

S T A T E M E N T

By Prof. Galya Mihaylova Kozhuharova PhD, Trakia University, Stara Zagora - member of the scientific jury

By competition for the academic position of "associate professor" in the field of higher education 1. Pedagogical Sciences, professional field 1.3. Pedagogy of education in..., specialty Methodology of education in mathematics, informatics and information technologies.

1. General presentation of the procedure

In the competition for "associate professor", announced in the State Gazette, issue 97 of 15.11.2024. for the needs of the "Education in Mathematics and Informatics" section of the Institute of Mathematics and Informatics of the Bulgarian Academy of Sciences, Georgi Stamov Gachev participated as the only candidate.

On 21.01.2025. the first meeting of the scientific jury was held, determined by order No. 4/14.01.2025. of the Director of the Institute of Mechanical Engineering, Bulgarian Academy of Sciences. The submitted documents for the competition were accepted. No violations of the requirements of Art. 4 of the Law on the Protection of Scientific and Technological Resources of the Republic of Bulgaria and Art. 2 of the Regulations to this law were found. When examining the submitted documents, I did not find any violations of the procedure.

2. Brief biographical data and description of the candidate's activities

Georgi Gachev. was born on 04.01.1968. He graduated from the Saint Petersburg Technical University, Russia, in 1994. He obtained a qualification as a teacher of informatics at the Plovdiv University "Paisiy Hilendarski" in 2001, having previously had a master's degree in finance from the University of Technology "St. St. Cyril and Methodius" and a technical specialty at the Technical University of Sofia. In 2008, he graduated from the Doctoral Program 4.6. Informatics and Computer Science at Sofia University.

In 2008, he completed the Doctoral Program 4.6. Informatics and Computer Science at Sofia University.

He worked as a research associate at Sofia University "St. Kliment Ohridski" and as an assistant and chief assistant at the Institute of Mathematics and Physics - Bulgarian Academy of Sciences.

Everything listed so far testifies to extensive professional experience in the field of this competition.

3. Description of the submitted materials for the competition.

As a candidate for participation in the competition for the academic position of "Associate Professor" in Methods of Teaching Mathematics, Informatics and Information Technologies in the field of higher education 1. Pedagogical Sciences, professional field 1.3. Pedagogy of Teaching in ... Dr. Gachev has presented **a list** of scientific publications, containing one monograph on the topic "Balancing Chemical Equations by the Graph Method", 8 publications in refereed journals in Scopus, Web of Science and 14 publications in publications with ISSN and DOI, (including publications in conference proceedings and specialized publications).

The submitted publications are thematically related to the announced competition and demonstrate targeted interest and academic research in the most innovative aspects of pedagogical theory and practice.

The publications proposed in the competition for associate professor are not included in the procedure for acquiring the scientific degree "doctor" and satisfy the minimum national requirements for scientific and teaching activities. The documents present a list of 20 citations in scientific publications, which meet the requirements. Six of the citations are in Scopus and/or Web of Science.

I have not noticed any plagiarism in the proposed materials.

4. Scientific contributions

In the scientific and theoretical research and the publications made on them, contributions have been made in the following areas:

1. Teaching methodology in mathematics, computer science and natural sciences
 - Using virtual collaborative learning environments (WebLabs) to improve mathematics and science teaching.
 - Development of educational resources for STEAM centers, including 3D printed models, 360-degree photos, and interactive assignments.
 - Online mathematics competitions ("VIVA Mathematics with Computer") as a tool for stimulating creative thinking.
2. Application of visual programming and robotics in education
 - Using Photon Robot to study symmetry.
 - Visual programming environments (Toon Talk, Tablet-based environments) for computer science education.
 - Development of an internet-based system for publishing mathematical topics.
3. Balancing chemical equations and mathematical models in chemistry
 - A graphing method for balancing chemical equations, reducing errors and improving accessibility for students.

- A fundamental system of solutions to chemical equations with different degrees of freedom.

4. Genetic and statistical research

- Numerical analysis of genetic proximity between Balkan peoples using Euclidean distances.
- Historical justifications for regional genetic differences in the Balkan region.

5. Mathematical models and methodologies

- Dimensional analysis as a necessary condition for mathematical modeling.
- Estimating the spread of diseases and the diagnostic accuracy of tests (e.g. COVID-19).
- Computer models for studying pyramids with equal edges inscribed in a sphere.

6. Educational games and interactive approaches

- Program implementation of the mathematical game "Combination Nine".
- Using mathematical problems to develop algorithmic thinking.

The candidate has reflected his scientific contributions in detail, realistically and accurately in the presented materials. The focus of the research is in the field of mathematics teaching methodology.

5. CONCLUSION

The documents and materials presented by Dr. Georgi Stamov Gachev meet all the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria (ADSRB) and the Regulations for the Implementation of the ADSRB.

The candidate's research work contains original scientific and applied contributions. The theoretical research has practical applicability, and some of it is directly oriented towards the education of students. The scientific and teaching qualifications of Dr. Gachev are unquestionable.

After familiarizing myself with the materials and scientific papers presented in the competition, analyzing their significance and the scientific, scientifically-applied and applied contributions contained in them, I find it reasonable to give my **positive** assessment and to recommend to the Scientific Jury to prepare a report-proposal to the Scientific Council of IMI-BAS, **FOR** the election of Georgi Stamov Gachev to the academic position of "Associate Professor" in Methodology of Teaching in Mathematics, Informatics and Information Technologies in the field of higher education 1. Pedagogical Sciences, professional field 1.3. Pedagogy of Teaching in.....