

POSITION
on a competition for the occupation of an academic position
"Professor"
in the scientific specialty of Informatics and Computer Science (Informatics – Distributed
Systems and applications),
for the needs of Plovdiv University "Paisii Hilendarski "(PU),
Faculty of Economics and Social Sciences,
declared in the State Gazette no. 94 of 12 January 2021 and on the websites of PU

The position was prepared by Prof. Dr. Sylvia Hristova Ilieva, Sofia University "St. Kliment Ohridski", Faculty of Mathematics and Informatics, Department "Software Engineering", as a member of the competition jury in 4.6 Informatics and Computer Science under the competition according to Order No. ПД 21-37 / 10.01.2022 of the Rector of Plovdiv University "Paisii Hilendarski."

Only one candidate has applied for participation in the announced competition: Assoc. Prof. Dr. Olga Dobрева Rahneva, PU, Faculty of economic and social sciences, Department "Management and quantitative methods in economy".

I. General description of the presented materials

1. Details of the application

The submitted documents from the applicant comply with the requirements of ЗПАЧРБ, ИИЗПАЧРБ and the Regulations for the development of the academic staff at Plovdiv University "Paisii Hilendarski".

For the competition the candidate Assoc. Prof. Dr. Olga Dobрева Rahneva has submitted a list of total 27 publications in Bulgarian and foreign scientific publications and scientific forums, including 22 publications, 3 monographs (2 in English and 1 in Bulgarian language), and 2 textbooks. They have not been used to obtain the educational and scientific degree of "doctor" and to hold the academic position of "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, as well as other documents supporting the achievements of the candidate, which fully meet the requirements of the Regulations for the development of the academic staff of Plovdiv University "Paisii Hilendarski".

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

2. Applicant details

The candidate Olga Rahneva has higher education in mathematics block D, completed in 1980 at FMI-Plovdiv, as well as a master's degree in Finance and Accounting in 1995. at UNWE Sofia, Plovdiv branch. She was a doctoral student at FMI-Plovdiv and in 2006 she defended her dissertation on "Distributed cluster for electronic testing". In the period 1986-2008 he was successively assistant, senior assistant, chief assistant, and since 2008 associate professor. Since 2014 he has been an associate professor of Informatics at the Plovdiv University "Paisii Hilendarski".

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

The research activity of Assoc. Prof. Dr. Olga Dobрева Rahneva and the topics of her scientific papers are entirely in the field of competition. She participated in the competition with 27 publications, which do not repeat those of the previous procedures for acquiring ONS "Doctor" and for the academic position of "Associate Professor".

All scientific papers submitted for participation in the competition are co-authored. Considering the subject and style of the publications, there is no doubt that they were prepared with the active participation of Assoc. Prof. Dr. Olga Rahneva.

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

According to Art. 1a, para. 1 of the PPRASRB, the candidates for the academic position "Professor" in the professional field 4.6 "Informatics and Computer Science" must have accumulated: 50 points per group of indicators A; at least 100 points per group of indicators B; at least 200 points per group of indicators Γ ; at least 100 points per group of indicators Δ ; at least 150 points on indicators from group E.

According to the submitted documents, the candidate for the competition covers:

- 50 points per group of indicators A;
- 100 points per group of indicators B;
- 402 points per group of indicators Γ ;
- 408 points per group of indicators Δ ;
- 216.67 points per group of indicators E.

The scientific papers fully meet the minimum national requirements (under Art. 2b, para. 2 and 3 of the 3PACPB), as the total number of points by group of indicators is significantly exceeded. They also fully meet the additional requirements of the Plovdiv University "Paisii Hilendarski" to hold the academic position of "professor" in the scientific field and professional field of the competition. The additional requirements of Plovdiv University "Paisii Hilendarski" do not set higher additional requirements than those specified in 3PACPB.

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

From the presented materials it is evident that Assoc. Prof. Dr. Olga Dobрева Rahneva has a significant volume and diversity in subject teaching and learning activities. Associate Professor Olga Rahneva is a lecturer in three courses in the bachelor's programs of FISN at Plovdiv University "Paisii Hilendarski" - Informatics, Information Systems and Technologies and E-Commerce. The courses are offered in more than 10 specialties in full-time and part-time education.

From 1986 to 2014 Assoc. Prof. Olga Rahneva was a lecturer at UFT, where she lectured in 9 compulsory subjects, namely: Databases, Pascal Programming, Programming and use of computer systems - in two parts, Computer Systems and communications, Informatics - in two parts, Economic informatics, Information technology, Tourism management information systems, Electronic market.

The candidate in co-authorship has published 6 textbooks and teaching aids on paper and 3 textbooks on electronic media.

Associate Professor Olga Rahneva is the head of 3 successfully defended MSc students, as well as two doctoral students in joint supervision with Prof. Stanimir Stoyanov. She is the supervisor together with colleagues from the University of Plovdiv "Paisii Hilendarski" of one doctoral student, expelled with the right to defense and one current doctoral student.

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

The scientific achievements of the candidate according to the scientific papers submitted for participation in the competition are in the field of "Distributed Systems and Applications", and they are relevant and significant. I accept the thematic grouping of the candidate's contributions as follows:

- Group A - development and improvement of a distributed cluster for electronic testing; development and improvement of a distributed e-learning platform, as well as its application;
- Group B - specialized studies of sigmoidal, cumulative and adaptive functions, which are used in Population Dynamics, Debugging and test theory and Computer Viruses Propagation.
 - o Investigation of intrinsic properties for new classes of cumulative and adaptive functions with respect to the degree of saturation with horizontal asymptote and proposing new models
 - o Methodology for uniform examination of the well-established characteristic "confidential assessments" and the new characteristic "super-saturation", for selection of an appropriate method for data analysis in the scientific fields of Population Dynamics, Debugging and test theory and Computer Viruses Propagation.
 - o Upgrading existing modules in scientific computing platforms.
- Group B – creation of software copying agents, looking for similarities in the content of the submitted homework projects by the students; Creating 3D tools to support music education for

children with special educational needs; creating the architecture of a regional data center for intelligent agriculture.

Based on the analysis of the provided materials, it can be summarized that the scientific contribution of the candidate in the identified areas is relevant and significant, leading to new knowledge and expanding existing knowledge in the field.

According to the report presented in 22 scientific publications, the candidate has a total of 387 citations, 50 citations are in articles referenced and indexed in Scopus and/or Web of Science. In summary, this citation deserves high praise and proves the importance of the research results of Assoc. Prof. Olga Rahneva among the scientific community in Bulgaria and abroad.

The above gives me a reason to recognize Assoc. Prof. Dr. Olga Dobрева Rahneva as a successful and competent researcher.

6. Critical notes and recommendations

I would recommend Assoc. Prof. Dr. Olga Dobрева Rahneva to pass on her experience and knowledge to more PhD students to participate in research work on data retrieval.

I have no significant critical remarks on the materials of the competition and the scientific publications of the candidate. I would recommend Assoc. Prof. Dr. Olga Rahneva to pass on her experience and knowledge to more PhD students who will participate in research work on the topic of the competition, as well as to publish also as a sole author of publication.

7. Personal impressions for the applicant

I do not know Assoc. Prof. Dr. Olga Dobрева Rakhneva and I have no personal impressions of the teaching and research activities, but from the materials presented for the competition I get an impression that he is an established scientist and professional.

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 3PACPE and the rules for its implementation as well as the corresponding rules of Plovdiv University "Paisii Hilendarski " for the academic position "Professor" in the scientific field and professional direction of the competition. In particular, the candidate Assoc. Prof. Dr. Olga Dobрева Rahneva meets the minimum national requirements in the professional field and no plagiarism has been detected in the scientific papers presented at the competition.

I give my **positive assessment** to the application of Assoc. Prof. Dr. Olga Dobрева Rahneva

II. GENERAL CONCLUSION

On the basis of the above, I **recommend** that the scientific jury propose to the competent body for the selection of the Faculty of Mathematics and Informatics at Plovdiv University "Paisii Hilendarski " to choose Assoc. Prof. Dr. Olga Dobрева Rahneva to take the academic position of “Professor” in the professional field of 4.6 Informatics and Computer Science (Informatics – Distributed systems and applications).

01.03.2022

Prepared the position:

(Prof. Dr. Sylvia Hristova Ilieva)