

STATEMENT

**for the competition for the occupation of the academic position “ Associate Professor”,
in the professional field: 4.6 Informatics and Computer Science,
specialty Informatics (Programming),
for the needs of the Sofia University St. Kliment Ohridski (SU),
Faculty of Mathematics and Informatics (FMI),
announced in the State Gazette No 61/02.08.2022
by Prof. Dr. Kalinka Kaloyanova
Faculty of Mathematics and Informatics, Sofia University**

I am presenting this statement as a member of the scientific jury in the above-mentioned competition, on the basis of the order № ПД-38-561/ 28.09.2022 of the Rector of the Sofia University St. Kliment Ohridski.

The only candidate for this competition is Chief Assistant Prof. Dr. Dafina Jordanova Petkova – Faculty of Mathematics and Informatics, Sofia University.

1. General description of presented materials

The documents submitted for the competition by the candidate comply with the requirements of the Act on the Development of the Academic Personnel in the Republic of Bulgaria (ADAPRB), the Rules for the Implementation of the Act on the Development of the Academic Personnel in the Republic of Bulgaria (RIADAPRB) and the Rules on the Conditions and Procedure for Acquiring Science Degrees and Holding Academic Positions in Sofia University:

1. professional autobiography;
2. copy of diploma for higher education;
3. copy of diploma for the educational and scientific degree “Doctor”;
4. certificate for the occupation of the academic position;
5. certificate of internship in the specialty;
6. list of all publications;
7. list of publications presented for the competition;
8. list of publications, presentations, projects, and supervision activities, generated by Sofia University information system *Authors*;

9. reference for the fulfillment of the minimum national requirements and the requirements of SU for the professional field 4.6 Informatics and Computer Science,
10. list of citations of publications;
11. reference for original scientific contributions;
12. copies of publications presented at the competition;
13. abstracts of the publications presented at the competition;
14. a copy of the competition announcement in the State Gazette.

2. Candidate data

Dafina Petkova graduated from PMG "Acad. Sergey Korolyov" - Blagoevgrad in 2000, in 2004 she graduated from Sofia University St. Kliment Ohridski, Faculty of Mathematics and Informatics, with a bachelor's degree in informatics, and in 2010 she graduated from the FMI Master's program "Bio- and Medical Informatics". In 2021 she acquired a Ph.D. degree from IBPhBME-BAS with a thesis on the topic of "Research and program implementation in the theory of generalized networks".

She worked as a programmer in several software companies from 2004 to 2007. Since 2006 until now, she has been working as an assistant at FMI - department of Computer Informatics. From 2019 until 2021 she also worked as an assistant at the Bioinformatics and Mathematical Modeling section at IBPhBME-BAS.

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

It is clear from the presented materials that Chief Assistant Prof. Dafina Petkova complies with the requirements of the Act on the Development of the Academic Personnel in the Republic of Bulgaria (ADAPRB), the Rules for the Implementation of the Act on the Development of the Academic Personnel in the Republic of Bulgaria (RIADAPRB), and the Rules on the Terms and Conditions for Acquisition of Academic Degrees and Occupation of Academic Positions at Sofia University

- Dafina Petkova has a Ph.D. degree: Ph.D. thesis on " Research and program implementation in the theory of generalized networks (2021) - diploma No 001324/29.01.2021, from the Bulgarian Academy of Sciences;
- she presents 3 publications by the group of indicators B: two publications are indexed by WoS, with impact factors in Q2 and Q3, and one publication is indexed by Scopus – a total of 123 points out of the required 100 points;

- she presents 6 publications by the group of indicators G: one publication with impact factors in Q2 and 5 publications with SJR - a total of 210 points out of the required 200 points;
- she presents 7 citations in Scopus of her publications - 56 points out of the required 50 points in group D;
- she has more than 16 years of academic experience;
- most of the results have been published in the last two years and do not repeat those of the procedure for acquiring her Ph.D.;
- there is no evidence of plagiarism in the scientific works submitted for the competition.

4. General characteristics of the applicant's teaching activities

The academic disciplines taught by Chief Assistant Prof. Dafina Petkova, are entirely in the field of the competition: Introduction to Programming, Object-Oriented Programming, and Data Structures. She is a co-author of the guide "Collection of C++ Programming Tasks. Part One. Introduction to Programming."

Student reviews of her teaching skills are excellent.

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

Dr. Dafina Petkova presented nine publications for the competition. Most of the results were published in series with impact rank (SJR) - 5 publications. Three publications are in journals indexed by Web of Science - two of them with an impact factor in Q2 and one - with an impact factor in Q3. One publication is indexed in Scopus, with no impact rank.

All publications are co-authored, in two of them Dr. Petkova is in the first place, and in the other seven, she is in second or third place, which is a significant indicator of her personal contribution.

Publications B4.1, B4.2, B4.3, D7.1, D7.2 address metaheuristic algorithms for solving complex optimization problems related to parameter identification of biotechnological processes. The explored algorithms are appropriately adapted, implemented, and applied for modeling non-linear processes (fermentation processes).

Several publications focus on generalized nets (GNs) - B4.3, G7.3, G7.5, G7.6. One of them is an overview and follows the development in this area, the others present specific GN models.

Two publications - D7.2 and D7.4, present an application of Inter-Criteria analysis in specific applied tasks.

I appreciate her strong research activities after acquiring her Ph.D. degree.

6. Critical remarks and recommendations

Given the potential of Dr. Dafina Petkova, I would recommend her to expand the field of her scientific and teaching interests.

7. Personal opinion about the candidate

I have known Dafina Petkova since she joined the Computer Informatics department in 2006. I have excellent impressions of the seriousness and thoroughness of all aspects of her work.

8. Conclusion

After reviewing and analyzing all materials and particularly scientific and applied scientific contributions of the applicant, I confirm that the academic achievements of the candidate Chief Assistant Prof Dr. Dafina Petkova meet the requirements of the ADAPRB, the Regulations for its implementation, and the corresponding Regulations of Sofia University for the occupation of the academic position of "Associate Professor" in the professional field 4.6 Informatics and Computer Science. The applicant meets the minimum national requirements in the professional field and no plagiarism has been detected in the submitted scientific papers.

I give a **positive assessment** of the application of. Dr. Dafina Petkova.

II. 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 for the assignment of Chief Assistant Prof. Dr. Dafina Jordanova Petkova to the academic position of Associate Professor in the professional field: 4.6 Informatics and Computer Science.

November 21, 2022

Member of the scientific jury:

(Prof. Dr. Kalinka Kaloyanova)