

## STATEMENT

on the materials submitted for participation in the contest for occupation of the academic position "Associate Professor" in the Faculty of Mathematics and Informatics of Sofia University "St. Kliment Ohridski" in Area of Higher Education 4. Natural Sciences, Mathematics and Informatics, Professional Field 4.5 Mathematics (Differential equations), announced in State Gazette (SG) No 24/17.03.2023.

**In the Contest for the academic position "Associate Professor" announced in State Gazette No 24/17.03.2023 and on the web site of Sofia University "St. Kliment Ohridski" (in short, henceforth abbreviated as SU) for the needs of Faculty of Mathematics and Informatics (FMI) participate candidates:**

- **Assistant Professor Georgi Ivanov Georgiev, Ph.D. – Faculty of Mathematics and Informatics, Sofia University "St. Kliment Ohridski".**
- **Assistant Professor Svetlin Georgiev Georgiev, Ph.D. – Faculty of Mathematics and Informatics, Sofia University "St. Kliment Ohridski".**

**Review Author: Professor, Kamen Krastev Delchev, Ph.D. – Faculty of Mathematics and Informatics, Sofia University "St. Kliment Ohridski".**

By Order No RD 38-245/12.05.2023 of the Rector of SU I was appointed as a member of the Scientific Jury of the aforementioned Contest. By a decision of this Scientific Jury from 22.05.2023 I was assigned to write a statement of the Contest.

### **I. General description of the procedure and submitted documents**

#### **1.1. General description of the materials submitted by Dr. Georgi Ivanov Georgiev.**

Dr. Georgi Ivanov Georgiev presented a list of a total of 8 titles, including 8 publications in international scientific journals and scientific forums. A total of 18 other documents (or groups of documents) are also presented, according to the Regulations for the terms and conditions for acquiring scientific degrees and holding academic positions at SU "St. Kliment Ohridski".

The documents submitted by the candidate in the competition correspond to the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria (ADASRB), the Rules for Implementation of the ADAS in the Republic of Bulgaria (RI-ADAS in the RB) and the Rules on the Terms and Requirements for Acquisition of Scientific Degrees and Occupation of Academic Positions at Sofia University (RTR-ASD-OAP at SU).

#### **1.2. General description of the materials submitted by Dr. Svetlin Georgiev Georgiev.**

For participation in the competition announced in SG No. 24 of 17.03.2023, the candidate submits all necessary documents in accordance with the requirements of the regulations of the SU (RTR-ASD-OAP at SU), with the exception of the reference under Art. 107, para. (1), item 15. The documents are without numbering, lists of publications (for 100 items and for 200 items) are also

presented, which are not formally required by RTR-ASD-OAP at SU. The documents were filled in by the applicant carelessly and incompletely, which significantly complicates their evaluation.

Formally, Dr. Svetlin Georgiev Georgiev submitted a list of only 2 publications for participation in the competition in file: "spisakuchastie.rtf". Informally, to those publications that match the publications from file: "publikacii100tochki.rtf" and indicators „B3“ and „B4“ of the minimum national requirements (for "associate professor"), the 8 publications from file: "publikacii200tochki.rtf" can be added, matching indicators „Г“ of the minimum national requirements, regardless of the fact that another competition is indicated in the title of this list - SG No. 66, 2019

## **2.1 Brief biographical data about the candidate Dr. Georgi Ivanov Georgiev.**

Dr. Georgi Ivanov Georgiev graduated consecutively:

Veliko Tarnovo Mathematics High School - (1981-1985), "Differential Equations" - master's degree (1987-1992) and doctoral studies in "Differential Equations" (1994-1997) at the Faculty of Mathematics and Informatics of Sofia University "St. Kliment Ohridski".

From 1997 to 2017, the candidate held the position of "assistant in mathematical analysis" at VTU "Todor Kableshkov", Sofia, and from 2017 to the present, Dr. Georgi Ivanov Georgiev held the position of "assistant professor" at the Faculty of Mathematics and Informatics of SU "St. Kliment Ohridski".

