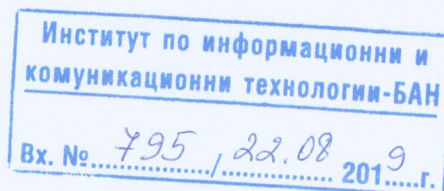


## REVIEW



on concourse for gaining academic degree "Associate Professor" in professional division 5.3 TS "Electrical engineering, Electronic and Automation" scientific discipline "Robots and manipulators in IICT BAS, published in ДВ # 41 form 21.05.2019,

candidate: eng. Nayden Nedkov Shivarov, PhD

Jury member: Prof. Dr. Todor Dimitrov Neshkov

### 1. Candidate's overview and data

Dr. eng. Nayden Nedkov Shivarov apply in the concourse with 42 scientific publications, without those in other procedures. He is born in 27.10.1973. After PhD graduation and gaining "doctor" title in one of the most prestigious technical education institutions — TU Vienna, supervised by world-famous scientist prof. Peter Kopachek, he started working in IR—BAS. In 2012 he is chosen for Associate Professor. He was Associate Professor in research laboratory in EPU — Pernik. Currently he is a programmer in IICT — BAS. Some of his publications are popular are linked to research, simulation and optimising the work of system robots. Group A indicators gives 50 pts, Group B — 106 pts., Group C — 224,4 pts, Group D — 63 pts, and group E — 50 pts.

The analysis over the provided materials shows, that all requirements of ЗРАСПБ and its applications are fulfilled.

### 2. Main discription over the materials provided for participation in the procedure

Most of the papers are published in: local science repertory — 17 pcs.; science repertory abroad — 10 pcs.; local journals — 5 pcs.; foreign journals — 3 pcs. They are in the concourse field. He has 7 quotations, mainly abroad in prestigious forums.

Eng. Shivarov, has worked over 5 science projects, 2 of which are with local finance support, and the rest are financed by foreign organisations. One is financed by FP 7. 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 positively evaluate the qualities for gaining higher title corresponding to the academy requirements, based on candidate's scientific and pedagogical training, his work as scientist and the following:

- After PhD graduation and acquiring educational and scientific “doctor” title the candidate constantly upgrade his qualification by successfully graduating different courses for developing his work and skills. The candidate is fluent in Deutsch and English.

- He was lecturing and sharing information about his project results with students in TU’s Engineering faculty for three times.

- He was actively participating in organising many conferences, seminars and forums on high-level international presence.

- From 2012 he was Associate Professor in ISIR — BAS, EPU — Pernik and programmer in IICT — BAS.

#### **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:

- A communication system has been developed with graphical customer interface for multifunctional robot SHADOW/ СЯНКА.

- Participation in developing and popularising in Bulgaria the concept of intelligent module service robot.

- A model is proposed of the educational robot РОБКО ФЕНИКС as part of the family robots РОБКО СКАРА.

- A module robotic systems for football playing mini robots is designed.

- A conceptual and real robots are developed from the family РОБКО

11,12,17 и 18

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 more contributions that wasn’t officially presented. By candidate presentation there are 7 author publications quoted, 6 abroad and 1 in Bulgaria, 2 are quoted within FP 7.

#### **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 ЗРАСПБ and the manual of its application. BAS’s content requirements for gaining academic title “Associate Professor” are fulfilled.

The scientific and scientifically-applied contributions has meaningful importance for discrete manufacturing’s robotics and automation theoretical and practice development. All this proves candidate’s authority with the scientific audience on local level and abroad.

## 6. Notes and recommendations

I don't have crucial 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 famous bulgarian publications quoted or most probably used, for internet references the date of use is not presented.

The scientific and scientifically-applied contributions are object formulated. I recommend the guidelines according to BAK to be used in the future.

The overall formating of the documents doesn't have important gaps and flaws.

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

## 6. Personal impression and recommendations

I know d-r Shivarov since he was a student. I have an overview and personal impressions of his work development and competence as scientist . He is deep thinking and precise scientist with responsible organisation and realisation 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 automotisation, IFAC Mechatronis commision, Low cost automatisation 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. Nayden Nedkov Shivarov to take academic degree " Associate Professor" in discipline " Robots and manipulatros" in IICT — BAS.**

20.08.2019

Jury Member:

(Prof. Dr. T. Neshkov)

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