OPINION

by Associated Professor Hristo Stefanov Kiskinov, PHD -
Faculty of Mathematics and Informatics, University of Plovdiv University 'Paisii Hilendarski',
on candidacy for competition for the occupation of the academic position of "Professor"
of Plovdiv University Paisii Hilendarski
in Area of Higher Education: 4. "Natural Sciences, Mathematics and Informatics"
Professional Field: 4.5 Mathematics (Mathematical Analysis)

In the competition for the academic position 'Professor', announced in State Gazette No 31/12.04.2019 and on the web site of Plovdiv University 'Paisii Hilendarski' (PU) for the needs of the Department of Mathematical Analysis within the Faculty of Mathematics and Informatics (FMI) Assoc. Prof. Boyan Georgiev Zlatanov, PhD, from Department of Mathematical Analysis, Plovdiv University 'Paisii Hilendarski', participates as a single candidate.

1. General Presentation of the Procedure and the Candidate

By order P33-3779 / 12.07.2019 of the Rector of the Plovdiv University 'Paisii Hilendarski' I am appointed as a member of the Scientific Jury of the competition for occupation of the academic position 'Professor' for the needs of the Department of Mathematical Analysis in FMI, Plovdiv University 'Paisii Hilendarski' in Area of Higher Education: 4. "Natural Sciences, Mathematics and Informatics Professional Field: 4.5 Mathematics (Mathematical Analysis).

Documents for participation in the in the announced competition have been submitted only by one candidate: Assoc. Prof. Boyan Georgiev Zlatanov, PHD, from the Department of Mathematical Analysis at the Faculty of Mathematics at the Plovdiv University 'Paisii Hilendarski'. The documents were checked by a committee appointed by order P33-3480 / 05.07.2019 of the Rector of the University of Plovdiv "Paisii Hilendarski". According to the protocol of the meeting of the committee on 17.07.2019, signed by all the members without comments, the committee allowed the participation of the only candidate Assoc. Prof. Boyan Georgiev Zlatanov, PHD.

As a member of the Scientific Jury I have received all the necessary documents, attached to the application by Assoc. Prof. Boyan Georgiev Zlatanov to the Rector of the Paisii Hilendarski University for admission to the competition. The documents are well designed and arranged.

The candidate Assoc. Prof. Boyan Georgiev Zlatanov has attached a list of all his scientific works. It consists of 1 monograph, 53 scientific publications in journals and conference volumes and 2 textbooks. To participate in the competition for the occupation of the academic position of "Professor"are selected: 1 monograph, 31 scientific publications and 2 textbooks. From the attached additional lists of scientific publications already used to obtain a PHD-degree (4 pcs), to participate in the competition for associate professor (9 pcs), as well as those not used in previous procedures and not included in the present (9 pcs) it is evident that the selection of scientific papers for participation and review in this procedure is correct and does not include works used in previous procedures. Attached is a list of 100 noted citations, all made after the applicant's habilitation, i.e. obviously unused in previous procedures.

Concerning the minimum national requirements for the occupation of the academic position of "Professor": Indicator A - the candidate has 50 points from the dissertation for the PHD-degree with a minimum requirement of 50 points (no over-fulfillment is possible here); Indicator B - the candidate has 319 points, obtained from a submitted monograph (B3 - 100 points) and published scientific articles in journals referenced in world-known databases (B4-219 points) with a minimum

requirement of 100 points (i.e. overdelivery 319 %); Indicator D - the candidate has 606 points, obtained from submitted scientific publications in journals, referenced in world-known databases (D7-606 points) with a minimum requirement of 200 points (i.e. 303 % overdelivery); Indicator E - the candidate has 472 points, obtained from the submitted evidence for citations in scientific publications in publications, referenced in world-known databases (D11-472 points) with a minimum requirement of 100 points (i.e. overdelivery 472 %) ; Indicator E - the candidate has 200 points, collected from scientific supervisorship of one PHD-student with successfully defended PHD-Thesis (E13 - 50 points), participation in 7 national scientific or educational projects (E14 - 70 points) and from two textbooks presented (E20 - 80 points) with a minimum requirement of 100 points (i.e. 200 % overdelivery). This review shows that all requirements are met and even substantially over-fulfilled.

