



**МИНИСТЕРСТВО НА ОТБРАНАТА**  
**ИНСТИТУТ ПО ОТБРАНА „ПРОФЕСОР ЦВЕТАН ЛАЗАРОВ”**  
София 1592, бул. „Проф. Цветан Лазаров” № 2, факс: 02/92 21 808, <http://di.mod.bg>

**REVIEW**

By Academician Kiril Lyubenov Boyanov  
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on the competition for the academic position "Professor"  
for a military officer in the field of higher education 5. "Technical Sciences",  
professional field 5.3. "Communication and Computer Technology", announced  
in the State Gazette (issue 81, 11.10.2022), in pursuance of Order of the  
Minister of Defense No OX-916, 28.09.2022 announcing a competition and  
Decision of the Scientific Council of Bulgarian Defence Institute "Professor  
Tsvetan Lazarov"  
for selection of a Scientific Jury, Minutes No84, 09.12.2022

with a single candidate:  
**Col. Assoc. Prof. Dr. Eng. Nikolai Todorov Stoianov,**  
Deputy Director of the Bulgarian Defence Institute "Professor Tsvetan Lazarov"

## **1. General characteristics of the research, applied science and pedagogical activity of the candidate:**

For participation in the competition and evaluation are presented one monograph, one chapter of a collective monograph, three published university textbooks, one study and forty-one publications.

The research activity of the candidate Assoc. Prof. N. Stoianov is mainly related to research in the field of security of information and communication technologies for the needs of defence, design and construction of automated information systems, cybersecurity systems, cryptographic systems and software implementations, creation of mathematical, technical, experimental and other models and methods.

Following the author's reference, the main scientific areas in which the candidate works are:

- Approaches, models, architectures, research and possible applications in the field of information protection;
- Cryptographic methods and mechanisms;
- Cybersecurity and Cyber Defense.

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

Associate Professor Dr. Nikolai Stoianov is an established and respected researcher at the Bulgarian Defence Institute at the Ministry of Defence, with very serious scientific training, with long and vast work experience, both in the research and teaching field, as well as in the creation and management of the implementation and operation of Automated Control Systems of the Ministry of Defence and the Bulgarian Army. He currently holds the position of Deputy Director of the Defence Institute. Extremely creative and communicative, with impressive scientific output, which is evident from the presented list of publications, projects, developments and implementations and last but not least from the long list of citations.

Knowing personally the candidate, his work and scientific and applied researches, I can confidently say that Associate Professor Dr. Stoianov has extensive professional experience in the field of management of scientific teams and military-scientific institutions. N. Stoianov has a significant in volume and high quality scientific and teaching activity. Under his scientific guidance, two doctoral theses were defended. Currently, he is the head of five PhD students.

## **3. Main scientific results and contributions**

The main scientific results and contributions can be formulated as follows:

- *Approaches, models, architectures, research and applications in the field of information protection*

Proposed are approaches to risk management, testing and assessment of information security in computer systems. Basic theoretical formulations for information protection, computer networks and approaches to security testing and analysis are presented in the published university textbooks. Research on existing information protection models in emerging cloud architectures and proposed approaches and models have been tested and implemented in a number of research projects.

- *Cryptographic methods and mechanisms*

Quantum computing and processing processes are one of the biggest challenges facing modern cryptography. Research has been published on how these technologies will impact cryptography. Approaches to improving cryptographic systems in order to overcome the so-called. quantum factor are focused on the evaluation of new cryptographic schemes and algorithms and on new approaches to the generation of cryptographic keys. The research and the results obtained have been published.

- *Cybersecurity and Cyber Defence*

Cyberspace and cybersecurity are some of the most important issues for NATO, the EU and its member states. The research of Associate Professor Dr. Nikolai Stoianov covers: approaches to design and build various cyber architectures; analysis and assessment of cybersecurity of critical infrastructure systems, security and defence systems and administrative information systems; using approaches to analyse and assess cybersecurity at strategic, operational and tactical (technical) levels; ways and approaches for modeling cyber processes and cyber secure interactions in information systems; research on cyber security in emerging system concepts and technologies. The received scientific and applied research contributions have been tested in numerous national and international projects.

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

The entire scientific researches of the candidate, as well as his publication in authoritative scientific journals (*eighteen of the publications are in editions indexed in world-famous databases*) prove that the results of his scientific work are significant for science and practice.

The significance of the contributions can also be assessed by their applicability in the various implemented projects (*24 - international and 4 - national*) in which Associate Professor Dr. Nikolai Stoianov was a leader, participant and coordinator in the management of research teams and researchers and postgraduates.

## **5. Critical remarks on the submitted works**

I have no significant critical comments to the materials submitted by the candidate under the competition procedure.

## **6. Conclusion**

I am fully convinced that Associate Professor Dr. Nikolai Stoianov is a highly erudite, educated and precise researcher, lecturer and leader. The in-depth and broad knowledge of the candidate in the field of the competition and the related areas stand out. My overall assessment, as well as the specific assessment of the scientific and practical results and contributions, give me grounds to express my positive opinion and to propose to the members of the esteemed jury to vote positively for the award of the academic position "PROFESSOR", field of higher education Technical Sciences, professional field 5.3 Communication and computer equipment of Colonel Associate Professor Dr. Nikolai Todorov Stoianov.

## **7. Evaluation of candidates**

The documents presented in the competition show that the candidate Associate Professor Dr. Nikolai Stoianov fulfills all regulatory requirements for the *academic position of "PROFESSOR". He has fundamental knowledge in the field of automated systems and information security, which he applies successfully.*

I confidently and categorically give the **POSITIVE ASSESSMENT** of the candidate in the competition for "PROFESSOR" Colonel Associate Professor Dr. Nikolai Stoianov.

**19.01.2023**

**Sofia**

**Member of the jury:**

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**(Academician Kiril Boyanov)**