

OPINION

by Prof. Evdokia Nikolaeva Sotirova, PhD
University “Prof. D-r Asen Zlatarov” - Burgas

on the documents submitted by
Assoc. Prof. Desislava Georgieva Petrova-Antonova, PhD
for participation in the competition
for acquiring the academic position “Professor”
Faculty of Mathematics and Informatics (FMI)
of Sofia University “St. Kl. Ohridski”

in the field of higher education: 4. Natural Sciences, Mathematics and Informatics;
professional field 4.6. Informatics and Computer Science;
(Software technologies - Data-intensive software platforms),
announced in State Gazette No. 87 of October 19, 2021

The reason for writing the present opinion is Order № ПД-38-593/10.12.2021 of the Rector of Sofia University “St. Kl. Ohridski” (SU) 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 Occupation of Academic Positions at SU “St. Kl. Ohridski” (RTCAADOAPSU).

One applicant has submitted documents for participation in the announced competition: **Desislava Georgieva Petrova-Antonova, PhD**, Assoc. Prof. at department „Software technologies“ FMI.

1. General information about the candidate

Assoc. Prof. Desislava Georgieva Petrova-Antonova, PhD was born on 25.12.1977. In 2000 she graduated the Technical University of Sofia (TU) with a master degree on specialty “Computer Systems”, specialization “Information Technology”. In 2007 she is awarded the educational and scientific degree Doctor of Philosophy (PhD) in the scientific specialty 02.21.03 “System Programming” from the Higher Attestation Commission.

From the submitted documents it is clear that the candidate started his work experience in 2000 as Assistant Professor, after that – Senior Assistant (2004) and Chief Assistant (2007) at the Department of Computer Systems, Faculty of Computer Systems and Technologies, Technical University - Sofia.

In 2009 she was appointed as an assistant professor, and from 2012 until now - as an associate professor at 4.6. Informatics and Computer Science (Informatics - Testing of Software Systems) at the Department of Software Technologies, FMI at Sofia University “St. Kliment Ohridski”. Since 2021 she has been a head of the Scientific Group "Data

Management" at the Institute for Big Data for the benefit of the Intelligent Society (GATE), Sofia University "St. Kliment Ohridski".

In 2009 she was appointed as an assistant professor, and from 2012 until now - as an associate professor at 4.6. Informatics and computer science (Informatics - software testing) (Informatics - Testing of Software Systems) at the Department of Software Technologies, FMI at Sofia University "St. Kliment Ohridski". Since 2021 she has been a head of the Scientific Group "Data Management" at the Institute for Big Data for the benefit of the Intelligent Society (GATE), Sofia University "St. Kliment Ohridski".

2. Description of the submitted materials

The submitted materials and documents for participation in the competition are in accordance to the RTCAADOAPSU of the Sofia University "St. Kliment Ohridski". The materials are precisely described and carefully arranged.

Assoc. Prof. Desislava Petrova-Antonova participates in the competition with 19 scientific papers, not used for obtaining the educational and scientific degree "Doctor of Philosophy" and holding the academic position "Associate Professor". All publications are entirely on the topic of the competition.

All documents and references required for the academic position of "professor" are presented, and they are in full compliance with the requirements of RTCAADOAPSU of the Sofia University "St. Kliment Ohridski".

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

A huge amounts of diverse data are generated in today's world with high speed. In this reason the research interests of the Assoc. Prof. Desislava Petrova-Antonova are focused on an very current field - design and development of data-intensive software platforms.

7 publications - 1 in journal with Impact Factor and in quartile Q2 ([1]), and 6 in journals with SJR-rank ([2], [3], [5], [8], [11], [16]) are listed as a habilitation thesis. 2 of the publications are in journals ([1] and [2]), the rest are in conference proceedings, refereed and indexed in Scopus. The applicant covers 240 points in *Group of indicators B* with a minimum requirement at least 100 points.

The publications presented outside the habilitation thesis include 12 scientific publications in conference proceedings, of which 6 with SJR-rank ([4], [6], [13], [14], [18], [19]), 6 indexed in Scopus ([7], [9], [10], [12], [15], [17]), 3 of which at IEEE conferences. In *Group of indicators G* Assoc. Prof. Desislava Petrova-Antonova has 288 points with a minimum requirement of 200 points.

Assoc. Prof. Desislava Petrova-Antonova participats in the competition with 78 citations of 32 of her publications in articles by other authors, published in publications,

referenced and indexed in Web of Science or Scopus. In *Group of indicators D* the applicant has 312 points with a minimum requirement of 100 points.

Assoc. Prof. Desislava Petrova-Antonova has 250 points in *Group of indicators E* with a minimum requirement of 100 points. She was a scientific supervisor of one successfully defended in 2017 PhD student in professional field 4.6. “Informatics and Computer Science”. The candidate participates in the competition with 9 national research or educational projects (in 2 as a leader, in 7 as a member of the team); 1 international project as a leader of the Bulgarian team; 2 international research projects (team member).