Regarding the additional requirements of the Faculty of Mathematics and Informatics (FMI) for the occupation of the academic position of "Professor": - 1 monograph, 31 publications, 1 textbook were presented, with a minimum requirement of 20 publications and 1 textbook; - of these 31 publications, 29 are in peer-reviewed journals and 2 in conference proceedings, with a minimum requirement of 20 in journals; - 12 articles have been published in journals with Impact Factor, with a minimum requirement of 8; - evidence of 100 citations given with a minimum requirement of 20 citations; - scientific supervisorship of 1 PHD-student with successfully defended PHD-Thesis at FMI with a minimum requirement of 1 such a PHD-student. This review shows that all the additional requirements of the FMI have been met and not at all.

All this convinces me that the set of materials presented by Assoc. Prof. Boyan Georgiev Zlatanov is in full compliance with the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB), the Rules for the implementation of the ZRASRB and the Rules for the Development of the Academic Staff of the PU Paisii Hilendarski (PRASPU).

The candidate Boyan Georgiev Zlatanov was born on January 29, 1971 in Plovdiv. In 1991 he graduated from the Georgi Kirkov Language School with extensive study of English in Plovdiv. In 1996 he completed a five-year course of study in Mathematics (second qualification - Mathematics / Informatics teacher) at the Faculty of Mathematics and Informatics at St. Kliment Ohridski Sofia University and obtained a Mathematics qualification with a specialization in Mathematical Analysis, equivalent to a Master's degree. In 1997 he started a PHD-study at the FMI of PU. After a competition in 1999, he takes a job at the FMI of PU, where he was an assistant, senior assistant and chief. assistant. In 2001 he defended his PHD-Thesis "Geometric properties of some classes of Banach spaces with unconditional basis"and obtained a PHD-degree in mathematical analysis. He became an Assistant Professor in 2008. He is listed in the NACID Register as an Assistant Professor with completed scientometric data. Since 2015 he has been a Deputy Dean at FMI, in charge of research and project activity in the scientific field 4.5 Mathematics.

I have known the candidate Boyan Georgiev Zlatanov since he joined the FMI at the University of Plovdiv in 1999. Over the years he has proven himself as an established specialist in mathematical analysis and as a teacher with considerable professional experience. Fluent in English and good Russian.

2. General Characteristics of the Activity of the Candidate

2.1. Assessment of Educational and Pedagogical Activity

The teaching experience of Boyan Zlatanov is about 20 years. After his habilitation in 2008, he has prepared and delivered the following lecture courses for FMI students: Mathematical Analysis -1, -2, -3, -4 for the bachelor programs of Mathematics and Applied Mathematics at FMI; Mathematical

Analysis -1, -2 for Informatics; Mathematical analysis for the bachelor programs Software Technologies and Design and Informatics; Stock and OTC trading for the specialties Business Information Technology and Business Mathematics. He has taken lectures in Mathematical Analysis for students in the bachelor program Physics and Mathematics at the Faculty of Physics and Mathematics, and Mathematical Analysis -1, -2 for bachelor programs at the branch of the University of Smolyan. He has prepared and lectured the following courses for undergraduate students of FMI: Functional Analysis; Money Math; Geometry of the Fractals; Metric Spaces; Convergence and Compactness in Metric Spaces; Theory of Value in a Market Economy; Application of Computer Algebraic Systems in Mathematics Classes. He has lectured on Computer Algebraic Systems and Applied Functional Analysis of the students of the Master's Program in Applied Mathematics at the Faculty of Mathematics and Informatics, as well as a lecture course for masters at the Faculty of Education - GeoGebra - Opportunities and Challenges.

The lectures and exercises, led by Assoc. Prof. Boyan Georgiev Zlatanov, are of high scientific and methodological level. Hi demonstrates high professionalism and responsibility in his work and applies modern methods and techniques in his teaching activity. His active research activity is a prerequisite for good results in the educational process.

The candidate Assoc. Prof. Boyan Georgiev Zlatanov works actively with students, graduates and PHD-students and has co-written articles with them. He was the scientific supervisor of one PHD-student with successfully defended PHD-Thesis - Atanas Ilchev, PHD who is currently assistant at the Mathematical Analysis Department at the FMI of the PU, as well as of 8 graduates. He regularly participates in committees for conducting State exams and defending diploma-works at the FMI.

