

OPINION

by Maria Georgieva Marudova-Zsivanovits, PhD

Professor at Plovdiv University Paisii Hilendarski

of the materials submitted for participation in the competition
for the occupation of an academic position of "**Associate professor**"
at Plovdiv University "Paisii Hilendarski"

by: field of higher education 4. Natural sciences, mathematics and informatics,
professional field 4.1. Physical Sciences (Physics of the microcosm, high energies and elementary
particles)

In the competition for "**Associate professor**", announced in the State Gazette, no. 98 from 19.11.2024 and on the Internet page of Plovdiv University "Paisii Hilendarski" for the needs of the Department of Educational technologies at the Faculty of Physics and Technology, as the only candidate participated **Mariana Filipova Shopova**, PhD, chief assistant professor at the same department.

1. General presentation of the procedure and the candidate

By order No. RD-22-96/17.01.2025 of the Rector of the Plovdiv University "Paisii Hilendarski" (PU), I have been appointed as a member of the scientific jury to ensure a procedure for selecting an "Associate Professor" at the PU in the field of higher education 4. Natural sciences, mathematics and informatics, professional direction 4.1. Physical sciences (Physics of the microcosm, high energies and elementary particles), announced for the needs of the Department of Educational technologies at the Faculty of Physics and Technology.

For participation in the announced competition, the only candidate who submitted documents is Chief assistant professor Dr. Mariana Filipova Shopova from the Department of Educational technologies at the Faculty of Physics and Technology at Plovdiv University Paisii Hilendarski. The set of materials submitted by her in electronic format complies with the Regulations for the Development of the Academic Staff at Plovdiv University Paisii Hilendarski and includes all necessary documents.

The candidate, Chief Assistant Professor Dr. Mariana Shopova, has submitted a total of 18 scientific publications (all of which are in peer-reviewed and indexed journals in databases Scopus/Web of Science) and a list of her participation in 6 research projects (5 national and 1 university). In terms of quantitative criteria and content, the scientific output of Chief Assistant Professor Mariana Shopova exceeds the minimum national requirements for holding the academic position of "associate professor" - the total number of points is 610 with the required 400. The documents submitted for consideration are in a proper technical form and very well arranged. All the applied scientific works are of a high level, they have been published in prestigious journals with a quartile Q1 or Q2 and have undeniable scientific significance. The candidate's H-index is 117 (according to Scopus).

I have known the candidate since her student years and later as an assistant and chief assistant professor at the Department of Educational technologies. She is very responsible, fair, and respected by both colleagues and students.

2. General description of the candidate's activity.

Evaluation of educational and pedagogical activities.

Dr. Shopova has been an assistant professor on a permanent contract in the Department of Educational Technologies at Plovdiv University Paisii Hilendarski since 2016, and from 2019 to the present, she has been a chief assistant professor in the same department. Her annual teaching load over the last six years is from 524 to 669 hours, which exceeds the established norm of 360 hours of study time.

The teaching and pedagogical activity of chief assistant professor Shopova includes conducting lectures, seminars and laboratory exercises with students of the Bachelor's and Master's degree programs - part-time and full-time studies. The applicant's academic record shows that the department provides the required number of lecture hours according to the regulations of the University. Chief assistant professor Shopova has developed 8 curricula and 8 lecture courses for Bachelor's and Master's degrees. She participates in a joint Master's program in English "Medical Physics" of the Faculty of Physics and Technology at the Plovdiv University "Paisii Hilendarski" and the Faculty of Physics of the Sofia University "St. Kliment Ohridski", in which she teaches the disciplines "Radiation Physics" and "Dosimetry and Radiation Protection".

An indicator of the qualities of Chief Asst. Shopova as a teacher is her active work with students, as over the past 5 years she has been the scientific supervisor of 6 successfully defended bachelor students. Dr. Shopova works actively towards popularizing physics in secondary education. From 2018 to the present, she has been a local organizer for Bulgaria, a lecturer and mentor of the international master classes for students with CERN data.

