

OPINION

by Assoc. Prof. Iva Chavdarova Petrinska, Technical University - Sofia
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)

In the contest for associate professor, announced in the State Paper, issue 54/25.06.2024 and on the website of TU-Gabrovo for the needs of the Technical College - Lovech as a candidate participated Dr. Eng. Milko Todorov Yovchev, Senior Assistant Professor at the Department of Electrical Power Supply and Electrical Equipment at the Technical University - Gabrovo.

The statement was prepared in accordance with the requirements of the Regulations for the Acquisition of Scientific Degrees and Academic Positions at the Technical University - Gabrovo.

1. Overview of the content and results in the presented papers

In the contest for associate professor, Milko Yovchev has submitted a total of 35 scientific publications and 3 books. Information on citations and participation in research and educational projects is also presented. The presented scientific publications are divided into two groups. Publications equivalent to a monographic work (group of indicators B4) - 10 publications in journals that are refereed and indexed in world-known databases of scientific information - Scopus and Web of Science. One of these publications has SJR 0,180. 2. Publications beyond those, equivalent to a monographic work - divided in two subgroups: - in publications that are refereed and indexed in world-known databases of scientific information (group of indicators G7) - a total of 5 conference papers. In this subgroup, the candidate is ranked first in one publication; - in non-refereed peer-reviewed journals or in edited collective works (indicator group G8) - 20 conference papers. Of the publications in this subgroup, 3 are independent. All publications in indicator groups B4 and G7 are in English, and of those in indicator group G8, 3 are in English and the rest in Bulgarian. A reference of citations of the candidate's works is provided, which shows that the candidate has 10 citations in SCOPUS, one of them in a publication in a journal with IF 2.7.

2. General description of the applicant's activities

2.1. Teaching and pedagogical activity (work with undergraduate and postgraduate students)

The teaching and pedagogical activity of the candidate Milko Yovchev is significant. A list of lectures, laboratory and seminar exercises in 5 disciplines is presented. His teaching activity in the last three academic years averaged over 450 hours per year. The two Students books submitted, as well as the textbook in which the candidate is co-author and which have been submitted for this contest, should be assessed positively. Asst. prof. Milko Yovchev has developed two curricula for the Master's degree and three for the PhD degree.

2.2. Scientific and applied activities

Assistant Prof. M. Yovchev has participated in the development of research laboratory C 7.3: "Ecological, energy-saving and electromagnetically compatible light, LED and RES components and technologies" at the Centre of Competence "Intelligent Mechatronic Eco- and Energy-saving Systems and Technologies" at the Technical University of Gabrovo. He is also the head of one research project on "Study of photometric and electrical characteristics of LED luminaires, volt-ampere characteristics and efficiency of photovoltaic modules". It should also be noted that he was awarded with a certificate for the best paper of the UNITECH 2022 Conference from the Union of Electronics, Electrical Engineering and Communications in Bulgaria - CEEC. For the purposes of the contest, Milko Yovchev has also submitted a certificate of limited design competence issued by the Chamber of Engineers in Investment Design.

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

The main contributions of the candidate can be summarized as follows: A methodology for iterative three-dimensional computer modelling and photometric analysis of luminaires for different purposes has been proposed; an algorithm for optimization of optical systems of LED luminaires for indoor and street lighting has been developed; an analytical dependence of the efficiency of hazardous blue light emission in the visible spectrum on the correlated color temperature of lamps and luminaires has been defined; models of secondary optical lenses for street LED luminaires, reflectors and diffusers for LED luminaires for indoor lighting have been developed to calculate the light distribution, zonal luminous fluxes, luminances and the degree of glare from luminaires; losses in optical systems of luminaires with different purposes have been investigated, as well as the influence of various factors on the color characteristics and photobiological safety of lamps and luminaires; digital graphical models of existing lighting installations in a number of Bulgarian settlements have been developed jointly in a team, energy-saving measures have been proposed on the basis of variant optimization light engineering calculations and evaluation of the energy efficiency of the proposed technical solutions for the reconstruction of lighting systems.

It is evident that the candidate's contributions are significant as they represent theoretical models applied in practice.

The comparison of the candidate's indicators with the minimum requirements for the academic position of Associate Professor in the Regulations for the Acquisition of Scientific Degrees and Academic Positions at the Technical University - Gabrovo shows that in all indicators the candidate exceeds the minimum requirements.

4. Evaluation of the candidate's personal contribution

It can be assumed that the candidate has made an equivalent contribution to joint publications.

5. Critical remarks and recommendations

A recommendation can be made that in the future the candidate should publish his results in journals with impact factor and continue his successful development in the field of light engineering.

6. Personal impressions

I know Asst. Milko Yovchev since 2014. Since then, thanks to our common scientific interests related to lighting technology, we have met at a number of scientific forums. My impression is that Milko Yovchev is extremely erudite and capable, very efficient, correct, and at the same time modest and well-mannered young man.

7. CONCLUSION

Taking into account the above mentioned, I suggest that assistant prof. Milko Todorov Yovchev PhD should be elected as "Associate Professor" in the field of higher education - 5. Technical sciences, professional field - 5.2. Electrical engineering, electronics and automatics, specialty - "Electrical supply and electrical equipment" (Lighting and installation engineering).

28.10.2024

Member of the scientific jury: /signature/

/Assoc. Prof. Iva Petrinska PhD/