Review

on a competition for the academic position "Professor" professional field 4.6 "Informatics and Computer Science", specialty "Informatics" with Candidate Assoc. Prof. Vassil Guliashky, PhD

Reviewer: Prof. Radoslav D. Yoshinov, PhD

In connection with the competition procedure at IICT-BAS for the academic position "Professor" in the professional field 4.6 "Informatics and Computer Science", speciality. 01.01.12 "Informatics", announced in SG No. 21 of 15.03.2022 for the needs of the Section "Information Processes and Decision-Making Systems". and in accordance with Article 4 of the Law on the Development of Academic Staff in the Republic of Bulgaria, Decree No26 of 19 February 2019, the Regulations on the Specific Conditions for Academic Position at IICT-BAS, I am appointed as a member of the scientific jury of Dr. Vasil Guliashky.

For participation in the competition for the academic position **"Professor"** in professionall field 4.6 "Informatics and Computer Science", specialty "Informatics" has submitted documents the candidate Dr. Vasil Guliashky from IICT-BAS.

As a member of the Scientific jury, I have received:

1. Order of the Director of IICT-BAS No 115/04.05.2022 to conduct the competition for the academic position;

2. Rules of Procedure for acquiring scientific degrees and for holding academic positions at IICT-BAS.

3. Copy of diploma of scientific and educational degree "Doctor" 19.12.1994;

4. Copy of an associate professor's degree;

5. Certificate of service;

6. Creative CV;

7. Declaration of originality and reliability;

8. List of all publications of Dr. Vasil Guliashky;

9. List of the publications presented for the competition by Assac. Dr. Vasil Guliashky;

10. Author's report by Dr. Vasil Guliashky;

11. List of quotes of Dr. Vasil Guliashky;

12. Publications;

13. Additional documents

Note: all required competition documents were provided electronically at https://iict. bas. bg/VGuliashki/

I have been selected as a reviewer under the procedure of the first meeting of the scientific jury on 18.05.2022.

Candidates for the academic position "Professor" must meet the requirements described in the **Law on Development of Academic Staff in the Republic of Bulgaria (ZRARB) of Art. 29(1)2, the** Rules of Application of the Law on the Development of Academic Staff in the Republic of Bulgaria of Art. 29(1)2, the Rules of Application of the Law, the Rules of Procedure for acquiring scientific degrees and for holding academic positions at IICT-BAS

1. to comply with the relevant minimum national requirements and additional requirements of IICT-BAS;

2. have acquired a Doctor's decree, as for specialties from regulated professions, it shall be of the same specialty;

3. have held the academic position of associate professor at the University or at another higher school or scientific organisation for at least five academic years, or

4. not less than five years:

(a) have been lecturers, including honorees, or members of a research team at the University or at another higher school or scientific organisation, or

(b) have pursued artistic activity, or

(c) have been specialists in practice and have proven track record in their field;

5. have submitted published monographic work and/or equivalent publications in specialized scientific publications (including their citations) or evidence of relevant artistic achievements in the field of the arts;

6. have submitted other original research papers, publications, inventions and other scientific and applied developments or artistic achievements which are assessed as a whole;

7. there must be no statutory plagiarism in scientific papers.

31 (2) (new - 20.06.2011) The materials under para. 1, item 4 and item 5 should not repeat others with which the applicant has participated in successful procedures for acquiring the "Doctor" and the National Doctor of Sciences and for holding the academic positions of "Chief Assistant" and "Associate Professor"

– regardless of which scientific organization this has happened, as well as for holding an academic position "Professor" at the University.

(3) If applicants have not held the academic position of associate professor, they should present another published monographic work or equivalent publications in specialized scientific publications or relevant evidence of artistic achievements in the field of the arts, which do not repeat "Doctor" and "Doctor of Science" presented for the acquisition of the NSA.

(4) (amend. – 15.10.2018) The faculties of the University shall have the right to lay down additional requirements, which shall be accepted on the FC and shall be deposited in the Department. In determining the additional requirements, the faculties take into account the established indicators for evaluation and financing of the scientific and artistic activity of the state higher schools, as well as the indicators from the rating system of higher schools in Bulgaria.

