

Review

for the competition for the occupation of the academic position „Associate Professor“
in the professional field 4.6 Informatics and Computer Science,
specialty "Informatics (Information Modeling of Service Networks)",
for the needs of the Institute of Mathematics and Informatics,
Bulgarian Academy of Sciences,
announced in the State Gazette, № 70/07.08.2020

by Prof. Dr. Kalinka Kaloyanova

Sofia University "St. Kliment Ohridski ", Faculty of Mathematics and Informatics,
Institute of Mathematics and Informatics - BAS

I am presenting this review as a member of the Scientific jury in the above-mentioned competition, on the base of the order № 190/06.10.2020 of the Director of the Institute of Mathematics and Informatics (IMI) - BAS, which is based on the decision of the Scientific Council of IMI (Protokol 9, 25.09.2020).

The only candidate for the competition is Assistant Prof. Velin Stoyanov Andonov from the Institute of Mathematics and Informatics - BAS.

As a member of the jury I have received the following documents:

1. Application to the Director of the Institute of Mathematics and Informatics;
2. CV;
3. Copy of master's degree diploma;
4. Copy of diploma for the educational and scientific degree "Doctor";
5. List of all scientific publications;
6. List of the scientific publications for the participation in the competition;
7. A. Author's reference for the scientific contributions of publications presented for the participation in the competition;
B. Author's reference for the scientific contributions of the publications presented as the equivalent of a monograph;
8. Abstracts of the scientific publications for participation in the competition;
9. Copies of publications for participation in the competition;
10. List of all citations;
11. List of citations for participation in the competition;
12. Copy of State gazette No 70, 2020
13. Certificate of internship in the specialty;

14. Reference for the fulfillment of the minimum national requirements and the requirements of IMI-BAS (Application 2.2 and Application 2.2 – revised);
15. Declaration for the absence of plagiarism.

A short CV

Velin Stoyanov Andonov graduated from the Geo Milev Secondary School in Stara Zagora in 2004. He graduated from Sofia University - the Faculty of Mathematics and Informatics with a bachelor's and master's degree in mathematics. Velin Andonov defended his Ph.D. thesis on the topic of "Generalized networks with position characteristics" in 2015 at the Institute of Biophysics and Biomedical Engineering - Bulgarian Academy of Sciences.

He worked as a teacher of mathematics at the Geo Milev Secondary School in Stara Zagora for 5 years (2011 – 2016). Since 2016 he has been working at the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences.

General presentation of the submitted materials. Compliance with the minimum requirements

It is clear from the presented documents that Velin Andonov meets the requirements for the occupation of the academic position of "Associate Professor", which are specified in the Act for the Development of the Academic Staff in the Republic of Bulgaria and the Rules of the Implementation of the Act for the Development of the Academic Staff in the Republic of Bulgaria:

- He has a Ph.D. degree: Ph.D. thesis on " Generalized networks with position characteristics" (2015) - diploma No 000547/30.03.2015, from Bulgarian Academy of Sciences.
- The publications that meet the group „B“ requirements are indexed in Scopus. Five of them are published in journals or series with SJR and only they cover the required 100 points for this group, the other 2 are referred to and indexed in IEEE Xplore and carry an additional 24 points. The publications were made in the period 2017-2020 and are not used for other procedures.
- Seven of the publications that meet the requirements of the group „Г“ are in editions with Impact Rank (SJR) – 140 points and one publication has IF (Q4) - 24 points. 6 publications are indexed in Zentralblatt or IEEE Xplore, for which 48 points are awarded. Thus, the total number of points on this group - 236, again exceeds the required minimum. The publications were made in the period 2012-2020, and are not used for other procedures.
- A list of 28 citations is presented – 147 points, which meet the requirements of group „Д“ of indicators.
- V. Andonov has held academic positions for more than 2 years.

- He also participated in 2 research projects, funded by the Bulgarian National Scientific Fund and one project (program) funded by the Ministry of Education and Science – 30 points for group „E“.
- There is no identification of plagiarism in the presented publications.

For the position of “Associate Professor”, the Rules on the Terms and Requirements for Acquisition of Academic Degrees and Occupation of Academic Positions of IMI-BAS requires at least 220 points from criteria in group „Г“ instead of 200 points according to the minimal national requirements, respectively 70 points for group „Д“ and 20 points for group „E“.

The calculations on the documents presented by Velin Andonov show:

- Group „A“ - 50 points (threshold 50);
- Group „B“ - 124 points (100 required);
- Group „Г“ - 236 points (220 required);
- Group „Д“ - 147 points (70 required);
- Group „E“ - 30 points (20 required).

