

STATEMENT

Of Prof. Nikolay Dimitrov Madzharov, PhD
Head of Electronics department,

Faculty of „Electrical engineering and Electronics”, Technical University - Gabrovo.
Member of the Scientific Jury pursuant to Order № P-109-559/04.12.2020 of the
Rector of Medical University „Prof. Dr. Paraskev Stoyanov” – Varna

Subject: Competition for the academic position of „Associate Professor“ in the field of higher education „5. Technical Sciences”, professional field „5.2. Electrical Engineering, Electronics and Automation“, in the scientific specialty „Biomedical Engineering and Technology“, for the needs of the Faculty of „Public Health“, Department of „Medical Equipment, Electronic and Information Technologies in Healthcare“, Medical University „Prof. Dr. P. Stoyanov“ - Varna and published in the State Gazette, issue. 86 of 6.10.2020.

Only one candidate participated in the announced competition - Assistant Eng. Zhivko Borisov Bliznakov, PhD, who submitted all necessary documents for participation in the competition, meeting the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for its implementation and the Regulations for the development of the academic staff (RDAS) of the Medical University „Prof. Dr. P. Stoyanov“ - Varna.

I. Short details of the applicant's career development.

Assistant Eng. Zhivko Borisov Bliznakov, PhD was born on 2.12.1973 in Varna. In the period 1991 - 1996 he graduated with a master's degree from the Technical University - Varna, specialty “Electronic Engineering and Microelectronics”. In 1998 obtained a second master's degree in „Biomedical Technology“ at the University of Patras, Greece. At the same university in 2003 he defended his doctoral dissertation and was awarded the degree „Doctor” in „Biomedical Technologies”.

The beginning of his research work was in 2004 as Head of the Department of „Biomedical Technology Management”, Institute of „Biomedical Technologies”, Patras, Greece and as a researcher in the Laboratory of „Biomedical Technologies”, Department of „Medical Physics”, University of Patras, Greece. In 2013 was appointed as a research associate and part-time lecturer in the laboratory of „Computer Simulations in Medicine” at the Technical University - Varna. In 2020, after a competition, he was elected an assistant in the Department of „Medical Equipment, Electronic and Information Technologies in Healthcare”, Faculty of „Public Health”, MU „Prof. Dr. P. Stoyanov” – Varna.

In addition to in-depth research, the candidate has extensive administrative and public activities - Head of the „Center for National and International Projects”, Technical University - Varna (2016 - 2019) and Deputy Director of the „Center for Simulation Techniques and Medical Equipment“, MU „Prof. Dr. P. Stoyanov” - Varna (2019 - 2020).

Assistant Eng. Zhivko Borisov Bliznakov, PhD uses English, Greek and Russian in his professional and research activities.

II. General characteristics of the applicant's research and applied activities.

The research and scientific-applied activity of Assistant Eng. Zhivko Borisov Bliznakov, PhD is in the field of: Computer models, simulations, algorithms and software applications in image diagnostics using X-rays; Management of medical equipment in healthcare and development of specialized software systems for this purpose; Reforming and harmonizing curricula in the field of biomedical engineering in Europe.

The candidate has presented materials - scientific publications, reference for citations, participation in research projects, lectures and exercises in disciplines that fully cover the minimum national requirements for the academic position of „Associate Professor” for the field of „Technical Sciences” in higher education, laid down in Art. 2b of the Law for academic careers and positions in the Republic of Bulgaria and RDAS in MU „Prof. Dr. P. Stoyanov” - Varna.



Regarding the national criteria for academic position of „Associate professor”, the applicant has presented the following proofs:

Criteria group A (at least 50 points are required) – PhD thesis – **50 points**;

Criteria group B (at least 100 points) - **B4** scientific publications equivalent to a monographic work - *10 papers in co-authorship are presented by the applicant, six of which with IF* - **100.96 points**;

Criteria group Γ (at least 200 points)- the group **Γ7** comprises 13 scientific publications indexed in worldwide scientific databases, *two of which with IF* - **167.32 points**; **Γ8** comprises 5 scientific papers published in co-authorship in journals, conference proceedings and collective works not listed or indexed in the worldwide scientific databases – **36.67 points** – the total is **203.99 points** for this criteria group.

Criteria group Δ (at least 50 points required) – The academic report, which candidate presents for participation in the competition, contains 1 publication, which is cited 5 times in scientific journals, referenced and indexed in world-famous databases - **Δ12** - **a total of 50 points**. Additionally, there are citations of scientific publications with which the candidate participates in the competition - in SCOPUS - 51 and Google Scholar - 129 numbers.