## **2.2 Brief biographical data about the candidate Dr. Svetlin Georgiev Georgiev.**

Dr. Svetlin Georgiev Georgiev graduated consecutively:

"Mathematics and Informatics" - master's degree (1992-1997) at the Faculty of Mathematics and Informatics of Veliko Tarnovo University "St. St. Cyril and Methodius".

"Differential Equations" - PhD, completed in 2002 according to submitted copy of ONS PhD diploma.

From 2002 to 2011, the candidate held the position of "assistant", and from 2011 to the present - "assistant professor" at the "Differential Equations" department at the Faculty of Mathematics and Informatics of SU "St. Kliment Ohridski".

I do not take into account the additional facts regarding the research activity of Dr. Svetlin Georgiev Georgiev, presented in his professional biography, because he presented evidence only for the "Who's Who..." certificates, which can be received after payment to the relevant organization.

## **3.1 General characteristics of the scientific works and achievements of the candidate Dr. Georgi Ivanov Georgiev.**

The scientific works of Dr. Georgi Ivanov Georgiev submitted for participation in the competition can be referred to the field of Hamiltonian systems of differential equations and more specifically - research on their integrability.

The scientific works meet the minimum national requirements (under Article 2b, Paragraphs 2 and 3 of the ADASRB) and, accordingly, the additional requirements of SU "St. Kliment Ohridski" for occupying the academic position of "associate professor" in the scientific field and professional direction of the competition. They fully cover and exceed the minimum national requirements (for "associate professor"), as for group "B.4" the presented articles give 107 points with a requirement - 100 points, and for group "T.7" - 240 points with a requirement - 200 and for group "Д.11" - 64 points, if required - 50 points.

The scientific works presented by the candidate do not repeat those from previous procedures for acquiring a scientific title, academic position and scientific degree, according to Art. 107 para. (1), item 3 of the RTR-ASD-OAP at SU, and plagiarism has not been proven according to the law.

### **3.2 General characteristics of the scientific works and achievements of the candidate Dr. Svetlin Georgiev Georgiev.**

Those submitted for participation in the competition, according to Art. 107 para. (1), item 16, there are only two scientific works of Dr. Svetlin Georgiev Georgiev (files: "Publicationuchastie1.pdf" and "Publicationuchastie2.pdf") that correspond to the list under Art. 107 para. (1), item 10b. One publication is an article in the field of differential equations (transport equations), difference equations, and integral equations. The other publication is a monograph (book) in the field of integral equations.

In order to fulfill the minimum national requirements for an "associate professor" according to RI-ADAS in the RB, the candidate submits 8 monographs (books), for which only the covers and abstracts are presented. It is surprising that the scientific works presented for participation, according to Art. 107 para. (1) item 16, are less in number than the submitted works of the candidate to meet the minimum national requirements, especially taking into account that 49 publications are given in the list of all publications, and in "Web of Science" for Georgiev, S. G. - Sorbonne Universite, University of Sofia, 60 publications are recorded.

Regardless of the confusing information, I accept that the publications presented by the candidate, according to Art. 107 par. (1), item 12, meet the minimum national requirements (under Art. 2b, paras. 2 and 3 of ADASRB) and, accordingly, the additional requirements of SU "St. Kliment Ohridski" for occupying the academic position of "associate professor" in the scientific field and professional direction of the competition. They fully cover and

exceed the minimum national requirements (for "associate professor"), as for group „B.3“ the presented monograph gives 100 points, and for „B.4“ the presented article from Q2 for 2017 gives 60 points - a total of 160 points if required - 100 points, and for group „Г.7“ - 240 points if required - 200 and for group „Д.11“ - 64 points if required - 50 points.

The scientific works presented by the candidate do not repeat those from previous procedures for acquiring a scientific title, academic position and scientific degree, according to Art. 107 para. (1), item 3 of the RTR-ASD-OAP at SU, and plagiarism has not been proven according to the law.

