

REVIEW

on concourse for gaining academic degree "Associate Professor" in professional division 5.2 TS "Electrical engineering, Electronic and Automation" scientific discipline "Automated systems for information processing and control", in IICT BAS, published in Gov.Newspaper No 85 from 2019,

candidate: eng. Nikolay Ivanov Stoimenov, Ph.D.

Jury member: Prof. Dr. Todor Dimitrov Neshkov

1. Candidate's overview and data

Dr. eng. Nikolay Ivanov Stoimenov apply in the concourse with 38 scientific publications, excluding those in other procedures. He is born in 23.07.1988. After Ph.D. graduation and gaining "Doctor" title in one of the most prestigious scientific-technical education institutions IICT-BAS, supervised by the famous scientist Prof. Dr. Dimitar Karastoyanov, he started working in IICT-BAS. In 2017 г. he is chosen for chief assistant. He was a programmer in IICT-BAS. Some of his publications are related to the research, simulation and optimization of the work of automated and robotized systems. Group A indicators gives 50 pts, group B 143 pts, when required 100, group G 227,5 /220/ pts, from group D are 72 /60/ pts, and from group E are 52 /20/ pts.

The analysis over the provided materials shows, that all requirements are fulfilled in accordance with the Law for academic growth, the Regulations for its implementation, as well as with the Rules of the specific conditions for acquisition of academic degrees and occupation of academic positions at IICT-BAS.

2. Main description over the materials provided for participation in the procedure

Most of the papers are published in: local science proceedings –18 pcs.; science proceedings abroad – 10 pcs.; local journals – 4 pcs, foreign journals – 5 pcs. and one chapter from monography in English and Italian language. They are in the concourse field. He has 16 citations, mainly abroad in prestige forums.

Nikolay Ivanov Stoimenov has worked in 2 science projects. He supervised one research project. All projects are referent to the current procedure. There are no documents presenting his work and results provided. Nevertheless his application is significant and his research work is directly associated with potential industry problems.

3. Main overview of candidate's scientific and scientifically-applied work

I evaluate positively the applicant's research and pedagogical preparation and his work as a researcher at the level of the required scientific title in the BAS, on the basis of the following:

- After PhD graduation and acquired educational and scientific degree „doctor” the candidate constantly upgrade his qualification by successfully graduating different courses for developing his work and skills. The candidate is fluent in English.
- He was sharing information about his project results with students in TU's Engineering faculty for now once and informative
- He was actively participating in organizing many conferences, seminars and forums on high-level international level.
- He was awarded from “EUREKA” foundation for 2019 for the best young inventor.

4. Main scientific and scientifically-applied contributions

I accept all contributions that have been presented in candidate's application and highly evaluate them. They can be signed as **scientifically-applied** as follows:

- Methods for 3D digitalization and 3D modeling of objects of cultural and historical heritage have been developed, and he has participated in the application of the developed methods, which are presented in exhibitions and galleries abroad.

- Innovative technologies in grinding processes are proposed. Factors for improving the quality and productivity of mills have been studied.

- Innovative grinding media were studied, their advantages according to the standard used in production were determined, and their wear resistance was taken into account.

- In the field of non-destructive testing, the internal structure of objects and details is examined. Based on the research, the effects of different modes of operation of lasers for ablation were determined, and defects in the production of details were minimized.

- In the field of production automation, a theoretical analysis has been made to automate packaging processes and automate assembly operations

These scientifically-applied contributions can be added to the following groups: proving new significant sides of already examined scientific areas, problems, theories, hypothesis; discovering new classifications, methods, constructions, technologies and achieving solid factors, constructions and methods for enriching existing knowledge with practical application.

In the presented work, there are also many other unaccounted applied and methodological contributions. According to the candidate, 5 of his works were cited in Scopus.

5. Scientific and practical meaning of the contributions

I believe that the volume and the quality of the scientific and scientifically-applied research work of the candidate correspond to the requirements of the Law for academic growth, the Regulations for its implementation, as well as with the Rules of the specific conditions for acquisition of academic degrees and occupation of academic positions at IICT-BAS for gaining academic title "Associate Professor" are fulfilled.

The scientific and scientifically-applied contributions contained in the candidate's research work are essential for the development and enrichment of the theory and practice of digitization of cultural and historical heritage, new materials and technologies, and the automation of discrete production. All this leads to the recognition of the candidate's authority among the scientific circles at local level and abroad.

6. Notes and recommendations

I don't have critical notes that interact with the main scientific and scientifically-applied contributions of the candidate.

There are some notes over few lacks in the formatting in few of the publications – in some publications there aren't cited and probably are not used famous Bulgarian publications, for internet references the date of use is not presented.

In general, the preparation of the documents does not have significant gaps and incompleteness.

The importance of the problems and the existing results give me the opportunity to recommend to the candidate to make more author publications in referred foreign journals. I also recommend active participation in prestigious national and international projects connected to the industrial technologies and their application.

7. Personal impression and recommendations

I know Dr. Stoimenov since he was a student. I have an overview and personal impressions of his work development and competence. He is deep thinking and precise scientist with responsible organization and realization skills with proven abilities. He has skills for team work and the ability of building creative environment for sharing knowledge and experience. I recommend active work in The Bulgarian Society of Robotics and Automation, as well as in IEEE, section Robotics and automatization, IFAC Mechatronics commission, Low cost automatization etc.

CONCLUSION

According to the materials provided and my personal impression of the candidate's scientific and pedagogical activity, the actuality and the importance of his scientific and scientifically-applied contributions, I strongly recommend Dr. eng. Nikolay Ivanov Stoimenov to take academic degree " Associate Professor" in discipline "Automated systems for information processing and control" in IICT — BAS.

15.01.2020

JURY MEMBER:

**NOT FOR
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(Prof. R. T. Neshkov)