of assistant and associate professor since 2008. Since 2012 until now he is also the Director of TC. In summary, Associate Professor Dr. Dimitar Rusev Rusev has over 30 years of work and teaching experience.

### 2. General description of the presented materials

Regarding his scientific and teaching activity under the announced competition for the scientific specialty "Machines and equipment for the chemical, oil, gas and oil refining industry", field of higher education 5. Technical sciences, professional field 5.1. Mechanical Engineering, the candidate meets and has fulfilled the minimum national requirements and additional requirements for occupying the academic position "professor".

Assoc. Prof. Dimitar Rusev participated in the competition with a total output of 66 publications, of which 16 are in journals referenced and indexed in world-renowned databases with scientific information (Scopus and Web of Science), and 50 in non-refereed journals with scientific reviews. Assoc. Prof. Rusev is the sole author of 9 publications, and the rest of the publications are co-authored, with 31 of the publications being in English and 35 in Bulgarian. 29 of the presented scientific publications were reported at conferences - 4 abroad and 25 at international and national conferences in Bulgaria. A scientific monograph was published under the competition, which was not presented as the main habilitation thesis. I accept that the degree of participation in the competition is high and equal to that of the other authors in the collective.

The candidate presents a comprehensive and significant teaching and research activity. The topic of the presented scientific works/publications is significant and relevant for science and practice. Modern analytical techniques were used to conduct the research. The obtained results have scientific and scientific-applied contributions for enriching the theory and practice in the field of the scientific specialty.

### 3. Impact of the candidate's scientific publications in the literature

A total of 65 citations were noticed and presented in the competition materials: 59 citations in scientific publications, in references and indexed in the Scopus and Web of science databases, distributed as follows: publications with more than 2 citations - 9;

publications with 2 citations 3; publications with 1 citation - 2. Of the submitted references, citations in non-refereed journals with scientific review are a total of 6 nos.

The results presented in the scientific works of Assoc. Prof. Dimitar Rusev are known to the scientific community.

#### **4. General characteristics of the applicant's activity**

##### **4.1. Educational and pedagogical activity (work with students and doctoral students)**

Assoc. Prof. Rusev is a teacher at the University "prof. A. Zlatarov" and conducted lectures and exercises for "Bachelor's", "Professional Bachelor's" and "Master's" degree students in regular and part-time form for 5 majors in 14 disciplines. He participated in the development of 38 study programs, of which 22 for the Bachelor's degree, 3 for the "Professional Bachelor's" and 13 for the "Master's". 25 lecture courses have been developed for students at the bachelor's, professional bachelor's and master's degrees, as well as video lectures and video exercises in one discipline. 2 university textbooks have been published. Assoc. Prof. Rusev is the supervisor of 12 successfully defended diploma students and 3 successfully defended doctoral students.

Assoc. Prof. Dimitar Rusev has extensive training in the use of modern methods and tools for research and teaching, he has prepared and published teaching materials, that is why I rate the educational and pedagogical activities as excellent.

##### **4.2. Scientific and applied activity**

Assoc. prof. Dimitar Rusev presents a report for participation in the competition for the academic position of "professor" with completed points in groups of indicators A, B, G, D, E. Evidence documents for implementation with a total of 1828.09 points in all groups are presented.

He participated in the team of 1 project financed under the European Program, 1 project financed under the National Science Program and 5 national scientific projects at the NSF. He is the coordinator of 1 and a participant in 2 projects financed under the Grant system for competition-project financing of scientific and artistic-creative activity at the University "Prof. Dr. Asen Zlatarov" - Burgas, Team leader of 2 and participant in 2 projects financed on topics in the University "Prof. Dr. Asen Zlatarov", Burgas. He has 3 patents and 2 patent applications and a utility model. He presented Certificates for 4 scientific studies applied in practice. Assoc. prof. Rusev is the joint supervisor of 3 successfully defended doctoral students. Their names and the topics of their dissertations are presented.

#### **5. Contributions (scientific, scientific and applied)**

The main scientific and scientific-applied contributions of Assoc. Prof. Dimitar Rusev are in the field of construction of machines and devices, hydrodynamics, simulation studies, application of surface coatings, energy efficiency and management, organization and optimization of the educational process. Contributions can be summarized in the following groups:

- Development of machine and apparatus designs and improvement of energy efficiency and turbine designs for ORC-installations;
- Hydromechanical studies and optimization of mechanical structures;
- Application and study of the mechanical characteristics of surface coatings applied to metal and polymer materials;
- Simulation studies and optimization of mechanical structures and strength characteristics of applied coatings;
- Synthesis of new materials;
- Management, organization and optimization of the learning process.

Assoc. Prof. Dimitar Rusev has presented a very detailed report on the achieved scientific and scientifically applied contributions from his scientific publications.

I accept the contributions defined in the applicant's reference as scientific and scientific-applied. They refer to the acquisition of new scientific knowledge, the enrichment of existing knowledge and the practical applicability of the obtained results.

#### **6. Evaluation of the candidate's personal contribution**

The objective analysis of the scientific and scientific-applied contributions shows that they are the personal and independent work of Associate Professor Dimitar Rusev. All scientific works and university textbooks and manuals have a certain academic style, which determines the significance and originality of his scientific achievements. I have no doubt that the contributions are the personal work of the candidate and in equal collaboration with the co-authors. The reliability of the submitted materials for the competition is supported by a declaration signed by the candidate for the reliability of the information.

#### **7. Personal impressions**

The presented materials for the competition are very well systematized and designed, and the following generalizations can be made: The scientific research and implementation activity is purposeful and thorough; The scientific works are dedicated to current problems in the field of the scientific specialty machines and equipment for the chemical, oil, gas and oil refining industries; The candidate's scientific and scientific-applied contributions are significant and indisputable. I could qualify Assoc. Prof. Dimitar Rusev as a very good teacher and a colleague with a high sense of responsibility and internal ethics. As a scientist, he is dedicated and proactive, a good and competent researcher with a preference for industrially oriented research. There are emphasized organizational abilities and extremely good results, despite the fact that this activity requires high concentration, a lot of time and dedication.

### **CONCLUSION**

Bearing in mind the above, I propose that Associate Professor PhD Dimitar Rusev Rusev be awarded the academic position of "Professor" in professional direction 5.1. "Mechanical engineering", scientific specialty "Machines and equipment for the chemical, oil, gas and oil refining industries".

Based on the analysis of the documents of Assoc. Prof. Dimitar Rusev Rusev, giving a real assessment of the achieved contributions in the educational and pedagogical activity, the volume and relevance of the conducted scientific research and published publications, the achieved scientific indicators, the available fundamental scientific and applied contributions, professional qualification and competence in the field of the announced competition, the presence of indisputable organizational experience and effective pedagogical activity, without a doubt Assoc. Prof. Dimitar Rusev Rusev meets the requirements for acquiring the academic position of "professor" in the field of the announced competition.

**Therefore, I propose that Associate Professor Dimitar Rusev Rusev be awarded the academic position of "Professor" in professional field 5.1. "Mechanical engineering", scientific specialty "Machines and equipment for the chemical, oil, gas and oil refining industries".**

Member of the Jury:

08.11.2022

/Assoc. Prof. PhD Tsvetan Dimitrov/