

STANDPOINT

Regarding: Competition for occupation the academic position Professor,
in the professional field 5.3 Communication and Computer Engineering, specialty
Theoretical basis of communication engineering

(Information systems for data collection)

Announced: in State gazette, issue 89 from 26.10.2021 г.

Candidate: **Associate Professor Eng. Valentina Ilieva Markova, PhD**

Member of the scientific jury: **Professor Eng. Teodor Bozhidarov Iliev, PhD,**

University of Telecommunications and Post, Sofia

In this competition for occupation the academic position Professor, appointed in the Bulgarian State Gazette issue 89/26.10.2021 and on the official website of Technical university - Varna, the only candidate for this position is Assoc. Prof. Eng. Valentina Ilieva Markova, PhD.

1. General characteristics of the research and scientific-applied activity of the candidate

Assoc. Prof. Eng. Valentina Ilieva Markova, PhD was graduated from Technical University – Sofia with M.Sc “Telecommunication” in 2002. In 2008 she defended successfully a dissertation for obtaining the educational and scientific degree PhD on the topic „Design and implementation of linear digital circuits without multipliers". From 2007 she worked at the Technical University - Varna consecutively as an assistant, chief assistant and associate professor (department of Communication technique and technologies). Assoc. Prof. Valentina Markova's research, engineering and pedagogical activities are developed in a balanced and simultaneous way, complementing each other.

Assoc. Prof. Valentina Markova, PhD participated in the competition with 36 scientific papers according to the groups of indicators (B.4, Г.7 and Г.8).

The publications can be classified, as follows: 1) Referenced and indexed in world-renowned database (Scopus and/or Web of Science) – **31** papers [publication from group B.4 (10 papers) and from group Г.7 (21 papers)]; 2) manuscripts published in international journals, indexed in Scopus with SJR - **6** papers [B4.1, B4.2, Г7.1, Г7.2, Г7.20, Г7.21 of the attached list of publications]; 3) manuscripts, published in Bulgarian journals - **4** papers [Г8.1, Г8.2, Г8.3, Г8.5 of the attached list of publications]; 4) papers in conference proceedings indexed in Scopus - **25** papers [B4.3÷B4.10, Г7.3÷Г7.19 of the attached list of publications]; 5) papers in conference proceedings from conferences in Bulgaria - **1** paper [Г8.4 of the attached list of publications]

The contents of the above scientific papers are fully relevant to the scientific field of the competition for academic position “Professor”.

Assoc. Prof. Markova took part in: 1) 6 national scientific and educational projects, one of which was a coordinator; 2) 4 projects financed by Technical University - Varna, three of which was a coordinator; 3) 5 international scientific and educational projects, two of which was a coordinator and in the others researcher.

There is an official document for submitted application for registration of a utility model, in the assurance that Assoc. Prof. Valentina Markova is a co-author and owns the copyright on a scientific product.

2. Evaluation of the applicant’s teaching activity

Assoc. Prof. Valentina Markova, PhD has considerable teaching experience. Over the last 3 academic years she has taught the following subjects: Communication Circuits, Telephometric and optical measurements, Automation of the design in communications, Information systems for data collection, Graphical modelling with LABVIEW, Audio systems and sensor networks and Sensor networks for the Bachelor's and Master's degrees in the professional field 5.3 Communication and Computer Engineering.

She has been diploma work supervisor to more than 30 students who defended successfully.

Undoubted proof of Assoc. Prof. Markova's work with students not only during regular academic hours, but also outside of them is the two awarded students with an award of the Municipality of Varna for "Best Diploma Thesis".

3. Main scientific and applied contributions

From the analysis of the presented materials I can classify the main contributions of the candidate in the competition in the following main areas:

1. New methods for determining the cognitive load and stress.

The following scientific papers from indicator B.4 (10 papers) can be referred to this area and the following contributions:

- Created new methods for detecting negative emotional states and stress from physiological signals (Photoplethysmography, ECG, skin resistance and galvanic skin response) or speech;
 - Improved existing and created new methods for extracting descriptors from physiological signals;
 - A new intelligent architecture for highly responsible communications has been synthesized, adaptable to the context of the available mobile networks (3G/4G/5G).
2. Created new signal collecting and processing methods.

The following scientific papers from indicators Г.7 and Г.8 (26 papers) can be referred to this area and the following contributions:

- New methods for processing physiological signals have been proposed;
- Modified audio and speech signal processing algorithms;
- Resources and algorithms have been developed for ergonomic assessment of the working environment and prevention of musculoskeletal disorders;
- Resources are unified to investigate the spread of radio waves over the Black Sea;
- Created resources to support research and applied activities;
- Study of innovative training methods.

I accept the contributions announced by Assoc. Prof. Valentina Ilieva Markova, PhD. I define the contributions presented as: scientific, scientifically applicable and applied. I consider that the requirements for quantitative performance criteria for academic position "Professor" are met.

Assoc. Prof. Valentina Markova has submitted information for 31 citation in SCOPUS and/or Web of Science database, 26 from them of foreign authors. The reference to the citations shows that the scientific publications of Assoc. Prof. Markova are well known and accordingly evaluated by the scientific community in Bulgaria and abroad.

4. Significance of contributions to science and practice

The candidate's main scientific and applied contributions in the submitted publications under the competition can be classified according to the fulfillment of the scientometric criteria as follows:

Groups of indicators	Content	Minimum score points for academic position Professor	Fulfillment
A	Indicator 1	50	50 pts.
B	Indicators 3 or 4	100	180 pts. (indicator 4)
Г	Sum of indicators from 5 to 9	200	313,2 pts. Indicator 7 – 272,5 pts. Indicator 8 – 40,7 pts.
Д	Sum of indicators from 12 to 14	100	310 pts. Indicator 12 – 310 pts.
E	Sum of indicators from 16 to 26	150	531 pts. Indicator 18 – 100 pts. Indicator 19 – 100 pts. Indicator 20 – 60 pts.

Groups of indicators	Content	Minimum score points for academic position Professor	Fulfillment
			Indicator 21 – 40 pts. Indicator 22 – 211 pts. Indicator 22 – 20 pts.

The independent publications of Assoc. Prof. Valentina Markova, PhD and those where she has a lead role, are evidence of her leadership in the research. The scientific ideas and approaches presented and defended in scientific forums are an assessment of the candidate's personal contribution.

5. Critical remarks and recommendations

I have no critical remarks on the documents, scientific production and academic activity presented by the candidate. I will point out some recommendations on the future work of Assoc. Prof. Valentina Ilieva Markova, PhD:

- My recommendation to Assoc. Prof. Markova and her leading PhD students to publish their future scientific results in journals with impact factor, which would also help to increase the citation index.

6. Conclusion:

The presented documents and materials fully satisfy and exceeds the requirements of the Law for the Development of Academic Staff in the Republic of Bulgaria and the Regulations on its implementation as well as the Regulations for the conditions and order for acquiring academic degrees and academic positions at Technical University - Varna.

I hereby suggest with the utmost conviction of the Honorable Scientific Jury **to elect Associate Professor Valentina Ilieva Markova, Eng, PhD for the academic position „Professor“** in the field of higher education 5. Technical Sciences, professional field 5.3. Communication and Computer Engineering, specialty Theoretical basis of communication engineering (Information systems for data collection).

Заличена информация
по Регламент (ЕС)
2016/679

February 3, 2022

Member of the scientific jury:
/Prof. Teodor Ilev, PhD/