

OPINION

by competition for an academic position "Professor"
in professional direction direction 4.1 Physical Sciences (General Physics),
for the needs of Sofia University "St. Kliment Ohridski" (SU),
Faculty of Physics, announced in SG no. 24 of 17.03.2023

The opinion was prepared by: Associate Professor Dr. Milena Todorova Georgieva, Faculty of Physics, SU "St. Kliment Ohridski", in his capacity as a member of the scientific jury for the competition, according to Order No. RD-38-173/20.04.2023. of the Rector of Sofia University.

Only one candidate submitted documents for participation in the announced competition:
Associate Professor Dr. Veselin Todorov Donchev, Faculty of Physics, SU "St. Kliment Ohridski"

I. GENERAL DESCRIPTION OF THE PRESENTED MATERIALS

1. Application data

The documents submitted by the candidate in the competition correspond to the requirements of the ŽRASRB, PPZRASRB and the Regulations for the terms and conditions for acquiring scientific degrees and occupying academic positions at SU "St. Kliment Ohridski" (PURPNSZADSU).

To participate in the competition, the candidate Veselin Todorov Donchev submitted a list of a total of 22 titles, including 16 publications in foreign scientific journals with an impact factor and 6 published in full text in proceedings of conferences or scientific forums. Submissions for the contest have not been used in the applicant's previous contests.

17 other documents (Artefacts.zip) supporting the applicant's achievements are also presented.

All necessary documents according to the requirements for occupying the academic position "Professor" have been submitted.

2. Applicant data

Veselin Todorov Donchev is a graduate physicist at the Faculty of Physics, SU "St. Kl. Ohridski" since 1985. In 1991, he defended his doctoral thesis in the field of Solid State Physics, after which he worked as a physicist, senior assistant and chief assistant at the Department of Condensed Matter Physics, SU "Kliment Ohridski", and from 2004 he was appointed as an associate professor at the same department. Since 2013, he has held the position of Head of Department. His scientific activity is related to the study of electronic and optical properties of semiconductor materials and structures by photoelectric and optical methods, as well as by computer simulations.

3. General characteristics of the scientific works and achievements of the candidate

Candidate Veselin Todorov Donchev mainly works in two directions:

- Surface photovoltaic spectroscopy of materials for photovoltaics (Ga(In)As(Sb)N, Si, perovskites) and of semiconductor materials and nanostructures for optoelectronic applications (emitters, detectors).
- Calculation of reflection and transmission spectra of multilayer structures with consideration of roughness of the interfaces.

The presented scientific works meet and exceed the minimum national requirements (according to Art. 2b, paras. 2 and 3 of ZRASRB) as well as, respectively, the additional requirements of SU "St. Kliment Ohridski" for occupying the academic position of "professor" in the scientific field and professional direction of the competition.

The scientific works presented by the candidate do not repeat those from previous procedures for acquiring a scientific title and academic position.

There is no evidence of plagiarism in the scientific works submitted for the competition.

4. Characteristics and assessment of the candidate's teaching activity

From the submitted report on the candidate's study load over the last 5 years, it is clear that he fulfilled and exceeded the mandatory classroom and extra-auditory employment for each of the reported years.

The candidate's teaching activity includes two basic courses in General Physics - "Mechanics" and "Molecular Physics", which he has led as a lecturer for more than 15 years, one specialized course in "Optoelectronic Instruments", as well as two courses in Master's programs - "Nanostructural materials and instruments for information technology" and "Physical foundations of optoelectronics". He was the scientific supervisor of 6 graduates - 2 bachelors and 4 masters, as well as scientific consultant of 4 graduates. He was the scientific supervisor of a full-time doctoral student who successfully defended his thesis and is currently the supervisor of a part-time doctoral student. From all this, it can be concluded that Veselin Todorov Donchev is very responsible and devoted to his teaching activity, and it is an important part of his academic development, which is essential for anyone holding the position of "Professor".

5. Content analysis of the applicant's scientific and scientific-applied achievements contained in the materials for participation in the competition

The candidate's total number of authored or co-authored scientific publications includes 137 scientific journal papers, book chapters and reports published in full text in conference proceedings, three teaching books and two publications in popular journals. He participated in over 40 scientific conferences. The works have been cited 400 times (without self-citations) and have an h-index of 9, according to data from Scopus. In the current competition, the candidate participated with 22 scientific publications and 113 citations.

The candidate's scientific works and contributions are related to the study of electronic and optical properties of semiconductor materials and nanostructures, for applications in optoelectronics and information technologies. Materials investigated include: perovskites deposited directly on crystalline silicon for photovoltaic applications, InGaAsN, GaAsSb and GaAsSbN layers obtained by liquid epitaxy, InAs/GaAs quantum dots, InGaAs/GaAs semiconductor tubes, as well as SiO_x layers containing Si nanoparticles. The results of these studies have been published in recognized journals with an impact factor. The contribution of the candidate in the scientific works with which

he participates in the current competition are thoroughly described, with letters from his collaborators for significant contributions in the relevant publications, where he is not the first author, also attached.

The candidate takes a leading place in the design and development of an experimental setup and methodology for surface photovoltage (SPV) spectroscopy, through which a large part of the experimental work on the investigated materials for optoelectronic applications is carried out.

His scientific activity is also related to his participation or management of a number of research projects - university, national and international. There is an active collaboration with the Paris Laboratory of Electrical Engineering and Electronics (Laboratoire de Génie électrique et électronique de Paris (GeePs), CentraleSupélec), Paris-Saclay University.

The scientific activity of Veselin Todorov Donchev is significant both quantitatively and qualitatively. He has a proven sizable or leading contribution in the various research teams, Bulgarian and international, with which he worked. His works have a serious impact in the scientific circles in the field, as evidenced by their citations.

6. Personal impressions of the candidate

My personal impressions of the candidate are of a dedicated and responsible lecturer, a serious and goal-oriented researcher, and a very well-organized head of department.

7. Conclusion on the application

After having familiarized myself with the materials and scientific works presented in the competition and based on the analysis of their significance and the scientific and scientific-applied contributions contained in them, I confirm that the scientific achievements meet the requirements of ZRASRB, the Regulations for its application and the relevant Regulations of SU "St. Kliment Ohridski" for the candidate to occupy the academic position of "professor" in the scientific field and professional direction of the competition. In particular, the candidate satisfies the minimum national requirements in the professional direction as well as the additional requirements of the FzF at SU "St. Kliment Ohridski" and no plagiarism was found in the scientific works submitted to the competition.

I give my positive assessment to the application.

II. GENERAL CONCLUSION

Based on the above, I recommend the scientific jury to propose to the competent authority for the selection of the Faculty of Physics at SU "St. Kliment Ohridski" to choose Vesselin Todorov Donchev to occupy the academic position of "professor" in professional direction 4.1 Physical Sciences (General Physics).

11/07/2023

Prepared the opinion: Associate Professor Dr. Milena Georgieva