

# OPINION

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On the materials presented by  
Ivan Radoslavov Georgiev, PhD

for participation in competition  
for the academic position “Associate Professor“,  
in area of Higher education 4. Natural sciences, Mathematics and Informatics,  
Professional field 4.6 Informatics and Computer Science,  
Scientific specialty „Informatics“ (Informatical modeling of high-dimensional complex  
systems), announced in the State Gazette Vol. 14 from 10. 02.2023 for the needs of the  
Institute of Mathematics and Informatics of the Bulgarian Academy of Sciences

By order № 186 from 07.04.2021 г. of the Director of the Institute of Mathematics and Informatics (IMI) at the Bulgarian Academy of Sciences (BAS), on the basis of a decision of the Scientific Council of IMI (protocol № 3/17.03.2023) I have been appointed a member of the Scientific jury for the competition for acquiring of the academic position “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“, for the needs of the Information modelling department. The competition has been announced in the State Gazette Vol. 14/10.02.2023. I declare that as a member of the Scientific jury I have received the documents of Ivan Radoslavov Georgiev. He is the only candidate in the competition.

## 1. List of the materials presented by Ivan Georgiev, PhD

The candidate has presented the following materials for participation in the competition:

1. An application to the Director of IMI-BAS
2. Curriculum Vitae according to the European model.
3. Copy of a master degree diploma.
4. Copy of a diploma for educational and scientific degree “Doctor” (PhD).
5. List of all publications, inventions and other scientific and applied results of the candidate.
6. List of all publications, inventions and other scientific and applied results of the candidate for participation in the competition.
7. Summary of the original scientific contributions in the publications for participation in the competition.
8. Abstracts of the publications for participation in the competition in Bulgarian and English.
9. Copy of the publications from 6.
10. A list of all citations of the candidate.
11. A list of citations for participation in the competition.
12. Copy of the announcement in the State Gazette.

13. Certificate for experience in the field according to the requirements of Art. 24, Par. 1, Sec. 2 of the Act on Development of the Academic Staff in the Republic of Bulgaria (ADASRB).
14. Other documents such as:
  - proof for given lectures/exercises;
  - a list of textbooks and supplementary materials of the candidate;
  - a list of PhD students of the candidate;
  - a list of scientific research projects in which the candidate is a participant or coordinator.
15. Verification for fulfillment of the minimal national requirements of Art. 2b, Par. 2 and 3, and the requirements of Art. 2b, Par. 5 of the ADASRB as well as the minimal requirements of IMI-BAS with the corresponding proofs (Application 2.2).
16. Declaration according to a template (Application 3.2).
17. Declaration for agreement for storage and processing of personal data.
18. Document certifying that the candidate has held the corresponding academic position in another university or scientific organization.

## 2. Biographical data of the candidate

Ivan Radoslavov Georgiev was born on October 25, 1983. In 2005, he acquired a bachelor degree in Pedagogy of the education of Mathematics and Informatics at the Ruse University “Angel Kanchev”. In 2009, he acquired a master degree in Information and Education Technologies. In 2015, he acquired the educational and scientific degree “Doctor” (PhD) in 4.5 Mathematical modelling and applications of mathematics.

In the period 2005-2009, Ivan Georgiev has worked as a part-time assistant at the Department of Applied Mathematics of Ruse University “Angel Kanchev”. In the period 2009-2016 he was Assistant Professor and after that – in the period 2016-2022 – Senior Assistant Professor. Since 2022, Ivan Georgiev has held the position of Associate Professor.

## 3. Analysis of the presented publications and citations

The candidate has presented a list of all publications, consisting of 39 papers in conference proceedings, 46 papers, 4 monographies and 1 textbook. According to the presented materials the candidate takes part in the competition for acquiring of the academic position “Associate Professor” with 23 publications. The candidate has presented 8 publications as a substitution for habilitation work in thematic field “Modeling of high-dimensional complex systems”. Of them 6 have SJR, while 2 are indexed in Scopus without SJR.

