

OPINION

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PF 4.6 "Informatics and computer science"

About:

competition for a **professor** in the field of higher education 4. Natural sciences, mathematics and informatics, professional field 4.6 "Informatics and computer sciences", scientific specialty "Informatics", announced by IICT-BAS in SG No. 87 of 15.10.2024. for the needs of the "Information processes and decision-making systems" section

1. Information about the contest

The competition was announced in SG No. 87 of 15.10.2024 for the needs of the "Information processes and decision-making systems" section of IICT-BAS. Pursuant to Order No. 311/13.12.2024 of the Director of IICT-BAS, I am determined to be a member of the scientific jury according to the announced procedure and according to the minutes of the first meeting of the Scientific Committee held on 17.12.2024, I am determined to prepare an opinion. According to the current procedure, I have received all documents in electronic format.

2. Information about the candidate in the competition

To participate in the competition, the only candidate, Assoc. prof. PhD Leonid Mihailov Kirilov. He graduated from Sofia University "St. Kliment Ohridski", Faculty of Mathematics and Mechanics, major "Operational Research" in 1984. Since 1993, he has acquired the educational and scientific degree "doctor" (candidate of technical sciences), Diploma No. 28987 / 30.06.1993. In 1999 became a senior

research associate II degree at the VAK, and in 2011 was appointed to the position of "associate professor" at IICT-BAS.

3. Fulfillment of the requirements for occupying the academic position

The candidate Assoc. prof. PhD Leonid Mihailov Kirilov submitted 19 scientific publications for participation in the competition. To meet the requirements of indicator B, the candidate submitted a monographic work in co-authorship, published by Academic Publishing House Marin Drinov in 2021. According to indicator D, 18 scientific publications were provided, 3 of them were with IF, 10 were with SJR, 2 articles were in IEEE, 2 articles are in ACM, 1 is a book chapter published by IGI-Global, the same is referenced in SCOPUS. Group D indicators are covered with a provided reference for 41 citations of 15 scientific publications. Indicators from group E are covered by provided references for 16 participations in national research projects, 7 participations in international projects, 3 leaderships of national research projects, 2 leaderships of Bulgarian teams in international projects and 3 attracted funds for projects led by the candidate.

The submitted scientific works have not been used by the candidate in previous procedures for acquiring the Doctor of Public Health and for holding the academic position of Associate Professor.

The competition candidate fulfills the minimum national requirements for "Professor" in Field 4. Natural Sciences, Mathematics and Informatics, PF 4.6 Informatics and Computer Science, as shown in the table below:

A group of metrics	Content	Professor	Presented by the candidate in the competition
A	Indicator 1	50	50
	Indicator 2	--	---
B	Indicators 3 or 4	100	100
G	Sum of indicators from 5 to 10	200	341
D	Sum of points in indicator 11	100	207
E	Sum of the indicators from 12 to the end	100 For PF 4.6	576
Total:		550	1274

Reference from Scopus, Web of Science, Google Scholar and ResearchGate as of 01/21/2025. shows the following scientometric indicators:

Scopus: H-index 7, articles 42, citations 134

Web of Science: H-index 4, articles 17, citations 58

Google Scholar: H-index 11, Citations: 435

The analysis shows that Assoc. prof. PhD Leonid Mihailov Kirilov fulfills the minimum national requirements for "professor" in professional field 4.6 Informatics and computer sciences.

4. Description of the presented scientific works

The candidate's scientific developments are the following scientific fields:

Modeling, Development of Optimization and Decision Algorithms for Real Processes and Systems, Publications №: 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12;

Modeling, Development of Optimization and Decision Algorithms for Some Classes of Abstract Problems, Publications №: 5, 8, 9, 13, 14, 15, 16, 17, 18, 19;

Depending on the specifics of the tasks to be solved, the publications can be divided into the following areas:

Publications on Computer Modeling and Decision Making for Hydrologic Processes and River Basin Management, with № 1 (Monograph).

Publications on Modeling and Algorithm Development for the Optimization of Mono- and Bi-Metal Nanostructures, with № 4, 7, 9, 10, 11, 12.

Publications on modeling and development of decision-making approaches and algorithms for solving some applied problems and tasks, with № 2, 3, 5, 6, 8, 13, 14, 15, 18.

Publications on Modeling and Development of Multi-Criteria Decision Making Algorithms, with №16, 17, 19.

5. Synthesized evaluation of the main scientific and scientific-applied contributions of the candidate

The candidate's contributions have a scientific and scientific-applied nature, being in the areas of: modeling, risk assessment, decision-making such as:

- The need to create and use specialized mathematical methods and algorithms and software implementations to create decision support systems is substantiated.

- Hydrological models of the catchments of the Mesta and Struma rivers have been developed, calibrated and tested with real data.
- Hydrological models have been developed for the analysis of extreme events - during torrential rain and during flooding for the watershed of the Bistrica River.
- Models were made for the assessment and planning of the waters of the Mesta River and the Struma River with the help of the Decision Support System for the Assessment of Water Resources.
- The task of water quality management is considered and a multi-criteria model with a finite number of alternatives is proposed.
- A flood risk assessment model was developed.

6. Main criticisms and recommendations

I take the liberty of recommending Assoc. prof. Kirilov to be the scientific supervisor of doctoral students in order to pass on his rich scientific and teaching experience to the next generation of Bulgarian teachers and researchers.

7. Personal impressions of the candidate

I know Assoc. prof. Kirilov for more than 20 years. We have no public posts. During this period, I have repeatedly had the opportunity to convince myself of his ability to generate new ideas and implement them, as well as his high professionalism in the field in which he works.

8. Conclusion

On the basis of the outstanding scientific contributions of the candidate, I believe that all the requirements and criteria of the Law on the Development of the Academic Staff of the Republic of Bulgaria, the Regulations for its Application and

the specific criteria of IICT-BAS have been met and I give a fully convinced positive assessment for the selection of Assoc. prof. PhD Leonid Mihailov Kirilov for the academic position of "professor" in professional direction 4.6 Informatics and computer sciences.

I propose to the respected Scientific Jury to support the candidate and vote on a proposal to the IICT-BAS Scientific Council to elect Assoc. prof. PhD Leonid Mihailov Kirilov for the academic position "Professor" in professional field 4.6 Informatics and Computer Sciences, (Informatics) for the needs of the "Information Processes and Decision-Making Systems" section of IICT-BAS.

05.03.2024

Sofia

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