OPINION

on a competition for the occupation of an academic position "Professor",

in the professional field 4.6. Informatics and computer sciences

(Information technology),

for the needs of the Sofia University St. Kliment Ohridski,

Faculty of Mathematics and Informatics (FMI),

declared in the State Gazette No. 74 of 21.08.2020 and on the websites of ~~of~~ FMI and SU

The opinion was prepared by Full Professor Daniela Ananieva Orozova, PhD from Burgas free university, professional field 4.6. Informatics and Computer Sciences (Information technology), scientific field 4. Natural sciences, mathematics and informatics, as a member of the scientific jury for the competition according to Order No. РД 38-496 from 19.10.2020 of the Rector of Sofia University.

Only one candidate has submitted documents for participation in the announced competition: Assoc. Prof. Eliza Petrova Stefanova, PhD from the Faculty of Mathematics and Informatics at the Sofia University St. Kliment Ohridski.

I. General description of the materials presented

1. Details of the application

The submitted documents from the applicant comply with the requirements of the Development of Academic Staff Act in the Republic of Bulgaria and the Regulations on the conditions and procedures for acquiring scientific degrees and occupying academic positions at the Sofia University St. Kliment Ohridski.

To participate in the competition the candidate Assoc. Prof. Eliza Petrova Stefanova has presented a list of 21 publications in Bulgarian and foreign scientific publications and scientific forums, referenced in the scientific databases Scopus or Web of Science. The following candidate materials were presented to me: Autobiography, Diploma of higher education, Diploma of educational and scientific degree "Doctor", Document of scientific title, Certificate of seniority in the specialty, Documents proving the fulfillment of the requirements of art. 115, para. 1, item 2, List of publications, Reference by the Author system, Reference for meeting the minimum national requirements for the respective scientific field and the additional requirements of SU St. Kliment

Ohridski, Reference for citations, Reference for original scientific contributions, Reference for indicators under Art. 122, para. 2, Scientific papers submitted for participation in the competition, Abstracts of the peer-reviewed publications, Copy of the announcement in the State Gazette.

The documents are carefully systematized and described and significantly facilitate the assessment to meet the necessary requirements.

2. Details of the applicant

Assoc. Prof. Eliza Petrova Stefanova graduated from the Faculty of Mathematics and Informatics of Sofia University "St. Kliment Ohridski" in 1991. She obtained her PhD degree in Informatics in 2012. In the Sofia University "St. Kliment Ohridski", Faculty of Mathematics and Informatics she holds academic positions: assistant (in the period 1999 - 2002), senior assistant (in the period 2002 - 2007), chief assistant (in the period 2007 - 2014), and since January 2014 is associate professor. In 2015 she held the position of Vice Dean for Academic Affairs - Master's Degree Programs and Postgraduate Qualification, and since then she has been Vice-Rector for Information Activities, Academic Staff and Administration of Sofia University "St. Kliment Ohridski".

She has command (to various degrees) of English, Russian and Romanian.

3. General characteristics of the applicant's scientific work and achievements

Assoc. Prof. Eliza Petrova Stefanova PhD, has presented a total of 21 scientific publications for participation in the competition for the academic position "Professor".

The analysis of the presented publications shows that:

- **2 are articles in scientific journals** (№№ 6, 18);
- **19 are in conference proceedings indexed in Scopus or WoS** (№№ 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20 и 21);
- **8 are indexed in Scopus or WoS with SJR** (№№ 2, 3, 4, 6, 7, 14, 16, 18);
- **13 are indexed in Scopus or WoS without SJR** (№№ 1, 5, 8, 9, 10, 11,12, 13, 15, 17 19. 20 и 21);
- **all of the presented publications are in English**;
- **all of the presented publications have more than one author, in 2 of the articles she is the first author, in 9 the second author, in 9 the third author and 1 the fourth author.**

The presented publications at the competition can be distributed over time as follows:

Year	2015	2016	2017	2018	2019	2020
Number	5	2	2	5	5	2

Among the publications for participation in competition 9 publications are presented as a cumulative habilitation thesis.

Apart from that, the candidate has included a list of all of her publications (124 scientific publications, 8 textbooks and 18 teaching aids.)

The submitted candidate's scientific papers for participation in the competition are divided into three thematic groups:

(1) application of ICT in education (methods of training based on competencies, new methods for assessing learning, application of virtual reality and application of web services in education) (№№ 3, 4, 7, 9, 10, 12, 13, 14, 16, 20);

(2) analysis of large data sets in education (collection and analysis of large data sets in training systems, methods and tools for analysis and processing of large data sets) (№№ 4, 5, 6 , 8);

(3) training of teachers for application of research approach in education (methods and models for application of scientific approach in education, methods and approaches for training of teachers for application of research approach in education, pilot experiments for implementation of research approach in education in Bulgarian schools) (№№ 1, 2, 3, 4, 8, 11, 15, 17 18, 19, 21).

Undoubtedly, the thematic areas of the scientific publications of the candidate is highly topical. The text of the papers is appropriately structured and includes diagrams, figures and examples which vastly improve the clarity of the papers and makes them easier to understand.

The candidate has provided a citation list, which contains a total of 38 citations in scientific journals, referenced and indexed in world-famous databases of scientific information (Web of Science and Scopus), with which the candidate participates in the competition for "professor". A general list of 210 citations is also attached.

According to the submitted documents the applicant covers: 50 points in the group of indicators "A", 222 points in the group of indicators "Б", 252 points in the group of indicators "Г", 296 points in the group of indicators "Д", 160 points in the group of indicators "Е". Therefore, the minimum national requirements and the additional requirements under Art. 1a, para. 2 and para. 3 of the RIADAPRB for occupation of the academic position of "Professor" in the professional field 4.6 Informatics and Computer Science have been completely covered.

