

STATEMENT

by Prof. Dr. Eng. Elena Georgieva Koleva,
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Regarding: Procedure for the academic position "professor" in the field of higher education 5. Technical sciences, professional area 5.2 Electrical engineering, electronics and automation and scientific specialty "Biomedical engineering and technologies".

The competition has been announced for the needs of the Department of Medical Equipment, Electronic and Information Technologies in Health Care, at the Faculty of "Public Health" at the Medical University - Varna, according to Order No. P-109-143/23.02.2023 and announcement in the State Gazette, no. 102 of 23.12.2022 with a single candidate Assoc. Prof. Dr. Eng. Kristina Stanimirova Bliznakova.

Additional conditions have been announced for the competition - not to apply the requirement of Art. 137, para. 1, item 6 of the Regulations for the development of the academic staff at the University of Medicine - Varna and the sum of the points for the indicators from item 16 to item 28 for the field of higher education 5. Technical sciences to be 150, without applying the requirement more than 80 points to be formed by indicator 17.

I. Biographical data and career development of the candidate:

Assoc. Prof. Dr. Eng. Christina Bliznakova was born on August 15, 1973 in the town of Shumen. She obtained a Master's degree in electrical engineering at the Technical University - Varna in 1996, specialty in "Electronic Engineering and Microelectronics". In 1998, she received a Master's degree, and then in 2003, a PhD in Biomedical Technologies at the University of Patras, Greece. The topic of her PhD thesis is "Research, development and application of a software platform for modeling and simulations of X-ray images". She is currently studying at the "Paisii Hilendarski" University of Plovdiv in the Master's program for the specialty "Medical Radiation Physics and Technology".

Assoc. Prof. Dr. Eng. Kristina Bliznakova continued her professional development at the Laboratory of Biomedical Technologies, Department of Medical Physics, Faculty of Medicine, at the University of Patras, Greece, where she was a researcher until 2012. Then until 2016 again as a scientific researcher and teacher, she works in the Laboratory of Computer Simulations in Medicine of the Technical University - Varna.

In 2016, she obtained the academic position of "Associate Professor" at the Technical University of Varna, Faculty of Computing and Automation in Professional Area 5.3 "Communication and Computer Technology" in the scientific specialty "Automated Systems for Information Processing and Management".

From 2016 to 2019, Assoc. Prof. Dr. Eng. Kristina Bliznakova received the academic position of associate professor in the "Software and Internet Technologies" department at the Faculty of Computing and Automation at the Technical University - Varna. Since 2019, he is an associate professor in the Department of "Medical Equipment, Electronic and Information Technologies in Health Care", at the Faculty of Public Health of the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.

The aspiration of Assoc. Prof. Dr. Eng. Kristina Bliznakova to continuously increase her qualification skills and knowledge through participation in seminars, trainings, etc., makes a strong impression and it is visible from the presented certificates.

II. Scientific data

A total of 38 peer-reviewed publications were selected for participation in the competition and meeting the minimum scientometric requirements (36 of them in English and 2 in Bulgarian), presenting the candidate's research activity in the period 2016 - 2022 and divided by category. Additionally, 5 peer-reviewed publications in English and referenced in the international SCOPUS database are presented, beyond the minimum scientometric requirements.

To participate in the competition and cover the minimum scientometric indicators in Group B (B), 11 peer-reviewed scientific publications in English, referenced in the international SCOPUS database, with a total of 143.84 points (minimum 100 points) were selected.

A total of 26 scientific peer-reviewed publications (25 in English, 1 in Bulgarian) have been selected for participation in the contest covering the minimum scientometric indicators in Group G (Г), for indicator G7 – 16 scientific publications referenced in the international database SCOPUS (144.08 points), G8 – 10 scientific indicators (75.2 points) and a published book chapter (G9 – 10 points), and the total number of points for indicators in group G is 229.28 (minimum 200 points, of which at least 80 points are for indicator G7). 5 scientific publications outside the competition are also presented - referenced in the international SCOPUS database - a total of 33.66 points

In the contest, 17 citations (D12) were presented for three of the articles included in the contest to meet the minimum requirements - a total of 170 points (the minimum is 100 points). Outside of the minimum requirements, 5 more citations (50 points) were also presented.

The participation in national (2 projects) and international (2 projects) projects gives 60 points, leadership of national scientific or educational projects – 3 projects – 60 points, leadership of an international project – 1 project – 40 points, raised funds – BGN 2,240,000 (448 points), submitted patent application - 20 points, recognized patent application - 40 points. Total for indicators E16-E28 give 688 points (minimum 150 points, more than 80 points from indicator E17 – Guidance of a successfully defended doctoral student, dropped due to the additional conditions of the competition).

The total number of articles by Assoc. Prof. Dr. Eng. Kristina Bliznakova is 70, and the reports are 71. The scientific publications indexed in Scopus are 119. Last but not least are the candidate's participations in national scientific conferences - 38 and 147 participations in international scientific conferences. Assoc. Prof. Bliznakova took part in 18 national and 10 international research projects, as well as in 6 projects for scientific measurements of European

synchronous infrastructures ELETRA, ESRF. The total number of citations of Assoc. Prof. Dr. Eng. Kristina Bliznakova in Scopus is 1092 (without removal of the related citations). These are impressive scientometric data, far exceeding the minimum requirements for scientific publications, citations and leadership or participation in national and international scientific projects.

III. Evaluation of the contributions of Assoc. Prof. Dr. Eng. Kristina Bliznakova

The scientific, scientific-applied and applied contributions of the candidate Assoc. Prof. Dr. Eng. Kristina Bliznakova are impressive. In addition to the publications presented in the competition, citations and participation in national and international projects, Assoc. Prof. Bliznakova also has numerous awards, participation in projects, national and international scientific forums, which testify to her intensive scientific activity, as well as for the obtained high scientific results. Her work has been highly appreciated by distinguished scientists in the field of medical physics and radiobiology. The high number of citations of her scientific publications, as well as the awards she received, speak for the impact and level of her scientific achievements.

The scientific publications from Group B (Б) and Group G (Г) presented in the competition are a total of 38, as well as 5 publications beyond the minimum scientometric requirements, divided into four main thematic areas:

1. New methods for computer modeling of the mammary gland, including new algorithms for modeling tumor formations and materials research, including 3D printing materials to create physical phantoms of the mammary gland for applications using X-rays.
2. New methods for creating physical models (phantoms) of the mammary gland and tumor formations, as well as for the study of materials, including 3D printing materials for the creation of these models for the purposes of X-ray studies.
3. Innovative models, methods and techniques for screening and diagnosis of mammary gland, lung, including new software platforms supporting the evaluation of the proposed methods.
4. New software applications and methods for teaching and scientific research in medicine.

Research contributions are presented in detail in the submitted author's statement of scientific contributions, and more widely - in the applicant's extended habilitation statement. Assoc. Prof. Bliznakova's presentation is systematic and shows the in-depth knowledge and the obtained results and author's contributions in the field of Biomedical Techniques and Technologies. A strong impression is made by the thorough and purposeful research and development over the years of new and more precise methods, practices and tools for image diagnostics, the use of physical and computer anthropomorphic models for screening and diagnosis of the mammary gland. I accept the presented scientific, scientific-applied and applied contributions without remarks.

IV. Evaluation of the participation in scientific and teaching activities of Assoc. Prof. Dr. Eng. Kristina Bliznakova

Assoc. Prof. Dr. Eng. Kristina Bliznakova has over 10 years of teaching experience, of which over 3 years are related to teaching in the Department of "Medical Equipment, Electronic and Information Technologies in Health Care" at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.

Over the years, Assoc. Prof. Bliznakova has established herself as a teacher and scientist with extensive professional and pedagogical experience. She is a co-author of a textbook and a teaching exercise textbook (which are not included in the competition).

She has led lectures on a total of 16 disciplines and exercises on 20 disciplines. The candidate-supervised diploma students are 21 masters and bachelors, and the doctoral students are 6, and one of the PhD students obtained the ESD "Doctor" in the doctoral program "Medical Physics", in the field of higher education 4. Natural sciences, mathematics and informatics, professional direction 4.1. Physical sciences. In this way, she transfers her accumulated exceptional scientific and practical experience, knowledge and skills to students, PhD students and young scientists and specialists studying in the field of biomedical engineering and computer science.

Conclusion

The materials presented for the competition on the overall scientific and teaching activities of the candidate by Assoc. Prof. Dr. Eng. Kristina Stanimirova Bliznakova give me reason to believe that she is a well-established scientist with high qualifications, significant scientific contributions and many years of teaching experience. Her scientometric indicators cover, and for some of the criteria significantly exceed the requirements specified in the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for the Implementation of the LDASRB, the Regulations for the Development of the Academic Staff at the University of Varna and the additional conditions announced in SG no. 102 of 23.12.2022 for obtaining the academic position "PROFESSOR" in the scientific specialty "Biomedical Techniques and Technologies".

Everything stated up to this point gives me reason to confidently propose that Assoc. Prof. Dr. Eng. Kristina Stanimirova Bliznakova should be elected for the academic position "PROFESSOR" in the field of higher education - 5. Technical sciences, professional area - 5.2. Electrical engineering, electronics and automation, scientific specialty - "Biomedical engineering and technologies" for the needs of the Department of Medical Equipment, Electronic and Information Technologies in Healthcare, at the Faculty of "Public Health" at the Medical University - Varna.

28/04/2023

Sofia

Member of the Scientific Jury:
/Prof. Dr. Eng. Elena Georgieva Koleva/

