

EVALUATION STATEMENT

with regard to a contest for the academic position of Associated Professor
in 'Computer Vision' scientific profile,
5.3 'Communication and Computer Equipment' professional orientation,
5. 'Technical Science' higher education area,
announced in SG, Issue 5 of 17/01/2020

Scientific Jury Member: Prof. Mihail Petkov Iliev D. Eng. Sc

1. General Characteristics of the Applicant's Scientific and Applied Research

Chief Asst. Prof. Todor Pavlov Kostadinov PhD participates in the contest for the academic position of Associated Professor with a monograph produced in collaboration, 32 scientific publications and 2 methodological guides for teaching/learning. The applicant's publications are categorized as follows:

- scientific publications in editions referenced and indexed by internationally acclaimed scientific databases /Scopus/ – 14 pcs.;
- scientific publications in unreferenced journals requiring review of scientific production or in edited collective volumes – 18 pcs.

The monograph and the scientific publications are in English language.

With regard to the number of authors the applicant's scientific manuscripts are divided as follows:

- single-authored - 8 pcs.;
- in collaboration - 24 pcs.

The submitted appendix for assignment of the authorship in the collaborative manuscripts indicates equal authorship for all contributors listed.

Chief Asst. Prof. Todor Pavlov Kostadinov PhD has presented evidence for 26 citation counts for 9 articles in editions referenced and indexed by internationally acclaimed scientific databases or in monographs and collective volumes.

SCOPUS author citation report indicates that the author has published 16 articles cited 36 times with an h-index of 4.

2. Evaluation of the Applicant's Pedagogical Competence and Activities

Chief Asst. Prof. Todor Pavlov Kostadinov PhD has been employed with 'Prof. Dr. Asen Zlatarov' University of Burgas since 2011. He started there as an Assistant Professor and is a Chief Assistant Professor since 2014. The applicant has lectured 4 academic subjects in the curricula of Bachelor's and Master's programmes and has delivered practical learning content in a variety of subjects. He has supervised 11 graduates in the preparation and defense of their research/theses and has examined numerous theses of undergraduate and graduate students. The applicant has published 2 methodological guides for teaching/learning, used for preparation of students at 'Prof. Dr. Asen Zlatarov' University of Burgas.

All in all, it can be concluded that the teaching work of Chief Asst. Prof. Todor Pavlov Kostadinov PhD is diverse and meaningful.

3. Key Scientific and Applied Research Contributions

The applicant's contributions can be summarized across areas of study and categorized as follows:

3.1. Monograph Contributions

3.1.1. The principles and main characteristics of monitoring technologies using a bistatic radar system are analyzed.

3.1.2. Theoretical models of signals are presented, together with software for their generation.

3.1.3. The methods for reconstruction and extraction of images from radio frequency signals are analyzed.

3.1.4. An analytical approach for geometric evaluation of the bistatic monitoring system resolution is explored.

3.1.5. Theoretical models are presented and analyzed.

3.2. Contributions in the Applicant's Scientific Articles

The applicant's contributions can be grouped into 3 categories:

3.2.1. Imaging algorithms:

Applied Research Contributions:

- Kinematic models of systems with different topologies have been developed [2.1], [2.2];
- Signal modeling is used for exploration of signal representation properties [2.6], [2.7], [2.8];
- The principles of aperture synthesis for production of images are studied [2.5], [3.12];
- The methods for reconstruction and extraction of images are explored [2.9], [3.12], [3.13].

Practical Contributions:

- Software of algorithms for signal reception and image reconstruction has been developed [3.1];
- Signal synthesis software has been developed [2.2], [2.3], [2.4], [3.2];
- The theoretical model has been verified with data gathered in a practical experiment [2.10];
- Experimental data are processed using the developed algorithms for determination of the size, speed and mass of the experimental object [3.18].

3.2.2. Design of communication systems:

Applied Research Contributions:

- The properties and principle of operation of a complex monitoring system have been explored [3.16];
- The conditions and modes of operation of the studied system are assessed [3.17];
- Conceptual design is developed and a system monitoring solution is proposed [3.4], [3.10];

Practical Contributions:

- Specialized sensors have been designed, developed and introduced [2.11];
- The hardware architecture is assembled and the system software is implemented [2.12], [3.11].

3.2.3. Approaches to decision making:

Applied Research Contributions:

- Analysis of decision making methods is made [3.5];
- A methodology is developed for evaluating the accuracy of the intercriteria assessment [3.9];
- An approach is developed to enhance the performance of the assessment algorithm [3.14];
- A range of digital devices are modelled using generalized network modelling methods [2.13].

Practical Contributions:

- Formal description of microcomputer embedded systems operation is made [2.14];
- The algorithms are implemented on meteorological data [3.15];
- Approaches to enhance a navigation system accuracy are used [3.17];
- Methods of intercriteria analysis are used for object recognition [3.8].

4. Significance of Contributions to Science and Practice

The contributions of Chief Asst. Prof. Todor Pavlov Kostadinov PhD are as follows:

- Argumentation of significant new aspects of existing scientific areas, problems, theories, hypotheses by employing new means;
- Formulation of new approaches, methods, algorithms and structural diagrams and gathering supporting facts.

All scientific production is presented and published in highly-rated scientific journals and forums.

5. Critical Remarks and Recommendations

- It is recommended that the applicant focus his efforts on publication of specialized books and textbooks;
- It is recommended that the applicant intensify his work with PhD students, postgraduates and young scientists in order to build a team with sufficient capacity for participation in significant research programmes.

CONCLUSION

The scientific production of Chief Asst. Prof. Todor Pavlov Kostadinov PhD submitted within the contest is in line with the requirements for filling the academic position of 'Associated Professor' outlined in the Act on Academic Staff Development in the Republic of Bulgaria, its Implementing Regulations and the Rules on the Terms and Conditions for Taking Academic Positions at 'Prof. Dr. Asen Zlatarov' University of Burgas.

Upon a complex assessment of the applicant's scientific production submitted for preparation of an evaluation statement, as well as assessment of the applied research and practical contributions of the presented scientific work and the overall scientific and teaching activity of the candidate, I would reasonably propose that Chief Asst. Prof. Todor Pavlov Kostadinov PhD be selected for the academic position of 'Associated Professor', 5.3 'Communication and Computer Equipment' professional orientation, 'Computer Vision' scientific profile at 'Prof. Dr. Asen Zlatarov' University of Burgas.

20/07/2020

Prof. Mihail Petkov Iliev D. Eng. Sc