

OPINION

For the competition for the occupation of the academic position "professor" by professional direction 5.2. Electronics, electrical engineering and automation, specialty "Application of the principles and methods of cybernetics in various fields of science", announced in SG no. 95/14.11.2023 for the needs of the "Intelligent Systems" section at IICT-BAS.

Member of the scientific jury: Prof. Dr. Maya Ignatova - IR-BAN

1. General conditions and biographical data

The only candidate in the competition is Assoc. Prof. Vera Angelova Angelova-Dimitrova. She completed her higher education at the Higher Machine-Electrical-Technical Institute (VMEI) in Sofia in 1989, after which she did post-graduate qualification at the same institute and became an engineer-specialist in applied mathematics and informatics. After that, she went to work at the BAS in the following institutes, holding the positions: Institute of Informatics, where in 1993 she defended the scientific degree "doctor"; In 2005, she held the academic position of "associate professor" at the Institute of Information Technologies, which was later renamed the Institute of Information and Communication Technologies (IICT), where Dr. Angelova still works. Since 2022 till now, she is a scientific secretary of IICT.

2. General description of submitted documents

The candidate Assoc. Prof. PhD Vera Angelova Angelova-Dimitrova participated in the competition for the academic position of "professor" with a list of 28 publications, 3 university textbooks and 2 university study aids. Of the publications, 17 are in Impact Factor journals and 7 are in SJR journals. 10 of them are in group B - Habilitation work - scientific publications (not less than 10) in publications that are referenced and indexed in world-famous databases with scientific information; 14 are in group D - Scientific publications in publications that are referenced and indexed in world-renowned databases with scientific information; 4 are in group D- Scientific publications in non-refereed peer-reviewed journals or in edited collective volumes. The publications do not repeat those presented for obtaining the educational and scientific degree "doctor" and for occupying the academic position "associate professor".

A list of 87 citations of 24 works is presented. One articles where Assoc. Prof. Angelova is the sole author (G4) was cited 16 times. All these citations are in publications that are referenced and indexed in world-renowned databases of scientific information. A list of 21 citations of 9 papers in non-refereed peer-reviewed journals is presented.

Assoc. Prof. Angelova is the supervisor of 5 full-time doctoral students, one of whom has successfully defended his dissertation. Has participated in 4 national scientific or educational projects. She is author of 3 published university textbooks and 2 published university teaching aids. For 10 years (1999-2009), Assoc. Prof. Angelova led lectures and exercises with students from TU-Sofia in French. From 13 years until now, she has been leading 2 courses of lectures and exercises with students from the Faculty of Economics of SU "St. Kliment Ohridski" in French.

The scientific publications presented for the competition are grouped into three thematic groups. The most numerous (25) of the publications can be united under the title "Conditionality and sensitivity of matrix equations". One of the articles refers to soft computing and two to the topic "Personality and behavior in electronic commerce".

In 9 of the publications presented for the competition, Dr. Angelova is in first place; in 9 is co-authored with Academician Popchev; in 8 is co-authored with the team of academician Popchev, Corresponding Member Petko Petkov and Prof. Misho Konstantinov; in 2 of the articles, Dr. Angelova is co-author with other colleagues.

Assoc. Prof. Angelova's long-term work in a team with many famous scientists in the field makes an impression. As a result, 17 publications from their joint work included in the competition list are presented.

Summary of the minimum national requirements and the requirements of IICT-BAS by groups of indicators for the academic position "professor" by professional direction 5.2. Electronics, electrical engineering and automation, specialty "Application of the principles and methods of cybernetics in various fields of science" and the evidence presented by the candidate is shown in the table:

Groups of indicators	Minimal national requirements	Minimal requirements of IICT-BAS	Declared points by groups of indicators by the candidate
A	50	50	50
B	-	-	-
C	100	100	240
D	200	220	338.3
E	100	120	918
F	150	150	250

The analysis of the data in the table shows that in all groups of indicators Assoc. Prof. Angelova exceeds the minimum national requirements of the Law on the Development of Academic Staff in Republic of Bulgaria, the Regulation for the implementation of the law on the development of the academic staff, as well as the Regulations for the specific conditions for acquiring scientific degrees and for holding academic positions at IICT-BAS.

The submitted works for participation in the competition are in topical areas relevant to science and practice. Upon a more detailed examination of the works, it can be seen that the candidate uses contemporary methods and tools to solve scientific problems and achieve the relevant goals.

3. Scientific and scientific-applied contributions

The candidate has clearly articulated each of his scientific and applied scientific contributions and has paid special attention to a detailed description of each of them. This clarifies the nature of the contribution, both scientifically and the effect of its application.

3 scientific and 4 scientific-applied contributions are proposed. All of them are mainly in the field of studying the conditionality and sensitivity of matrix equations related to problems of the theory of linear control systems. The contributions relate to modifications of Perturbation analysis applied to the theory of scientific computation.

4. The significance of the contributions for science and practice

I believe that the candidate's contributions are relevant and significant for the enrichment and development of scientific research in the thematic area in which she works. The significance of the contributions is due to the fact that the Perturbation analysis provides an assessment of the conditionality and sensitivity of the problem solved in the middle of finite machine arithmetic with a numerically stable algorithm and guarantees the reliability of the computational process according to national standards in scientific and engineering calculations.

All contributions are protected by works published and repeatedly cited in publications that are referenced and indexed in world-renowned databases of scientific information. All this convincingly shows that the candidate's works have received the necessary fame and recognition from the scientific community at home and abroad.

5. Concluding remarks and recommendations

From the presented scientific production for participation in the current competition and the candidate's impressive educational and teaching activity, I believe that Assoc. Prof. Angelova is a highly qualified and erudite scientist with a

broad general culture, who enjoys a well-deserved authority among specialists in our country and abroad. Assoc. Prof. Angelova is a member of 2 editorial boards: of the Journal of Information Technology and Control, ISSN 1312-2622 from 2019 to the present and of Lectures Notes in Computer Science and Technologies of IICT – BAS, ISSN 2367-8666 from 2016 till now. She is the secretary of the journal Cybernetics and Information Technologies, ISSN 1311-9702 from 2019 to the present. In addition, she is the Scientific Secretary of IICT - BAS from 2022; member of the Scientific Council of IICT - BAS and member of the Academic Council of the Training Center at BAS since 2009. She is also a member of the state examination commissions for awarding the educational-qualification degrees of bachelor and master in the Faculty of Economics of SU "St. Kliment Ohridski". Since 2020, Assoc. Prof. Angelova has been a representative of IICT-BAS in the VIII General Assembly of BAS.

I have no critical remarks with which to dispute the applicant's main scientific and scientific-applied contributions.

I recommend Assoc. Prof. Angelova to activate her participation as the head of research projects.

Conclusion

Based on my familiarity with the competition materials, the relevance and significance of the contributions achieved, as well as my positive assessment of the overall activity of the candidate, I propose to **the Scientific Council of IICT to elect Associate Professor Vera Angelova Angelova-Dimitrova to the academic position "professor"** in professional direction 5.2 Electronics, electrical engineering and automation, specialty "Application of the principles and methods of cybernetics in various fields of science" for the needs of the "Intelligent Systems" section at IICT-BAS.

16.02.2024

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