In general, Assoc. Prof. Desislava Petrova-Antonova has 1140 point, with a minimum requirement of 550 points, that exceed two times the minimum national requirements for academic position of “professor” in a professional field 4.6. “Informatics and Computer Science”.

The scientific papers, presented for participation in the competition, contain original research and applied results, related to the design and development of a reference architecture for a big data platform, design and implementation of data-intensive software platforms related to smart cities, healthcare, education and the Internet of Things. The presented research and the obtained results prove the serious scientific potential and define Assoc. Prof. Desislava Petrova-Antonova as a researcher with significant scientific achievements and opportunities for research and critical analysis.

Assoc. Prof. Desislava Petrova-Antonova has a total 99 scientific publications, 20 of which are in scientific journals, 79 in conference proceedings. They have found reflection in the works of other authors. Her publications are cited in 142 independent articles, excluding self-citations, of which 86 citations were in articles referenced and indexed in Scopus and / or the Web of Science, and 56 are other citations as indicated in the attached document. Assoc. Prof. Desislava Petrova-Antonova has participated in a total of 11 international, 19 national and 9 internal university projects. She has presented papers at 45 international conferences and forums; she was a member of 23 program committees at 7 international conferences, 5 of which were indexed in Scopus.

Based on the above I evaluate Assoc. Prof. Desislava Petrova-Antonova as an established scientist with recognized scientific contributions in the field of software technology. Her research on software architectures and systems based on services, data mining, innovative big data solutions, interoperability and semantic enrichment of big data, confirms her as a successful and competent researcher.

4. General characteristics of the applicant's teaching activities

From the submitted documents it is clear that the Assoc. Prof. Desislava Petrova-Antonova has a serious and diverse teaching and learning activities. She teaches 3 mandatory subjects (“Quality Management” and “Design and Integration of Software Systems” from the curricula of the BSc programme and “Service-Based Software

Systems” from the curricula of the MSc programme) and 3 elective subjects (“Software Systems Testing”, “Distributed Systems Integration”, “Big Data Management and Processing” from the curricula of the MSc programme). She leads the master's program in “Technological Entrepreneurship and Information Technology Innovation” at the FMI of Sofia University "St. Kliment Ohridski". She was the scientific supervisor of one successfully defended PhD student. Currently she a supervisor of a two PhD students, enrolled in the doctoral program “Software Technology” in 2021, that were attracted as young scientists at the GATE Institute. In the last eight years, Assoc. Prof. Desislava Petrova-Antonova has been the research supervisor of 39 successfully defended graduates. She is a co-author of 2 textbooks: “Knowledge Management” and “Parallel Programming” and 3 manuals: “The World of Programming”, “Software Environments” and “Software Environments - .NET”. She is the only author of 2 manuals: “Testing software systems in .NET environment” and “Design and integration of software systems with .NET technologies”.

Assoc. Prof. Desislava Petrova-Antonova skillfully combines her serious scientific and practical experience with her teaching activities. This gives me a reason to appreciate her educational and teaching experience.

5. Recommendations

I do not know personally Assoc. Prof. Desislava Petrova-Antonova.

I am convinced that it will be useful Assoc. Prof. Desislava Petrova-Antonova to summarize in a monograph her research on software architectures and systems based on services and quality of web services.

I believe that Assoc. Prof. Desislava Petrova-Antonova has enough scientific experience, and I would recommend her to focus her efforts on working with doctoral students and young researchers.

6. Conclusion on the application

Having become acquainted with the materials and scientific works presented in the competition, I can summarize that the applicant has serious scientific and scientific-applied achievements. I confirm that the academic achievements of the candidate Assoc. Prof. Desislava Petrova-Antonova meet the requirements of 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 Occupation of Academic Positions at SU “St. Kl. Ohridski” for the occupation of the academic position of “Professor” in the professional field “Informatics and Computer Science”. The applicant meets the minimum national requirements in the professional field and no plagiarism has been detected in her scientific papers submitted at the competition.

I give a **positive assessment** of the application of Assoc. Prof. Desislava Petrova-Antonova.

GENERAL CONCLUSION

Based on the above, I recommend the scientific jury to vote on a proposal to the Council of the Faculty of Mathematics and Informatics of Sofia University St. Kliment Ohridski to **select Assoc. Prof. Desislava Georgieva Petrova-Antonova, PhD for the academic position of “Professor” in the field of higher education: 4. Natural Sciences, Mathematics and Informatics, professional field 4.6 Informatics and Computer Science (Software technologies - Data-intensive software platforms).**

29.01.2022 г.
Burgas

Signature:
(Prof. Evdokia Sotirova, PhD)