

OPINION

**considering a competition for the academic position
"associate professor"
in professional direction PN 4.5 Mathematics (Differential Equations),
for the needs of Sofia University "St. Kliment Ohridski" (SU),
Faculty of Mathematics and Informatics (FMI),
announced in SG no. 24 of 17.03.2023 and on the FMI and SU websites**

The opinion was prepared by: **Assoc. Dr. Alexander Aleksiev Stefanov – FMI, MRM department, PN 4.5 Mathematics**, in my capacity as a member of the scientific jury for the competition according to Order No. RD 38-245 / 12.05.2023 of the Rector of Sofia University.

The **following candidates** submitted documents for participation in the announced competition:
1. chief assistant professor Dr. Georgi Ivanov Georgiev, FMI, Department of DU;
2. chief assistant professor Dr. Svetlin Georgiev Georgiev, FMI, Department of DU.

I. General description of the presented materials

For the candidate: chief assistant professor **Dr. Georgi Ivanov Georgiev**, FMI, Department of DU;

1. Application data

To participate in the competition, the candidate chief assistant professor Dr. Georgi Ivanov Georgiev presented a list of a total of 8 titles, including 8 publications in Bulgarian and foreign scientific journals and scientific forums, 0 studies, 0 monographs, 0 books, 0 certificates and patents, 0 textbooks and teaching aids. A total of 3 other documents are also presented - a copy of the employment contract for the position of chief assistant professor, an official note for teaching employment and a certificate of internship in the specialty.

The documents are well laid out and clear. The only noticed problem is that in some places formulas are copied directly from a LaTeX file, which complicates their readability. The certificate of compliance with the minimum national requirements has been correctly prepared and the applicant has correctly used the WoS quartiles. Almost no spelling and punctuation errors are found. The full texts of the publications are also provided.

The candidate has been cited 9 times, with no self-citations.

The documents submitted by the candidate in the competition correspond to the requirements of the ZRASRB, PPZRASRB and the Regulations for the terms and conditions for acquiring scientific degrees and occupying academic positions at SU "St. Kliment Ohridski" (PURPNSZADSU).

2. Applicant data

The candidate was born in 1967 in the town of Gorna Oryahovitsa. He graduated from the mathematics high school in Veliko Tarnovo in 1985. After his military service, he became a student at the University of St. Kliment Ohridski" in 1987, and in 1992 he obtained a master's degree with a specialization in "Differential Equations". In 1994, he was accepted as a full-time doctoral student in the Department of Differential Equations. He defended his doctorate much later, in 2015. His dissertation is entitled "Non-integrability in the Liouville sense of some higher-order Painleve equations" with supervisors Art. cor. Prof. Emil Ivanov Horozov, Ph.D. and Associate Professor Ognyan Borisov Hristov, Ph.D. For the PhD, one publication was used, which was not included in the titles submitted for this competition.

3. General characteristics of the scientific works and achievements of the candidate

The presented articles almost in their entirety concentrate on integrability (or lack of integrability) for systems of ordinary differential equations (ODEs) with applications in physics - geodesic motion near a system of two or more compact objects (Chazy-Curzon metric); trapped ions etc. This is not surprising, considering that the candidate is a specialist in ODEs, especially in terms of their integrability. There is also an article devoted to the existence of solutions of partial differential equations (PDEs). In five of the articles, the candidate is the sole author. The papers are of a high standard and represent a solid contribution to the field of integrability of differential equations. It is evident from all the publications of Dr. Georgi Georgiev that he is a serious specialist in this field. In short, it can be said that:

a) the scientific works **meet the minimum national requirements** (under Article 2b, Paragraphs 2 and 3 of the ZRSARB) 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 (4.5 Mathematics);

b) the scientific works presented by the candidate **do not repeat** those from previous procedures for acquiring a scientific title and academic position;

c) there is **no evidence** of plagiarism in the scientific works submitted for the competition.

4. Characteristics and assessment of the candidate's teaching activity

The applicant has submitted an officially issued certificate of teaching employment, from which it is evident that the applicant meets and exceeds the minimum requirements (on average 457.98 hours of lectures/seminars for the period 2017-2022 with a mandatory 360 hours).

5. Content analysis of the applicant's scientific and applied scientific achievements contained in the materials for participation in the competition

The presented articles have excellent scientometric indicators – 2 articles Q1, one Q2, one Q3, the rest SJR. Original scientific contributions are well described in the applicant's reference document.

The publications are of a high quality and represent a significant contribution to ODE theory and integrable systems.

6. Critical notes and recommendations

I have no significant notes or recommendations for the candidate.

7. Personal impressions of the candidate

I know the candidate as a colleague from FMI. He gives the impression of a calm and cheerful person with a permanent positive attitude towards the world and the people around him.

8. Conclusion on the application

After having familiarized myself with the materials and scientific works 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 ZRASRB, the Regulations for its application and the relevant Regulations of 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.

For the candidate: chief assistant professor **Dr. Svetlin Georgiev Georgiev**, FMI, Department of DU.

1. Application data

To participate in the competition, the candidate chief assistant Dr. Svetlin Georgiev Georgiev presented a list of a total of 10 titles, including 1 publication in Bulgarian and foreign scientific publications and scientific forums; 0 studies; 9 books that are presented as monographs; 0 certificates and patents, 0 textbooks and teaching aids. 2 other documents are also presented - a certificate of work experience and a copy of an employment contract for a chief assistant professor.

