

STATEMENT

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ABOUT

**documents and scientific papers presented in a competition for the academic position
“Associate Professor”**

Field of higher education: 5. Technical sciences;

Professional field: 5.3 Communication and Computer Engineering;

published in the State Gazette No 77/27.09.2022 for the needs of the department

„Distributed information and communication systems“

in the Institute of Information and Communication Technologies – BAS

with the only candidate in the competition: Chief Assist. Prof. Elisaveta Trichkova-Kashamova, Ph.D.

By order No 338/25.11.2022 of the Director of the Institute of Information and Communication Technologies at the Bulgarian Academy of Sciences (IICT-BAS), I am included in the Scientific Jury of the competition for the academic position “Associate Professor” published in the State Gazette No 77/27.09.2022. Materials for the competition are submitted by the only candidate Elisaveta Trichkova-Kashamova, Ph.D., Chief assist. prof. at IICT-BAS. As a member of the Scientific Jury, I have received the following materials from the candidate, meeting the requirements of IICT-BAS:

1. Application for participation in the competition;
2. European CV;
3. Copy of diploma for the educational and scientific degree “Ph.D.”;
4. Certificate of internship in the specialty;
5. List of scientific publications for participation in the competition;
6. List of citations;
7. Summaries of scientific publications for participation in the competition - in Bulgarian and English;
8. Copies of scientific publications for participation in the competition;
9. Information on fulfillment of the minimum requirements of IICT;
10. Information on the original scientific and scientific-applied contributions;
11. Declaration that there is no legally proven plagiarism in scientific works.

General characteristics of the presented materials.

The presented CV shows that the candidate received the educational and scientific degree "Ph.D." at the Institute of Information and Communication Technologies - BAS, in the period 2007-2014. The reference for the fulfillment of the requirements of IICT-BAS for the occupation of the academic position "Associate Professor" shows that the requirements for all groups of indicators are fulfilled and have been exceeded. The review of the submitted materials by the candidate Trichkova-Kashamova, Ph.D. shows that they have been prepared following the Act for Academic Growth, the Regulations for its implementation, as well as the Rules for the specific conditions for the acquisition of academic degree and occupation of academic positions at IICT-BAS.

Evaluation of the scientific work.

To participate in the competition, the candidate participates with a list of 10 scientific papers in publications that are referenced and indexed in world-renowned databases of scientific information. Beyond this number, the candidate includes 2 refereed and indexed publications in global databases, as well as 13 in non-refereed peer-reviewed journals or in edited collective volumes.

The scientific publications corresponding to group of indicators B4 are 10 published in the period 2020-2022, and one from 2007. The candidate has 3 solo author publications, 7 in co-authorship, first author in 2 of them. There are 15 publications in group G. Issued in the period 2005-2021, of which 2 are in indicator G7, referenced in world-famous databases. In this indicator, the candidate is the first author in 4 of them, and solo author in 9.

The scientific papers presented by the candidate do not repeat the publications for obtaining the doctoral degree.

In general, the works presented contain scientific and scientific-applied results related to the application of a communication network for modeling and management of information flows. Scientific results in the field of intelligent animal husbandry, analyzing types of modern systems and technologies, based on which recommendations have been drawn up to support decision-making. A technological solution for automation in information activities has been developed. An approach for assessing the quality of information systems has been created. These results show that the candidate has in-depth knowledge, high competence and accumulated experience in the field of the competition.

Evaluation of the citations.

In the presented list of citations, most citations of the candidate's works are in the works of authors in publications that are indexed and referenced in the scientific information database Scopus, citations in foreign publications are also noticeable.

In the submitted information for fulfillment of the minimum requirements of IICT for "Associate Professor" the candidate has indicated the data shown in Table 1.

Table 1. Data, provided by the candidate.

Group ind.	Indicators	Points required	Candidate Points
A	1. Dissertation thesis for educational and scientific degree "Ph.D. "	50	50
B	Indicator 3 or 4	Min. 100	370
G	Sum of indicators 5 to 11	Min. 220	263.34
D	Sum of indicators 12 to 15	Min. 60	158
E	Sum of indicators from 16 to the end	Min. 20	110
Total:		450	951.34

Scientific and scientific-applied contributions.

I accept and positively evaluate the scientific and scientific-applied contributions of the candidate indicated in the attached statement of contributions. They fully correspond to the scientific specialty of the competition "Communication networks and systems" and include scientific and scientific-applied results related to information flow management. A model for flow control in networks is proposed, widely used in the management of real-time communication networks. An example of an algorithm for moving emergency vehicles in a rush road environment is proposed. A network management model is presented, with security also being affected. Solutions are proposed to increase the organization and productivity of livestock farms through three-level monitoring. Key performance factors, application of IoT devices for data collection and decision making are analyzed. Numerous methods, approaches and tools for modeling, implementation and analysis of business processes have been analyzed. Based on the analysis, a technological solution was developed, allowing the introduction of automation in information activities and services. A general model for evaluating software products has been developed, developed on the basis of the established international standard ISO/IEC 9126. A formal approach for quantitative evaluation of quality and efficiency of information systems has been proposed. The approach is based on a mathematical method aimed at eliminating the subjective influence of experts. A template was developed based on the ISO/IEC 25010:2011 standard. The template provides a general framework for evaluating software products. The proposed approach is also applicable in the education sector.

General characteristics of the candidate's activity.

The candidate for the current competition, Trichkova-Kashamova Ph.D. has a master's degree from the University of Chemical Technology and Metallurgy - Sofia, faculty of systems and chemical engineering. She has more than 18 years of total work experience at ICT, of which 7 years as chief assistant professor. During this period, she was a doctoral student, programmer, assistant and ch. assistant. The publications submitted for participation in the competition show the candidate's active publication activity and contain original scientific and scientifically applied results in the field of communication networks and systems.

She participated as a member of the team in 5 national projects, including 2 from the NSF grant, one project financed by the National Scientific Program, a project under the Operational Program Innovations and Competitiveness.

Additional, she participated in three international projects – Cost Action, 6th framework program of EC, Erasmus+

Critical notes and recommendations.

I have no critical remarks with which to challenge the scientific-applied contributions of the candidate. There are no separate protocols provided for the contributions in the evaluated papers, for this reason I consider the authors to have equal participation. An inaccuracy was noted in the presented citations, which is why I do not take into account the cited publication No. 4 from indicator D 12, as well as the cited publication No. 4 in D 14. However, the candidate has enough points on the aforementioned indicators. I would recommend that in the candidate's future activity, she should focus on publishing in foreign scientific forums and protecting intellectual property.

Conclusion

The materials of the competition and the presented results of the candidate satisfy all the requirements under the Act of the Development of the Academic Personnel of the Republic of Bulgaria, and the Rules of the Academic Personnel of the Republic of Bulgaria, the Rules for the conditions and the procedure for acquiring scientific degrees and for the occupation of academic position in the Bulgarian Academy of Sciences and the Rules for the specific conditions for the acquisition of the academic degrees and the occupation of academic positions in the Institute of Information and Communication Technologies. My assessment of the overall activity of the candidate is **positive**.

I strongly recommend the esteemed Scientific Jury to vote a proposal to the Scientific Council of IICT-BAS for the election of Elisaveta Trichkova-Kashamova Ph.D. to the academic position of "Associate Professor" in Professional: 5.3 Communication and Computer Engineering, for the needs of Department "Distributed Information and Management Systems" at the IICT-BAS.

Date:

20.01.2023

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