REVIEW

for the Competition for the Academic Position of "Associate Professor"

Field of Higher Education:	4. Natural Sciences, Mathematics and Informatics
Professional Field:	4.6. Informatics and Computer Science
Scientific Specialty:	Informatics (Adaptive Educational Software Systems)
Announced in:	State Gazette No. 63 of 10 July 2026 and on the website of the Institute of Mathematics and Informatics (IMI)
For the Needs of:	Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences (IMI–BAS)
Prepared by:	Prof. Peter Stanchev, DSc
Member of the Scientific Jury for the Competition, pursuant to	Order No. 88 of 8 September 2026 issued by the Director of IMI

The only candidate who submitted documents for participation in the announced competition is **Dr. Desislava Dakova Vasileva**.

I. General Description of the Submitted Materials

1. Information about the Application

The documents submitted by the candidate for the competition comply with the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB), the Regulations for its Implementation, the Regulations on the Conditions and Procedure for Acquiring Scientific Degrees and Holding Academic Positions at the Bulgarian Academy of Sciences, and the Regulations on the Conditions and Procedure for Acquiring Scientific Degrees and Holding Academic Positions at the Institute of Mathematics and Informatics of the Bulgarian Academy of Sciences.

2. Information about the Candidate

Dr. Desislava Dakova Vasileva graduated in 2002 with a Master's degree in Mathematics, specializing in Information and Communication Technologies, from the Faculty of Mathematics and Informatics at Sofia University "St. Kliment Ohridski." In 2011, following the successful defense of her dissertation entitled *Adaptive Software Systems for E-Learning*, she obtained the educational and scientific degree of doctor in professional field 4.6, Informatics and Computer Science.

She has worked as a part-time assistant at the Faculty of Mathematics and Informatics and as a research associate in the Research Sector at Sofia University "St. Kliment Ohridski"; as a programmer at the Institute of Mathematics and Informatics of the Bulgarian Academy of Sciences; and as a senior software engineer at the Bulgarian companies Gravis Bulgaria Ltd., MB Ltd., Aemon Ltd., and Bonea Ltd., as well as at the Spanish companies PayRetailers, SQLI Group, and Divina Pastora. She has extensive, long-standing experience in both academic and industrial organizations.

She has participated in 12 research projects, five of which were international (FP6, FP7, Horizon 2020, Erasmus+, and SEE) and seven national. She is currently participating in the MOTIVATE project funded by the Bulgarian National Science Fund. She is a member of the program committees of several international conferences, including Applied Computing, ICEduTech, e-Society, ELDL, and STEMedu, and serves as a reviewer for the journal *Scientific Reports*. She holds two utility models registered with the Patent Office of the Republic of Bulgaria.

The candidate has more than two years of research experience in her field, gained as a research associate in the Research Sector at Sofia University "St. Kliment Ohridski" (2008–2011), through research projects conducted within the university's Research Sector (2015–2018), and as an R2 researcher at the Centre of Excellence "Heritage BG" (2020–2021). She therefore satisfies the requirement under Article 24, paragraph 1, item 2 of the LDASRB.

3. General Characterization of the Scientific Publications and Compliance with the Requirements

The candidate has submitted 22 scientific publications and two utility models for participation in the competition. All are indexed in Scopus, Web of Science, the ACM Digital Library, IEEE Xplore, or MathSciNet. Of these, two are journal articles published in journals with an impact factor (IF): *Computers in Human Behavior* (IF = 4.306, Q1) and *Applied Sciences* (IF = 2.9, Q2). Fourteen publications appeared in outlets with a Scimago Journal Rank (SJR), including

one Q1 publication (JCR/Web of Science and SJR/Scopus), one Q2 publication (JCR/Web of Science and SJR/Scopus), two Q3 publications (SJR/Scopus), and four Q4 publications (SJR/Scopus).

Regarding compliance with the minimum national requirements and the additional requirements of the Bulgarian Academy of Sciences and the Institute of Mathematics and Informatics, as defined by the IMI regulations governing the acquisition of scientific degrees and the holding of academic positions, the candidate's scores for the academic position of Associate Professor in professional field 4.6 are as follows: **Group A:** 50 points, **Group B:** 130 points, **Group G:** 346 points, **Group D:** 150 points, **Indicator Group E:** 170 points. All these scores are significantly above the required minimums.

