REVIEW

For procedure for academic position "**associated professor**"

domain of High education: **5. "Technical Sciences"**,

professional field of study: **5.2 „Electrical engineering, Electronics and Automatics"**

scientific specialty: „**Application of the principles and methods of cybernetics in different domains of science (technical sciences) "**;

for the needs of the department "**Cyber-physical systems**"

The competition is published in "State newspaper" N45/28 May 2021 for the needs of Institute of Information and Communication Technologies – Bulgarian Academy of Sciences (IICT-BAS)

with candidate: **chief assistant Ph.D. Stanislav Gyoshev** from Institute of Information and Communication Technologies – Bulgarian Academy of Sciences

Member of the jury: prof. D.Sc.,Ph.D. Eng. **Todor Atanasov Stoilov** , Institute of information and communication technologies – Bulgarian Academy of Sciences, Sofia, Acad.G.Bontchev str., BL.2

I. Common biographical data of the candidate

Main data about the education and for his scientific degree and academic position of the candidate are summarized in Table1

Table 1.

Name	born	High education	Scientific degree Ph.D.	Chief assistant
Stanislav Dimitrov Gyoshev	1988	2013 – masters, 2011 – bachelor Technical University – Sofia Specialty: Mechanical engineering and instrument making	2016 – IICT-BAS	2017 г. – IICT-BAS

Staniclav Gyoshev graduated in 2011 in Technical University of Sofia, bachelor degree with specialty Mechanical engineering and instrument making. In 2013 he finished his master degree in the same University for the same specialty. Since 2012 till now he is working in IICT-BAS starting with programmer position. In 2013 he became PhD. student. In 2016 he defended the educational scientific degree PhD. in IICT-BAS. He took sequentially positions as programmer, PhD student. Currently. he

is a chief assistant in IICT-BAS, department "Distributed information and management systems".

II. Common presentation of the candidate's materials for the competition

The presented research papers for the competition for the academic position "associated professor" are prepared according to the legislative requirements in Bulgaria: The Law for academic promotion, The Rules for the application of this law. The internal rules for this position in the IICT-BAS particularly a more restrictive. That's why the referee makes assessments about the candidate achievements towards the internal requirements of IICT-BAS.

The candidate presents a list with 36 research publications for this academic position. Additionally, he presented a list with 2 approved and one waiting for approve patents and one useful model. In the document "REFERENCE for the completion of the minimal requirements of IICT-BAS for the academic position associated professor" the candidate presents 36 titles, which are given in two sections: papers, which are indexed and referred in SCOPUS and no referred papers. Additionally, there is a document "LIST of papers.....presented for the competition...", where the titles of the papers are numbered from 1 to 38. The referee finds that the sequence in numbering of the titles is not correct and the real number of titles is not 38 but 36. The referee makes his report following the research paper, given in these both documents "REFEREE..." and "LIST of papers.....presented for the competition..."

Indicators group A: it is presented a diploma for defense of the educational and scientific degree Ph.D. The title of the Ph.D. thesis is "Research controlled impact processes". The candidate satisfies the requirements for this indicator.

Indicators group B: These indicators insist that the candidate achieves 100 points with habilitation thesis or to have (at least 10) publications, which are indexed and referred to world known data bases. The candidate satisfies this indicator, presenting ten publications. The papers are published in journals (Mechanical Technology and Structural Materials, Food Additives and Contaminants - Part A, Science of Sintering), scientific conferences (IFAC, Mathematics and Computers in Sciences and Industry, ICAI, Conference on Emerging eLearning Technologies and Applications) and specialized edition (Lecture Notes in Computer Science). The presented data about indicators group B do not give enough bibliographic records. Records about DOI are given only for two publications. There are not links towards these publications. This is a disadvantage of the presented documents. The referee met difficulties for the assessment and checks of the presented publications. For example there are difference in the title of publication 6 in document "REFERENCE..." and the presented electronic copy of this publication. The publication 8 from the document "REFERENCE..." is not given as electronic copy in the documents. The lack of such presentation can result in decrease the evaluated points for Indicators group B.

