

## **R E V I E W**

**by Dr. Alexander Iliev Iliev , Associate Professor at the Institute of Mathematics and Informatics - Bulgarian Academy of Sciences**

by competition for the academic position of " **associate professor** "  
at the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences,  
in the field of higher education: 4. Natural sciences, mathematics and computer science  
Professional field: 4.6. Informatics and computer science  
scientific specialty: Informatics (Systems for managing digital cultural content and e-learning)

By order No. 9/30.01.2026 of the Director of the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences I have been appointed as a member of the Scientific Jury in a competition for the academic position of "Associate Professor" in the field of higher education 4. Natural Sciences, Mathematics and Informatics, professional field 4.6 Informatics and Computer Sciences, scientific specialty: "Informatics" (Digital Cultural Content Management Systems and E-Learning), announced in the State Gazette No. 103/02.12.2025 for the needs of the "Mathematical Linguistics" section.

**Only one candidate** has submitted documents for participation in the competition : **Senior Assistant Professor Dr. Maxim Krasimirov Goinov, IMI-BAS .**

### **1. General description of the submitted materials and the candidate's profile**

The candidate, Senior Asst. M. Goinov, has submitted a complete set of documents in accordance with the requirements of the Law on the State Administration of Education and Science of the Republic of Bulgaria and the Regulations on the terms and conditions for acquiring scientific degrees and occupying academic positions at the Institute of Medical Sciences at the Bulgarian Academy of Sciences (Regulations of the Institute of Medical Sciences-BAS). It should be emphasized that the documents have been prepared precisely and in full compliance with the regulatory requirements, which testifies to a high degree of professionalism, namely:

1. Application to the Director of IMI-BAS for admission to participate in the competition.
2. Professional CV according to the European model.
3. Diploma of completed higher education - master's degree.
4. Diploma for acquired educational and scientific degree, "Doctor".
5. General list of publications.
6. List of publications for participation in the competition.
7. A hand-signed reference for the original scientific contributions in the papers for participation in the competition.

8. Summaries of the publications for participation in the competition - in Bulgarian and English.
9. Copies of the works under item 6.
10. General list of citations.
11. List of citations for participation in the competition.
12. State Gazette with the announcement of the competition.
13. Certificate of internship in the specialty according to the requirements of Article 24, paragraph 1, item 2 of the Law on the Republic of Bulgaria on the Training of Professionals.
14. Information about other scientific research and applied scientific activities.
15. Certificate of compliance with the minimum national requirements under Art. 26, para. 2 and 3, and the requirements under Art. 2b, para. 5 of the Law on the Protection of Children from Sexual and Sexual Abuse, as well as the minimum requirements of the Institute of Medical Sciences and the Bulgarian Academy of Sciences, with the necessary evidence.
16. Declaration according to the template (Annex 3.2).
17. Declaration of consent for the storage and processing of personal data.

According to the submitted CV, the candidate, Senior Assistant Professor M. Goinov, has many years of professional experience at the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences, starting in 2006. He has held the position of "Senior Assistant Professor" since 2021, having previously worked as an assistant and programmer. The scientific degree "Doctor" was acquired in 2016 at the Institute of Mathematics and Informatics-BAS in PN 4.6. "Informatics and Computer Science".

The candidate's professional profile shows consistent development in the field of informatics, with a special focus on semantic technologies, digital libraries, management of large volumes of knowledge and data of digital cultural and scientific heritage.

## **2. General characteristics of scientific works**

The total number of scientific publications of Senior Asst. M. Goinov is 65, which represents a significant volume of scientific production. There is a clear trend towards an increase in the quality of publications in recent years, including an increase in the share of publications in refereed and indexed editions. Of these, 43 are indexed in world-renowned databases ( Web of Science and Scopus ), and 19 were published in journals with an impact factor and/or SJR.

22 scientific publications were submitted for participation in the competition, which were not used to acquire the ONS "doctor" and to occupy the academic position "chief assistant" and are directly related to the topic of the competition.

