

REFEREE REPORT

on competition for occupation of the academic position Associate Professor in the professional field 4.1 "Physical Sciences (Experimental Nuclear Physics)" for the needs of the Faculty of Physics of Sofia University "St. Kliment Ohridski", published in the State Gazette №103/10.12.2021

by the member of the scientific jury Prof. Roumen Vassilev Tsenov, Dr.Sci. (Department of Atomic Physics, Sofia University "St. Kliment Ohridski", now retired) in his capacity as a member of the scientific jury of the competition as stipulated in the order № RD-38-38 / 20.01.2022 of the Rector of Sofia University.

There is only one candidate in the competition, Head Assistant Professor Dr. Strahil Georgiev from the Faculty of Physics of Sofia University.

I. General description of the submitted documents

1. Candidate's data

Fifteen documents were presented (CV, diplomas, official memos, excerpts from databases, certificates from the employer, etc.), supporting the achievements of the candidate. The documents submitted for the competition by the candidate comply with the requirements of the Law for development of the academic staff in the Republic of Bulgaria (ZRASRB), State Regulations for its application (PPZRASRB) and the Regulations on the terms and conditions for obtaining scientific degrees and holding academic positions at Sofia University "St. Kliment Ohridski" (PURPNSZAD-SU). I have no comments on the documents and consider them enough to form my opinion on the competition.

2. Details about the candidate

Strahil Georgiev was born on July 8, 1980. In 1999 he graduated from the Mathematical High School in Pleven and then entered the Faculty of Physics at Sofia University. In 2003 he received a Bachelor degree in Physics, and in 2005 a Master degree in Medical Physics. Shortly before that, he got a position of researcher (physicist) in the Department of Atomic Physics. In 2012 he successfully defended his thesis for Ph.D. degree in Physics at Sofia University. The title of the thesis was "Nuclear Methods for Study of Migration of Radioactive Noble Gases". In 2013 he got a tenure track position of Head Assistant Professor in the same department.

3. General characteristics of the papers and achievements of the candidate.

For participation in the competition, Strahil Georgiev has presented a selection of 30 publications in scientific journals and talks at conferences. All his publications are as many as 75. Out of the 30 selected publications presented, the first 7 [1 – 7] were used in his Ph.D thesis. They cannot be used in a competition for an Associate Professor, according to Art. 24, para. 1, item 3 of the ZRASRB and I will not consider them. In his author's report, the

candidate excludes from consideration also publications with numbers from 8 to 11, used in the competition for Head Assistant Professor. He does this in fulfillment of the additional requirements of the Faculty of Physics of Sofia University for holding academic positions in it (point D of Appendix 2 to Article 86, para. 12 of PURPNSZAD-SU). Therefore, I will not consider these publications, too. The candidate's papers meet the minimum national requirements (under Art. 2b, para. 2, item 3 of ZRASRB) and the additional requirements of Sofia University "St. Kliment Ohridski" for holding the academic position Associate Professor in the scientific field of the competition. There is no legally proven plagiarism in the scientific papers submitted for the competition.

4. Characteristics and evaluation of the teaching activities of the candidate

The candidate has been a lecturer (Head Assistant Professor) at the Department of Atomic Physics of Sofia University for 9 years. His teaching load during all these years is on average by 25% higher than the accepted norm. In addition to conducting laboratory and seminar classes, he also lectures on some courses. He has supervised three student theses. His teaching work exceeds the average for a Head Assistant Professor in the Faculty of Physics of Sofia University and the requirements for applying for an Associate Professor.

5. Analysis of the scientific achievements of the candidate presented in the materials for participation in the competition

Strahil Georgiev has presented 19 publications [12-30] for participation in the competition. Out of them, publications [12-16] were presented as equivalent to a habilitation thesis. These last 5 publications collect a total of 105 points, which exceeds the established threshold in the minimum national requirements under Art. 2b of the ZRASRB. According to the submitted report, all other numerical indicators exceed the above-mentioned minimum requirements. The scientific contributions of the candidate, reflected in the presented papers, are related in general to the development and application of nuclear methods for dosimetric measurements of radioactive noble gases (RNG).

The contributions can be summarized in the following ways:

- Cumulative methods for measuring ^{222}Rn and ^{220}Rn , based on formation of traces of alpha particles in polycarbonate CDs - papers [12,13,16,18,23,25,28];
- Measurement of radon and other RNGs based on their absorption in polymers - papers [14,15,17,19,20,26] and related study of the absorption properties for RNGs of polymeric materials, including plastic scintillators - papers [21,22,24,27,29];
- Development and validation of approaches to reduce temperature bias in radon detectors with anti- ^{220}Rn polymer membranes - paper [30].

According to the data presented in the author's report, the candidate's contributions are significant in all publications and include, in general, participation in the planning, preparation and conduct of the experiments, processing and analysis of experimental data, participation in preparation and editing of the text of the publications and figures to them. Strahil Georgiev is corresponding author for publications [15, 30] and first author in publications [18, 29]. For me that means a decisive contribution to them. The presented

results are at the highest scientific level. Strahil Georgiev works in the strong and world-renowned group of Dosimetry and Radiation protection in the Department of Atomic Physics of Sofia University. He is a participant in national and international research projects, all of them successfully completed. The scientific significance and quality of the research conducted by him and his colleagues is beyond doubt. According to the report provided, all of the candidate's publications have been cited 85 times. At this very moment, this number is certainly higher. The Hirsch index (h-index) is equal to 5.

6. Critical remarks and recommendations

I have no significant critical remarks.

7. Personal impressions of the candidate

I have known the candidate for about 20 years - since he appeared as a student in the Department of Atomic Physics. My impressions are excellent: a good student, a serious and originally thinking researcher, a good teacher, responsible for the training of the students, an active participant in the collective activities of the department.

8. Conclusion on the application

After getting acquainted with the materials and papers presented for the competition and based on the analysis of their importance and the scientific contributions described in them, I confirm that the scientific achievements meet the requirements of ZRASRB, Regulations for its application and relevant Regulations of Sofia University "St. Kliment Ohridski" for getting the academic position Associate Professor in the scientific field 4.1 "Physical Sciences". In particular, the candidate satisfies the minimum national requirements in the above field and no plagiarism has been established in the scientific papers submitted for the competition. I give my positive assessment of the candidacy.

II. OVERALL CONCLUSION

Based on the above, I strongly recommend the scientific jury to propose to the Faculty Council of the Faculty of Physics of Sofia University "St. Kliment Ohridski" to elect Head Assistant Professor Dr. Strahil Boychev Georgiev to take the academic position Associate Professor in the professional field 4.1 "Physical Sciences".

06.04.2022

Sofia

Prof. Roumen Tsenov, Dr.Sci., now retired