

OPINION

from Professor D.Sc. Ivan Garvanov
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on competition for academic position "Associate Professor" in professional field 4.6 "Informatics and Computer Sciences", specialty 01.01.12 "Informatics", announced for the needs of IICT-BAS, Department "Hierarchical Systems", published in press No 41/21.05.2019 with sole candidate Assistant Professor PhD Boryana Emilova Vachova

1. GENERAL DESCRIPTION OF THE PRESENTED MATERIALS

According to Order No 180/19.07.2019 of the Director of IICT-BAS, Prof. Galya Angelova, I was appointed a member of the Scientific Jury, and at the first meeting held on 26.07.2019 I received the materials in connection with the competition on electronic media.

The submitted documents for participation in the competition for the occupation of the academic position "Associate Professor" and the conducted procedural actions are in accordance with the Law on the Development of Academic Staff in the Republic of Bulgaria and the Regulations for its implementation. With regard to the implementation of the necessary indicators on the basis of the documents submitted by the applicant, I found the presence of:

- copy of the diploma No. 33111 of 22.04.2009 for educational and scientific PhD degree, in implementation of Art. 53 (1);
- a certificate of work experience in the specialty, in accordance to the Art. 53(2a);
- a certificate of teaching activity in the discipline "Software Engineering" for masters for the last 3 academic years from 2016 to 2019, in pursuance of Art. 53 (2b);
- monographic work consisting of 128 pages, satisfying Art. 53 (3);
- information on the fulfillment of the minimum requirements of the IICT, from which it is evident that they have been satisfied in accordance with Art. 53 (4);
- a declaration for lack of plagiarism proven in the law, in the scientific works, in accordance to the Art. 53(5).

For the implementation of Art. 54(1), the applicant has presented a certificate for the fulfillment of the minimum national requirements, a report on the requirements of art. 1a, para. 2, as well as a reference to the original scientific contributions to which the relevant evidence is attached.

2. QUANTITATIVE AND QUALITATIVE CHARACTERISTICS OF PUBLICATIONS AND CANDIDATES

PhD Boryana Vachova participates in the competition for academic position "Associate Professor" with 16 works, outside the participants in the procedures for "PhD". Of these, one monograph and 15 publications in journals and conference proceedings. The monograph consists of 128 pages and is published by the publishing house "Education and Cognition", which fulfills an indicator of group B - 100 points.

The other 15 publications, all indexed in WoS and Scopus, have been attached to form the points for Group D. Two of the publications have an impact factor of IF, respectively, 1.594 and IF: 1.426, and 10 have SJR. The papers have been published in various publishers, 7 of them in IOS Press; 3 at Springer Nature Press; 3 in IEEE Press; 1 in WSEAS Press and 1 was printed at IADIS European Conference Data Mining. The total number of points in Group D is 280.

In the competition documents, PhD Boryana Vachova submitted 15 citations to the SCOPUS and WoS bases, which corresponds to 78 Group E. points.

Evidence of participation in 3 Erasmus international science and education projects has been attached to the formation of the E Group points. These holdings are rated at 60 points for Group E.

3. ASSESSMENT OF THE APPLICANT'S PERSONAL CONTRIBUTION

I believe that the submissions by the candidate for review of the competition are for the most part her own business. The presence of more than one author in 14 of the scientific publications shows that PhD Boryana Vachova manages to work well in a team and to obtain high scientific results, which is confirmed by the places of publication of the works. With the exception of the monograph, all 15 works are in English.

4. EVALUATION OF THE SCIENTIFIC RESULTS AND CONTRIBUTIONS OF THE SUBMITTED TO PARTICIPATE IN THE CREATIVE PRODUCTS COMPETITION

The candidate's contributions are both scientific and scientifically applied. In her research, she confirms some known facts, enriches existing knowledge with new facts, and proposes that some of the new scientific findings be put into practice.

Scientific contributions to the publications presented concern the development of:

- a model with a network structure for extracting knowledge of complex processes;
- method for modeling multifactor nonlinear stochastic objects;
- method for faster targeting to local extremum using genetic algorithms and gradient method.

The scientific contributions to the publications presented relate to the development of:

- a method for extracting knowledge of non-stationary processes by aggregating data into packages using multifaceted logic and probability functions (MLFW);
- logical method for knowledge extraction based on experimental data on technological process for copper ore flotation;
- Application of innovative fuzzy network theory and rule base for different types of complex processes and objects.

I would appreciate the candidate's developments as contributions by putting scientific achievements into practice.

5. CRITICAL NOTES AND RECOMMENDATIONS

I would like to recommend that PhD Boryana Vachova, in the future, work more with students and PhD students in order to pass on the knowledge and skills she has acquired to the next generations of young scientists.

6. CONCLUSION

On the basis of the acclaimed scientific contributions of the candidate, as well as the fact that she fulfills all the requirements and criteria of the Law on the Development of Academic Staff in the Republic of Bulgaria and its Rules for Implementation, as well as the Regulations of BAS and the Regulations on the specific conditions for acquiring academic degrees and occupying academic positions at IICT-BAS, , I propose PhD Boryana Emilova Vachova to be elected to the academic position "Associate Professor" in the professional field 4.6 "Informatics and Computer Science", specialty: 01.01.12 "Informatics".

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prof. Ivan Garvanov