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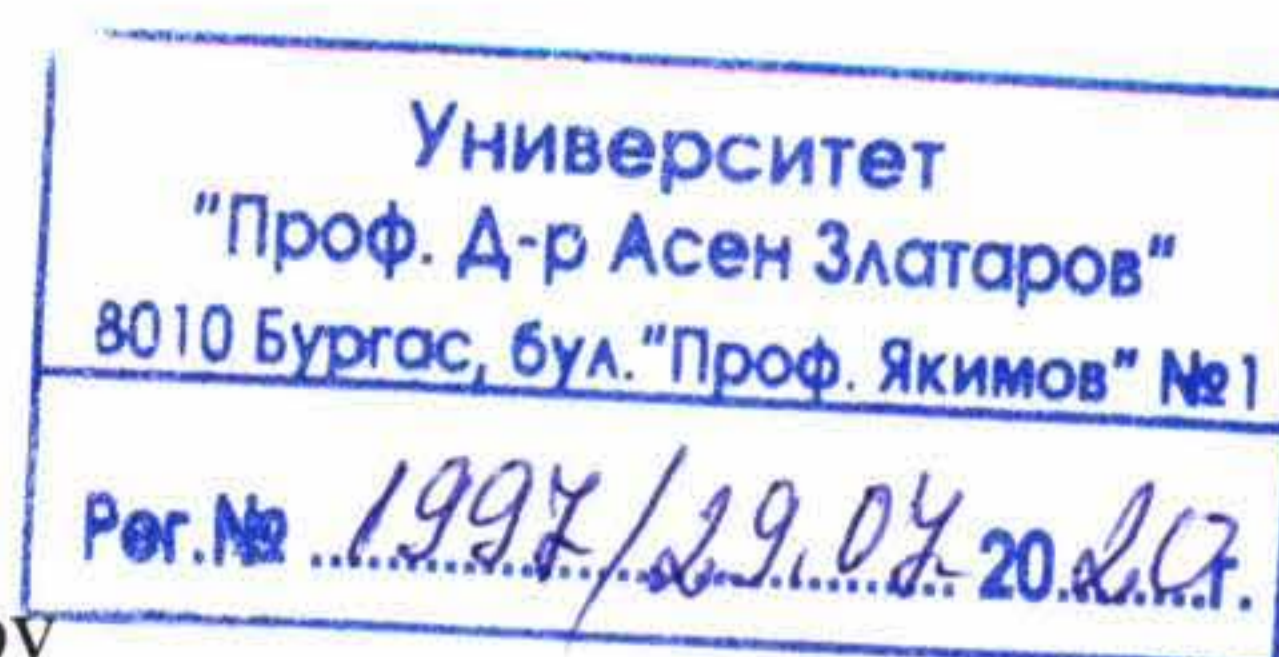
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on a competition for the occupancy of an academic position "**Associate Professor**" in the field of higher education 5 "Technical Sciences", professional direction 5.3 "Communication and computer science", scientific specialty "computer vision", announced on State Gazette, issue 5 date 17.01.2020 with only one candidate – **assistant prof. eng. Todor Kostadinov, PhD**.

1. GENERAL DESCRIPTION OF THE PRESENTED MATERIALS

According to order **№ RD – 110/01.06.20202020.** of the Rector of University "prof. dr. A. Zlatarov", prof. d.s Magdalen Mitkova. I am designated for a member of the Scientific jury and on the first session on **02.07.2020** I have been given the materials of the competition on an electronic media.

The documents presented in order to participate in the competition to occupy an academic position "associate professor" and the performed procedural processes are in comply of the Law of the growth of the academic staff in Republic of Bulgaria and also the Regulation for application of this law.

