To the Chairman of the Scientific Committee,

according to Ordinance 178 from 19 July 2019

of the Director of IICT - BAS

OPINION

by Assoc. Prof. Sofiya Ivanovska, IICT-BAS, member of the scientific committee for Contest for an academic position Professor, appointed by Ordinance No 178 from 19 July 2019 of the Director of IICT-BAS, announced in State Gazette, issue 41 from 21 May 2019
Specialty: Mathematical modeling and application of mathematics
Professional area: 4.5. Mathematics
Candidates: Associate Prof. Todor Vasilev Gurov, Ph.D., IICT-BAS (only candidate)

1. Brief biographical information

Todor Gurov has a degree in Mathematics from the Faculty of Mathematics and Mechanics at Sofia University St. Kliment Ohridski. In 1999 he received the Doctor educational and scientific degree in Mathematics from the Center for Informatics and Computer Technology at BAS. The field of his degree corresponds to the field of the this contest.

The candidate has started his career at CLPP, now IICT in 1993 as a mathematician. As of now, he has 32 years of overall work experience, out of which 23 in the scientific research field as a Scientific Researcher III–II–I degree, Senior Scientific Researcher II degree and Associate Professor.

He had visited the Department of Computer and Information Science at CUNY Brooklyn College for 2 years, on a post-doctoral position. He had also held visiting researcher in Scotland and France.

2. General description of the materials presented by the candidate

The materials for the participation in the contest are presented in full accordance with the current Law on development of the academic staff in the Republic of Bulgaria, the Implementing Rules for that law and also with the Implementing Rules of BAS and the Institute of Information and Communication Technology, BAS as of the time of the contest announcement.

3. Reflections of the scientific publications of the candidates in the scientific literature (known citations)

Group E of the table below shows a total number of points from 174 presented citations found out in world-renowned scientific information databases such as Scopus, Web of Science or others, and each citation has a link to the respective citing scientific publication.

4. General description of the activities of the candidate

For his participation in the contest Assoc. Prof. Todor Gurov has presented a total of 26 articles in refereed scientific publications (all of them after becoming an Associate Professor), out of which 22 have Impact Factor and/or SJR index and also one book chapter. Most of the articles have been published by renowned scientific publishers such as Springer and Elsevier, and all of them are indexed by the international databases Web of Science and/or Scopus.

The scientific and applied results by Assoc. Prof. Todor Gurov are in the field of Monte Carlo and quasi-Monte-Carlo algorithms and applications. In his Contribution Reference, Assoc. Prof. Todor Gurov has pointed out correctly the main fields of his scientific contributions. The fields in which his scientific contributions stand out based on the 26 presented publications are:

- Development of Monte Carlo and hybrid Monte Carlo algorithms for simulation of quantum transport and in electronic transport in ultra-small devices in a mixed mode
- Development of the Grid application SALUTE by integrating of several Monte Carlo, quasi-Monte-Carlo and hybrid algorithms for solving quantum-kinetic equations
- Monte Carlo approach to the equation of rendering (model of Cook-Torrance) and for reconstruction of densities
- Research on the sensitivity of the Monte Carlo and quasi-Monte-Carlo algorithms for solving multidimensional integrals and integral equations with random number generators and application of variance reduction techniques
- Research on scalability and the energy efficiency of intensive Monte Carlo and quasi-Monte-Carlo algorithms on supercomputer systems

As a scientific advisor, he has two Ph.D. students that have finished their education in 2019 with the option to defend their dissertations. Assoc. Prof. Todor Gurov has taught a Master-level course at New Bulgarian University, Bachelor-level course at Southwest University and Numerical Methods courses at the Faculty of Mathematics and Informatics at Sofia University St. Kliment Ohridski.

Assoc. Prof. Todor Gurov has presented a list of 13 scientific projects (7 international and 6 national) in which he had participated and he has led the Bulgarian team of 11 projects (7 international and 4 national scientific projects).

His scientific metrics are summarized in the following table:

Group of indicators	content	minimum score for a professor	candidate score
A	Indicator 1	50	50
C	Indicator 3 or 4	100	178
D	Sum of indicators from 5 to 10	260	371
E	Sum of points in indicator 11	140	444
F	Amount of indicators 12 to end	150	630

It is evident from contents of the table that Assoc. Prof. Todor Gurov significantly exceeds the required numbers of points for each indicator group for obtaining the academic position of Professor.

5. Evaluation of the personal contributions of the candidate

The presented publications for participation in the contest are with co-authors, this shows teamwork and allows building a better scientific research team. There is no doubt in his leading role in obtaining the scientific results and the stated contribution of the candidate in the development of the respective scientific field.

6. Critical notes and suggestions to the candidate

I have no significant critique on the materials presented to the contest by Assoc. Prof. Todor Gurov. The documents are prepared and presented precisely, in the right order, and in full.

7. Personal impressions from the candidate

I have known Assoc. Prof. Todor Gurov since I started working at CLPP-BAS, currently IICT-BAS. I have worked with him on national and international projects funded by EU framework programs. Leading these projects, he has always shown his exceptional organizational and administrative skills. I would also like to point out his responsiveness and his desire to help the younger colleagues and the advices for their career development that he has given them. Assoc. Prof. Todor Gurov has always shown precision and professionalism in his academic work, complementing his in-depth knowledge in the field of his scientific research.

CONCLUSION

Given everything above-mentioned, I evaluate the previous scientific research work of Assoc. Prof. Todor Gurov at a very high level. I am convinced that he satisfies the requirements of the current Law for development of the academic staff in Republic of Bulgaria and the Implementing Rules for that law for obtaining the academic position of Professor and significantly exceeds the recommended requirements of IICT-BAS for obtaining the academic position of Professor. I recommend to the esteemed scientific committee to propose to the Scientific Council of the Institute of Information and Communication Technologies, BAS to appoint Assoc. Prof. Todor Gurov to a position of Professor in professional area 4.5 Mathematics, field Mathematical modeling and applications of mathematics.

12 September 2019

/ Assoc. Prof. Sofiya Ivanovska /