

OPINION

on a competition for the occupation of an academic position
“Professor”,
in the professional field 4.6. Informatics and computer sciences (Information Technologies)
for the needs of the Sofia University St. Kliment Ohridski,
Faculty of Mathematics and Informatics (FMI),
declared in the State Gazette No. 48 of 26.05.2020 and on the websites of FMI and SU

The opinion was prepared by Full Professor Toni Chehlarova from the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences, as a member of the scientific jury for the competition according to Order No. ПД 38-344 from 23.07.2020 of the Rector of Sofia University.

Only one candidate has submitted documents for participation in the announced competition: Assoc. Prof. Pavel Hristov Boytchev from the FMI of SU.

I. General description of the materials presented

1. Details of the application

The submitted documents from the applicant comply with the requirements of the Development of Academic Staff Act in the Republic of Bulgaria and the Regulations on the conditions and procedures for acquiring scientific degrees and occupying academic positions at the Sofia University St. Kliment Ohridski. To participate in the competition the candidate Assoc. Prof. Pavel Hristov Boytchev has presented a list of 1 monograph, 29 articles in scientific journals (14 of which in SCOPUS), 69 articles in conference volumes, 1 textbook and 2 books. For participation in the competition, 1 monograph, 4 articles in scientific journals, 4 articles in conference volumes and 2 books are presented.

Other documents and references supporting the candidate's achievements are also presented.

2. Details of the applicant

Assoc. Prof. Pavel Boytchev is Head of the Department of Information Technology at Sofia University “St. Kliment Ohridski”, Faculty of Mathematics and Informatics.

He graduated in Informatics at Sofia University "St. Kliment Ohridski". Since 2001 he has been a doctor of scientific specialty 01.01.12 "Informatics". He has also worked at the University of Telecommunications, Chofu, Tokyo, Japan; Stevens Institute of Technology, School of Engineering, Hoboken, New Jersey, USA and others. He has experience in design and development of software for 3D graphics, educational modules, programming languages, skills for creating multimedia products - interactive models, computer movies, videos and animations and more.

In the last 10 years he has participated in 14 research projects. He has presented papers at 26 scientific conferences and seminars.

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

The main scientific, scientific-applied and scientific-artistic contributions, which are reflected in the publications of Assoc. Prof. Pavel Boytchev presented for the competition, are in the following areas: educational software and educational content; ontologies, taxonomies and metadata; programming languages and translators for them.

The scientific works meet the minimum national requirements (according to Art. 2b, p. 2 and 3 of the Development of Academic Staff Act in the Republic of Bulgaria) and respectively the additional requirements of Sofia University "St. Kliment Ohridski" for holding the academic position of "professor" in the scientific field and professional direction of the competition. The scientific papers submitted by the candidate do not repeat those from previous procedures for acquiring a scientific title and academic position. There is no legally proven plagiarism in the scientific papers submitted at the competition.

4. Characterization and evaluation of the applicant's teaching activity

Assoc. Prof. Pavel Boytchev has developed and taught disciplines such as "Fundamentals of Computer Graphics", "Languages and Learning Environments", "Computer Graphics", "Computer Graphics with WebGL", "Applied Computer Graphics with Elica", "Computer Training Systems " and others.

Under his supervision there are three successfully defended graduates and two PhD students.

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

I accept the scientific and scientific-applied contributions, reflected in the reference of Assoc. Prof. Pavel Boytchev. The monograph presents the results in three domains – the creation of educational software, the creation of university disciplines and the creation of educational content. The software provides a learning environment for the disciplines, for self-learning and for generating new educational content. The created software provides a learning environment for conducting the developed disciplines and for self-learning. New educational content is also generated through this software. The following are presented: two programming languages; four educational environments; several stand-alone applications for research activities, for learning with games; for 3D models and visualization of natural sciences; six university disciplines; three software tools for working with metadata; examples of created educational content; educational concepts, for example to assess students through gamification.

There is a reference for 189 citations of scientific works of Assoc. Prof. Pavel Boytchev, of which 13 (citations in scientific journals in Scopus) are on the competition. Four papers have received awards at international forums. Scientific and artistic works are presented, five of which have international recognition, such as the computer-generated film "A journey in The Mandelbrot Set", which won first place in the Fractal Movies section of the international online competition Spring 2010 Fractal Art Competition. Assoc. Prof. Pavel Boytchev is the author of illustrations on the covers of scientific journals.

6. Critical remarks and recommendations

I have no critical remarks and recommendations for the peer-reviewed works.

7. Personal impressions of the applicant

My personal impressions are from joint work on projects and participations of Assoc. Prof. Pavel Boytchev with reports at conferences and seminars. The created computer applications for the teaching of stereometry in the secondary school under the DALEST project have been used for more than 14 years in the Bulgarian school. His reports are precisely prepared and attractively presented. His exhibitions have impressed a number of teachers and students and motivated them for research work.

8. Conclusion on the application

After getting acquainted with the materials and scientific works presented in the competition and based on the analysis of their significance and contained in them scientific and scientific-applied contributions, I **confirm** that the scientific achievements meet the

requirements of ZRASRB, the Regulations for its application and the respective Regulations of Sofia University "St. Kliment Ohridski" for holding the academic position of "professor" in the scientific field and professional direction of the competition. In particular, the candidate satisfies the minimum national requirements in the professional field and no plagiarism has been established in the scientific papers submitted at the competition.

I give my **positive** assessment of the candidacy.

II. OVERALL CONCLUSION

Based on the above, I **recommend** the scientific jury to propose to the competent authority for the selection of the Faculty of Mathematics and Informatics at Sofia University "St. Kliment Ohridski" to elect **Assoc. Prof. Dr. Pavel Hristov Boytchev** to take the academic position of "**professor**" in a professional field 4.6. Informatics and computer sciences (Information Technologies), scientific field 4. Natural sciences, mathematics and informatics.

15.09.2020

Opinion prepared by: Prof. Toni Chehlarova