It can be seen, the criteria of IMI-BAS have been achieved and exceeded in some of the indicators, therefore the minimum national requirements according to the Rules for the Implementation of the Act on the Development of the Academic Staff in the Republic of Bulgaria for the professional field 4.6 "Informatics and Computer Sciences" have been achieved, too.

General characteristics of the applicant's scientific and applied activities and his contributions in the submitted for the review publications

Velin Andonov has submitted 23 publications. All of them are written in English. The publications were made in the period 2012-2020. He co-authors all papers, except for one. He is also the first author in six of them. Although no reference is made to the individual contributions of the candidate, the systematic results presented in these publications testify to his significant role.

Most of the submitted publications are published in SJR ranked journals and series - publications 2, 4, 6, 8, 9, 10, 12, 14, 15, 16, 17, 20, and 21 from the list of scientific publications for the participation in the competition. Publication 5 - „Generalized Nets with Characteristics of the Arcs“ is indexed in Web of Science (Q4). Publication 11 and publication 23 are not indexed. The others are indexed in IEEE Explore & Zentralblatt, as well in Scopus, but without SJR.

The list of all publications of Velin Andonov indexed in Scopus and WoS is longer and indicates a good albeit not homogeneous publishing activity over the years.

The research activity of the candidate, presented in the publications for the competition, is mainly related to theoretical aspects and applications of the generalized nets (GNs). The publications presented in group „B“ summarize the results related to the development of methods for the conceptual modeling of service systems and service quality, GN models of service systems, and analytical modeling of complete telecommunication systems. The contributions of the candidate are related to the development of methods for conceptual modeling of service systems - publications with numbers 1, 2 and 3 of the author's reference for the publications in group „B“ (document 7.B), and in modeling the quality of service of telecommunication systems - publications 4 and 5 of the same reference. Other results are related to the creation of generalized net models of telecommunication systems - publications 2, 4, 5, 6, and 7, as well as to the analytical modeling of a complete telecommunication system with a queue - publications 3 and 7.

The results presented in the group „Г“ publications are in the field of the theory of the generalized nets and GNs modeling. Some results regarding the modeling of telecommunication systems are also presented.

An extension of the ordinary GNs class is presented (publication 5 from the list of all publications) that adds arcs characteristics. The contributions in this publication, as well as the general scheme for optimization of generalized network models presented in publication 22, refer to the theory of generalized nets.

Several valuable results are presented in publications 1,2,12, and 15 - models of processes in telemedicine and models of the human body systems. The first two publications present models of monitoring systems working with sensors to monitor patients and process the data obtained from them. The other two articles present models of important systems in the human body (or parts of them). These results can be used to treat patients more effectively.

Results on generalized net models of service systems are discussed in several publications. Publication 10 describes generalized net representations of basic elements of queuing theory, and publication 16 describes decisions, concerning information feedback and forward and request feedback that could be used for more complex types of control structures. Several other publications in this group present generalized net models of service systems (17, 19, and 22).

The modeling of telecommunication systems is a significant part of the candidate's research activities. Publications 9, 14, 13, and 17 focus on the conceptual modeling of

overall telecommunication systems. The first 2 publications, as well as publication 21 present results that aim to facilitate analytical modeling.

Results related to the modeling of the quality of service (QoS) in telecommunication systems are presented through publications - 13, 18, and 20. Several approaches for normalization are proposed, the problem of the composition of the traffic quality in the service composition is discussed and the problem of the presentation of the traffic quality in the queuing system is considered as a composition of the quality of the components of the system.

Citations

The list of citations submitted by the candidate presents 28 citations: 21 citations are visible in Scopus&WoS, 6 citations are visible in Zentralblatt, and 1 citation - in IEEE Xplore library. The overall list of the citations reports 55 citations.

Personal Impressions

I do not know personally Velin Andonov.

Critical notes and recommendations

I recommend Velin Andonov in his future work to aspire to more single-authored publications. I also recommend the candidate to enlarge his teaching activities.

Conclusion

In conclusion, the documents and materials presented by Velin Andonov declare results that meet all requirements for the academic position of "Associate Professor" of the Act of the Development of the Academic Staff of the Republic of Bulgaria, the Rules for its implementation, as well as of the Rules on the Terms and Requirements for Acquisition of Academic Degrees and Occupation of Academic Positions of IMI-BAS in the scientific field 4. Natural Sciences, Mathematics and Informatics, professional field 4.6. Informatics and Computer Sciences, Informatics and even exceed some of the requirements. I strongly recommend to the Honorable Scientific Jury to vote on a proposal to the Scientific Council of IMI - BAS to select Velin Andonov for the academic position of "Associate Professor" at IMI - BAS in the field 4.6. Informatics and Computer Sciences.

November 15, 2020
Sofia

Reviewer:
/Prof. Dr. Kalinka Kaloyanova/