

REVIEW

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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", (Informatics), announced by *Konstantin Preslavsky* University of Shumen

1. Information about the contest

The competition was announced in SG No. 100 of 01.12.2023 for the needs of the "Computer Informatics" Department at the Faculty of Mathematics and Informatics of the Konstantin Preslavski University of Shumen, according to the Decision of the FC of FMI (Protocol No. FD-02-04/23.01.2024). I participate in the composition of the scientific jury for the competition according to Order No. RD-16-013/30.01.2024 of the Rector of the Konstantin Preslavski University of Shumen.

2. Information about the candidate in the competition

The only candidate who submitted documents for participation in the competition was Krasimir Mitkov Kordov, Ph.D., Eng. At the first meeting of the Scientific Jury, I was chosen to prepare a review. As a result of the competition, I received a complete set of documents electronically. Assoc. Prof. Ph.D. Eng. Krasimir Mitkov Kordov is a doctor of informatics since 20.10.2015, diploma from "Konstantin Preslavski" University of Applied Sciences, number D-083. Since 28.03.2017, he is an associate professor in PF 4.6 Informatics and computer sciences with the decision of the FC of FMI of "Konstantin Preslavski" University of Shumen.

3. Fulfillment of the requirements for occupying the academic position

The candidate Assoc. Prof. PhD Eng. Krasimir Mitkov Kordov has submitted 3 scientific publications for participation in the competition to meet the requirements of indicator B, 1 of which is with IF and Q3, and the remaining 2 are with SJR. According to indicator G, 6 scientific publications are provided, 1 of which is with IF and Q2, and 5 are in publications that are referenced and indexed in Web of Science and Scopus and are with SJR. Indicators from group D are covered with a provided reference for 13 citations of 1 scientific publication. Group E indicators are covered by provided references for 6 participations in national research projects, 1 university textbook and 1 university teaching aid.

The submitted scientific works have not been used by the candidate in previous procedures for obtaining the title of "doctor" and for occupying the academic position "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	Assoc. Prof. PhD Eng. Krasimir Mitkov Kordov
A	Indicator 1	50	50
	Indicator 2	--	--
B	Indicators 3 or 4	100	105
G	Sum of indicators from 5 to 10	200	210
D	Sum of points in indicator 11	100	104
E	Sum of the indicators from 12 to the end	100 за ПИИ 4.6	110
Общо:		550	579

A reference from Scopus, Web of Science, Google Scholar and ResearchGate as of

05.03.2024 shows the following scientometric indicators:

Scopus: H-index 10, articles 26, citations 378

Web of Science: H-index 8, articles 14, citations 202

Google Scholar: H-index 14, Citations: 569

ResearchGate: H-index 13, Citations: 488

The analysis shows that Assoc. Prof. PhD Eng. Krasimir Mitkov Kordov fulfills the minimum national requirements for a "professor" in professional field 4.6 Informatics and computer sciences.

4. Evaluation of teaching and learning activity

Assoc. Prof. Ph.D. Eng. Krasimir Kordov gives lectures at "Konstantin Preslavski" University of Shumen on 15 disciplines related to programming, databases, cryptography, information systems, etc. He is the supervisor of one doctoral student and 14 successfully graduated graduates. He is the winner of three national scientific awards. He is a member of four scientific organizations, 2 in the country and 2 abroad.

5. Description of the presented scientific works

The candidate's scientific developments are mainly in the field of information security and its subdivisions: Cryptographic protection of information, Steganographic protection of information, Protection of information using hashing algorithms, Research on the effectiveness of information processes and Development of information systems. This topic fully corresponds to professional direction 4.6 Informatics and computer sciences.

In works [7.2 and 7.5] cryptographic algorithms for protection of digital images and video files are considered. The presented algorithms are based on pseudo-random generators, which are used for substitution and permutation of numerical values and pixel positions in digital images and video files.

Algorithms for hiding secret text messages in digital images used for stego-containers are proposed in papers [4.1 and 7.1]. The algorithms use pseudo-random generators to randomize pixel positions to hide information in the color values by applying direct least-significant bit substitution. In [7.4], a steganographic study of the capacity of embedding

secret messages in standard text containers is proposed.

Papers [4.2 and 4.3] present two models of hash functions for one-way transformation of information into a fixed-length string. For each of the models, a pseudo-random generator was developed, tested for the required cryptographic security.

Paper [7.3] presents the pilot version of the first Bulgarian web-based information system for the study of associative dictionaries - LABLASS. The system is implemented through distributed access rights and enables researchers to create and administer data related to associative dictionaries. LABLASS enables parallel processing of information in created dictionaries and enables simultaneous implementation of different dictionaries.

Publication [7.6] examines the influence of disturbing effects with different statistical characteristics on the performance efficiency of information processes.

Textbook [19.1] is intended for students studying the discipline "Databases" and aims to familiarize students with the main theoretical and practical aspects of using databases to organize, collect and process information. The textbook is structured in three parts, which provide theoretical and practical training to learners at a beginner or intermediate level.

Tutorial [19.2] is a guide to working with Access 2016 and examines the capabilities of the Microsoft Access 2016 database management system, demonstrating with the help of examples the possibility of its use in creating small databases.

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

The candidate's contributions have a scientific and scientific-applied nature, confirming some known facts, enriching an existing scientific field with new knowledge, and it is suggested that some of the newly obtained scientific results be applied in practice.

The contributions are in the field of Information Security and in particular in Hashing, cryptographic and steganographic protection of information. In these prospective scientific directions, the candidate contributes to the design, development and testing of algorithms and programs.

The candidate's contributions are also in the field of development and testing of information systems, as well as research on the effectiveness of information processes.

7. Main criticisms and recommendations

I take the liberty of recommending Prof. Kordov to be the supervisor of more doctoral students in order to pass on his rich scientific and teaching experience to the next generation of Bulgarian teachers and researchers. I recommend him to publish a monographic work based on his scientific developments in the future.

8. Personal impressions of the candidate

I have known Assoc Prof. Kordov for more than 10 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.

9. Conclusion

Based on 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 "Konstantin Preslavski" University of Shumen have been met and I give a fully convinced positive evaluation for the selection of Assoc. Prof. PhD Eng. Krasimir Mitkov Kordov for the academic position "professor" in professional field 4.6 Informatics and computer sciences.

I propose to the esteemed Scientific Jury to support the candidate and to vote on a proposal to the Faculty Council of "Konstantin Preslavski" University School to elect Assoc. Prof. PhD Eng. Krasimir Mitkov Kordov for the academic position of "professor" in professional field 4.6 Informatics and computer sciences, (Informatics) for the needs of "Konstantin Preslavski" University of Shumen.

05.03.2024

Sofia

Signature:



/Prof. Ivan Garvanov/