

OPINION

by Professor Ivan Borisov Evstatiev Ph.D., University of Rouse "Angel Kanchev" Rouse, for the submitted materials for participation in the competition for the occupation of the academic rank "Associate Professor" in the area of higher education - 5. Technical Sciences, by professional field - 5.2. Electrical engineering, electronics and automation, major in Elements and Devices of Automation and Computing (Impulse and Digital Devices, Digital Circuitry), In the competition for associate professor, announced in the State Gazette, issue. 58 of 23.07.2019 and on the website of TU-Gabrovo for the needs of the Electronics Department at the Faculty of Electrical Engineering and Electronics of the Technical University of Gabrovo, with the candidate: Chief Assistant Professor Eng. Goran Danailov Goranov Ph.D.

1.A review of the matter and results of the proposed works.

The scientific works presented for the competition are grouped into several main thematic areas - digital systems for control of industrial converters and information processing, computer systems and applications and intelligent microprocessor systems for measurement.

In the field of digital systems for control of industrial converters and information processing are publications [4, 6, 7, 10, 12, 14, 18, 20, 24, 25, 28, 31, 34, 35, 38, 41, 42, 43, 44, 45 and 46].

In [4], [14] a digital method for the control of industrial converters was developed. There have been publications in the field of digital synthesis [12, 18] and [43] is related to the control of resonant inverters. PWM control is in [35, 20, 24], and in [42] a mathematical model of the PWM control system has been developed. In the field of communications are [44, 46], and for display management [38], [45]. They are related to combustion engines [34] and [28], and to control DC / DC power supplies [41]. Possibilities for application of microcontrollers in control systems are explained in [7], [28], [25], [31], [10]. In the field of data processing and management, Fuzzy Controller-based publishing is a publication [7] and image recognition [6].

Thematic group on computer systems and applications covers publications [1, 2, 3, 5, 8, 9, 15, 19, 22, 26, 27, 32, 33, 36, 37, 39, 40, 47].

Publications in the field of web services are [1, 2, 22, 3, 26, 27, 33, 40]. Simulations and software models have been developed using software applications for mathematical analysis and calculations of the set equations are in [5, 19, 47]. In the field of programming is [5]. Modeling of a digital circuit is considered in [19], and of a magnetotransistor in [47]. Software for optimizing Java ECG software has been developed and optimized by adding new code [8, 36, 37, 39]. An android software application is in [36]. In the field of research are [37] and [9, 15]. New processor ARM architectures have been explored [32].

The topic of intelligent microprocessor measuring systems covers the publications [11, 13, 16, 17, 21, 23, 29, 30] of the submitted for the competition.

In the field of galvanometry, they are [13, 16, 29, 30, 11, 17] and in the measurements they are [21, 23]. A method for operating a programmable logic device for faster digital design with the Spartan family of Xilinx has been implemented [16].

The publications presented in the competition correspond to the professional area and specialty.

2.General characteristics of the applicant's activity.

2.1. Educational activity (work with students and doctoral students)

Chief Assistant Professor Goran Danailov Goranov has been a lecturer at the Technical University of Gabrovo, Department of Electronics since 2003. so far. Since 2011. until 2015. and from 2018. so far, he is Deputy Head of the Electronics Department.

Between 2016 and 2019, Ch. Goranov Ph.D. is a holder of 4 disciplines from Bachelor of Electronics- Digital Circuitry, Impulse, and Digital Devices, Programmable Logic Controllers, Computer Systems and Applications.

He is also the holder of the discipline Designing Microprocessor Devices for Master's degree.

Goranov has developed 6 plans, is the head of 21 successfully graduated bachelor's and is a reviewer of 12 conference papers. An official note has been issued for the applicant's participation in the creation of a laboratory for the design of microprocessor devices.

Independent author of 2 textbooks and co-author of 2 more manuals.

It's my profound conviction that the pedagogical education and activity of the candidate fully meets the requirements for an academic position of "Associate Professor".