The layout and arrangement of the documents leaves much to be desired. The documents are not numbered and arranged according to the numbering in relation to the application for participation in the competition, which complicates their review. The set of documents is almost complete, with only the full texts of the titles proposed for participation in the competition missing (full texts are available for the titles under indicator B – one article and one book). This is a serious problem, since the bulk of them are books presented as monographs. According to ZRASRB, a monograph is a work that not only summarizes and/or contains already existing results, but also makes a significant contribution with new original ones. Since the texts are not available, it is not clear what their original contribution was (I suspect there was one, but with the documents presented it cannot be proven). The applicant's reference for original contributions also lacks a description of the scientific contributions of the titles provided. A description of the original contributions is also missing in the summaries of the scientific works.

The accessible texts (those under indicator B) are written at a high level. The article has excellent scientometric indicators.

This is also a problem in the reference for the fulfillment of the minimum national requirements, where a link to the publisher is given as proof. If the submitted titles are accepted as monographs, then the applicant fulfills the requirements for the academic position of "associate professor", but this cannot be proven with certainty from the available documents. The candidate has submitted 8 citations, with no self-citations.

From the submitted documentation, **it cannot be determined with certainty** whether the documents submitted by the candidate in the competition correspond or do not correspond to the requirements of the ŽRASRB, PPZRASRB and the Regulations for the terms and conditions for acquiring scientific degrees and occupying academic positions at SU "St. Kliment Ohridski" (PURPNSZADSU).

2. Applicant data

The candidate was born in 1974. in the city of Ruse. He graduated from Veliko Tarnovo University in 1997, majoring in "Mathematics and Informatics". In 2002 he defends a doctoral dissertation on the topic "Periodic solutions of non-autonomous systems of the Lotka-Volterra type" supervised by Assoc. Prof. Dr. Dimitar Petrov. For the PhD, one publication was used, which was not included in the titles submitted for this competition.

3. General characteristics of the scientific works and achievements of the candidate

The candidate has a huge number of publications (there are 136 titles entered in NACID) devoted to differential equations and analysis with applications in physics, technical sciences, biology, etc. A large part (more than half) of these publications are referenced in world-renowned databases, having good scientometric indicators. The candidate has a bias towards generalizations of differential equations in non-standard cases (time scales for example) to even exotic ones (isomathematics).

The broad area of researched problems is impressive, as it is evident that the candidate has serious mathematical knowledge.

This complicates the evaluation of the scientific contributions because, as mentioned above, the applicant submitted mainly books for the competition, without providing the full texts or description of the original contributions.

From the presented documents it can be concluded that:

a) **it cannot be determined with certainty whether** the scientific works meet the minimum national requirements (according to Art. 2b, paras. 2 and 3 of ŽRASRB) 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 (4.5 Mathematics);

b) the scientific works presented by the candidate **do not repeat** those from previous procedures for acquiring a scientific title and academic position;

c) **there is no evidence** of plagiarism in the scientific works submitted for the competition.

4. Characteristics and assessment of the candidate's teaching activity

No officially issued certificate of teaching employment is provided. The candidate has prepared a report on the courses he has taught, from which it is clear that he teaches courses such as PDE, Multivariable analysis, Mathematics, etc. In general, the applicant appears to have the necessary teaching history and activity.

5. Content analysis of the candidate's scientific and applied scientific achievements contained in the materials for participation in the competition

Alas, the lack of the texts of the books makes this assessment impossible. The available texts are written in rigorous mathematical language and are of a high level. For the presented article, the candidate used the SJR quartile instead of the WoS, which is contrary to the ZRASRP. However, the article is of a high standard and contains original contributions.

6. Critical notes and recommendations

It is clear from the submitted participation documents that the preparation of documents is not one of the candidate's strengths. Although administrative activities are not particularly interesting or pleasant, I would advise the applicant in the future not to overlook the need and benefit of well-prepared documentation. I would also recommend that in future contests he use some of his considerable body of publications instead of books.

7. Personal impressions of the candidate

I know Dr. Svetlin Georgiev as a colleague from FMI. Also, I have led the seminar classes for the "Multivariable analysis" courses for "NPNE, AMG, EF" specialties, as well as Mathematics for the "Biology" specialty, at which he is a lecturer. As a person, I would describe him as calm, rather introverted, maybe slightly eccentric. From working with him in general, I know that he has solid mathematical knowledge and skills.

8. Conclusion on the application

After having familiarized myself with the materials and scientific works presented in the competition and based on the analysis of their significance and the scientific and scientific-applied contributions contained in them, **it is not possible to confirm that the scientific achievements meet the requirements** of ZRASRB, the Rules 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.

For this reason, I have to give my **negative assessment** to the application.

II. GENERAL CONCLUSION

Based on the above, I **recommend** the scientific jury to propose to the competent selection authority of the Faculty of Mathematics and Informatics at SU "St. Kliment Ohridski" to choose Chief Assistant. Prof. **Dr. Georgi Ivanov Georgiev** for the academic position of "associate professor" in professional direction 4.5 Mathematics (Differential Equations).

11.07.2023

Signature:

/ Assoc. Prof. Dr. Alexander Stefanov/