

OPINION

on a competition for associate professor in the professional field 4.1. Physical Sciences (Particle Physics) for the needs of the Faculty of Physics at Sofia University "St. Kliment Ohridski", published in the State Gazette, issue. 93, dated 26.11.2019

Candidate: chief assistant Peicho Stoev Petkov, PhD, Faculty of Physics, Sofia University

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

The only candidate in the competition is chief assist. Peycho Petkov. Mr. Petkov received his Master's Degree in Physics at Sofia University "St. Kliment Ohridski " in 2001, and in 2009 received his doctoral degree (PhD) from the Higher Attestation Commission of the Council of Ministers of the Republic of Bulgaria. From June 2013 until now he is chief assistant in the Department of Atomic Physics of the Faculty of Physics of Sofia University "St. Kliment Ohridski ".

Applicant's eligibility for the position of Associate Professor

I. Related to teaching activities.

For the last five years, ch. assist. Petkov fully fulfills minimal academic requirements, teaching a wide range of compulsory and elective courses (lectures and seminars) in disciplines in the field of high energy and elementary particle physics and in programming and computer simulation of physical and biological processes. The courses are intended for both bachelor and master students at the Faculty of Physics of Sofia University. Some of them, in English, are intended for international students. The scientific guidance of ch. assist. Petkov includes successful defense of 5 master's and bachelor's theses, almost all of which are in the field of ionizing radiation detectors and simulation of biological processes.

II. Related to scientific work and achievements.

Chief assist. Petkov participated in the competition with 20 publications, all in journals having impact factors: 17 in Quartile Q1 and 3 in Q2 journals. All articles reflect the work of ch. assist. Petkov on the CMS experiment. The citations of these articles according to the scientific databases are thousands, and the candidate participates in this competition with a small fraction of them - 149. The candidate's H-index is 65. The articles do not repeat the articles used for the educational and scientific degree "doctor" (PhD). P. Petkov participates in a number of national and international scientific projects funded by the National Science Research Fund and the

European Commission in the fields of particle physics, supercomputer infrastructures and modeling biological process.

The research activities of ch. assis. Petkov, with which he applied in this competition for associate professor, are related to studies of a type of gaseous detectors of ionizing radiation – resistive plate chambers (RPC), which are part of the muon system of the CMS experiment of the LHC accelerator at CERN, Switzerland. The applicant's scientific, applied and methodological contributions can be summarized as follows:

- Key participation in the design, construction and testing of RPCs;
- Investigating the stability of RPC performance and RPC maintenance;
- Participation in cosmic ray and LHC accelerated beam data acquisition;
- Participation in obtaining physical results such as: measuring the ratio of positively and negatively charged cosmic muons, setting an upper limit for rare events, determining cross-sections for the production of b-quark hadrons.

All these results can be achieved only within the framework of international scientific collaborations, in this case the CMS Collaboration. Peicho's leading contributions mentioned above are confirmed by a letter from the RPC Collaboration (part of CMS) leader Gabriella Pugliese, in which she writes, "Peicho... has played a fundamental role in all the activities in which he has been involved."

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

III.1. P. Petkov 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) on 19.02.2019.

Group A,	Indicator 1,	min. 50 points,	scored 50 pts
Group Б,	Indicator 3 or 4,	min. 100 points,	scored 185 pts (from Ind. 4)
Group Г,	Indicators 5-10,	min. 200 points,	scored 300 pts (from Ind. 7)
Group Д,	Indicator 11,	min 50 points,	scored 298 pts

III.2. P. Petkov's indicators meet the recommended requirements of the Faculty of Physics of Sofia University, effective at the date of announcement of the competition.

Recommended requirements	Applicant's indicators
- at least 20 publications	exactly 20 publications
- 12 articles in reputable journals	20 in reputable journals
- at least 6 articles with leading role	leading role in 8
- at least 30 independent citations	298 citations
- h-index of at least 5	65
- guidance and /or participation in international and /or national projects.	Yes

III.3. P. Petkov's indicators meet the Additional requirements of the Faculty of Physics of the Sofia University, adopted on 29.01.2020 (not valid at the date of announcement of the competition)

Requirements	Applicant's indicators
- minimum 7 publication in Group I	20 publications
- at least 1 publ. in the last 3 years	3 in the last 3 years
- substantial contribution in at least 4 of the group I publications	8 articles
-minimum 50 independent citations in peer review journals	149
- h-index of at least 5	65
- scientific guidance of at least 1 successfully defended (under)graduate	5
- 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", Recommended 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. assoc. Petkov fully fulfills all the minimum, mandatory and recommended criteria in the aforementioned documents, and therefore **I express a positive opinion on selection of ch. assist. Peycho Stoev Petkov for Assistant Professor in the professional field 4.1. Physical Sciences (Particle Physics).**

February 27, 2020
Sofia

/assoc. prof. Mariyan Bogomilov/