The candidate, Dr. Vasil Guliashky, holds the educational degree "Doctor" since 1994, as well as holds the position of "Associate Professor" at IICT since 2008.

According to the certificate of service issued by IICT-BAS, the candidate Dr. Vasil Guliashky has an internship in the position of "Associate Professor" for more than 13 years, and acquired the educational and scientific degree "Doctor" more than 25 years ago.

Table showing compliance by points of the requirements of the RSA and the Rules of Procedure of IICT-BAS Minimum required points by group of indicators for academics. "Professor" position and their respective performance by the candidate Asoc. Prof. Vasil Guliashky, PhD.:

Ass.p. Dr. Vasil Guliashky for compliance with the National Minimum Requirements for the acquisition of the academic position "Professor" by 4.6. Informatics and Computer Science			
Scoreboard of indicators	Required number of points	Indicator	Points
A	50		50
		A1. Dissertation on the award of educational and scientific degree "Doctor" (50 t.)	
B	100		120
		B4. Rehabilitation work - scientific publications in publications that are referenced and indexed in world-famous databases of scientific information (Web of Science and Scopus)	
Г	200		265

		G7. Scientific publication in publications that are referenced and indexed in world-famous databases of scientific information (Web of Science and Scopus), outside of habilitation work	
		G8. Published chapter of a book or collective monograph	
Д	100		384
		D11. Citations in scientific publications, monographs, collective volumes and patents referenced and indexed in world-renowned databases of scientific information (Web of Science and Scopus)	200
E	100		283.1
		E13. Guidance of a successful phD student	
		E14. Participation in a national scientific or educational project	
		E15. Participation in an international scientific or educational project	
		E17. Leadership of the Bulgarian team in an international scientific or educational project	
		E18. Borrowings for projects led by the applicant	
		E19. Published university textbook or textbook to be used in the school network	
		Total	1102.1

All of this proves that the candidate, Assoc. prof. Vasil Guliashky fulfills (exceeds) all the requirements of Art. 29(1)1 of the Law, as well as all additional requirements of the rules of the IICT-BAS for participation in the competition.

Short biographical data about the candidate.

The candidate, Assoc. Prof. Dr. Vasil Guliashky holds a Master's degree from the Higher Machine-Electrotechnical Institute "V. I. Lenin" (now Technical University of Sofia).

He has been working since 1994 at the Institute of Information Technology – BAS, Section "Systems for Assisting Decision-Making.

From 1997 to 2009 he was a research associate 2nd and 1st degree at institute of information technology – BAS, Section "Systems for supporting decision-making.

Since 2010 he has been associate professor at the Institute of Information Technology – BAS, Section "Information Processes and Decision-Making Systems"

General description of the presented materials of the competition.

The candidate, Assoc. Prof. Dr. Vasil Guliashki has a complete list of 126 publications, of which 35 were indexed.

For the competition, the candidate has submitted 22 publications indexed in the Scopus, Web of Science, ACM Digital Library, IEEE Xplore.

Presented: 8 of the publications are in journals, all are indexed in Web of Science and/or SCOPUS (of which 7 have SJR, and two of them have IF, one is published in a journal ranked Q4;

There are 11 publications reported and published, such as reports at international conferences, all indexed. (of which six are in conferences with SJR)

There is a monograph and a book in co-authorship, as well as a separate chapter of a book about the competition.

Evidence of 71 citations (indexed in Web of Science, Scopus, IEEE Xplore) has been submitted. Zentralblatt) Of these, 40 are indexed in Scopus, 17 are in the Clarivate Analytics Web of Science, 12 are in IEEE Xplore and 2 are in Zentralblatt.

Projects – proof of participation in 9 national and 14 international projects was presented, in 3 of the national and in 4 of the international projects the candidates was the leader.

The candidate is a participant in program and organizational committees of scientific events, has given lectures at the invitation of more than 10 universities, as well as reports in international and national scientific forums, participant in the editorial of a scientific edition.

The submitted materials for the competition do not repeat others used in the procedures for acquiring an educational and scientific degree "Doctor" and for holding academic positions "Chief Assistant" and "Associate Professor". I have not noticed plagiarism in the presented materials.

