Opinion

for the competition for occupation of the academic position „ professor", in professional field: 4.6 Informatics and Computer Science, specialty: Informatics, for the needs of the Sofia University St. Kliment Ohridski (SU), Faculty of Mathematics and Informatics (FMI), declared in the State Gazette No 87/19.10.2021 and on the Web page of SU

Member of the scientific Jury: Prof. Dr. Eliza Petrova Stefanova, SU – FMI

I am presenting this opinion as a member of the Scientific Jury in the above mentioned competition, on the base of order № РД-38-593/10.12.2021 of the Rector of SU. This opinion fully corresponds to the ZRASRB, Statute of MC for the application of ZRASRB, Statute for the development of the academic staff of SU and FMI.

There is only one candidate for the competition – Associate Professor Dr. Dessislava Georgieva Petrova-Antonova, Faculty of mathematics and informatics, Sofia University.

1. General description of presented materials

The documents submitted by the candidate comply with the requirements of ZRASRB, PPZRASRB and the Regulations on the terms and conditions for obtaining scientific degrees and holding academic positions at Sofia University "St. Kliment Ohridski "(PURPNSZADSU). The candidate Assoc. Prof. Dr. Desislava Georgieva Petrova-Antonova has presented a list of nineteen (19) scientific publications for the participation in the competition, including 2 publications in foreign scientific journals - one indexed in Q2 of Web of Science, the second one with SJR in Scopus, 17 publications in conference proceedings indexed in Web of Science, Scopus, IEEE Xplore Digital Library, ACM Digital Library. More than 50 other documents (CV, copy of Diplomas, certificates, lists with additional information, etc.) are also presented. The publications presented for the competition correspond to the thematic of the competition. There are no official proofs for plagiarism in her publications.

The documents are well structured and best illustrate the candidate's work and contributions.

2. Candidate data

Desislava Petrova-Antonova graduated from the Technical University in Sofia in 2000, where in 2007 she acquired PhD degree.

She started her academic career in 2000 as an assistant in the Department of Computer Systems at the FCSU of the Technical University, where she worked in the following years until 2008 consecutively as a senior assistant and chief assistant professor.

In 2008 she started working at the Research Sector of Sofia University "St. Kliment Ohridski", and in 2009 she joined as a senior assistant at the Department of Software Technologies at the Faculty of Mathematics and Informatics at Sofia University. Since 2012 she has been an associate professor in the same department, where she has teaching and research activities. Since 2021 she has been the head of a research group at the GATE Institute at Sofia University.

3. A general characteristics of the candidate's the scientific works and achievements

The scientific results of Assoc. Prof. Dr. Desislava Petrova-Antonova are in the field of software systems and in particular, working with big data. The focus of her work is on interoperability and semantic enrichment of big data. Especially in the last two years, she has been conducting research in the field of analysis, simulation and visualization of urban processes and phenomena. With her active participation, the first 3D semantic model of the city of Sofia was developed, covering the territory of Lozenets municipality. In addition, the candidate's results have been published in articles with good scientific visibility. This is confirmed by the citations of the scientific works of Assoc. Prof. Petrova-Antonova.

According to the documents submitted by the candidate, Assoc. Prof. Dr. Desislava Petrova-Antonova meets the minimum national requirements (under Art. 2b, para. 2 and 3 of ZRASRB) and respectively the additional requirements of Sofia University "St. Kliment Ohridski" for holding the academic position of "professor" in the scientific field of the competition. According to the *indicator B* points collected are 2.4 times the minimum, according to *indicator G* points are 88 above the minimum, according to *indicator D* - more than 3 times the minimum, and according to *indicator E* - 150 points above the minimum required.

As can be seen from the NACID registers and the evidence provided in addition, the scientific papers submitted by the candidate do not repeat those of previous procedures for obtaining a scientific title and academic position.

There is no legally proven plagiarism in the scientific papers submitted at the competition.

4. Characteristics and evaluation of the teaching activity of the candidate

Assoc. Prof. Dr. Desislava Petrova-Antonova has a very intensive teaching activity. Its annual teaching load is more than 1.5 times the required at the University, and its total teaching staff is more than twice the norm for the required teaching load. The candidate teaches basic courses, most of which are bachelors and masters in Software Engineering. The feedback for her work from the students is very good.

In addition, Assoc. Prof. Antonova has 39 successfully defended graduate students, as well as one successfully defended the doctoral student. She is currently the head of two doctoral students, one of which she co-chairs with Assoc. Prof. Dr. Andreas Mark from Chalmers University of Technology, Gothenburg, Sweden.

5. Analysis of the scientific and applied research results of the candidate

The candidate has submitted 19 scientific publications for participation in the competition. They have scientific and applied results related to 3 aspects of the design and development of software platforms working with big data - architecture, data and technology in several application areas: smart cities, healthcare, education, Internet of things.

The total number of scientific publications of the candidate at the moment is 99, of which publications with impact factor or rank are 30, out of 51 indexed in Web of Science and Scopus. 1 of the publications submitted for the competition is an impact factor (IF), and 12 with an impact rank (SJR). The works of Assoc. Prof. Petrova-Antonova have been cited a total of 142 times, of which 86 citations are in publications indexed in Web of Science and Scopus. All publications submitted for the competition are in English, 2 in journals and 17 in proceedings of international conferences. In these 19 scientific publications the candidate is the first author in 14 publications, the second author in 4 publications and the third author in 1 publication. In each of the scientific publications the candidate has a major contribution to the modelling of software systems working with big data. The candidate has an h index of 4.

In addition, Assoc. Prof. Petrova-Antonova has 2 textbooks and 4 exercise manuals.

6. Critical remarks and recommendations

I don't have any critical remarks. I can recommend to the candidate to continue work professionally and actively.

7. Personal opinion about the candidate

I have known Assoc. Prof. Desislava Petrova-Antonova since she joined the FMI and in particular with her inclusion in the organization of the international conference organized in frame of project SISTER.

Subsequently, I had the opportunity to get acquainted with her work as a software engineer on the university system projects.uni-sofia.bg, created by her.

In all cases where I have had the opportunity to work with Assoc. Prof. Petrova-Antonova, I have met her professional and collegial attitude.

8. Conclusion

On the ground of all above mentioned facts and conclusions, and taking into account the standards expressed in the laws and statutes, **I confirm** that all scientific results and achievements fully correspond to the requirements expressed in ZRASRB, Regulations for its application and the relevant Regulations of Sofia University "St. Kliment Ohridski" for holding the candidate for the academic position "Professor" in the scientific field of the competition. In particular, the candidate satisfies the minimum national requirements in the professional field Also, there are no evidence for any form of plagiarism in respect to the scientific publications of the candidate.

I give my **positive** vote for all presented materials from Assoc. Prof. Dr. Dessislava Petrova-Antonova.

II. General Conclusion

As the candidate fully satisfy all requirements of ZRASRB and the rest of normative documents, standards and statutes enumerated above, this gives me the conviction to state, that Assoc. Prof. Dessislava Petrova-Antonova is fully suited to take the position of Professor. So, I propose to the Honorable Members of the Scientific Jury to vote for the assignment of Assoc. Prof. Dessislava Petrova-Antonova to the academic position of Professor in the professional field: 4.6 Informatics and Computer Science.

Date: 01.02.2022   Member of scientific Jury:

/Prof. Dr. Eliza Stefanova/