OPPINION

of Col. Assoc. Prof. Dr. Nikolai Todorov Stoianov,
Deputy Director of the
Bulgarian Defence Institute "Prof. Tsvetan Lazarov"
in the competition for the academic position "Associate Professor" in the
field of higher education 5 "Technical Sciences",
professional field 5.2. "Electrical Engineering, Electronics and
Automation",
announced in State Gazette 81 from 11.10.2022 for the needs of the
Information Technologies in Security Department
at the Institute of Information and Communication Technologies
at the Bulgarian Academy of Sciences
with a single candidate
Dr. George Ivanov Sharkov,
in the position of Chief Assistant in
Plovdiv University "Paisii Hilendarski",
FMI (Faculty of Mathematics and Informatics)

1. General characteristics of the research, applied science and pedagogical activity of the applicant

For the announced competition for the academic position "Associate Professor" one candidate has presented his works – Dr. George Ivanov Sharkov. Its full list of publications includes 38 titles. For participation in the competition, the candidate has presented 38 works that include: reports and articles delivered at scientific conferences in Bulgaria and abroad - 36 pcs., chapter of a collective monograph - 2 pcs. Of the presented works, 5 are published independently, the remaining 33 are co-authored. Thirty-six of the publications are in English and the rest are in Bulgarian language. The co-authored publications are a result of the participations of Dr. Sharkov in scientific and applied projects and researches.

Dr. George Sharkov realizes his competence and qualities as a researcher and practitioner in the field of information systems, computer science, cyber security, design and construction of software systems, approaches and models for building cyber-terrains, approaches and models for designing and building secure software systems.

The papers submitted for peer review are outside those submitted for acquiring the educational and scientific degree "Doctor".

The research activities of the candidate are related to theoretical models and concept for research on the security, sustainability and risks of complex interconnected systems.

The special preparation of the candidate marks a hierarchical upgrade of knowledge, skills, simulation and implementation of developments in the field of systems of systems, cyber terrains, and simulation cyber-environments (Cyber Range) of hybrid type.

Dr. Sharkov actively participates in 4 international research and educational projects.

The self-assessment of compliance with the minimum requirements of the announced competition, provided by Dr. Sharkov, shows that he meets the minimum national requirements under the Law on the Development of Academic Staff in the Republic of Bulgaria (ZRASRB), the Rules for its implementation and the Regulations for the specific conditions for acquiring academic degrees and for occupying academic positions in IICT-BAS, updated on 26.10.2022.

2. Assessment of the applicant's special training and activities

Dr. Sharkov started his research, teaching and development career

in 2013 at Plovdiv University "Paisii Hilendarski" – FMI (Faculty of Mathematics and Informatics).

He acquired the educational and scientific degree "Doctor" (candidate of mathematical sciences) in 1993, defending a dissertation on the topic: Presentation and interpretation of knowledge in the field of membrane biophysics, Diploma No/date: 28911 / 05.05.1993, approved by Protocol No/date: 10-PVAC/ 25.04.1993 (candidate of sciences).

Currently (2023) Dr. Sharkov is a Chief Assistant at Plovdiv University "Paisii Hilendarski" – FMI (Faculty of Mathematics and Informatics).

I've known Dr. Sharkov since 2016, our joint work with Dr. Sharkov gives me reason to confidently say that he has the necessary knowledge and training in the field of communication and information technologies and approaches for their application in the field of security, artificial intelligence and cyber defence, as well as to continue research in this field.

3. Main scientific results and contributions

The works of the candidate can be classified in the following directions of research:

- Works in the field of theoretical models and concepts for the study of security, sustainability and risks of complex interconnected systems – G04, G07, G09, G10, G12, G15, G16, G19, B01, B04, and B05.
- Works in the field of conceptual models for structuring knowledge and object models in the so-called. "cyber terrain" - B01, B02, B03, B04, B05, B06, B07, G03, G04, G06, G08, and G17.
- Works reflecting the achievements of the candidate in the development, and practical application of standards and models for design and development of quality and reliable software and IT systems, including standards for "security by design" and "resilience by design" – B07, B08, G01, G05, G06, G08, G18, G11, G13, G14, G20, G21, G22, and G23.

The scientific and applied contributions in the works of the candidate Dr. George Sharkov are in professional field 5.2. "Electrical Engineering, Electronics and Automation". These contributions can be summarized as: systematization and generalization of existing knowledge, methods and approaches for the study of systems of systems and cyber-simulation environments.

The author's participation is documented and is in full compliance with the research activity of the institute.

The provided documentation clearly shows that Dr. Sharkov's

research and related publications are up-to-date and evaluated by a wide range of researchers, as evidenced by the 22 citations of which 19 in world-famous databases (Scopus and Web of science) and 3 in collective volumes with scientific review.

4. Assessment of the significance of contributions to science and practice

The most characteristic in the importance of the contributions to science and practice in the extensive activity of Dr. George Ivanov Sharkov is their actuality. Contributions bringing solutions in today, tracing the vision of the requirements of tomorrow's technological solutions.

5. Critical remarks on the submitted works

To the scientific works thus provided to me, I have no critical remarks and comments.

6. Conclusion

Based on the above, and taking into account the self-assessment of the candidate Dr. George Ivanov Sharkov, I believe that the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria (ZRASRB), the Regulations for its implementation and the Regulations for the specific conditions for acquiring academic degrees and for occupying academic positions at IICT-BAS have been met. This gives me grounds to confidently give my positive assessment and to propose to the honorable scientific jury to vote for the award of Dr. George Ivanov Sharkov to the academic Position "Associate Professor" in the field of higher education 5. "Technical Sciences", vocational field 5.2. "Automated Information Processing and Management Systems" for the needs of the Information Technologies in Security Department at the Institute of Information and Communication Technologies at the Bulgarian Academy of Sciences.

03 Feb 2023   Member c

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На основание

ЗЗЛД

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