After a detailed review of the submitted scientific publications I confirm that:

a) The scientific works meet the minimum national requirements (according to Art. 2b, para 2 and para 3 of the *Development of Academic Staff Act in the Republic of Bulgaria*) and respectively the additional requirements of the Sofia University St. Kliment Ohridski for the academic position of "Professor" in the scientific field and professional direction of the competition.

b) The scientific papers presented by the applicant do not repeat those of the previous procedures for acquiring a scientific title and academic position.

c) There is no proven plagiarism in the scientific works presented at the competition.

4. Characterization and evaluation of the applicant's teaching activity

Information about the indicators under art. 122, para. 2 Assoc. Prof. Eliza Petrova Stefanova has one PhD student that have defended, she has been a scientific supervisor of 3 doctoral students, evaluated with the right of protection and is currently the supervisor of a foreign doctoral student. In the last 7 years she has 45 successfully defended graduates.

Hse has developed 7 lecture courses, included in the curricula of specialties from FMI, Sofia University: Information and communication technologies in teaching and working in a digital environment; Audiovisual and information technology in education; Computer Networks (Cisco) Workshop; Basics of e-learning; Specific issues of IT training; Pedagogical functions of an interactive whiteboard; Technologies in support of educational projects. The created educational content of the disciplines (lectures, exercises, assignments) is available and is provided to the students in electronic version in Moodle (http://learn.fmi.uni-sofia.bg). The disciplines are in bachelor's or master's degree, and the main part is in FMI at Sofia University. Details of the disciplines taught by the applicant are presented in Annex 15.A.2.1.

These facts allow me to conclude that the lecturing activities of Assoc. Prof. Eliza Petrova Stefanova are carried out at a high professional level, whereby she successfully combines standard teaching methods with modern forms of e-learning.

For the past 7 years Assoc. Prof. Eliza Stefanova leads the master's program in "E-learning" at the FMI of Sofia University "St. Kliment Ohridski ". She is the author of 8 textbooks and 7 textbooks in informatics and information technology for compulsory education in secondary and specialized schools.

She participates as an expert at the Ministry of Education and Science in: working group for preparation of a project for state educational standards for general education training in IT 2015; working group for preparation of new curricula in IT 10th grade 2016; working group for preparation of new curricula in Computer Modeling and IT for 5th, 6th and 7th grade 2020; the National Commission of the National IT Olympiad 2014-2020; National Commission of the National Competition on Computer Networks for Students 2014-2020; National Commission of the National Autumn Tournament "John Atanasov" 2014-2020.

During the last 10 years Assoc. Prof. Dr. Eliza Stefanova has participated in 10 international scientific and educational projects (Appendix 15.B.1.1). She also participates in 12 national research

and educational projects, manages 5 projects at the NSF of Sofia University and participates in one such project (a total of 18 national projects - Annex 15.B.1.2).

5. Substantive analysis of the scientific and applied scientific achievements of the candidate contained in the materials for participation in the competition

The original scientific contributions in the publications submitted for participation in this competition are correctly described in Reference document No. 14 prepared by the applicant. I accept the contributions formulated in the report on the results of the applicant's research activities in the works by which Assoc. Prof. Eliza Petrova Stefanova participates in the competition. These results have scientific and scientifically applied nature and can be defined as enriching the existing scientific field with new knowledge.

I was unable to find in the documents submitted to me information about the candidate's contribution to the submitted collective publications. Therefore, I assume that the contribution of all authors is comparable and commensurate.

In my opinion, the aforementioned results characterize the candidate Assoc. Prof. Eliza Petrova Stefanova as a well-established scientist with significant achievements, which give reason to claim that she completely covers the concept of a leading researcher in the field of information technology.

6. Critical notes and recommendations

I do not find any deficiencies in the structuring of content, in the accuracy and the completeness of description from a professional point of view, as well as in the presentation of the submitted documents for participation in the competition.

In expectation of her further development as a researcher, I would like to recommend that the candidate, in his future work, publish the results of his research in more papers in which she is the sole author. This would further establish her name in the scientific community.

7. Personal impressions of the applicant

I know Assoc. Prof. Dr. Eliza Stefanova as an established scientist and lecturer, as an active organizer of scientific forums and as an innovative author and participant in research projects. She maintains high academic standards and deservedly earns the respect of colleagues and students.

8. Conclusion on the application

Having become acquainted with the materials and scientific works presented in the competition and on the basis of the analysis of their importance and the scientific and applied contributions contained therein, I **confirm** that the scientific achievements meet the requirements of the *Development of Academic Staff Act in the Republic of Bulgaria*, the Regulations for its implementation and the corresponding Regulations of the Sofia University St. Kliment Ohridski for the position of the candidate in the academic position of "Professor" in the scientific field and professional direction of the competition. In particular, the applicant meets the minimum national requirements in the professional field and no plagiarism has been detected in the scientific papers submitted at the competition.

I hereby state my **positive** assessment of the application of Assoc. Prof. Eliza Petrova Stefanova, PhD.

II. GENERAL CONCLUSION

On the basis of the above, I **recommend** that the scientific jury proposes to the competent body of choice of the Faculty of Mathematics and Informatics at the Sofia University St. Kliment Ohridski to choose **Eliza Petrova Stefanova** to occupy the academic position of "**Professor**" in the professional field 4.6. Informatics and Computer Science (Information technology), scientific field 4. Natural Sciences, Mathematics and Informatics.

23.11. 2020   Opinion prepared by: ....

Burgas   (Prof. Daniela Orozova, PhD)