

## OPINION

for the competition for academic position of "Associate Professor"  
in the field of higher education 5. Technical sciences  
in a professional direction  
5.2. "Electrical engineering, electronics, automation",  
scientific specialty "Biomedical equipment and technologies",  
announced in SG no. 86 of 6 October 2020,  
with candidate: Asst. Prof. Zhivko Borisov Bliznakov, PhD

Member of the scientific jury:  
Assoc. Prof. Margreta Parashkevanova Vasileva, PhD

### **1. General description of the research and applied research activities of the candidate**

The candidate in the competition for associate professor Dr. Bliznakov has presented information about his research and applied-research activity through a reference, according to art. 2b of ZRASRB for fulfilment of minimum national requirements for holding the academic position "Associate Professor" in the field of higher education "Technical Sciences".

For participation in the competition, he presented the full text and summaries of 28 publications, 23 of which referenced in SCOPUS. The publications are grouped as "Habilitation work" - scientific publications in journals that are referenced and indexed in world-famous databases with scientific information" (10 articles), Scientific publications in publications that are referenced and indexed in world-famous databases with scientific information (13 articles) and Scientific publications in non-referenced journals with scientific review or in edited collective volumes (5 articles).

The scientifically-applied developments are thematically related to his research activity.

He has participated in 23 projects with national and European funding.

### **2. Assessment of the pedagogical state and activity of the candidate**

Dr. Bliznakov delivers lectures and exercises in the disciplines "Medical Equipment", "Information Systems in Healthcare" and "Informatics".

His ability to work with students makes a great impression.

### **3. Main scientific and scientifically-applied contributions**

The scientific and scientifically-applied contributions of the candidate are expressed in: Creation of new algorithms for reconstruction of tomographic images; Research of new materials for preparation of physical models for testing of new X-ray techniques; New methods for modelling small in shape and volume composite parts composed of carbon fibers reinforced polymers; Development of Monte Carlo based software simulators for research in the field of X-ray imaging and radiation therapy; Development of new computer models of the female breast for research in the field of X-ray imaging; Development of a comprehensive integrated software system to improve the management of medical equipment.

Another group of the candidate's contributions is related to the reformation and harmonization of the curricula in the field of biomedical engineering in Europe.

The teaching and methodological contributions of the candidate are related to the development and implementation in the educational process of new, attractive methods for training in the field of computer simulations in medicine.

From the citations' reference of the scientific works of Dr. Bliznakov, there are 5 known citations in scientific journals, referenced and indexed in world-famous databases with scientific information.

### **4. Significance of the contributions for the science and practice**

Dr. Bliznakov research activity has contribution to theory and practice, as it is dedicated to current issues related to the creation of computer models, simulations, algorithms and software applications in diagnostic imaging using X-rays, management of medical equipment in healthcare, as well as development of dedicated software systems for this purpose.

The results of his research are made available to specialists through his publishing activity.

The submitted documents for participation in the competition meet the requirements for the quantitative indicators of the criteria for holding the academic position "Associate Professor".

Dr. Bliznakov is well-known amongst the scientific society dealing with the specific issues in the area of biomedical engineering.


### **5. Critical remarks and recommendations**

I have no critical remarks about the candidate. I recommend him continue working in the field of biomedical equipment and technologies and the current trends related to their development and management.

## CONCLUSION

**On the basis of the presented scientific papers, their significance, the scientific, scientifically-applied and applied contributions they contain, and the results for the points obtained by the groups of indicators, according to art. 2b of ZRASRB, I propose Dr. Zhivko Borisov Bliznakov to take the academic position of "Associate Professor" in professional field 5.2. "Electrical Engineering, Electronics, Automation", in the scientific specialty "Biomedical Engineering and Technology".**

Date:  
14. 02. 2021 г.

Member of the jury:.....

/Assoc. Prof. Dr. Eng. M. Vasileva/