Regarding the requirement that a candidate must not use publications, citations, or other evidence previously submitted in procedures for obtaining the educational and scientific degree of doctor, the scientific degree of Doctor of Sciences, or an academic position, **the materials submitted for the present competition have not been used in any previous procedures**.

Regarding citations submitted for the competition in which the cited and citing publications share at least one author (i.e., self-citations), **no self-citations have been identified**.

With respect to the additional requirements specific to IMI for candidates seeking the academic position of Associate Professor, under Article 3 of the relevant IMI regulations, the candidate has submitted 21 publications in outlets indexed in Web of Science or Scopus. For professional field 4.6, she has submitted 14 publications in outlets with an impact factor or SJR. All these publications were published or accepted for publication after the date of the most recent procedure for obtaining the educational and scientific degree of doctor, the scientific degree of Doctor of Sciences, or an academic position. All figures are significantly above the required minimums.

Upon examining the candidate's scientific works, I found no evidence of plagiarism, and no plagiarism has been established through the legally prescribed procedure.

4. Substantive Analysis of the Candidate's Scientific and Applied Research Achievements Presented in the Competition Materials

The publications focus on **adaptive educational systems and e-learning**, including the conceptual development, practical implementation, and design methodology of an adaptive system for managing and delivering hypermedia educational content.

Another major research area is **adaptation based on emotional state and player behavior in educational video games**, including the dynamic adaptation of educational games according to the player's emotional state and behavioral patterns.

The candidate's work also addresses **game-based learning, serious educational games, and tools for measuring users' emotional states**.

The original contribution of the two utility models lies in the development of specialized devices for measuring users' emotional responses in real time while they play educational video games. The second model extends the functionality of the first by enabling the assessment of individual emotional arousal based on absolute skin conductance values.

Dr. Desislava Vasileva has received 48 citations in refereed and indexed publications (Web of Science/Scopus), 25 citations in peer-reviewed publications outside Web of Science and Scopus, and **73 citations in total**.

5. Evaluation of Project Work and Other Activities

The scientific publications submitted for the competition are associated with the candidate's participation in several successful research projects, including: **MOTIVATE** (KP-06-N85/2, Bulgarian National Science Fund, 2024–2028), **APOGEE** (DN12/7, Bulgarian National Science Fund, 2017–2021), **RAGE H2020** (No. 644187, European Commission, 2015–2018), **E-Creha** (Erasmus+, 2020–2023), **Heritage BG** (Operational Programme Science and Education for Smart Growth, 2020–2022).

6. Critical Remarks and Recommendations

I have no substantial critical remarks concerning the competition materials or the candidate's scientific works. I recommend that the candidate publish more single-authored papers.

7. Personal Impressions

I have known the candidate for many years and have direct knowledge of her research activities and professional achievements. She distinguishes herself through exceptional diligence, precision, and responsibility in her work, as well as through extensive experience acquired in both academic and industrial organizations.

8. Conclusion Regarding the Application

Based on my analysis of the competition materials and the significance and original contributions of the submitted scientific works, I confirm that the candidate's scientific achievements meet the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its Implementation, the Regulations on the Conditions and Procedure for Acquiring Scientific Degrees and Holding Academic Positions at the Bulgarian Academy of Sciences, and the corresponding regulations of the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences.

In particular, the candidate meets the minimum national requirements and the additional requirements of the Bulgarian Academy of Sciences and the Institute of Mathematics and Informatics for the relevant professional field. No plagiarism has been identified in the scientific works submitted for the competition.

I therefore give the candidate's application a **positive evaluation**.

II. Overall Conclusion

Having examined the materials and scientific works submitted for the competition and analyzed their significance and their scientific, scientific-applied, and applied contributions, I consider it justified to give the candidate a **positive evaluation** and **strongly recommend** that the Scientific Jury propose to the Scientific Council of the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences that **Dr. Desislava Dakova Vasileva be elected 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 (Adaptive Educational Software Systems).

Sofia

Date: 11 October 2026

Prepared by:

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