

## OPINION

**Authored by Prof. Teodor Bozhidarov Iliev, Ph.D.  
Professor in professional field 5.3. "Communication and Computer Engineering",  
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**Concerning scientific works submitted for participation in competition for awarding the academic position of "Associate Professor" in professional field 5.3 "Communication and Computer Engineering"; scientific specialty "Communication Networks and Systems", which was officially announced in State gazette, issue 58 from 23.07. 2019 and on the website of TU-Gaborovo to meet the needs of department "Communication Technologies and Equipment" which is a constituent unit of the Faculty of Electrical Engineering and Electronics; with applicant: Chief Assistant Professor Ivelina Stefanova Balabanova, Ph.D.**

### **1. An overview of the content and results of the works submitted**

Chief Assist. Ivelina Stefanova Balabanova, Ph.D. participated in the competition with:

- Publications - **37** items;
- Monograph - **1** items;
- Study books - **5** items s.

The publications can be classified, as follows:

#### **- By type:**

- Articles in journals - **17** items;
- Reports – **20** items;

#### **- By importance**

Ph.D. Balabanova is co-author of the articles in journals with impact - factor: Journal of Electrical Engineering, with impact - factor 0.636 and Journal "Electronics and Electrical Engineering" with impact - factor 0.561. For her presentation during the scientific conference of the University of Rouse she was awarded the Best Paper prize and crystal award - in 2015, 2016 and 2017

#### **- By place of publication:**

- Articles in Foreign Journals - **6** items [6, 26, 29, 32, 33, 35 of the attached list of publications];
- Articles in Bulgarian Journals - **11** items [9, 10, 11, 12, 13, 15, 16, 17, 18, 21, 22, from the attached list of publications];
- Reports on works of international scientific conferences abroad – **3** items [No 2, 7, 8 of the attached list of publications];
- Reports in the works of international scientific conferences in Bulgaria - **17** items [1, 3, 4, 5, 14, 19, 20, 23, 24, 25, 27, 28, 30, 31, 34, 36, 37 of the attached list of publications];

#### **- In the language in which they are written:**

- In English - **19** items [2, 3, 4, 5, 6, 7, 8, 9, 11, 23, 24, 25, 26, 29, 31, 32, 33, 34, 35 of the attached list publications];
- In Bulgarian - **18** items [1, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 27, 28, 30, 36, 37 from the attached list of publications].

#### **- Number of co-authors:**

- Independent - **5** items [1, 2, 3, 10, 12 of the attached list of publications];
- With one co-author - **7** items [7, 8, 13, 15, 16, 21, 22 of the attached list of publications];

- With two co-authors - **17** items [6, 9, 11, 14, 17, 18, 19, 20, 27, 28, 29, 30, 31, 32, 34,36, 37 of the attached list of publications];
- With three or more co-authors - **8** items [4, 5, 23, 24, 25, 26, 33, 35 of the attached list of publications].

Chief Assist. Prof. Ivelina Stefanova Balabanova, Ph.D. participates in the competition with five Study books, namely:

- Communication chains. A guide to solving coursework and lab work;
- Communication chains. A guide to solving coursework and lab work. (Second Additional issue);
- Guide for laboratory exercises and course design on Communication chains;
- Laboratory manual for commutative and multiplexing techniques;
- Design and study of digital filters and models for signal identification. Methodical manual for laboratory exercises.

The tutorials provided are fully relevant to the subject of the competition.

The contents of the above articles, reports and Study books are fully relevant to the scientific field of the competition for Associate Professor.

## **2. General characteristics of the candidate's activities**

### **2.1. Academic activity (work with students and Ph.D. students)**

Chief Assist. Prof. Ivelina Stefanova Balabanova, Ph.D. has been working at the Technical University of Gabrovo since 2005, and has been an Assistant and Chief Assistant in the Department of Communications Equipment and Technologies. Ph.D. Ivelina Balabanova's research, engineering and pedagogical activities are developed in a balanced and simultaneous way, complementing each other. Over the last 5-6 years she has taught in the following subjects as well:

- Communications circuits - Lectures and Exercises;
- Communications and multiplex engineering - lectures and exercises;
- Telecommunications transfer lines - lectures and exercises;
- Theory of teletraffic - lectures;
- Electromagnetic compatibility - lectures;
- Signals and systems - exercises;
- Training practice - exercises.

for Bachelor's and Master's degrees in “Communications Equipment and Technologies”. She is the supervisor of more than 56 successfully defended graduates.

Undoubtedly testament to the work of Ph.D. Ivelina Balabanova with students not only during training sessions, but also beyond them is the participation of students with scientific papers under her leadership at the annual Student Scientific Session of the Technical University - Gabrovo.

### **2.2. Scientific and applied-scientific activities**

Chief Assist. Prof. Ivelina Stefanova Balabanova, Ph.D. participates in the competition for Associate Professor with 37 scientific articles and reports, 5 Study textbooks and one monograph. In her applied science activities PhD Balabanova has been head of one applied project and has participated and in collectives in developing the projects funded by the state budget through fund "Scientific Research" Technical University - Gabrovo.

### **2.3. Implementation activity**

She presented a contract with the company "Videosat - CPT" Ltd., the town of Veliko Tarnovo for experimental research related to the development and design of digital filters.

### **3. Contributions (scientific, scientific-applied, applied). Importance of contributions to science and practice**

I accept the contributions announced by Chief Assist Prof. Ivelina Stefanova Balabanova, Ph.D. I define the contributions presented as scientifically applicable and relate to the applicant's scientific interests - communication circuits and noise filtering. I consider that the requirements for quantitative performance criteria for academic position "Associate Professor" are met.

### **4. Assessment of the candidate's personal contribution**

The independent publications of Chief Assist. Prof. Ivelina Stefanova Balabanova, Ph.D. and those where she has a lead role, are evidence of her not being a leadership as participant 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 notes and recommendations**

A major part of the evaluation towards the scientific production and creative activity of the candidate for the Associate Professor position was consistently set out above in the opinion. Here are just some of the remarks and recommendations for the future work of Ph.D. Ivelina Balabanova:

- In some of the publications there is not a rigorous assessment of the statistical representativeness of the conducted simulation and experimental studies in accordance with existing mathematical criteria for such assessments;
- To intensify her participation in projects under the European Union's specialized research programs, as well as in other international and regional specialized programs.

### **6. Personal impressions**

I know Ph.D. Ivelina Balabanova personally from my visits to the Department of Communication Equipment and Technology to the Faculty of Electrical Engineering and Electronics at the Technical University of Gabrovo and from participation in the annual UNITECH Scientific Conference. Chief Assist. Prof. Ivelina Stefanova Balabanova, Ph.D. has left an impression of a serious and business oriented scientist. She has the reputation of an erudite teacher.

### **7. Conclusion:**

**In view of the above, I propose Chief Assist. Prof. Ivelina Stefanova Balabanova, Ph.D. to be awarded "Associate Professor" in the field of higher education - 5. Technical Sciences, professional field - 5.3. Communication and Computer Engineering, specialty – “Communication Networks and Systems”.**

21.10.2019 y.

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Jury Member: / Prof. Teodor Iliev, Ph.D. /