

STATEMENT REPORT

On the announced competition for a position of

„Professor“

in the professional field:

4.5. Mathematics (Algebra, Coding theory and applications),

at the Sofia University „St. Kliment Ohridski“ (SU),

Faculty of Mathematics and Informatics (FMI),

announced in the State Gazette (Darzhaven vestnik) no. 63 / 30.07.2021 г.

and at the websites of the FMI and SU.

Author of the Statement Report: **prof. PhD Nikolai Lazarov Manev,**

at The Institute of Mathematics and Informatics - BAS

as a member of the Scientific Jury according to the Order no. ПД 38-475 / 28.09.2021 г.

of the на Rector of SU.

There is only one applicant:

Associate professor PhD Maya Miteva Stoyanova

I. General description of the procedure and the applicant.

1. Description of the documents presented by the applicant.

Applicant's documents correspond to the requirement of the government [Act on Development of the Academic Staff in the Republic of Bulgaria](#) and SU (see ЗРАСРБ, ППЗРАСРБ and ПУПИИ-СЗАДСУ).

Maya Stoyanova presents for evaluation 13 her papers: 6 of them with impact factor (IF), 2 with SJR, and the rest can be found in Web of Science (without IF), Scopus (without SJR), MathSciNet, zbMATH, and/or in IEEE Xplore. These papers have not been used for acquiring the PhD degree and her previous academic positions. The total number of publications of the applicant is 46.

The set of application documents includes also 16 other documents, namely: CV, copies of diplomas for Magister, PhD, and Associate professor, information for teaching work-load of the applicant, information that the applicant meets minimal national requirements for the position as well as the Regulations for the conditions and rules for acquiring academic position at SU, author's summary, list of citations, etc.

All documents are prepared with much care and give detailed information about teaching and research activities of Maya Stoyanova.

2. Biographical data about the applicants.

Maya Stoyanova was born on 28.02.1969 г. She acquires the degree Magister in mathematics with specialization in Geometry in 1992 г at the FMI of SU. The Ph.D. degree was conferred on her in 2009 after the defense of the thesis "On the structure of some spherical codes and designs". The thesis was written at the department Mathematical foundations of Informatics of the Institute of Mathematics and Informatics, Bulgarian Academy of Sciences under supervision of Peter Boyvalenkov, Since 1992 she is at part-time, and since 1999 at fulltime position at FMI. Recently the applicant is Associate professor at the department Algebra of FMI. She has also administrative experience as chief of department and vice-dean of FMI.

3. General characterization of the research and the results of the candidates.

The submitted information concerning article 26 of the [Act on Development of the Academic Staff in the Republic of Bulgaria](#), demonstrates that the candidate not only meets, but she significantly exceeds the legislative requirements. Her indicators "B" and "T" are 186 and 276 points while the required values are 100 and 200, respectively. Indicators D and E exceed the minimal requirements, too.

The scientific contributions of Maya Stoyanova are original and there are no doubts about plagiarism. The fact that her papers are published in prestige journals with high IF is attestation for their originality and high scientific level.

4. Characterization of the educational activity of candidates

Maya Stoyanova has given seminars and lectures on all basic algebraic courses to students of SU with different specialty as well as on additional electable by students courses. As far as I am concerned she is a reputable and likeable lecturer.

Maya Stoyanova was a supervisor of PhD student Tanya Marinova which successfully acquired PhD degree and co-supervisor of Tedis Ramaj also successfully acquired PhD degree.

5. Analysis of scientific contributions of the candidate presented in the submitted papers.

Scientific results obtained in the papers included in the submitted documents of the candidate are in two mathematical areas:

- Orthogonal Arrays: papers with numbers [3], [5], [6], [8], [9], [12], [13].
- Energy of codes and designs in Hamming spaces: papers [1], [2], [4], [7], [10], [11].

Two papers from the first group are with IF and one with SJR. The obtained results are mainly nonexistence of orthogonal arrays with given parameters. Such results give new lower bounds for the indexes. In the paper [9] new bounds for the covering radius of orthogonal arrays considered as codes are obtained.

In the second group paper with numbers [1], [2], [4], [7] are with IF. The obtained in them results are new bounds about cardinality and energy of codes and designs in Hamming and Euclidian spaces.

Scientific contributions of the candidate are enrichment and extension of the knowledge as well as development of new methods for solving the studied problems.

The applied declarations of the coauthors of Maya Stoyanova and my personal impressions show that her contributions to joint papers are equipollent.

Maya Stoyanova has attached a list of 30 citations of her papers in papers and monographs of other authors (without coauthors), which are indexed in Web of Sciences and Scopus, and list of 34 citations in other sources. The information is very detailed with complete bibliographical information. My conclusion is that Maya Stoyanova is well known to the researchers working in her scientific area.

6. Critical notes and recommendations

I have no critical notes.

7. Reviewer's opinion about the candidate

My personal impressions are that Maya Stoyanova fully corresponds to Society's concept about professor in the Sofia University „St. Kliment Ohridski”

8. Conclusions about the candidature

After my acquitting with the presented by the candidate documents and papers based on the careful analysis of them I **confirm** that the scientific contributions of the candidate meet the requirements of [Act on Development of the Academic Staff in the Republic of Bulgaria](#), the Regulations for its application, and the Regulations for the conditions and rules for acquiring scientific degree of the Sofia University “St. Kliment Ohridski” for taking on the position “Professor” in the announced scientific area. I give my **positive estimation** of the candidature.

II. GENERAL CONCLUSION

Based on aforesaid in this report I **strongly recommend** the Scientific Jury to propose the Scientific Council of the Faculty of Mathematics and Informatics **to confer on Maya Stoyanova the rank and position “Professor” at the Faculty of Mathematics and Informatics in the professional field 4.5. Mathematics (Algebra, Coding theory, and applications).**

01.11.2021.

Reviewer:

(Prof. PhD Nikolai Manev)