Evaluation of the candidate's scientific activity

In the competition for "associate professor" chief assistant professor Dr. Mariana Shopova participates with a total output of 18 scientific publications, grouped as follows:

- Publications in scientific journals equivalent to habilitation thesis (criterion B4) – 7 issues, all of which are in journals with an impact factor (4 articles in Nuclear Instruments and Methods in Physics Research, Section A, IF = 1.5 and 3 articles in Journal of instrumentation, IF = 1, 3).

- Publications that are indexed in world-renowned databases (criterion G7) – 11 issues, all of which are in journals with an impact factor in the first or second quartile.

The results presented in the publications are a collective development, which is related to the specifics of the scientific field and the publication policy of the large international groups in which Dr. Shopova works.

The candidate has worked purposefully, has accumulated significant results, which she has made available to a wide audience and has received recognition from a number of scientists abroad. The total number of citations presented is 80, all of which are in refereed journals (Scopus/Web of Science).

Dr. Shopova has participated in 6 national scientific projects. The candidate's scientific achievements have been presented at 8 international and 4 national conferences and workshops.

Chief Asst. Dr. Shopova has fulfilled the national minimum requirements and the requirements of the Regulations for the development of the academic staff of Plovdiv University "Paisiy Hillen-darski", and by indicators C, G and D she has significantly exceeded them. The points made for each indicator are detailed and supported by evidence.

Main scientific contributions:

The scientific interests of Chief Assistant Professor Dr. Mariana Filipova Shopova are in the field of the physics of high-energy and elementary particle, with her publications mainly related to

particle detectors and muon physics research. Her contributions can be summarized in the following areas:

- Operation and stability of the CMS RPC system. The candidate's personal contribution consists of data processing and analysis, determining the efficiency of the camera operation and coordinating the individual tasks for detector analysis.

- Muon trigger and trigger of the RPC system – analysis of the output data.

- Study of the longevity of the RPC detectors. The candidate's personal contribution to this analysis is participation in the assembly of part of the detectors, analysis of their operating parameters and assessment of their longevity.

- Modernization of the CMS Muon System - assembly and testing of the new detectors, analysis of their operating parameters and criteria for passing the various stages of quality control.

3. Critical remarks and recommendations

I have no critical remarks about the materials submitted for review.

CONCLUSION

The documents and materials presented by Chief assistant professor **Mariana Filipova Shopova**, PhD, meet all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for the Implementation of the Law and the relevant Regulations of Plovdiv University "Paisii Hilendarski".

The candidate in the competition has submitted a significant number of scientific works published after the materials used in the defence of her PhD and for occupying the academic position "Chief assistant" at the faculty of Physics and technology at Plovdiv University "Paisii Hilendarski". There are original scientific contributions in the candidate's works that have received international recognition and a representative part of them have been published in journals and scientific collections issued by international academic publishing houses. The scientific and teaching qualifications of Chief Assistant Professor Mariana Filipova Shopova PhD is unquestionable.

The achievements of Chief assistant professor Mariana Filipova Shopova, PhD, resulted in educational and research activities fully correspond to the minimum national and additional requirements adopted in connection with the Regulations of the Plovdiv University for the application of the Law on the Development of the Academic Staff in the Republic of Bulgaria.

After familiarizing myself with the materials and scientific works presented in the competition, analyzing their significance and the scientific contributions contained in them, I find it reasonable to give my positive assessment and to recommend to the Scientific Jury to prepare a document-proposal to the Faculty Council of Faculty of Physics and Technology for the selection of chief assistant professor Mariana Filipova Shopova, PhD, in the academic position of "Associate professor" at Plovdiv University "Paisii Hilendarski" in: area of higher education 4. Natural sciences, mathematics and informatics, professional field 4.1. Physical Sciences (Physics of the microcosm, high energies and elementary particles).

10.03.2025 г.

Prepared the opinion::

Professor Maria Marudova-Zsivanovits, PhD