Report

on a competition for the occupation of an academic position "Associate Professor" in the scientific specialty of Mathematics (Differential equations), for the needs of Sofia University "St. Kliment Ohridski "(Sofia University), Faculty of Mathematics and Informatics (FMI), announced in the State Gazette no. 65 **on 16.08.2019** and on the websites of FMI and SU

The report was prepared by: Corresponding member Prof. D-r of Mathematical Sciences Emil Horozov, Facultyof Mathematics and Informatics at Sofia University, as a member of the competition jury in Mathematics under the competition according to Order No. РД 38-593/11.10.2019 of the Rector of Sofia University.

Only one candidate has applied for participation in the announced competition: principal assistant professor Dr. Tsvetan Dimitrov Hristov from FMI, SU.

I. General description of the presented materials
1. Details of the application
The submitted documents from the applicant comply with the requirements of ЗРАСРБ, ППЗРАСРБ and the Regulations on the conditions and procedure for acquiring scientific degrees and occupying academic positions at Sofia University "St. Kliment Ohridski" (ПУРПНСЗАДСУ). The candidate Tsvetan Dimitrov Hristov has presented a list of 14 works, including 13 articles in Bulgarian and international scientific journals and conference proceedings volumes. He has presented an instruction manual for students in differential equations, too.

2. Details on the applicant

D-r Tsvetan Hristov was born in 1974 in the town of Cherven Briag He received his M.Sc. in mathematics from the Faculty of Mathematics and Informatics of Sofia University "St. Kliment Ohridski" in 1998 under the supervision of Prof. N. Popivanov Then he worked for about 2 years IMI, BAS. After that he started his Ph.D. studies again under the supervision of Prof. N. Popivanov He obtained his Ph.D. in 2006.

3. General characteristics of the applicant's scientific work and achievements
Tsvetan Hristov works in the field of partial differential equations. In particular he is interested in multidimensional generalizations of Darboux problem for equations with singularities and of mixed type.

The scientific works comply with the minimum national requirements (under Art. 2b, para 2 and 3 of the ЗРАСРБ) and respectively with the additional requirements of the Sofia University "St. Kliment Ohridski" for the occupation of the academic position of "Associate Professor" in the scientific field and professional direction of the competition. Moreover, the presented documents show that the candidate surpasses considerably the required minimum.

The scientific papers submitted by the applicant do not repeat those of previous procedures for the acquisition of a scientific title and academic position. There is no proven plagiarism in the scientific works presented at the competition.

He has presented declarations by his co-authors Prof. N. Popivanov and A. Nikolov that his contribution is equal to theirs.

4. Characterization and evaluation of the applicant's teaching activity Dr Hristov has diverse teaching activities. He has benn lecturing and performed problem sessions in ordinary and partial differential equations, Calculus. Also he has given a course in variational methods in differential equations in English. There is a letter by Associate Professor G. Dachev, who considers the teaching of the candidate as very successful. I personally have no direct impressions.   On the other hand I have been present at his scientific lectures and found them very clear and well structured, which corresponds to the letter by ass. Prof. G. Dachev. The teaching has resulted also in an instruction manual in differential equations. Apart from the teaching Dr Hristov has supervised one student in the M.Sc program.

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

The candidate works predominantly in multidimensional generalizations of the Darboux problem. The latter have been introduced by M. Protter in 1952 who has found the reasonable analog of the this problem in the 3-dimensional case. In different situations the candidate introduces and studies Protters's problem for equations of the Tricomi and Keldysh type. He investigates problems with lower order terms as well as problems with degenerations. For such problems he obtains existence and uniqueness theorems for the generalized solution.

The candidate has presented also a paper on electronic evaluation of the students in differential equations in the program of software engineering.

Dr Hristov has at least 70 citations. 10 of them are in journals with IF.

6. Critical remarks. Dr. Hristov is an expert in the field, he works in. On the other hand I consider that he would profit if he expands the area of his interests. This also will help him in next prmotions, for which I believe he has the abilities.

6. Personal impressions of the applicant
I know Tsvetan for many years. He has always made good impression. In particular he fulfilss with devotion both his scientific and pedagogical duties. Apart from it he is involved in service to community. He is member of the Faculty council of FMI and the Academic council of SU. As a person he is modest and helpful.

7. Conclusion on the application

Having become acquainted with the materials and scientific works 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 comply with the requirements of the ЗРАСРБ, the Regulations for its implementation and the corresponding Regulations of Sofia University "St. Kliment Ohridski "for the position of the candidate in the academic position "Associate Professor" in the scientific field and professional direction of the competition. In particular, the applicant satisfies the minimum national requirements in the professional field and no plagiarism has been found in the scientific papers presented at the competition.

II. GENERAL CONCLUSION

On the basis of the above, I recommend that the scientific jury propose to the competent body for the selection of the Faculty of Mathematics and Informatics at Sofia University "St. Kliment Ohridski" to elect Tsvetan Dimitrov Hristov to take the academic position of "associate professor" in the professional field of Mathematics (Differential equations).

December 10, 2019

Signature of the author of this report:

(Corr. member Prof. Dr of Math Sciences. Emil Horozov)