

## OPINION

Authored by Assoc. Prof. Valentina Ilieva Markova, PhD, Technical University of Varna

**Concerning scientific works submitted for participation in competition for awarding the academic position of “Associate Professor” in the field of higher education 5. Technical Sciences, professional field 5.3. Communication and Computer Engineering, scientific specialty “Communication Networks and Systems”, (“Wireless Communications and Broadcasting”, “Security equipment”)**

In the competition for „Associate Professor“, announced in the State Gazette, issue 68/31.07.2020 and on the website of TU – Gabrovo for the needs of the Department of “Communication Equipment and Technologies” at the Faculty of Electrical Engineering and Electronics as a single candidate participates

**Ch. Assist. Prof. Krasen Kirov Angelov, PhD – Technical University of Gabrovo.**

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

Ch. Assist. Prof. Krasen Kirov Angelov, PhD, participated in the competition for academic position “Associate professor” with a total of 42 publications and 3 published textbooks and laboratory exercise guides.

The candidate's publications can be classified as follows:

- 13 scientific publications in editions, which are referenced and indexed in world-famous databases of scientific information, 10 of which are indexed in Scopus and 3 in Web of Science.
- 29 scientific publications in journals with scientific review or in edited collective volumes, which are not indexed in Scopus;
- 17 publications are in Bulgarian language and 25 – in English language;
- 4 single-authored publications, 38 – in co-authorship, and in 19 of the publications the candidate is the first author.

The candidate's scientific publications can be divided into four thematic areas: wireless communications and broadcasting [B.4.1, B.4.4, B.4.5, Г.7.1, Г.8.3, Г.8.14, and Г.8.29], optical communication networks [B.4.2, B.4.7, B.4.8, B.4.9, Г.8.1, Г.8.2, Г.8.4, Г.8.6, Г.8.7, Г.8.13, and Г.8.15], systems and services in satellite and cable television networks [B.4.3, Г.7.3, Г.8.8, Г.8.9, Г.8.9, Г.8.10, Г.8.12, Г.8.16, Г.8.17, Г.8.18, Г.8.19, Г.8.20, Г.8.21, Г.8.22, Г.8.23, Г.8.24, Г.8.25, Г.8.26, Г.8.27, and Г.8.28] and reliability and fault tolerance of communication networks [B.4.6, Г.8.11].

Proof of the candidate's scientific contributions are 5 citations of his publications by other authors in Scopus indexed papers.

The results of research activity of Krasen Angelov, PhD fulfill the national quantitative indicators for occupying the academic position of “Associate professor“, grouped respectively in indicators B, Г and Д.

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

#### **2.1. Educational and pedagogical activity**

Ch. Assist. Prof. Krasen Kirov Angelov, PhD, has been working in the Department of Communication Equipment and Technologies at the Technical University of Gabrovo since 2008. Since 2016 holds the position of “Chief Assistant Professor”.

Over the years, Krasen Angelov, PhD has led laboratory exercises in the disciplines “Analog Circuitry”, “Signals and Systems”, “Digital Signal Processing” and “Design

Automation” in the Bachelor's Degree in the curricula of the specialties “Communication Equipment and Technologies”, “Electronics” and “Automation, Information and Control Systems”.

In the last 5 years he has been leading a full course of study (lectures and laboratory exercises) in 4 disciplines in the Bachelor's Degree for specialties “Communication Equipment and Technologies” and “Mobile and Satellite Communications” – “Wireless Communications and Broadcasting”, “Security Equipment”, “Audio and Video Equipment” and “Cellular Communications”, as well as in 1 discipline in the Master's degree for specialty “Communication Equipment and Technology” – “Information Technology in Communications”. In the disciplines “Cable Television Networks” and “Broadband Mobile Networks” in the Master's Degree, as well as in the “Television Technology” in the Bachelor's Degree, he leads laboratory exercises.

Krasen Angelov, PhD is a co-author of 3 textbooks and laboratory exercise guides in 2 disciplines and he has developed methodological materials for e-learning in 4 disciplines. He is developed of curricula in 5 disciplines: “Wireless Communications and Broadcasting”, “Security Equipment”, “Access Control Systems”, “Audio and Video Equipment” and “Information Technology in Communications”.

Currently, he actively participates in the development of curricula in 4 disciplines of the curricula of the newly created in TU - Gabrovo specialties „Communication Technologies and Cybersecurity“ and „Digital Administration“ in the Bachelor's degree.

For the period from 2016 until now Ch. Assist. Prof. Krasen Angelov, PhD was supervisor of a total of 50 graduates.

He has participated in the preparation of student teams with developments presented at the national exhibition and competition “Youth Technical Creativity“ – Gorna Oryahovitsa (2017 - 2019), national hackathon “Academy of Innovation: IDEAS 2018“ - Sofia and in “Gabrovo Innovation Camp 2018”.

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

Ch. Assist. Prof. Krasen Kirov Angelov, PhD has participated in 4 national projects under the Operational Program “Science and Education for Smart Growth“ and 2 national projects under the national “Scientific research” fund of Ministry of Education and Science, as well as in 4 university research projects, one of which he was the head of.

The candidate has been a reviewer of publications in the international scientific journal “IET Electronics Letters” and in two international scientific conferences “ELECTRONICS – ET” and “UNITECH”. Member of the organizing committee of the international scientific forum “Models for the implementation of innovative technologies in the context of Industry 4.0“, held in Gabrovo in 2018.

## **2.3. Implementation activity**

The candidate's implementation activity is related to the design of a research platform for providing experimental access for development and testing applications for intelligent communication in IoT (Internet of Things) based on LoRa communication technology. The platform is used for teaching and research purposes at TU - Gabrovo. Based on the platform, a demonstration service for intelligent parking management is developed.

On the territory of TU - Gabrovo is implemented a practical model of passive optical network (PON) for delivery of interactive services. The model is designed for conducting trainings, research and testing of new services.

## **3. Contributions (scientific, scientific-applied, applied)**

Analyzing the submitted materials for preparation of an opinion, the declared contributions can be summarized as scientific-applied and applied. They are the result of the candidate's research activity.

I accept the stated contributions of Ch. Assist. Prof. Krasen Kirov Angelov, PhD, and I reckon that they are sufficient to hold the academic position of “Associate Professor“.

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

The independent publications of Krasen Angelov, PhD and the leading author's position in a large number of other scientific publications are proof of the individual contribution of the candidate in the implemented research and presented results of scientific and applied nature.

#### **5. Critical remarks and recommendations**

I have some minor remarks regarding the submitted materials such as:

- the listed in Group B publications [B.4.1] and [B.4.2], indicated by the author as indexed in Scopus, are in fact publications in the “*Special Issue of the Conference in Telecommunications, Informatics, Energy and Management 2019*” of a foreign “*Journal of Engineering Science and Technology Review*” (*JESTR*). The journal is referenced in Scopus, but the mentioned special edition is not.

The above remarks in no way underestimate the work of Ch. Assist. Prof. Krasen Angelov, PhD, because there are enough publications in the author's reference, which are indexed in Scopus and Web of Science.

I have the following recommendation to the candidate:

- when submitting the reference with scientometric data to National Centre for Information and Documentation (NACID), the places of publications [B.4.1] and [C.4.2] shall be exchanged with [Г.7.1] and [Г.7.2], respectively.

#### **6. Personal impressions**

I do not know the candidate in person, but from the submitted materials given for my opinion, it is clear that he is a an established teacher and researcher with extensive experience and opportunities to develop his research potential and to implement his ideas in the field of science and business.

#### **7. Conclusion**

The documents submitted by the candidate in a competition for the academic position of ”Associate Professor“ meet the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria and the regulations of the Technical University of Gabrovo.

**In view of the above, I propose Chef Assist. Prof. Krasen Kirov Angelov, Ph.D. to be awarded the academic position of “Associate Professor” in the field of higher education – 5. Technical Sciences, professional field – 5.3. Communication and Computer Engineering, specialty – “Communication Networks and Systems” (“Wireless Communications and Broadcasting”, “Security equipment”).**

23.10.2020 г.

Member of the scientific jury: /signature/

/Assoc. Prof. Valentina Markova, PhD/