

# POSITION

on the competition for the academic position "*Associate Professor*" in professional field 5.2. "*Electrical engineering, electronics and automation*", under the scientific and educational specialty "*Electrical Apparatus*", at the Department of Electrical Engineering and Electrotechnology of the Faculty of Electrical Engineering of the Technical University of Varna, promulgated in the State Gazette No. 40 from 31.05.2022, with an only candidate Chief Assist. Prof. **Tatyana Marinova Dimova**, Ph.D.

Member of the scientific jury: Ph.D. **Peter Doncheff Dineff**, professor in the professional field 5.2. "*Electrical engineering, electronics, and automation*", under the scientific and educational specialty "*Electrotechnologies*", Technical University of Sofia (retired from 2012).

## 1. GENERAL CHARACTERISTICS OF THE APPLICANT'S RESEARCH, SCIENTIFIC AND IMPLEMENTATION ACTIVITIES

The overall scientific activity of the only candidate in this competition – Chief Assist. Prof. **Tatyana M. Dimova**, Ph.D., in the field of the announced professional field, and in the field of the announced scientific specialty, is permanently focused on research of problems in the scientific field "*Electrical Apparatus*", and in particular in the field of numerical modeling, analysis, optimization and synthesis of electromagnetic fields in magnetic separators and related thermal, mechanical and physicochemical states. I accept that the presented evidence accurately reflects the overall research and research activities of the candidate. I enclose a table illustrating the compliance of the quantitative indicators of the criteria for holding the academic position of "*Associate Professor*", with regard to research and applied research, according to the evidence presented by the candidate, Annex 1. With this, I positively assess the protected compliance of the quantitative indicators with the criteria, according to the requirements of the current normative base for: a) Art. 2b, Para. 2 and 3, respectively of Art. 2b, Para. 5 of Act on development of the academic staff in the Republic of Bulgaria (ADDSRB); b) Art. 60, Para. 1 and 3 of the Act amending and supplementing ADDSRB (AAS ADDSRB), and c) Art. 18, Para. 1, Item 4 of the Rules of procedure for ADDSRB implementation in Technical University of Varna (RPI ADDSRB), (2022). The minimum national requirements for all criteria and groups of indicators for the declared scientific specialty have been exceeded.

The candidate **Tatyana Dimova** participates in this competition with 10 scientific publications, in editions that were referenced and indexed in world-famous databases with scientific information, as equivalent to a monograph (group B4). The subject of research in the presented publications were different in type and purpose magnetic separators and systems with permanent magnets. Numerical modeling of the electromagnetic field and the analysis of the related changes in the thermal and mechanical state were used in solving forward and inverse problems. The presented scientific papers do not repeat the content and contributions of the scientific papers submitted for the acquisition of educational and scientific degree (ESD) "*Doctor*" and for holding the academic position "*Senior Assistant Professor*". With this, the candidate fully meets the requirements of Art. 18, Para. 1, Item 3 and 4 of RPI ADDSRB in TU-Varna.

In general, I appreciate the positively carried out research and applied research, which is a prerequisite for the candidate **Tatyana Dimova** to occupy with dignity the academic position of "*Associate Professor*" in the announced scientific specialty.

## 2. EVALUATION OF THE APPLICANT'S TEACHING AND STUDENTS' SUPERVISION ACTIVITIES

The candidate **Tatyana Dimova** entered in the Department of Electrical Engineering and Electrotechnology (EEE) at the Faculty of Electrical Engineering (EE) of the Technical University of Varna (TU-Varna) after she successively held the academic positions of "Assistant Professor" (from 2007). After that, she held the academic positions of "Chief Assistant Professor" (from 2016), under a permanent employment contract. Her total work experience in the specialty is over 15 years, as a teacher (pedagogical experience in higher education), in the same professional field and scientific specialty; and her experience only in the academic position of "Chief Assistant Professor" - over 6 years, which far exceeds the requirements of Art. 29, Para. 1, Item 2 of RPI ADDSRB in TU-Varna.

The consecutive passage through all stages of teaching, in the Department of Electrical Engineering and Electrotechnology, determines a characteristic positive individual development, which allows me to say that the candidate fully meets the requirements for acquired pedagogical and professional experience to hold the academic position "Associate Professor".