Ivan Georgiev has presented a list with 41 citations of 21 papers. All of the presented citations are in publications indexed in Scopus.

The presented publications for participation in the competition for the acquiring of the academic position “Associate Professor” are published after the acquiring of PhD degree.

I have not found any evidence of plagiarism in the presented publications.

## 4. Evaluation of the candidates’ contributions

The contributions of the candidate are in the fields of mathematical modeling, optimization, numerical methods for solving of differential equations. Informatic models of high-dimensional systems are developed.

The main scientific contributions pointed out by the candidate are:

- 1) A modified approach is developed for prognostics of time series and multi-dimensional time series based on numerical algorithms for solving of ordinary differential equations.
- 2) An approach for estimation of the location of apiaries in flat and hill country using mathematical and informatical model.
- 3) A multicriteria mathematical model with various indicators of efficiency in the area of the intermodal and multimodal transport is proposed.
- 4) Various techniques are discussed for prognosis of time series based on the classical methods, ARIMA approaches, approaches based on numerical solving of differential equations.

The main applied scientific contributions of the candidate can be grouped as follows.

- 1) An informatical model and software are developed for prognosis and management of the temperature in the room.
- 2) An approach for estimation of the location of apiaries based on multicriterial partly numerical optimization is proposed. The informatical model is implemented in Matlab.
- 3) In the transport field, various types of incoming flows of requests for specific types of service are modeled with the apparatus of the Service Systems Theory. Based on real data from the transport business, various logistic and optimization problems are studied. The models are implemented in Matlab.

I accept the so-formulated contributions in the Extended Habilitation Reference by the candidate.

## 5. Reference for scientometric requirements

The minimum required number of points for each set of indicators at IMI-BAS as well as the corresponding number of points for each set of indicators of the candidate are presented in Table 1.

Table 1. A reference for the fulfillment of the minimal requirements

<i>Indicator Group</i>	<i>Minimal score required for Associate Professor</i>	<i>Scores of the candidate Ivan Georgiev</i>
<i>A</i>	50	50
<i>B</i>	-	-
<i>B</i>	100	144
<i>Г</i>	220	269
<i>Д</i>	70	246
<i>E</i>	20	80
<i>Total:</i>	460	789

The requirements of the Act on Development of the Academic Staff in the Republic of Bulgaria, the Regulations on the Implementation of the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for the application of the Act on Development of the Academic Staff in the Republic of Bulgaria in IMI-BAS with respect to professional field 4.6 „Informatics and Computer Science“ are satisfied.

## 6. Critical remarks, recommendations and personal impressions of the candidate

I have no critical remarks to the candidate with respect to the materials presented by him for participation in the competition.

I do not know personally Ivan Georgiev but I have listened to his talk at a seminar of the Information Modeling department of IMI-BAS and I have good impressions on him.

## 7. Conclusion

Taking into account all the above, I believe that the candidate has the necessary scientific and applied contributions and fulfills the requirements of the Act on Development of the Academic Staff in the Republic of Bulgaria, the Regulations on the Implementation of the Act on Development of the Academic Staff in the Republic of Bulgaria, the Regulations on the terms and conditions for obtaining scientific degrees and for holding academic positions at the Bulgarian Academy of Sciences and the Regulations for the application of the Act on the Development of the Academic Staff in the Republic of Bulgaria of IMI-BAS.

Therefore, I give a positive evaluation to the materials presented by Ivan Georgiev in the competition for the academic position “Associate Professor” at IMI-BAS and I recommend to the respectful members of the Scientific Jury and, subsequently, to the respectful members of the Scientific Council of the Institute of Mathematics and Informatics – BAS, to vote for awarding **Ivan Radoslavov Georgiev, PhD**, the academic position “**Associate Professor**” in professional field 4.6 “**Informatics and Computer Science**”.

28 May 2023  
Sofia

Signature: .....  
(Assoc. Prof. Velin Andonov, PhD)