

# STANDPOINT

by Prof. Dr. Boyan Paskalev Bontchev,  
Faculty of Mathematics and Informatics, Sofia University "St. Kliment Ohridski"  
in a competition for the academic position of "Associate Professor"  
at the Plovdiv University "Paisii Hilendarski",  
Faculty of Mathematics and Informatics,  
in the field of higher education: 4. Natural sciences, mathematics and informatics,  
professional field: 4.6 Informatics and computer sciences  
(Algorithms and models for data analysis),  
announced in State Gazette no. 57 / 26.06.2020

By order of the Rector of the Plovdiv University "Paisii Hilendarski" No.P33-4128 dated from 25.08.2020 I have been appointed as a member of the Scientific Jury for conducting a competition for "Associate Professor" in the field of higher education *4. Natural Sciences, Mathematics and Informatics; professional field 4.6. Informatics and Computer Science (Algorithms and Models for Data Analysis)*, announced in SG, issue 57 from 26.06.2020 Documents for participation in the competition were submitted by one candidate - Chief Assistant Professor Dr. Kremena Vasileva Stefanova, from the chair "Computer Technologies" at FMI-PU. By Protocol №1 dated from 08.09.2020, at a meeting of the scientific jury of the competition I was chosen to prepare a standpoint on this application, which I present in this document.

As a member of the jury, I received electronically all the documents required by the rules of the competition for the academic position of "Associate Professor". All submitted documents are designed and described thoroughly, in detail and very carefully.

## *Research and teaching activity of the candidate*

Chief Assistant Professor Dr. Kremena Stefanova is the author or co-author of 43 scientific publications, of which 9 articles have been published in scholar journals with impact factor (with total IF = **7.484**), and 14 articles - in publications with SJR (with total SJR = **5.208**). The scientific papers with which the candidate participates in the competition for associate professor are 19 in total and include 12 articles in scientific journals, three monographs, two publications at scientific conferences, one PhD thesis abstract and one learnbook. Eight of them are referred to in SCOPUS and six to WoS. Ten of the journal publications are in editions with an SJR index, with a total SJR index of **3.593**. Six publications are in IF editions, with a total IF of **5.721**. The presented abstract is for a dissertation for awarding the educational and scientific degree "Doctor" (defended at the Plovdiv University "Paisii Hilendarski" in 2012) on

"Qualitative methods for some special types of differential equations" in professional field 4.5. Mathematics, doctoral program "Differential Equations". All 19 works for participation in the competition were not included in other competitions. In addition, the results and contributions in the scientific production presented at the competition are original and are not borrowed from research and publications in which the candidate does not participate.

Kremena Stefanova has gained serious research experience from participating in 7 research projects funded by the "Scientific and Project Activity" division at the University of Plovdiv since 2011 so far and, as well, in two national research programs. All of them are in the field of using ICT in research in mathematics, informatics and pedagogy of education.

The candidate has a rich teaching activity. He has almost 7 years of pedagogical experience as a chief assistant professor. Her annual classroom employment has always been almost twice the norm. She has lectured in 7 compulsory and two elective courses for bachelor students in the specialties "Software Engineering" and "Software Technology and Design". As well, she has presented laboratory exercises in 8 compulsory disciplines. In addition, the candidate has participated in commissions for state exams and for defense of diploma theses. She has published a textbook on the integration of software business applications.

#### *Scientific and applied scientific achievements*

The scientific and scientific-applied activity of the candidate is concentrated mainly in four thematic directions:

- Computer modeling of discrete neural networks (NN) - in the field of achieving consensus with the virtual leader and achieving stability of discrete pulsed NN;
- Use of iterative methods for solving differential equations (DU) of fractional order - differential equations of Caputo and Riemann-Liouville;
- Research of algorithms for approximate methods for differential equations;
- Design of software applications for business.

#### *Candidate's contribution to the collective publications and reflection of the results in the works of other authors*

Of all the 19 scientific publications submitted to the competition, two are independent, and the rest are developed in co-authorship with Bulgarian and foreign scientists, whereupon the candidate is the first author in 3 of them, second author in 7, third author in 5, fourth in 2, and fifth author – in one of them. From this it can be concluded that there is no place for doubt in the significant personal contribution of the candidate to the receipt and presentation of the above results.

The candidate submitted a report on observed citations of her papers, which includes data on 50 citations of a total of 11 scientific papers. 30 of these citations are in publications published in SCOPUS

and WoS, three are in ZentralBlatt and MathSciNet, and 17 are in cited dissertations and non-indexed journals and conference proceedings. It is important to note that 32 of the citations are from foreign researchers. The list does not contain self-citations, but *citations with numbers 7, 8 and 15 are co-authored, which requires their removal from this citations' list.*

*Fulfillment of the national and additional requirements for FMI-PU*

The report submitted by the candidate for compliance with the national minimum requirements of the PRSPASRB for holding the academic position of "Associate Professor" in direction 4.6 shows that the indicators of groups A and B are met, and the points for indicators of groups C, D and E *significantly exceed the national minimum requirements*, the total number of which is more than *twice higher than the minimum*. On the other hand, the additional requirements of the Faculty of Mathematics and Informatics at the Paisii Hilendarski University of Plovdiv have been exceeded, as well.

*Personal impressions*

I have no personal impressions of the candidate, but from conversations with her colleagues over the years and from the review of research projects with her participation, funded by FMI-PU, I know about her scientific and applied achievements, as well as the consistency and professionalism in her efforts. to achieve high professional results.

*Conclusions*

In conclusion, I would like to point out that the documents on the competition for Associate Professor, submitted by Chief Assistant Professor Dr. Kremena Stefanova, meet the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for the implementation of the same law and the relevant Regulations of PU "P. Hilendarski "and of the FMI of PU. The scientific papers presented at the competition are on the topic of the competition and make an excellent impression with the level of their scientific content. The teaching work of the candidate coincides with the theme of the competition, is significant in volume and is at a high professional level.

According to the above, I give my **positive opinion** on the choice of Ch. Assistant Professor Dr. Kremena Vasileva Stefanova in a competition for associate professor at the FMI of PU "P. Hilendarski "in the field of higher education 4. Natural sciences, mathematics and informatics; professional field 4.6. Informatics and computer science (Algorithms and models for data analysis). In this sense, I advise the esteemed jury to propose to the Faculty Council of FMI at the Plovdiv University to elect her to the academic position of "Associate Professor".

16/10/2020.

Sofia, Bulgaria

Prepared the standpoint: .....

(Prof. Dr. Boyan Paskalev Bontchev)