The candidate **Tatyana Dimova** defended, in 2016, her dissertation for the acquisition of ESD "doctor" on the topic "*Modeling of permanent magnetics separator*" in the same scientific specialty "Electrical Apparatus", which meets the requirements of Art. 18, Para. 1, Item 1 of RPI ADDSRB in TU-Varna.

The applicant teaches the curriculum "Electrical Apparatus", leading lectures and laboratory exercises and course tasks. The presented report on the horarium of the lectures led by the candidate **Tatyana Dimova** in TU-Varna during the last three years reveal the needs of the training department "Electrical Engineering and Electrotechnology", which is a serious basis for the announcement of the competition in relation to the discipline for Bachelor's and "Master's degrees: "Electrical Apparatus", which falls directly into the declared professional field – scientific and educational specialty. In his curriculum, the candidate has lectured in the discipline "Electrical Apparatus" for the past three years, in a volume of 120 hours (2020÷2021), 105 hours (2019÷2020) and 42 hours (2018÷2019).

The result of the above mentioned (pedagogical and professional) activity are the equivalent of monograph (group B4) ten scientific publications, referenced and indexed in the world-famous databases of scientific information with which the candidate participates in this competition.

Based on all the above, I accept and evaluate positively the compliance of the evidence presented by the candidate with the requirements of ADDSRB, AAS ADDSRB and RPI ADDSRB of TU-Varna. I appreciate the professional and pedagogical experience gained by the candidate **Tatyana Dimova**, which allow her to successfully cover the essential requirements for holding the academic position of "Associate Professor" in the announced scientific and educational specialty.

## 3. KEY SCIENTIFIC AND APPLIED SCIENCE CONTRIBUTIONS

The scientific interests of the candidate Chief. Assist. Prof. **Tatyana Dimova** are related to solving problems for analysis, optimization and design of permanent magnet separators. The main part of the achieved results (from conducted research) relates to the solution of problems for numerical modeling, analysis, optimization and synthesis of electromagnetic fields and related thermal and mechanical states. Object of research and scientific development are different in type and purpose devices and systems.

The more significant contributions to the scientific papers submitted by the applicant relate to the following subjects of study: (1) Modelling and study of processes occurring in permanent magnet separator, based on analysis of the distribution of the magnetic field and associated thermal, mechanical and physicochemical states; 2) Parametric modelling of the distribution of the electromagnetic field, in electromagnetic systems for different purposes, in order to optimize the systems, identification of parameters and effective control of the operating mode; 3) Modeling of impact separation processes and changing the separation (cleaning) efficiency; 4) Modeling of electromagnetic field and determining parameters and characteristics as an essential part of magnetic separator engineering design .

The main scientific contributions can be attributed to the group of scientific and applied contributions resulting from the conducted industrial scientific research: this means purposefully planned and conducted studies of: (1) exceptional importance, intended for the acquisition of new knowledge and skills for development; (2) new products, processes or services, or to achieve significant improvements to existing products, processes or services.

I accept that the scientific-applied contributions can be referred to the following groups: (1) proving with new means of significant new aspects of already existing scientific and technological fields and problems; (2) creation of new methods, constructions, technologies, schemes; (3) obtaining and proving new facts; (4) receipt of confirmatory facts; (5) contributions for implementation.

A certain part of the mentioned contributions can be referred to the group of purely applied contributions, which are a result of the so-called experimental development: this means acquiring, combining, shaping and using existing scientific and technological important knowledge in order to develop new or improved products or processes. To this group of purely applied contributions I also include the teaching and methodological contributions formulated by the candidate, realized in favor of the educational process.

I accept the presented thematic distribution of the contributions by fields of research and groups of scientific publications. I also accept, without amendment or supplement, the scientific-applied and applied contributions formulated by the candidate. The scientific-applied contributions can be referred mainly to the presented monograph (the publications from group B4) and the first three thematically formed areas of research. To the purely applied contributions, a result of the experimental development of devices and systems.

I appreciate the positively carried out research activity, which allows the candidate **Tatyana Dimova** to successfully cover the essential requirements for holding the academic position of "Associate Professor" in the announced scientific and educational specialty.

#### 4. SIGNIFICANCE OF CONTRIBUTIONS TO SCIENCE AND PRACTICE

The applicant **Tatyana Dimova** has published works with scientific and applied contributions that have value for science and practice. She has participated in active innovation as a researcher and consultant. She has presented scientific publications equivalent to monograph in publications that are referenced and indexed in world-famous databases with scientific information in the field of the announced competition and in areas that directly contact it. The quantitative indicators of the criteria for holding the academic position "Associate Professor" are not only covered, but exceeded several times by all criteria and groups of indicators.

The contributions of the candidate **Tatyana Dimova** in the announced scientific field are significant, and the information contained in them is useful, sought after and needed by other authors and specialists in the field of electrical engineering, electronics, and automatics, and most importantly - the candidate's name is already well known to the scientific community at home and abroad.

#### 5. CRITICAL REMARKS AND RECOMMENDATIONS

I have no remarks on the candidate's scientific works that I should state publicly. I am sure that the candidate **Tatyana Dimova** has more valuable ideas and results that she can share successfully in the coming years with the scientific community in the country and especially abroad. This should be taken as a recommendation to the candidate's future work.

#### CONCLUSION

Based on the presented scientific papers, on the acquaintance and assessment of their significance and visibility by the scientific community in the country and abroad, on the scientific, applied-scientific and applied contributions contained in them, as well as on acquaintance with and assessment of the overall teaching and supervision activities, equivalent to monograph scientific publications, scientific publications, and submitted citations in scientific journals,

**I find it justified to propose,**

Chief Assist. Prof. – Eng. **Tatyana Marinova Dimova**, Ph.D., to be awarded the academic position "Associate Professor" in Department of Electrical Engineering and Electrotechnology at

Position of Prof. Ph.D. **Peter Doncheff Dineff**, member of the scientific jury.

Competition for the academic position "Associate Professor".

Candidate: Chief. Assist. Prof. – Eng. Ph.D. **Tatyana Marinova Dimova**.

the Faculty of Electrical Engineering, of Technical University of Varna, in the professional field (5.2) of „Electrical engineering, electronics, and automation“, specialty “*Electrical apparatus*”.

Sofia,  
30.10.2022

Заличена информация  
по Регламент (ЕС)  
2016/679

Member of the Scientific Jury,  
Prof.-Eng. Ph.D. Peter D. Dineff:

**Peter Doncheff Dineff,**

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## ASSESSMENT

of compliance with the **minimum national requirements** in professional directions "Electrical Engineering, Electronics and Automation", under: a) Art. 2b, Para. 2 and 3, respectively with the requirements under Art. 2b, Para. 5 of Act on Development of the academic staff in the Republic of Bulgaria (ADDSRB); b) Art. 60, Para. 1 and 3 of the Act amending and supplementing ADDSRB; and c) Art. 18, Para. 4, Point 4 of the Rules of procedure for ADDSRB implementation in Technical University of Varna, for occupying academic positions of "Associate Professor".

Chief Assist. Prof. **Tatyana M. Dimova**, Ph.D., was the candidate wishing to hold the academic positions "Associate Professor" for the needs of the Department of Electrical Engineering and Electrotechnology of the Faculty of Electrical Engineering at Technical University of Varna.

	Indicators	Individual Score, points		Rate, points	Meets norm: Yes/No Note
A.1	Dissertation thesis for the awarding of the Doctor's degree: „Modeling the permanent magnets separators“, 2016	-	50	= 50	Yes, Meets the norm
B.3.	Equivalent to monograph scientific publications in editions that are referenced and indexed in world-famous databases with scientific information	-	225	≥ 100	Yes, Exceeds the norm
Г.7.	Scientific publications in editions that are referenced and indexed in world-famous databases of scientific information	200	236,67	≥ 200	Yes, Exceeds the norm
Г.8.	Scientific publications in non-peer-reviewed and peer-reviewed journals or in edited collective papers	36,67			
Д.12.	Citation in scientific journals, referenced and indexed in world-famous databases with scientific information or in monographs and collective volumes	200	240	≥ 50	Yes, Exceeds the norm
Д.14.	Cited in unreferenced journals with scientific review	40			
Ж.29.	Horarium (Schedule) of lectures given in the last three years	883 hours	883	≥ 30	Yes, Exceeds the norm

Sofia,  
30.10.2022

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Member of the Scientific Jury,  
Prof. Ph.D. Peter D. Dineff: