

OPINION

by Assoc. Prof. Nikola Draganov Draganov, Technical University – Gabrovo based on the materials submitted for participation in the contest for the academic position of associate professor in field of higher education - 5. Technical Sciences, in the professional field - 5.2. Electrical Engineering, Electronics and Automatics, specialty - "Electrical Power Supply and Electrical Equipment" (Lighting and installation engineering)

The competition for associate professor was announced in the State Gazette, issue 54 of 25.06.2024. and on the website of the Technical University – Gabrovo. The competition for a full-time associate professor is for the needs of the Technical College - Lovech. Only one candidate participated in the competition, Dr. Eng. Milko Todorov Yovchev, chief assistant in the Department of "Power Supply and Electrical Equipment" at the Faculty of Electrical Engineering and Electronics at the Technical University - Gabrovo.

This statement was prepared in accordance with the requirements of the Regulations for the Acquisition of Scientific Degrees and the Occupancy of Academic Positions (RASDOAP) at the Technical University – Gabrovo.

1. Content overview and results in the presented papers

In the competition for "associate professor", for which I was announced as an evaluator by Order of the Rector of the Technical University-Gabrovo 3-01-370/02.10.2024, there is only one candidate ch. Assistant Dr. Eng. Milko Yovchev. He applied with 35 scientific publications and 3 textbooks. Data were presented on citations of the candidate's scientific works and his participation in educational and research projects.

The scientific publications presented by the candidate can be classified into two large groups:

The first group are publications equivalent to a monographic work. These are group B. There are 10 publications that are referenced and indexed in world-famous databases with scientific information.

The second group are publications, other than those equivalent to a monographic work. They are in total 25 in representing group G. There are 5 publications in editions that are referenced and indexed in world-renowned databases of scientific information. There are also 20 scientific publications in non-refereed peer-reviewed journals or edited collective volumes.

The candidate is the author of 6 of all 35 publications, and co-author of 4. All the publications from group B are in English, and 25 of the presented. Publications in group G 14 are in Bulgarian.

Dr Yovchev is co-author of the 3 publications which has 10 citations. Cited publications are published and in editions that are referenced in Scopus.

2. General characteristics of the scientific activity of the candidate

According to the information presented in the candidate's documents, Dr. Yovchev's significant achievements both in educational and pedagogical, as well as in scientific, scientific-applied and innovative activities stand out.

2.1. Educational and teaching activities of the candidate

The attached documents unequivocally prove the significant achievements of the candidate in the study and teaching activities in the department where he works. In the period from 2020 to 2024, it had a maximum classroom load, which was expressed in conducting lectures seminars and laboratory exercises in academic disciplines from the educational qualifications Bachelor and Master. The academic disciplines that he teaches are Lighting and installation technology, Design of lighting systems, Power supply, Industrial power supply systems, Optimization and management of power supply systems. The candidate has participated in the development of programs of study disciplines included in the curricula of the educational qualifications Master and for the "doctor" educational and scientific degree. The teaching aids, authored by Dr. Yovchev, two manuals for laboratory exercises and one textbook are also of great importance. The textbook makes an excellent impression with the presentation of the latest trends in the development of lighting and installation technology.

2.2. Scientific, scientific applied and innovative activity

As a chief assistant, Dr. Milko Yovchev is the head of a scientific contract on the topic "Research of photometric and electrotechnical characteristics of LED illuminators, volt-ampere characteristics and efficiency of photovoltaic modules" (2308E/2023), at the University Center for Scientific Research and Technologies of Technical University-Gabrovo. His significant participation in operational program projects and international research projects should not be overlooked.

The participation of Dr. Yovchev in the construction of the scientific research laboratory C7.3-Ecological, energy-saving and electromagnetically compatible light engineering, LED and RES components and technologies" at the Competence Center "Intelligent Mechatronic Eco- and Energy-Saving Systems and Technologies" was highly appreciated." at Technical University-Gabrovo.

3. Contributions (scientific, scientific-applied and applied). Significance of contributions to science and practice

The contributions of Dr. Milko Yovchev and their significance for science and technology can be unequivocally described as:

- a methodology for iterative three-dimensional computer modeling and photo-metric analysis of lighting fixtures with different purposes is proposed,
- an iterative optimization of optical systems of LED illuminators for indoor and street lighting was performed,
- an analytical dependence of the effectiveness of the dangerous blue light emission in the visible spectrum on the correlated color temperature of lamps and illuminants is defined,
- models of secondary optical lenses for street LED luminaires, reflectors and diffusers for LED luminaires for interior lighting were created to calculate the light distribution, zonal light fluxes, brightnesses and the degree of glare from the illuminators,
- the losses in optical systems of illuminators with different purposes were studied,
- the influence of various factors on the color characteristics and photobiological safety of lamps and illuminators was studied,

- digital graphic models of the existing lighting systems in number of Bulgarian settlements were jointly developed as a team,
- energy-saving measures are proposed on the basis on variant optimization lighting engineering calculations and evaluation of the electrical efficiency of the proposed technical solutions for the reconstruction of the lighting systems.

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The presented materials show repeated implementation not only of the minimum scientometric data according to the requirements of RASDOAP in TU-Gabrovo, but also those according to the National requirements listed in the Law on the Development of the Academic Staff in the Republic of Bulgaria for occupying the academic position of associate professor. This proves that Dr. Milko Yovchev has established himself both as a teacher and as a high-level scientific researcher in the field of lighting technology.

4. Assessment of the candidate's personal contribution

I thoroughly studied the applicant's documents for the competition. I read the attached articles and familiarized myself with the textbook on Lighting and Installation Techniques. Based on this, I can conclude that the candidate has an equal contribution in all scientific publications, textbook and teaching aids.

5. Critical notes and recommendations

I have no critical remarks about Dr. Milko Yovchev and his works related to science. I recommend the candidate not to stop working in the field of lighting technology. He has accumulated a lot of knowledge and research skills that he can successfully prove in his future developments. I also recommend that a large part of his future publication appearances not to be co-authored.

6. Personal impressions

I have known Dr. Eng. Milko Yovchev since he joined the Department of Power Supply and Electrical Equipment as a doctoral student. My personal impression is that he is an intelligent responsible and correct young scientist and at the same time an extremely well-mannered person. I am glad that I had the pleasure of becoming more acquainted with his scientific work, which, for my critical point of view for these things, I rate with the highest praise.

7. Conclusion

From what has been said so far, I propose Ch. assistant Dr. Eng. Milko Yovchev to be elected as an "associate professor" in the field of higher education - 5. Technical sciences, professional direction - 5.2 Electrical engineering, electronics and automation, specialty "Electrical supply and electrical equipment" (Lighting and installation technology).

Gabrovo
October 30, 2024

Jury member: /signature/
 /Assoc. Prof. Dr. Eng. Nikola Draganov/