The candidate evaluates his score at 159.23 points. The referee finds that publication 6 has to give 10 points (instead of 12) and publication 9 gives 12 points (instead of 25). This reduction with 15 points decreases the total score to 144.23,

which does not change the level off indicator group B. The referee assumes that the candidate satisfies the legislative requirements for this indicator group.

Indicators group Г: it insists achieving 220 points. The candidate presents a list with 26 research publications for the category Г8: Research publications in no referred editions or edited books with several authors. Publications of the candidate have been published in research journal: 4 titles in journals „Problems of Engineering Cybernetics and Robotics", "Mechanics of machines". Two publications are presented on scientific conferences abroad (Greece and Poland). All the rest publications are given on local scientific events. The given data for indicator group Г does not contain precise bibliographic records. The lack of links does not allow making checks for these publications. This is a disadvantage of the presented documents. The referee met difficulties to assess in depth the presented titles of publications. For example publication 11 in the document "LIST...." is given with a title on English language but the presented electronic copy is written in Bulgarian language. The candidate has evaluated his score at 292.94 points. The referee could not find publications N 17, 20, 30. For the last two positions the documents contain publications with very different titles.

The referee assumes that the legislative requirements for indicator group Г are satisfied.

Indicators group Д: This indicator requires achieving 60 points. This indicator group concerns citations in scientific publications, monographs, collective preprints, patents, which are referenced and indexed in world recognized data bases with scientific information and citations in non-referenced editions. The candidate with the list of presented citations covers 171 points, which overrates the legislative requirements for this indicator. The referee finds self-citations in the category Д12 for citations in referred and indexed in world data bases positions 2.4, 2.6, 3.3, and 3.6. For the presented list of citations there are not given full bibliographic data for the cited and citation publications. This makes it difficult to follow the declared citations and represents a disadvantage for the presented document "REFERENCE....". Nevertheless of the reduction of the points for indicator Д the referee assumes that the candidate satisfies the legislative requirement for this indicator.

Indicators group E: participation in projects, attracted resources from projects, publication of University textbook. The requirements for this indicator are 20 points. The candidate declares participation in one international funded project (E19), leadership of three National projects (E20), an application for useful model (E25), three approved patents/useful models (E26) and attracted resources estimated to 4 points. The total score of points overrate considerable the legislative requirements for 20 points. This is a positive attestation for the candidate, who demonstrates active application and research activities, which leads to pragmatic project developments. The referee finds that in the presented documents there are not enough materials, which can prove the activities of the candidate, insisted in indicator group E. This is a disadvantage of the presented suite of documents for this competition. Thus the attracted resources for criteria E22 cannot be verified and proved as content and origin.

The final conclusion of the referee confirms that the candidate satisfies the legislative requirement and for part of them he overrates according to his declared

research and application activities. The candidate not always has evaluated correctly his scores. The main disadvantage of the presented documents is the lack of proves, bibliographic records, correct presentation of papers, citations, leadership and participation in research projects.

III. Assessment of the pedagogical activities of the candidate

The candidate is working in a position of chief assistant in academic institution of the Bulgarian Academy of Sciences. The main activities in such academic institution are researches and scientific activities. That's why in the presented documents such additional pedagogical activities are not presented in this competition.

IIV. Main research and experimental achievements

The candidate presents a list with 36 research publications for this competition. The document "LIST..." contains 10 titles of publications, which are referred and indexed in world recognized data bases and 26 publications in no referred editions. Additionally, the electronic versions of these publications are given in the suite of documents.

The main research and application contributions of the candidate, presented in his publications can be defined as design and development of methods and tools for solving problems of two classes of objects: people with visual impairments and creation of materials with improved physical and chemical properties.

For the case of people with visual impairments the problems, which were under consideration concern improvement of their quality of life. The problems, which were under consideration, can be defined as:

- Development of algorithm for 3D printing of relief image from pictures. The peculiarity of the algorithm concerns that it uses as input data two dimensional sources (pictures) and it gives as outcome 3D relief object for the same picture.
- A modification of this algorithm allows being generated tactile figures, which can be read from visual impaired people.

For the case of material generation the problems, which were under consideration, concern composition of mixtures, containing micro and nano elements. Thus, it is achieved that the materials have increased hardness, wear resistance, water resistance and materials for the powder metallurgy.

These results are presented in publications on international conferences (IFAC, MCSI) and in books of the international edition house Springer. Three of the publications are declared as papers in referred journals: „Food Additives and Contaminants - Part A", „Science of Sintering", „Journal of Physics D". These results are presented also on conferences in our country as "Robotics, Automatics and Mechatronics", "Automatics and Informatics". Publications are made in journals "Problems of technical cybernetics and robotics", "Machine mechanics", series of the Technical University of Sofia.

It has been published a paper, which has a bit different contain from the main researches of the candidate. Such publication is under N23 addressing train control on railways.

The referee finds that the publications contain research and implicational contributions, which mainly address visual impaired people and the composition of new materials.

As a result the publications of the candidate contain pragmatically results for the development of 3D models from two dimensional objects and for the composition of new. The referee assesses that in the candidates' publications are given representative examples of implemented research and engineering solutions.

V. Significance of the contributions for the science and practice

The referee assesses that in the researches of the candidate it is evident the will for the design and implementation of different models and application of methods in real practical engineering solutions. In the candidates documents there are given data about participation in an international research project, leadership in projects, funded by the Bulgarian Academy of Sciences for young researchers, project funded by the government Agency for support of small and medium sized enterprises. This is an indirect prove for the utility, usefulness and significance of the practical contributions of the candidate.

VI. Critical remarks and recommendations

The referee has critical opinion towards the presented documents for this procedure. He finds that the lack of correct bibliographic data of the presented publications is a disadvantage for the submitted documents. Thus, it is not possible to be approved the significance and the quality of each publication and citation.
Few weak points, which the referee meets, are:
- The documents "REFERENCE....." and "LIST of publications...." contain titles of publications, which are not presented with their electronic copy in the given file "All publications....". The referee finds such lack also for the position 8(Scopus list) and 7, 10, 25 for the document "REFERENCE...". For positions 10 and 25 the presented publications have titles, which are not the same in the both documents above.
- The title of the publications in the documents "REFERENCE..." and "LIST of publications...." do not correspond with the titles of the papers, given as electronic copies. The referee finds such lack of correspondence for positions 6,9 (Scopus list).
- In the presented data for criterion Д12 (citations) the referee finds self-citations. They are on positions 2.4, 2.6, 3.3, 3.4 from the document "REFERENCE...".

The documents for this procedure are difficult for working because there are not equal numerations and references for the list of publications, the electronic set of publications, different positions of the score evaluations and the corresponding items of publications and citations. These cause difficulties for the referee making objective and correct assessment of the presented documents. I recommend the candidate to present precisely his results in his future academic reporting activities. In his future activities the candidate has to limit the number of authors for a publication.

Conclusion

The candidate in this competition chief assistant Ph.D. Stanislav Dimitrov Gyoshev is presented with enough set of research works. In the candidate's works there are original research and practical contributions.

I find that the legislative requirements of The Law for academic promotion and The Rules for the application of this law and the internal rules IICT-BAS are satisfied. All upper said and after my acquaintance with the presented documents and their contributions with research and practical results give me ground to suggest **chief assistant PhD Stanislav Dmmitrov Gyoshev** to take the academic position "**associated professor**" in IICT-BAS, department "Cyber-physical systems" for the professional field of study: 5.2 „**Electrical engineering, Electronics and Automatics**", scientific specialty: „**Application of the principles and methods of cybernetics in different domains of science (technical sciences)** ".

10.09.2021

Reviewer: