

## OPINION

by Prof. Evdokia Nikolaeva Sotirova, PhD  
University "Prof. D-r Asen Zlatarov" - Burgas  
on the documents submitted by  
chief assist. Stancho Vulkanov Pavlov, PhD  
for participation in the competition  
for acquiring the academic position "associate professor",  
of University "Prof. D-r Asen Zlatarov" - Burgas,  
Faculty of Natural Sciences, field of higher education: 4. Natural Sciences, Mathematics  
and Informatics; professional direction 4.5. Mathematics (Higher Mathematics),  
announced in State Gazette No.45 of June 17, 2022

The reason for writing the present opinion is Order No RD-292/19.09.2022 of the Rector of University "Prof. D-r Asen Zlatarov" - Burgas for selecting the members of the Scientific jury. The present opinion is prepared according to the Law on the Development of the Academic Staff in the Republic of Bulgaria, the regulations for its implementation and the Rules on the Terms and Conditions for Acquisition of Academic Degrees and Regulations for the terms and conditions for acquiring scientific degrees and holding academic positions at the University "Prof. Dr. Asen Zlatarov" - Burgas.

One applicant has submitted documents for participation in the announced competition **Stancho Vulkanov Pavlov**, PhD chief assist. in the Department of Mathematics and physics, Faculty of Natural Sciences.

### 1. General information about the candidate

Chief assist. Stancho Vulkanov Pavlov, PhD was born on 31.01.1958 in Burgas. He completed his secondary education in 1976 in the Science and Mathematics High School „Acad. Nikola Obreshkov”, Burgas. In 1982, he graduated with a master's degree in mathematics, qualification „mathematics teacher” at Plovdiv University „Paisiy Hilendarski”.

After successfully defending a thesis in 2015 Ph.D. thesis on the topic “Current problems of the mathematical theory of catastrophes - computer simulation” has acquired the educational and scientific degree Doctor of Philosophy (PhD) in the scientific

specialty "Informatics" from the Southwest University „Neofit Rilski” Blagoevgrad (Diploma 0154/30.04.2015).

The work experience of chief assist. Stancho Vulkanov Pavlov, PhD started as a teacher in the Science and Mathematics High School „Acad. Nikola Obreshkov”, Burgas (1982-1985). From November 1985, he was an assistant, then a senior assistant (from June 1989) and chief assistant (from December 1993 to the present) at the University „Prof. Dr. Asen Zlatarov” - Burgas.

## **2. Description of the submitted materials**

The submitted materials and documents for participation in the competition are in accordance to the Regulations for the terms and conditions for acquiring scientific degrees and holding academic positions at the University “Prof. Dr. Asen Zlatarov” - Burgas.

Chief assist. Stancho Vulkanov Pavlov, PhD participates in the competition with 23 scientific works (1 monographic).

Also were presented: documents to prove work experience; copies of diplomas; copies of scientific works and educational publications; study load report; reference for study programs and lecture courses, copies of study programs; certificate of compliance with the minimum requirements; distribution protocols; author reference for scientific contributions (in Bulgarian and English); certificate of participation in scientific forums; Documents for participation in scientific research projects; reference of noticed citations; patent application certificates.

## **3. General description of the scientific and applied research and assessment of the personal contribution of the applicant**

A scientific interests of the chief assist. Stancho Vulkanov Pavlov, PhD are diverse and mainly focused on mathematical models and simulations (including artificial intelligence) focused on chemistry and physics.

In the current competition chief assist. Stancho Vulkanov Pavlov, PhD participates with 1 monographic work, 22 scientific works, 4 textbooks and 1 teaching aid.

The scientific works for participation in the competition were not used for acquisition of the educational and scientific degree Doctor of Philosophy and holding the academic position of “Chief assistant”, no plagiarism was found and all are subject to review.

Of particular interest is the monographic work of the chief assist. Stancho Vulkanov Pavlov, PhD, titled „Current Problems of Mathematical Catastrophe Theory”. A wide range of current problems related to accident prevention, resistance of materials, mechanics and others are analyzed. Mathematical proofs have been used and original results of an analytical nature have been achieved which can be used in practice.

The remaining publications are evidence of the applicant's broad interests in the application of his mathematical skills in various scientific fields. It can be seen from the presented documents, that chief assist. Stancho Vulkanov Pavlov, PhD has also participated in a number of scientific forums in Bulgaria and abroad.

The candidate has submitted 32 citations of his scientific works, which proves the value of his scientific output.

In addition, chief assist. Stancho Vulkanov Pavlov, PhD has registered a patent certificate under application No. 112845 for the invention „Combined bridge”.

The candidate has actively participated in the work on research and educational projects, 2 of which are international, which has enriched and updated his knowledge and experience as a researcher and teacher.

Chief assistant. Stancho Vulkanov Pavlov, PhD meets the minimum national requirements and the minimum requirements in the Regulations for the terms and conditions for acquiring scientific degrees and holding academic positions at the University “Prof. Dr. Asen Zlatarov” - Burgas for the academic position of „associate professor” in professional direction 4.5. Mathematics (Higher Mathematics). After a detailed analysis of the presented scientific works and evidentiary material, I believe that the candidate has the following points by groups of indicators:

- Group of indicators A - 50 points;
- Group of indicators B -100 points;
- Group of indicators D – I found 315 points (with a minimum requirement of at least 300 points);
- Group of indicators G – I found more than 180 points (with a minimum requirement of at least 100 points);
- Group of indicators E – I established 220 points (with a minimum requirement of at least 100 points).

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

According to the submitted references chief assistant. Stancho Vulkanov Pavlov, PhD has a serious educational and teaching activity. He submitted for participation in the competition 4 textbooks and 1 textbook with a total volume of almost 1000 printed pages „Classical curves“, „Book of higher mathematics - first part“, „Book of higher mathematics - second part“, „Book of higher mathematics - third part“, „Methodical guide in mathematics for the students of technical college - Burgas“.

From the attached reference, it is clear that the candidate has a high academic load. Conducts training in „Higher Mathematics Part I“ and „Higher Mathematics Part II“ for students in the Professional Bachelor's and Bachelor's Programs at the University. He participated in the preparation of the study programs for these disciplines, as well as the compilation of candidate student tests.

In addition, chief assistant Stancho Vulkanov Pavlov, PhD maintains a site where he publishes current information related to various aspects of mathematics, the material he teaches, a popular science journal, and more.

I believe that the chief assistant Stancho Vulkanov Pavlov, PhD has the potential to teach students, and has the necessary teaching experience and degree of preparation to occupy the academic position of „associate professor“.

## 5. Critical notes and recommendations

To those presented in the competition by chief assistant Stancho Vulkanov Pavlov, PhD documents I have some critical remarks.

It would have been easier if the candidate had put more effort into the arrangement of the submitted documents. When summarizing the information in them, there are quite a few inaccuracies. Contributions that are visible to me are not properly highlighted. The points in indicator groups D and G for satisfaction of the minimum requirements for the academic position „associate professor“ are not reflected correctly.

I recommend to the chief assistant Stancho Vulkanov Pavlov, PhD to focus his efforts on more active work with young researchers and doctoral students.

## 6. Conclusion

The provided information gives me the reason to evaluate chief assistant Stancho Vulkanov Pavlov, PhD as a researcher who combines knowledge and experience from various scientific fields and manages to direct them to solving current problems related to our time. The candidate has a lasting interest in the researched scientific fields, he has a skills to systematize and critically interpret new and classic theories and defend his theses. He is an established teacher at the University and I highly appreciate his educational and methodological activities.

After getting acquainted with the materials and scientific works provided by chief assistant Stancho Vulkanov Pavlov, PhD, and after analyzing their significance and the scientific-applied and applied contributions contained in them, I give my positive assessment.

**I recommend** the scientific jury to propose to the Faculty Council of the Faculty of Natural Sciences at the University “Prof. Dr. Asen Zlatarov” - Burgas **to elect chief assistant Stancho Vulkanov Pavlov, PhD in the academic position “associate professor” in the field of higher education: 4. Natural sciences, mathematics and informatics; professional direction 4.5. Mathematics (Higher Mathematics).**

23.11.2022

Burgas

Signature:..

(prof. E.Sotirova)