III. Assessment of the pedagogical preparation and activity of the candidate.

The teaching career of Assistant Eng. Zhivko Borisov Bliznakov, PhD, began at the Faculty of „Medicine” at the University of Patra and at the Faculties of „Mechanical Engineering” and „Electrical Engineering and Computer Technology” at the National Technical University of Athens in the discipline „Clinical Engineering” for the academic years of 2004 until 2011. In the period 2009-2012 he participates in the teaching process in the discipline „Special Topics - IT Applications in Medicine” at the Faculty of „Medicine” of the University of Patra, Greece.

At the Technical University - Varna is a part-time lecturer in the discipline of „Clinical technique” with a schedule of 91.2 hours for 2017, 18.4 hours for 2018 and 33.5 hours for 2019. For the academic years in the period 2019-2021 there is a study load of 260 hours in MU „Prof. Dr. P. Stoyanov” - Varna in the different disciplines.

He is the co-author of three teaching aids written in English - a textbook, a guide for practical exercises and a lecture course. There are active links in Google Scholar, Research gate, ORCID, ResearcherID, eLibrary.

The candidate has participated in 5 national and 18 international research projects. In the last five years he has received 7 certificates from specialized trainings held in Napoli (Italy), Leuven (Belgium) and Varna in the field of technical equipment and software applications in medicine.

Proof of the reputation of the author in the scientific community are references by prominent professors and scientists: Prof. Nicholas Pallikarakis, University of Patras, Greece; Prof. Paolo Rousseau, University of Napoli - Federico II, Italy; Prof. Hilde Bosmans, Catholic University of Leuven, Belgium; Dr. Simona Avramova-Cholakova, Bulgarian Society of Biomedical Physics and Engineering.

IV. Main scientific and applied contributions.

I accept a large part of the contributions, formulated by the author on the basis of the publications, for participation in the competition for academic position of „Associate Professor” - a total of 28 scientific articles and reports, eight of which with IF. In essence, they are mainly of a scientific and scientific-applied nature.

Scientific contributions

1. Creation of new models, algorithms and methods for modeling and analysis of tomographic and realistic three-dimensional software images in medicine [B4-01, B4-03, B4-04, B4-07, B4-09, Γ7-07].

Scientific-applied contributions

1. Research of new materials and models for creation of physical objects in the field of X-ray image diagnostics and for testing of new X-ray techniques [B4-02, B4-06, B4-07, B4-08, B4-09, B4-10].

2. Development of software tools for research, training and increasing the efficiency of conventional technologies used to simulate the process of X-ray imaging in radiology [Г7-06, Г8-01, Г7-01, B4-05].
3. Development of a complete integrated software system for management of medical equipment in healthcare (including in Greece) and classification of withdrawals of medical devices from their manufacturers [Г7-02, Г7-03, Г7-04, Г7-05, Г7-13, Г8-02, Г8-03].
4. Analysis of the current situation and proposal for harmonization of biomedical engineering curricula in European universities [Г7-08, Г7-09, Г7-10, Г7-11, Г7-12, Г8-04, Г8-05].

V. Importance of the contributions for the science and practice.

Evaluation for Assistant Eng. Zhivko Borisov Bliznakov, PhD in the scientific community are the citations from the references in NACID and the databases of Web of SCIENCE, SCOPUS and others. Most of them are by foreign authors, resulting in a H-index of 8. He has participated in a number of international and national projects directly related to innovative methods in Biomedical Engineering and Technology, the results of which have been reported at international indexed conferences and journals. This gives me reason to conclude that the candidate is an established researcher who has presented his results in well-known scientific journals and conferences in the field of competition and has made a technological transfer of his scientific achievements in the educational process and practice.

VI. Critical notes and recommendations

I have no critical remarks on the materials submitted by the candidate for the competition. To continue work in the field of computer models, algorithms and software applications in diagnostic imaging and current issues related to their future use, as well as to deepen and increase the work with graduates and doctoral students in order to pass on their extensive experience in training young scientists and lecturers at MU „Prof. Dr. P. Stoyanov“- Varna.

CONCLUSION

My altogether evaluation is that the applicant has fulfilled the requirements necessary for the academic position of „Associate Professor“ according to the national laws and the procedures for career development of the academic staff in the MU „Prof. Dr. P. Stoyanov“- Varna. **Based on the acquaintance with the presented scientific papers, their significance, the scientific and scientific-applied contributions contained in them, I give a positive opinion to the candidate and recommend to the Honored Scientific Jury to award the academic position „Associate Professor“ to Assistant Eng. Zhivko Borisov Bliznakov, PhD in the professional field „5.2. Electrical Engineering, Electronics and Automation“ in the scientific specialty „Biomedical Equipment and Technologies“ for the needs of the Department of „Medical Equipment, Electronic and Information Technologies in Healthcare“ of MU „Prof. Dr. P. Stoyanov“ - Varna.**

Date: 18.01.2021

Jury member:



(Prof. Nikolay Dimitrov Madzharov, PhD)