2.2. Scientific and applied activities.

The research activities of Goran Goranov Ph.D. concentrate on the following areas of theoretical research:

-Development and research of digital systems for control of industrial converters and information processing;

- development and programming of computer systems and applications;

- creation of intelligent microprocessor measuring systems.

Analyzing the submitted materials for the competition, it can be said that the following fulfilled approach from the author is noticed - analysis, algorithm creation, hardware and software on an electronic device.

Graduate Ph.D levels in 2007.

Goranov Ph.D. has joined as a reviewer at international scientific conferences.

The scientific publications are focused on the practice, which is confirmed by the participation of Goranov in 10 research projects. Project topics are similar to or related to publications.

I believe that the scientific and applied activity of Dr. Goran Goranov fully meets the requirements for occupying the academic rank of "Associative Professor".

2.3. Implementation activities.

From the submitted information on the implementation activity, the developments made are related to the applicant's publication activity and have been implemented in 10 research projects.

The implementation activity is quite sufficient for acquiring an academic position as an Associate Professor.

3. Contributions (scientific, scientific-applied, practiced). The importance of contributions to science and practice.

I consider the contributions to the materials of Goranov to be scientifically applied and implemented.

Scientific and practiced contributions.

Applied scientific contributions may include:

1. A digital method has been developed based on the digital synthesis of combinatorial, register and counting circuits for the control of transistor resonant converters [4, 14].

2. A cyclic method for controlling a thermostat is proposed. Digital PWM has been synthesized [35].

3. Algorithms for spot and skin pattern recognition have been developed [6].

4. Proposed architectures for Web services modules [1, 2, 22].

5. A model of two-collector magnetotransistor has been developed [47].

6. A digital design method for a development system is proposed [16].

These contributions have the character of enriching existing knowledge.

Practiced contributions:

1. Study of problems and solutions in the field of inverter converters [12, 14, 18, 43].

2. A PWM control for a three-phase electric motor has been developed [22,24].

3. Developed hardware and software for controlling electronic devices [11, 13, 17, 19, 21, 23, 25, 28, 29, 30, 31, 38,44, 45, 46].

4. A method for finding the maximum power of a solar panel [10] has been applied.

5. Fuzzy Controller-based data processing and management system [7].

6. Application of parallel calculations of multi-core processors to reduce the simulation time for complex physical processes [5].

7. Created systems and networks with WEB interface [3, 15, 26, 27, 33, 36, 37,39, 40].

8. Study on the capabilities and applications of new ARM architectures [32].
9. An algorithm for working with ECG monitors and printing was created [8].
10. The method of infrared thermography is used to study the wear of cutting discs [9].

4. Evaluation of the applicant's contribution.

From the material presented for evaluation, it can be argued that the contributions are important for the development of modern science and technology.

The quantitative indicators of the criteria for filling the academic position of associate professors are met. The applicant is a holder of 4 courses and has 2 textbooks and 2 manuals issued. Goranov Ph.D. is involved in 10 projects. He is also involved in the creation of laboratories.

All this characterizes eng. Goranov as an established scientist in the field of the announced competition and is sure proof of his contribution to the materials presented for the competition.

5. Critical notes

I have no critical comments. The recommendation for the future activity is for Eng. Goranov to apply the accumulated knowledge with participation and guidance in research and applied projects.

6. Personal impressions.

I meet with Goranov at scientific conferences. From the materials provided and the personal impressions of the meetings with the candidate, I was left with the impression that Goranov is a young, well-established scientist, perfectly adapted to the academic position of Associative Professor.

7. Conclusion:

The availability of 47 publications, 2 textbooks and 2 manuals books, participation in 10 projects and teaching activities give me a reason to **suggest Ch. Assistant Professor Eng. Goran Danailov Goranov to employ the academic position of Associate Professor** in the professional field - 5.2. Electrical Engineering, Electronics and Automation, specialty "Elements and Devices of Automation and Computing" (Impulse and Digital Devices, Digital Circuitry).

11/28/2019

Jury member: /signature/
/ Prof. Eng. I. Evstatiev Ph.D. /