Scientific results and contributions.

According to its content, the scientific papers submitted for participation in the competition can be classified in the following scientific fields:

I. Optimal design and implementation of technical systems - 4 Publications under numbers: 1, 4, 8, 21;

II. Formulating models, developing methods, algorithms and approaches for multi-criminal optimization. 13 Publications under numbers: 2, 3, 4, 6, 7, 8, 9, 11, 14, 15, 20, 21, 22;

III. Formulating models, developing methods, algorithms and approaches for single-crystal optimization. 9 Publications under numbers:1, 5, 10, 12, 13, 16, 17, 18, 19, Textbooks and teaching aids – 1 textbook.

On the topic - I. The optimal design and implementation of technical systems, Comparative analysis of scalarising methods/approaches was carried out and 13 most effective and popular among them were selected. On this basis, a summary scalarization model has been proposed to solve multi-arterial tasks with continuous and/or integer variables called GENS, on the basis of which a generalized scaling interactive GENS-IM method has been developed. A WEB-based interactive system has been established to help build models and solve optimization and decision-making tasks,

On the topic- II. Formulating models, developing methods, algorithms and approaches for multi-criminal optimization

An interactive evolutionary algorithm based on a population called EVALIMCO has been proposed. A new scaling model of a starting area with properties that make it particularly suitable for solving integer tasks has been proposed. A comparative analysis of the techniques developed to solve multi-ritterial flexible production schedule (FJSP) tasks has been developed over the past decade. A methodology has been developed and an approach has been proposed to optimise the energy efficiency of buildings, connected in micro-grids. An accelerated genetic algorithm called ASOGA has been proposed to solve multi-crystall optimization tasks in a microgrid connected to the core network.

On the topic- III. Formulating models, developing methods, algorithms and approaches for single-crystal optimization.

A secure modem with multiple carrier frequencies based on bank filters has been developed. The schedule of the system for storing electricity (battery) in a microgrid has been optimized. A procedure has been proposed that generates an initial population of schedules with an even distribution for flexible production schedule optimization (FJSSP) tasks. a task is formulated to minimize the time-averaged target function of the system identification error including a simple IIR filter. Optimization algorithms used to manage databases, data warehouses, big data and machine learning have been studied. A portfolio optimization task model using time lines has been proposed, including a square limit for diversification.

Audience employment, participation in scientific projects and in the organisation of scientific forums

The applicant has carried lectures on the CEEPUS and Erasmus+ programmes at more than 10 international universities.

Evidence of participation in 9 national and 14 international projects was presented, in 3 of the national and in 4 of the international projects the candidate was a leader.

Critical notes

It makes an impression on the very good organization and good quality of the candidate's materials, both as content and as shaping. The reviewer noticed only some minor technical inconsistencies and spelling errors. All this does not diminish the large volume of research, scientific and scientific practical work of the candidate, shaping him as an established scientist.

Makes a pleasant impression of the relatively high quoteability in indexed publications. The reviewer accepts the distribution of the publications thus made on the three thematic strands presented by the applicant, although they flow into each other and no clear boundary can be drawn between them. It would be good to show the impact of these posts on more than one strand, as seen in their reading. This would show the interaction of the thematic strands presented in their dynamics and would more focus on the theme of the competition.

It is clear from the submitted documents that the applicant has already proven his teamwork opportunities (participant in international, national and university projects and collectives, of nearly a fifth of whom, as a leader).

Conclusion

The requirements, conditions and criteria of the Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for implementation of the Law on the Development of Academic Staff and the Rules of Procedure for acquiring scientific degrees and for holding academic positions at IICT-BAS are fulfilled and I give a strongly positive conclusion for the selection of Assoc. Prof. Dr. Vasil Guliashky on competition for "Professor" in professional field 4.6. Informatics and Computer Science.

By expressing a positive opinion on the presented materials, I propose to the venerable Scientific Jury to unanimously vote on a proposal to the Scientific Council of IICT-BAS to elect Assoc. Prof. Dr. Vassil Guliashki, for the academic position "Professor" in professional field 4.6 "Informatics and Computer Science", specialty "Informatics"

На основание

ЗЗЛД

01.07.2022