The publications are distributed as follows: 7 publications in international scientific journals; 13 publications in renowned international conferences; 2 book chapters. Fifteen of the publications are in publications that have an impact factor (IF - Web of Science, 4 nos. in quartiles

Q3 and Q4 ) or impact rank (SJR – Scopus , 11 issues ) ( the requirement of Art. 3, para. 1, item 3 of the Regulations of IMI-BAS has been fulfilled ). Seventeen of the 22 publications submitted for participation in the competition are after the last academic degree "chief assistant" (the requirement of Art. 3, para. 3 of the Regulations of IMI-BAS is fulfilled).

A significant part of the works have been published in publications by Springer , ACM and other international publishers, which is an indicator of high quality and international visibility.

Scientific research can be systematized in the following main areas:

A. Systems for managing digital cultural content: A.1. Methods and tools for managing and presenting content in digital libraries. Architectures of digital libraries and digital cultural ecosystems (a total of 13 publications – articles No. 3, 4, 5, 6, 7, 8, 9, 11, 14, 17, 19, 20, 21). In this subpackage of research, the candidate develops and implements models and architectural solutions for building modern digital libraries, with the emphasis on the integration of heterogeneous resources, intelligent access to content and the creation of sustainable digital cultural ecosystems. A significant contribution is made by the proposed solutions for interoperability and unification of content from different sources, as well as their implementation in real systems.

A.2. Technologies for the development of digital paleography (a total of 4 publications – articles No. 2, 10, 13, 13). These studies examine approaches for semantic description, structuring and analysis of manuscript cultural heritage. The developed methods support the study of medieval texts and create a basis for building intelligent tools for digital humanities.

B. E-learning systems. Development and applications of serious educational games (total 5 publications – articles No. 1, 15, 16, 18, 22). In this direction, the candidate develops innovative approaches to learning through the use of digital technologies, including serious games and storytelling . The proposed solutions demonstrate how cultural heritage can be effectively used as an educational resource through interactive and adaptive environments. The developed systems and applications have real applicability and contribute to increasing engagement and effectiveness of learning.

The submitted publications are thematically united and show a consistent development of the candidate's scientific interests.

### **3. Scientific and applied scientific contributions**

The publications submitted for the competition (22 issues) by Senior Assistant Professor M. Goinov demonstrate clearly distinguishable and mutually complementary contributions, which can be specified by direction and linked to the relevant works.

3.1 Theoretical contributions - Formalization of semantic models and machine-readable descriptive structures for representing knowledge about cultural and historical heritage (publ. 2, 3); - Development of the concept of digital cultural ecosystems and integrated libraries with intelligent access and search (publ. 3, 7, 9); - Models for interoperability and unification of content from heterogeneous digital sources (publ. 6).

3.2 Methodological contributions - Methods for semantic description, structuring and analysis of data on manuscript and iconographic heritage (publ. 2, 10); - Approaches for improving the usability and access to digital libraries through intelligent indexing and curation (publ. 3); - Methodology for transformation of 2D images into 3D objects for the needs of virtual museums and digital exhibitions (publ. 4); - Approaches for personalized monitoring and analysis of content in cultural digital environments (publ. 8).

3.3 Scientific and applied contributions - Implementation of software platforms for digital libraries and virtual environments (publ. 3, 11); - Development of mobile and web-based applications for research and education (publ. 5, 8); - Creation of serious games and storytelling based solutions for teaching history and cultural heritage (publ. 1, 9); - Application of technologies for digitization and visualization of cultural artifacts (publ. 4, 5).

Assessment of contributions: The contributions are original, well-argued and published in internationally recognized journals. A particular strength is the integration between theoretical models and practical implementations, which leads to real applicability of the results in infrastructures such as digital libraries and research platforms.

#### **4. Citations and fulfillment of the requirements for holding the academic position of "associate professor"**

Candidate Senior Assistant Professor M. Goinov presents a significant number of citations in scientific publications indexed in the Web of Science and Scopus . There are citations in a large number of international publications, which indicates good scientific recognition. A list of 22 citations (excluding self-citations ) in WoS and/or Scopus for the period 2019-2025 of 13 publications of the candidate is presented for the competition.

According to a certificate issued by IMI-BAS, as of 01.01.2026, Senior Assistant Professor Goinov has a total work experience at BAS of 10 years, 7 months and 9 days, of which 4 years, 10 months and 9 days as a senior assistant, which proves the fulfillment of the condition for required experience.

According to the presented reference for the minimum requirements, it can be summarized:

- group A: 50 points (with a minimum of 50): presented Diploma No. 000823/14.12.2016 for a defended dissertation on the topic "Interoperability between digital libraries for cultural heritage" for the educational and scientific degree "doctor", issued by IMI-BAS;
- group B: 110 points (with a minimum of 100 for IMI-BAS) according to indicator B4;
- group D: 296 points (with a minimum of 220 for IMI-BAN) according to indicators G7 and G8;
- group D: 132 points (with a minimum of 70 for IMI-BAN) according to indicator 11;
- group E: 50 points (with a minimum of 20 for IMI-BAS) on indicator 14.

These indicators convincingly exceed the national minimum requirements (according to the Regulations for the Implementation of the Law on the Promotion of Higher Education and Research) and the additional requirements of IMI-BAS (according to the Regulations of IMI-BAS) for holding the academic position of "associate professor" in the PN 4.6.

## **5. Participation in research projects**

Candidate Senior Asst. M. Goinov actively participates in research projects at national and international level, related to digital cultural heritage, e-learning and the development of software solutions. Participation in these projects demonstrates the ability to work effectively in an interdisciplinary environment and contribute to the construction of scientific infrastructures.

There is participation in significant infrastructure projects (e.g. CLaDA -BG), as well as in projects funded by national and European programs. Within the framework of applied projects, he is a leading researcher and developer of digital libraries and systems for managing large volumes of digital content for the Supreme Court of Cassation, Central Library of the Bulgarian Academy of Sciences, National Library "Ivan Vazov"-Plovdiv, Sofia University, National Statistical Institute, IMI-BAS, etc.

## **6. Critical notes and recommendations**

I have no significant critical comments on the presented materials.

I would recommend that Senior Assistant Professor M. Goinov increase publications in first and second quartile journals (Q1/Q2), increase the share of independent publications, and participate more actively as a leader of scientific projects.

## CONCLUSION

The comprehensive analysis of the submitted materials shows that Senior Asst. Prof. Dr. Maxim Krassimirov Goinov possesses the necessary qualities of an established scientist and researcher in the field of informatics. The documents and materials submitted by Senior Asst. Prof. Dr. M. Goinov meet all the requirements of the Law on the Protection of Scientific and Technological Information of the Republic of Bulgaria, the Law on the Protection of Scientific and Technological Information of the Republic of Bulgaria and the Regulations of the Institute of Mechanical Engineers of the Republic of Bulgaria. He has submitted a sufficient number of scientific works, in addition to the materials used in the defense of the Doctoral Dissertation and holding the academic position of Chief Assistant.

His scientific output is significant in volume and quality, with good international visibility, proven by publications in refereed and indexed journals and by citations in authoritative scientific sources. The presented works are thematically united, logically consistent and demonstrate sustainable development of scientific research.

The candidate demonstrates a very good combination of fundamental and applied research, with his/her results being implemented in specific software systems and scientific infrastructures. This is a significant indicator of maturity as a researcher and of the ability to create practically relevant solutions.

The quantitative indicators not only cover, but also significantly exceed the minimum requirements of the Law on the State Academic Research Institute of the Republic of Bulgaria, the Law on the State Academic Research Institute of the Republic of Bulgaria and the Regulations of the Institute of the Republic of Bulgaria. There is no evidence of plagiarism in accordance with the legally established procedure, and the submitted materials are correctly formatted and fully comply with the requirements of the competition. I believe that the scientific and scientific-applied achievements and contributions of Senior Asst. M. Goinov fully meet the criteria for occupying the academic position of "associate professor".

Based on all the above, I give a categorically **positive assessment** and I strongly recommend that the Scientific Jury prepare a report proposal to the Scientific Council of IMI-BAS for the election of Senior Assistant Professor Dr. Maxim Krasimirov Goinov to the academic position of " **Associate Professor** " in the field of higher education 4. Natural Sciences, Mathematics and Informatics, professional field 4.6 Informatics and Computer Science, scientific specialty: "Informatics" (Digital Cultural Content Management Systems and E-Learning).

24/03/2026

Reviewer : .....

Assoc. Prof. Dr. Alexander Iliev Iliev