Assoc. Prof. Boyan Zlatanov is a single author of two textbooks presented in the procedure, intended for use by students studying at the Faculty of Mathematics and Informatics at the University of Plovdiv:

- The textbook "Mathematical analysis - Differential calculus of a function of a single variable using algebraic computer systems" represents the first part of the course in mathematical analysis, including theory of the real numbers; numerical sequences; limit; continuity and differentiability of a function of a single variable; applications of derivatives.

- The textbook "Real Analysis - Integral Calculation of the Function of a Variable Using Algebraic Computer Systems" represents the second part of the course in mathematical analysis, including classical sections of analysis: indefinite integral and methods for its calculation; definite (Riemann) integral; improper integral; applications of the definite integral in analysis, geometry and physics.

Characteristic of both textbooks is a complete presentation of the basic theoretical results, a rich illustration of definitions and theorems with examples and drawings, the use of algebraic computer systems (Maple, GeoGebra) for solving problems and the availability of brief biographical data for the mathematicians mentioned in the text.

2.2. Assessment of Scientific and Applied-Scientific Activities

Of the 31 scientific papers submitted by the applicant for participation in the competition:
- 24 are published in foreign journals and 7 are in Bulgarian;
- 29 are in peer-reviewed journals and 2 are in conference proceedings;
- 29 are in English and 2 are in Bulgarian;
- 13 are single-written, 10 with one co-author, 7 with three and 1 with more co-authors;
- 12 are in journals with Impact Factor: 3 in Q1, 5 in Q2 and 4 in Q4; overall impact factor

10.232.

- 21 are indexed in Web of Science (13) and / or SCOPUS (13) and / or SJR (14) and / or Zentralblatt Math (10) and / or Mathematical Reviews (18).

A monograph published by LAP LAMBERT Academic Publishing is presented.

It should also be noted that Assoc. Prof. Boyan Zlatanov:

- has participated in 2 national research projects, 1 national educational project and 4 university projects under the scientific research fund;

- has 5 participation in program and organization committees of scientific conferences;

- is a member of the editorial boards of 2 scientific journals, one of which is foreign;

- has 12 participations with a report at international scientific conferences with international participation and seminars;

- has served as a peer reviewer for 15 scientific journals and is a reference for Mathematical Reviews with a total of 22 written references so far;

- is a member of the Union of Mathematicians in Bulgaria.

2.3. Contributions and Citations

I agree with the candidate's self-assessment that thematically the main scientific and applied scientific contributions of the candidate can be separated in three directions.

The first direction includes articles [1–7] and is devoted to the study of some geometric properties of Banach spaces with an unconditional basis. Since the PHD-Thesis of the candidate for his PHD-degree is also in this direction, it can be said that the presented papers continued the research on this topic. The main field of the presented articles, related to the geometry of Banach spaces are classes Koethe sequence spaces and classes of Musielak–Oricz sequence spaces. Summarized the obtained results are: calculation of several constants, that are relevant to the geometric properties of the Banach spaces; investigation of the Kottman and packing constants [7], the Reisz angle [6,7], the weakly convergent sequence coefficient [1], the normal structure [5], the Schur property [4]. Investigated are also properties of generalized moduli of convexity and smoothness [5]. Obtained are results connected to the property for a space to be stabilized asymptotic ℓ_∞ [2,3,4] for classes of Koethe sequences spaces. Particular results for the above mentioned ones for the cases of ℓ_p, Orlicz, Nakano, Muscielak–Orlciz, Lorentz, Orlicz–Lorenz and Cesaro are obtained.