#### **4.1 Characteristics and evaluation of Dr. Georgi Georgiev's teaching activity**

The assessment of the candidate's educational and pedagogical activity is definitely positive. According to the report submitted by the FMI of SU for the period 2017-2023, the candidate reports significant teaching activity:

- Auditor employment – 11 semesters (total hours by year – 357,390,345,348,270,180-winter semester),
- Total employment - 11 semesters (total hours by year - 441,547,414,477,408,206 - winter semester).

#### **4.2 Characteristics and evaluation of Dr. Svetlin Georgiev's teaching activity**

The candidate has submitted a report on his teaching activity completed by him, which is not certified by FMI and does not contain information on the number of classroom hours and general employment.

Anyway, I accept a positive assessment of the teaching activity of Dr. Svetlin Georgiev Georgiev.

#### **5.1 Detailed analysis of the scientific and applied achievements of Dr. Georgi Ivanov Georgiev contained in the materials submitted for participation in the competition**

A major scientific contribution in the first paper of the list of the candidate's papers for the competition is the proposed new approach to solving the Dirichlet problem for the fractional (3D) Poisson equation. In this article, Dr. Georgi Ivanov Georgiev is second author and corresponding author, but it is explicitly stated that the contribution of both authors is equal. It was published in a journal with IF 3.577 for 2021.

Publications 2, 3, 4, 5 and 6 of the candidate's list are one-authored articles. Papers 2, 3 and 4 show cases of non-integrability of the closed ion model equations. It should be noted that article 4 was published in a journal with a very high IF - 9.922 for 2021.

Paper 5 offers a different (than known) approach to studying the integrability of the Chazy-Curzon space-time geodesic equations.

The scientific contribution in paper 6 is a different proof of non-integrability of a Hamiltonian system with a Dyson potential. The publication is in "Reports of the BAS" - IF 0.21 for 2018.

In publications 7 and 8, Dr. Georgi Ivanov Georgiev is the second author, and although no agreement is provided for his contributions to the joint publications, I assume that the contributions of both authors are equal. In 7, conditions for non-integrability of fourth-order equations with Painleve property are proved. Article 7 was published in a journal with IF – 1.1 for 2017. In 8, the cases of integrability of a Hamiltonian system of differential equations describing the Bose-Fermi model were proved, and the publication was in a journal with IF – 1.611 for 2015.

The total Impact Factor (IF) of the presented articles is 16.420.

## **5.2 Detailed analysis of the scientific and applied achievements of Dr. Svetlin Georgiev Georgiev contained in the materials submitted for participation in the competition**

The candidate has submitted a reference to the original scientific contributions, in which it is briefly and vaguely recorded that since 1995 Dr. Svetlin Georgiev Georgiev has proposed "a new way of investigating the existence of positive periodic solutions for some classes of ordinary differential equations", which subsequently also applied to "other classes of ordinary differential equations" and "the various classes of partial differential equations". The reference ends with the statement that "The scientific articles and monographs I have published can serve as proof of my scientific contributions."

Unfortunately, for participation in this competition, the candidate submitted only two publications, according to Art. 107 para. (1), item 16 – article and monograph. In the article, Dr. Svetlin Georgiev Georgiev is the second author and is not a corresponding author. In the scientific literature, not a single work of the candidate is included in the article. 4 articles by the first author are included, but they also do not contain a single reference to publications by Dr. Svetlin Georgiev Georgiev.

Only one article by Dr. Svetlin Georgiev, published in the same year together with the monograph, is included in the scientific literature of the presented monograph of the candidate. This article does not contain a reference to any work of Dr. Svetlin Georgiev. Moreover, there is no reference to it in the text of the monograph. There are references to only 2 literary sources (numbers 2 and 4) out of a total of 29 presented in the literature of the monograph.

The lack of specific information in the reference about the scientific contributions of the candidate, as well as the lack of references to previous publications of Dr. Svetlin Georgiev in the presented scientific works of the candidate for participation in the competition, did not allow me to find the relevant evidence of the scientific contributions of Dr. Svetlin Georgiev Georgiev described above.

