

# OPINION

on a competition for associate professor in the professional field 4.1. Physical Sciences (Experimental Nuclear Physics) for the needs of the Faculty of Physics at Sofia University “St. Kliment Ohridski”, published in the State Gazette, issue. 103, dated 10.12.2021

Candidate: chief assistant Strahil Boychev Georgiev, Ph.D., Faculty of Physics, Sofia University

Prepared by: assoc. prof. Mariyan Velichkov Bogomilov, Ph.D., Sofia University - Member of the Scientific Jury

The only candidate in the competition is Chief Assistant Dr. Strahil Georgiev. Mr. Georgiev received his master’s degree in the specialty "Medical Physics" at Sofia University "St. Kliment Ohridski" in 2005, and in 2012 he received his doctoral degree (Ph.D.) from the Sofia University“ St. Kliment Ohridski ” in specialty 4.1. Physical sciences (Nuclear physics). Since June 2013 he has been a chief assistant in the department of "Atomic Physics" at the Faculty of Physics of Sofia University.

## **Applicant's eligibility for the position of Associate Professor**

### **I. Related to teaching activities.**

In the last eight years, Ch. Assistant Professor Dr. Georgiev has had a teaching (classroom and extracurricular) workload that exceeds the minimum requirements of Sofia University. In recent years he has given lectures and laboratory exercises in the following courses: "Experimental methods of nuclear physics in medicine", "Dosimetry and radiation protection", "Radioactivity in the environment and radioecology", "Metrology of ionizing radiation", "Radioactivity in the Environment and Radioecology", "Atomic and Nuclear Physics", "Geometrical Optics", "Physics", some of which are compulsory and others - elective courses. Most of the courses are categorized in the field of experimental nuclear physics, but there are also basic courses for physicists. They are intended for both bachelor’s and master’s students at the Faculty of Physics of Sofia University, one of which is in English and is intended for foreign students. The scientific guidance of Ch. Assistant Professor Georgiev includes the successful defense of two master's and one bachelor's theses, all three in the field of radon measurement, which is a practical application of methods and detectors in nuclear physics. Georgiev maintains and further develops the exercises in the educational laboratories in nuclear physics, dosimetry, and radiation protection.

## **II. Related to scientific work and achievements.**

Dr. Georgiev participated in the competition with 19 publications, all in journals with impact factors: 5 are in quartile Q1, 13 - in Q2, and 1 - in Q3. All articles reflect the work of the candidate on the development of methods and tools for measuring radioactive noble gases. In four of the articles, the candidate has made a significant contribution. Instead of a monograph, 5 equivalent publications from group I are presented as habilitation work according to the criteria of the Faculty of Physics, but each of the other articles would further develop the main scientific idea in habilitation work. According to the scientific databases, the citations of Dr. Georgiev's works are 85. The candidate's H-index is 5. The articles do not repeat the articles used for obtaining the educational and scientific degree "Doctor" and for holding the academic position of Ch. Assistant Professor. Dr. Georgiev participates in 3 national and 1 international projects funded by the Bulgarian National Science Fund and the European Commission with the main theme of measuring noble radioactive gases.

The research activities of Ch. Assistant Professor Georgiev, with whom he applied for this competition for associate professor, is related to the development of methods and tools for measuring radioactive noble gases (RNG). The scientific, applied and methodological contributions are formulated by the candidate very precisely and here I confirm them explicitly:

- Development and practical application of methods for measuring  $^{222}\text{Rn}$  and  $^{220}\text{Rn}$ , based on the formation of traces of alpha particles in CD / DVD;
- Development and practical application of methods for measuring radon and other radioactive noble gases based on absorption in polymers;
- Investigation of the absorption properties of polymeric materials, including plastic scintillators, absorbing RNG. Development of methods for determining the partition coefficient and diffusion length of RNG in polymers;
- Development and validation of approaches to reduce the temperature shift in radon detectors with anti-toron polymer membranes.

The significant contribution of the candidate is proved either by placing his name in the first place in the list of authors or by a note in the publication that he is the corresponding author.

## **III. Comparison of the applicant's indicators with the requirements for the occupation of the academic position Associate Professor**

**III.1. S. Georgiev meets the minimum national requirements (aka points) for occupying the academic position of associate professor, adopted by the "Rules for the Implementation of the Law for the Development of Academic Staff in the Republic of Bulgaria" (PPZRASRB).**

Group A,	Indicator 1,	min. 50 points,	scored 50 pts
Group Б,	Indicator 3 or 4,	min. 100 points,	scored 105 pts (from Ind. 4)
Group Г,	Indicators 5-10,	min. 200 points,	scored 295 pts (from Ind. 7)
Group Д,	Indicator 11,	min 50 points,	scored 170 pts
Group E,	Indicator 12-20,	no min,	claimed 110 pts

### III.2. S. Georgiev's indicators meet the Additional requirements of the Faculty of Physics of the Sofia University

Requirements	Applicant's indicators
- minimum 7 publication in Group I	18 publications
- at least 1 publ. in the last 3 years	6 in the last 3 years
- substantial contribution in at least 4 of the group I publications	4 articles of group I
-minimum 50 independent citations in peer review journals	85
- h-index of at least 5	5
- scientific guidance of at least 1 successfully defended (under)graduate	3
- guidance and/or participation in international and/or national projects.	Yes

## Conclusion

In drafting this opinion, the following normative acts and documents were taken into account: the Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB ) and the Regulations thereto, the Rules on the Conditions and Procedures for Acquiring of Academic Degrees and Occupation of Academic Positions at Sofia University "St. Kliment Ohridski", Additional Requirements for Acquiring of Academic Degrees and Occupation of Academic Positions at the Faculty of Physics at Sofia University "St. Kliment Ohridski".

In conclusion, Ch. Assistant Professor Dr. Georgiev fully meets all the minimum, mandatory and additional criteria in the aforementioned documents. On this basis and as a result of my excellent personal impressions of the professional, ethical and moral qualities of the candidate, **I express a positive opinion on the selection of Chief Assistant Professor Dr. Strahil Boychev Georgiev for "Associate Professor" in the professional field 4.1. Physical Sciences (Experimental Nuclear Physics) "**.

April 15, 2022

Sofia

/assoc. prof. Mariyan Bogomilov/