In regard to the fulfillment of the required indicators based on the documents presented by the candidate I have established the presence of:

➢ copy of a diploma № 000376 form 09.01.2014 of educational and scientific degree "doctor, issued by IICT-BAS, by execution of article 53 (1);

➢ certificate, issued by the University "prof. d-r. A. Zlatarov" that verify 7.5 years of work experience up to the date of issue, 6.5 years of which as a chief assistant professor and 1 year as an assistant professor according to article (2a);

➢ references of the workload of the lectures and labs held by the candidate in educational qualification degree "Professional bachelor" and "Bachelor" by reference № 1134/21.04.2020 for the last three years as follows: for the session 2016/2017 – 635 hours; 2017/2018 – 650 hours; 2018/2019 – 738 hours;

➢ references of the workload of the lectures and labs held by the candidate in educational qualification degree "Master" by reference № 1133/21.04.2020 for the last three years as follows: for the session 2016/2017 – 113 hours; 2017/2018 – 98 hours.; 2018/2019 – 143 hours;

➢ reference of the developed educational programs, accordingly: Engineering design – lectures/labs; Multimedia systems and technologies – lectures/labs; Specialized practice – labs, and educational materials as follows: Signals and systems labs manual – 107 pages and Specialized practice manual – 75 pages;

➢ list of 11 successfully graduated graduates under the supervision of the candidate;
➢ list of scientific projects that the candidate participated, accordingly: 1 – international NATO project, 7 national research projects and 7 projects funded by the University. It was not specified whether the candidate was leading some of the projects;
➢ list and a copy of the scientific works presented for a review;
➢ monographic work that consist of 194 pages, satisfying article 53(3);
➢ list of citations of the candidate;
➢ co-authorship declarations that verifies that the candidate participation in all of the presented works is equally distributed among the authors;
➢ author reference of the candidate;
➢ reference of fulfillment of the minimal national and university requirements for participation in a competition for the occupancy of an academic position "Associate Professor" of which it is notedly that the requirements are fulfilled according to article 53(4);
➢ to fulfill the requirements of article 54. (1) the candidate presented a reference of fulfillment of the minimal national requirements, a reference of the requirements according to article 1a, paragraph 2, and a reference for the scientific contributions.

2. QUANTITIVE AND QUALITATIVE CHARACTERISTICS OF THE CANDIDATE PUBLICATONS AND CITATIONS

Chiev assistant eng. Todor Kostadinov PhD participates in the competition of an academic position "Associate Professor" with 35 works:

1pcs. of Monography issued in English and indexed in worldwide databases with scientific information Scopus and WoS (1.1);

2 pcs. of labs and practice manuals (5.1 и 5.2);

15 pcs. of scientific publications in editions, referred and indexed in worldwide databases with scientific information (from 2.1 to 2.14 and 3.1);

17 pcs. of scientific publications in unreferred journals with scientific review (from 3.2 to 3.18).

6 pcs. of them have SJR index by Scopus, accordingly: scientific publication (2.3) with SJR index of 0.453; (2.4) with SJR index of 0.13; (2.5) with SJR index of 0.279; (2.6) with 0.32; (2.7) with 0.32 and (2.14) with 0.174. Scientific publication (2.14) has a Q3 by Scopus. The great transparency and the wide spread of the scientific results verify the lack of plagiarism in the scientific works of the candidate.

According to the competition, chief assistant eng. Todor Kostadinov PhD has applied a list of 26 citations on 9 of his publications presented in the publications list. All of the 26 citations have been obtained by the Scopus platform and refer only Scopus citations.

The monography consists of 194 pages, it is published by the publishing house "Wiley" originally in English and it fulfills index from group V – 100 points. 10 more publications with an overall quantity of 204 points have been applied to group V. The overall points **gathered by group V are 304**.

To form the points according to group G, a book based on a defended dissertation to award educational and scientific degree "Doctor", four scientific publications in editions, referred and indexed in worldwide databases with scientific information and 18 scientific publications in unreferred journals with scientific review or in edited collective volumes. The overall **group G points is 323.88**.

In the documents of the competition, Todor Kostadinov PhD has presented 26 citations in the SCOPUS and WoS databases that corresponds to **260 points of gropu D**.

To form group E points, evidence for participation in 6 natinal scientific or educational projects and 1 international NATO project and two published university study materials have been applied. The contributions presented above are evaluated to **110 points for group E**.

3. EVALUATION OF THE CANDIDATE PERSONAL CONTRIBUTION

I believe that the most of the publications presented by the candidate for review are his personal work. For the common publications, separation protocols that verifies an equal participation among the authors in the publications have been provided. The presence of more than a single author in most of the scientific publications indicates that Todor Kostadinov PhD manages to work well in collective and obtain high scientific results which is verified also by the editions where most of the works are published.