The second field in the investigations is in the theory of fixed points [10,16,17], together with its subfields: cyclic contracting maps (a generalization of the notion contracting map from Banach's theorem) [8,20,21] and best proximity points (a generalization of the notion fixed point from Banach's theorem)[9,11,12,13,14,18,19,22]. A significant contribution is the introduction of an entirely new kind of cyclic maps, which are called "summing" maps [9,11,19]. The classical generalization of contractive maps to cyclic contractive maps covers only the case, when the distances between the consecutive sets are equal. The "summing" maps overcome this drawback and can be applied to investigate cyclic maps between sets, when the distances between the consecutive sets are not equal. There are obtained error estimates of the best proximity points if obtained by sequences of successive iterations [14,22]. The notion of best proximity points is generalized in the context of modular function spaces and there are found sufficient conditions for their existence and uniqueness [12,18]. Following the technique of fixed points in modular function spaces are obtained similar results in b–metric spaces [16,17], and so are generalized and enriched the known results about fixed points in b–metric spaces. In [16,17] are presented examples, which show that the obtained error estimates are better than the classical ones in the case of metric spaces for wide classes of maps.

In the third direction - Using algebraic computer systems in mathematics training, I include the presented monograph and articles [24–31]. The works in this direction include methodological developments for using the universal algebraic computer system Maple and the dynamic geometric software GeoGebra. The original specific dynamic geometry software Sam was developed and written in C# in the NET Framework 4 environment and created as educational software specifically for the subject of synthetic geometry.

The applicant has also submitted an article of applied nature [23] outside these main areas, in which a specific computational problem in electrostatics is solved by the methods of mathematical analysis.

The cited List of noted citations includes 100 citations of 26 scientific papers. Of these 100 citations, 59 are in journals indexed in Web of Science and / or SCOPUS, and 5, beyond those 59, are referenced in Mathematical Reviews. The citations are substantive and not explicit or implicit self-citations.

The candidate's Hirsh index (without self-citations) in SCOPUS is 5, which is a very good certificate for his scientific research.

2.4. Evaluation of the Personal Contribution of the Candidate

I am fully convinced of the candidate's authorship of the submitted publications, monographs and textbooks. In the publications with coauthors, I consider the authors' participation to be equivalent. I do not find plagiarism.

3. Critical Remarks and Recommendations

I have no significant criticisms. However, I would still recommend to the candidate more attention when preparing the various documents - for example, in the CV of Bulgarian there are wrong dates; the scanned monograph is missing the first page and the author and title are not visible; the second textbook is entitled "Real Analysis - ..." not as described in the lists "Mathematical Analysis 2 - ..."; the number of articles in conference proceedings is 2, not 1. Also, the candidate had to report on indicator E not 472 points out of 59 citations indexed in WoS and / or SCOPUS, but 492 points because he did not include 5 of the citations indexed in Mathematical Reviews.

CONCLUSION

The documents and materials presented by Assoc. Prof. Boyan Georgiev Zlatanov meet all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB), the Rules for the implementation of the ZRASRB and the Rules for the Development of the Academic Staff of the PU Paisii Hilendarski (PRASPU), as well as the additional requirements of the FMI to occupy the academic position of "Professor".

The candidate has submitted a sufficient number of scientific papers that do not repeat the materials used in previous procedures. The works of the candidate have original scientific and applied contributions that have received international recognition as a representative part of them have been published in journals and conference proceedings published by international academic publishers. 100 citations made after 2008 are proof of this. The scientific and teaching qualifications of Assoc. Prof. Boyan Georgiev Zlatanov are at a very good level and cannot be called into question.

The results achieved by the candidate Assoc. Prof. Boyan Georgiev Zlatanov in the educational and research activities fully satisfy the minimum national requirements and the additional requirements of the Faculty of Mathematics and Informatics.

After reviewing the materials presented in the competition, analysis of the candidate's results,

his scientific contribution, the originality of the submitted papers and the reliability of the scientific data presented, I find it reasonable to give my **positive assessment** and to recommend to the Scientific Jury to prepare a report-proposal to the Faculty Scientific Council of the Faculty of Mathematics and Informatics for the election of Assoc. Prof. Boyan Georgiev Zlatanov, PhD for the academic position 'Professor' in Plovdiv University 'Paisii Hilendarski' in Area of Higher Education: 4. "Natural Sciences, Mathematics and Informatics" Professional Field: 4.5 Mathematics (Mathematical Analysis).

04.09.2019 This opinion is prepared by: .....

Plovdiv Assoc. Prof. Hristo Stefanov Kiskinov, PHD