STATEMENT REPORT

On the competition for the academic position of "Professor"
In the Scientific field: 4. Natural Sciences, Mathematics and Informatics,
Professional field: 4.5. Mathematics,
Scientific specialty: Algebra (non-commutative rings and algebras),
For the needs of the Institute of Mathematics and Informatics, BAS,
Competition announced in State Gazette no. 69 (11.08.2023)

This statement report has been prepared by Professor Maya Miteva Stoyanova, Department of Algebra, Faculty of Mathematics and Informatics, Sofia University "St. Kliment Ohridski", as a member of the scientific jury for the competition according to Order No. 466 / 10.10.2023 of the Director of the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences.

Documents from one candidate, namely Associate Professor Peter Vassilev Danchev, Doctor of Science, Department of Algebra and Logic, Institute of Mathematics and Informatics (IMI), Bulgarian Academy of Sciences (BAS), were submitted in time for participation in the announced competition.

1. Data on the applicant and submitted documents

The documents submitted by the candidate in accordance with the competition comply with the requirements of the Act for the Development of the Academic Personnel of the Republic of Bulgaria (ADAP of the RB), the Rules for Implementation of the ADAP of the Republic of Bulgaria (RIADAP of the RB) and the Rules on the Terms and Requirements for Acquisition of Scientific Degrees and Occupation of Academic Positions of IMI and BAS.

Petar Vasilev Danchev graduated from secondary education in 1989 at OMG "Acad. K. Popov, Plovdiv. He obtained the Master's degree in 1995 at the FMI of Plovdiv University "Paisiy Hilendarski", specialization Algebra and Number theory. He defended a doctoral thesis for the Ph.D. degree in professional field 4.5 Mathematics, scientific specialty "Algebra and number theory" at IMI, BAS in 2018 and a dissertation for the scientific degree "Doctor of Sciences" in the same specialty again at IMI-BAS in 2020.

Since 2018, Petar Danchev has been working in the "Algebra and Logic" section, IMI, BAS successively as an assistant, chief assistant, and since April 2021 he has held the academic position of "Associate Professor".

The set of the documents submitted by the candidate show that Assoc. Prof. Peter Danchev meets the requirements of Art. 24 of the ADAP of the RB, and Art. 53 of the RIADAP of the RB for the occupation of the academic position "Professor".

2. General characteristics of the applicant's scientific work and achievements

The full list of scientific works of Associate Professor Petar Danchev consists of 402 publications, and for participation in the current competition 15 scientific publications have been presented, all published in the period from 2019 to 2024. Eight of them are published in specialized international journals with impact factor (IF) and corresponding quartile in Web of Science, and the remaining seven are publications in impact-ranked scientific journals (SJR, Scopus). I confirm that none of the 15 publications submitted for the competition have been used in the previous procedures (for ONS "Doctor", scientific degree "Doctor of Science") and competitions (for chief assistant, associate professor), and that there is no plagiarism.

From the report submitted by Assoc. Prof. Petar Danchev on the fulfillment of the minimum national requirements (under Art. 2b, para. (2) and (3) of the ADAP of the Republic of Bulgaria) and the additional requirements (Art. 2., (2) from the Rules on the Terms and Requirements for Acquisition of Scientific Degrees and Occupation of Academic Positions of the IMI, BAS) under a competition for the academic position of "professor" in Professional field 4.5. Mathematics, accompanied by the necessary evidences for verification in the world scientific information databases, shows that the applicant exceeds both the minimal national requirements and the specific ones of the internal regulations of IMI and BAS.

3. Description and evaluation of the candidate`s teaching experience

In the documents presented by Assoc. Prof. Petar Danchev there is no information about his teaching work at IMI. I have no information about his work with students and Ph.D. students, nor about those who defended his thesis under his supervision. Since I do not know the candidate well enough, I cannot give an objective assessment on this criterion, but I believe that for a scientist with so many publications, it is desirable to have more active work with students and Ph.D. students.

4. Detailed analysis of the scientific and applied achievements of the candidate contained in the materials submitted for participation in the competition

The scientific interests of Assoc. Prof. Petar Danchev are in the field of ring theory, algebras and their applications.

Following the numbering from the list of publications submitted by the candidate, papers [1,14,15] deal with issues related to π-regular rings. Some non-trivial generalizations of classical regular and π-regular rings are explored, and connections to other classes of rings are considered.

In articles [2,3,4,7,11,12], a number of new results were obtained, devoted to possible decompositions of arbitrary (nilpotent) square matrices in matrix rings as a sum of special elements with certain properties.

In publications [5,9] generalizations of Jacobson's classical theorem are considered, and in article [5] it is proved that the ring R is commutative if for each element x of the ring R there exist two natural numbers m and n with different parity, for which $x^m = x^n$, and in article [9] different approaches for proving commutativity of rings are considered.

Publications [6,8,13] are devoted to issues related to π-rings, and in [6,13] these rings are characterized in relation to other types of rings – periodic and involution rings.

In the article [10] n-generalized commutators in rings are studied and it is proved that if R is a noncommutative simple ring and n>2, then every n-generalized Lie ideal of R contains a nonzero ideal.

The abstracts of the publications and the summary of the scientific contributions presented by the candidate, although in a rather short format, accurately and clearly reflect the contents and the results of the publications.

5. Approbation of the scientific contributions

Associate Professor Petar Danchev presented a list containing 9 citations of the publications with which he participated in this competition, as well as 20 citations of his other articles. Assoc. Prof. Danchev's profile in Scopus shows that he has an h-index of 13, and his publications have been repeatedly cited up to date. I have listened to several of his presentations at various scientific forums and I have excellent personal impressions from them.

Seven of the publications presented in the competition are single-authored, and the remaining eight publications are co-authored, 6 with one co-author and 2 with two co-authors. I believe that the contribution of Assoc. Prof. Petar Danchev in the joint publications is equal

to the contributions of the respective co-authors. I have no information and I am convinced that there is no plagiarism or auto-plagiarism.

Conclusion

Having become acquainted with the documents and scientific papers presented in the competition and on the basis of the analysis of their importance and the scientific and applied contributions contained therein, I **confirm** that the scientific achievements meet the requirements of the ADAP of the Republic of Bulgaria, the Rules for its Implementation and the corresponding Rules of the Bulgarian Academy of Sciences and the Institute of Mathematics and Informatics for the occupation by the candidate of the academic position "Professor" in the scientific field and professional field of the competition. In particular, the applicant meets the minimal national requirements in the professional field and no plagiarism has been detected in the scientific papers submitted for the competition.

I **give** my **positive opinion** to the application.

On the basis of the above said, I **strongly recommend** to the Scientific Jury of the competition to propose to the Scientific Council of the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences to select Associate Professor Peter Vesselinov Danchev, Doctor of Science, for the academic position "Professor" in professional field 4.5. Mathematics, in this area, with scientific specialty Algebra and number theory (non-commutative rings and algebras).

November 19, 2023   **S**ignature: ....

/ Prof. Maya Stoyanova, Ph.D. /