4. EVALUATION OF THE SCIENTIFIC RESULTS AND CONTRIBUTION OF THE CREATIVE PRODUCTION PRESENTED FOR PARTICIPATION IN THE COMPETITION

The contributions of the candidate have a **scientific as well as scientifically applied nature**. In the researches the candidate **verifies some well-known facts, enriches the existing knowledge with new facts and proposes some of the new scientific results for practical applications**.

The contributions presented in the presented publications can be generalized as:

> ➢ Design and research of algorithms to obtain images by radiolocation methods for direct and inverse aperture synthesis, as well as the program implementation and provisioning;

As a confirmation of this contribution, a great number of algorithms to simulate direct and inverse aperture synthesis for extraction of high-resolution images of designated objects or targets, geographical territories, irrelevant of the light level

and the distance, using a complex signal generated by radiolocation, communication of satellite systems have been created by the candidate.

By the implemented diverse kinematic models of complex architecture systems and structure of the signals, results illustrating the applicability of the considered methods have been obtained. The scientific works verifying this particular contribution are the monography under number 1.1, scientific reports with numbers from 2.1 to 2.10 as well as reports 3.1, 3.2, 3.3, 3.12, 3.13, 3.18.

➢ Design of hardware, software and algorithms of complex communication systems for management, monitoring, diagnostics and visualization;

As a confirmation of this contribution of the candidate comes the series of designed and implemented systems for data interception, detection of processes and phenomenon. The hardware developed for that purpose, corresponds to the requirements of work in specific and aggressive environment working nonstop. Algorithms for establishment of events and remote visualization have been developed. A work routine and the data structure of the system have been devised. Diagnostics and number of tests on the system functionality have been carried out. The results are presented in publications under numbers 2.11, 2.12, 3.4, 3.10, 3.11, 3.16, 3.17.

➢ Application of innovative decision-making approaches in the presence of great number of criteria over the intuitionistic fuzzy sets and generalized networks;

Great number of digital devices models have been developed, as well as entire systems using generalized networks theory. Experiments and algorithms research using intuitionistic fuzzy logic and indexed matrices for data estimation based on multicriteria decision, as well as optimization of the performance of the algorithms have been carried out. The results are published in works under numbers 2.13, 2.14, 3.5, 3.8, 3.9, 3.14, 3.15, 3.17.

I would evaluate the developments of the candidate as **contribution with an application of the scientific achievements in the practice**.

5. CRITICAL NOTES AND RECOMMENDATIONS

A distinguish in the numeration of the publications in the different references can be noted, which creates difficulties during the review. The candidate did not classify correctly all of his publication, for example 3.1 must be regarded to section 2 – scientific publications in editions indexed and referred in worldwide databases with scientific information. The SJR index of the six of the candidate publications has not been presented accordingly: (2.3) has a SJR index of 0.453; (2.4) has a SJR index of 0.13, (2.5) has a SJR of 0.279, (2.6) has 0.32; (2.7) has 0.32, and 2.14 has Q3 by Scopus. This reference can be performed on the following website https://www.scimagojr.com/ by ISSN.

I recommend to the candidate Todor Kostadinov, PhD to create profiles in https://www.webofknowledge.com/, https://orcid.org/ and https://scholar.google.bg/.

I will recommend to Todor Kostadinov PhD for the future to extend the work with students and PhD candidates in order to pass the accumulated knowledge to the next generation of young scientists.

6. CONCLUSION

Based on the distinguished scientific contributions of the candidate as well as the fact that he fulfills all of the requirements of the law of growth of the academic staff in Republic of Bulgaria, regulations on application of the law of growth of the academic staff in Republic of Bulgaria and the regulation of the specific conditions for the acquisition of scientific degrees and occupancy of an academic positions in University "prof. dr. A. Zlatarov" I can confidently give positive evaluation on the election of chief assistant eng. Todor Kostadinov, PhD for the academic position "associate professor" in professional direction 5.3 "Communication and computer science"

I propose the honorable jury to support the candidate and vote a proposition to the Faculty council on ....To choose **chief assistant eng. Todor Kostadinov PhD** on professional direction 5.3 "Communication and computer science", scientific specialty "computer vision"

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Prof. dsc. Ivan Garvanov