As a result of the analysis, I accept that the presented reference for the candidate's original scientific contributions does not meet the requirements of the rules of the SU "St. Kliment Ohridski" RTR-ASD-OAP at SU - art. 107 para. (1), item 14 that prevents the substantive analysis of the candidate's scientific and scientific-applied achievements.

### **6.1 Critical remarks and recommendations of Dr. Georgi Georgiev's candidacy**

In the abstracts of the articles submitted for participation in the competition, formulas are given in a difficult-to-read format. The titles of the articles are missing in the table for the minimum requirements, according to RI-ADAS in the RB.

### **6.2 Critical remarks and recommendations of Dr. Svetlin Georgiev's candidacy**

The documents completed and presented by the candidate for participation in this competition do not give a real idea of the results of his scientific research activity and, above all, of the volume of his publication activity.

The submitted report on the scientific and scientific-applied contributions of Dr. Svetlin Georgiev Georgiev is incomplete and does not provide the relevant evidence, according to the requirements of the rules of SU: RTR-ASD-OAP at SU - art. 107 para. (1), item 14.

### **7.1 Personal impressions for the candidate Dr. Georgi Ivanov Georgiev**

I do not know the candidate and have no personal impressions of him.

### **7.2 Personal impressions for the candidate Dr. Svetlin Georgiev**

I do not know the candidate and have no personal impressions of him.

### **8.1 Conclusion on Dr. Georgi Georgiev's candidacy**

After having familiarized myself with the materials and scientific works of the candidate presented in the competition and based on the analysis of their significance and the scientific and scientific-applied contributions contained in them, I confirm that the scientific achievements meet the requirements of ADASRB, the Regulations for its application and the relevant Regulations of the SU "St. Kliment Ohridski" for the candidate to occupy the academic position of "associate professor" in the scientific field and professional direction of the competition. In particular, the candidate satisfies the minimum

national requirements in the professional direction and no plagiarism has been found in the scientific works submitted for the competition.

I give my positive assessment to the application.

## **8.2 Conclusion on Dr. Svetlin Georgiev's candidacy**

Having familiarized myself with the materials presented in the competition and the scientific works presented by the candidate and based on the analysis of the reference for the scientific and scientific-applied contributions, I confirm that the reference for the scientific achievements do not meet the requirements of the regulations of SU "St. Kliment Ohridski" RTR-ASD-OAP at SU - art. 107 para. (1), item 14, for the candidate to occupy the academic position "associate professor" in the scientific field and professional direction of the competition. In particular, the reference does not contain relevant evidence for the scientific contributions described in it. Although the candidate satisfies the minimum national requirements in the professional field (Art. 107 para. (1) item 12), he submitted a reference for the same number of citations as the citations of the other candidate (Art. 107 para. (1) item 13) and no plagiarism was found in the scientific works submitted for the competition, the assessment of the above-mentioned facts, according to Art. 112 para. (1), from RTR-ASD-OAP at SU does not allow me to rank the candidacy of the Assistant Professor Dr. Svetlin Georgiev Georgiev in front of that of the Assistant Professor Dr. Georgi Ivanov Georgiev.

## **II. GENERAL CONCLUSION**

Based on the above and in accordance with Art. 112 para. (1), according to the regulations of the SU (RTR-ASD-OAP at SU) I rank the candidates participating in the competition announced in SG No. 24 of 17.03.2023 as follows:

1. Assistant Professor Dr. Georgi Ivanov Georgiev,
2. Assistant Professor Dr. Svetlin Georgiev Georgiev,

**and I recommend the scientific jury to propose to the Faculty Council of the Faculty of Mathematics and Informatics at Sofia University "St. Kliment Ohridski" to elect Assistant Professor Dr. Georgi Ivanov Georgiev to occupy the academic position of "associate professor" in professional direction 4.5. Mathematics (Differential Equations).**

Date: 01.07.2023

Signature: .....

/Prof. Kamen Krastev Delchev/