

S T A T E M E N T

regarding a contest for obtaining an academic position “Associate professor”
in the professional field 5.2. “Electrical engineering, electronics and automation”
in the scientific specialty “Power Electronics – Converters”

The competition is announced in State Gazette (SG) 93/26.11.2019

Candidate: Angel Stanimirov Marinov, PhD

Member of the scientific jury: Prof. Chavdar Iliev Alexandrov, PhD

1. General characteristic of the Candidate’s research and scientific applied activity

The candidate for participation in the competition for the appointment to an academic position " Associate professor " in the Department of “Electronics and Microelectronics” at the Technical University – Varna has graduated specialty "Electronics" in same university. After completing his PhD studies he defended his PhD thesis. The subject of the dissertation is "Power electronics converters in an integrated heating and electro energy system based on using biomass" and is in scientific specialty 02.08.02 "Electronization". The entire scientific research apart from the PhD thesis is also dedicated to the field of electrical engineering and power electronics. The candidate is included in the register of the academic staff and the defended PhD theses in NACID. No scientific metrics for the PhD degree are introduced in the registration of his PhD thesis.

The candidate in the "Associate professor" competition participates with 13 publications, referenced in Scopus and WoS indexed conferences and journals and equal in value to a monograph and 36 publications, 11 of which were referenced in Scopus and WoS indexed journals and 25 publications in unrevised journals with scientific review or in edited collective volumes in the country. The total number of works used in the competition participation is 50. The candidate is a sole author of 6 publications and has indicated participation in 15 research projects with university, national and international funding.

A list of 17 quoted scientific works of the candidate is presented, including citations in issues, indexed in Scopus, as well as in unrevised journals with scientific review.

All of the candidate’s scientific works, representing his research and scientific applied activity are in the field of the competition and correspond to the requirements of the regulations as follows:

A – Indicator 1	50 points
B – Indicator 3 or 4	227 points
Г – Sum of Indicators 5 – 11	408 points
Д – Sum of Indicators 12 – 15	100 points
Ж – Indicator 29	91 points
Total	876pts / Minimum required 430pts.

2. Evaluation of the candidate’s pedagogical training and activities.

Angel Marinov begins his researches and teaching activities in 2009 as an assistant professor in the Department of “Electronics and Microelectronics” of TU – Varna. The attached documents show that over the years he taught different subjects included in the curricula of the Faculty of Computing and Automation. The list is too long and entirely in the field of power electronics and convertors, microelectronics, electrical engineering and energy. Along with teaching, Angel Marinov is responsible for the development and modernization of the educational facilities necessary for providing the educational process. The number of

graduates supervised by him is 47. There are about as many reviews of final projects he has written (44). Tutoring of students in writing research papers for publication in indexed issues, or for participation in conferences should be mentioned in addition. All this shows that Angel Marinov has good pedagogical training and experience in teaching activities.

3. Main scientific and scientifically applied contributions.

The contributions of the candidate research and pedagogical activities can be divided in groups as follows:

3.1. Contributions of predominantly scientifically applied character (in works B.4.1, B.4.3, B.4.5, B.4.10, B.4.11, Г.7.1, Г.7.3, Г.7.8, Г.7.9, Г.7.11, Г.8.4, Г.8.8, Г.8.9, Г.8.10, Г.8.14 до Г.8.16, Г.8.22 до Г.8.24, as in Г.8.26 Г.14 и Г.15)

Advantages of some up-to-date materials and constructions used in magnetic components for building of power electronics converters are pointed out;

Algorithms and schematics are proposed for studying and estimation of highly effective power electronics converters with improved parameters;

Improved approaches and algorithms are proposed for computer-added modelling and simulation, used in researching electro-thermal devices and processes;

Complex researches are carried out related to the application of piezoelectric polymer elements for hydro and meteorological monitoring and diagnostic imaging in medicine;

Different test benches and models applicable in research of piezoelectric transducers with wide area of applications are developed;

Different solutions, both algorithms and schematics are proposed for measurement of electrical parameters, applicable in intelligent energy systems and renewable sources of energy;

Some schematic solutions are proposed for the purposes of control of electrical machinery and for analysis of their parameters.

3.3. Methodological studies, textbooks and teaching manuals (in works B.7.5, Г.7.4, Г.8.2 and Г.8.11)

Two teaching manuals are included into the candidate's list – a tutorial for laboratory practice and a manual for distance learning. Some methodological studies are included as well, dedicated to the development of algorithms and software solutions for electronic education in the area of electronics. The list of programs for teaching different subjects, developed by the candidate and included in different curriculums not only for the Faculty of Computing and Automation but also for other faculties of the University is impressive as well.

4. Significance of contributions to science and practice

From a theoretical point of view, the applicant's contributions relate to the study of the up-to-date materials and constructions for building of power electronics converters and piezoelectric polymer components with wide area of applications, and computer modeling and simulations for research in the area of electrical devices and processes. The accuracy and workability of the theoretical developments has been confirmed by a large amount of practical results, both simulation and experimental.

In applicable aspect, the contributions are expressed in the development of various types of devices, test benches and testers with applications in the field of power electronics and converters, but also in the education and training of future engineers in this field.

In 6 of the papers proposed the candidate is a sole author, in one paper he participates with one co-author and in the others - with two or more co-authors. For the cooperative publications, no sharing protocols have been submitted from the co-authors, so I believe that the co-authors' participation is on an equal footing. The works are dominated by researches in

the field of power electronics and converters, microelectronics, electrical engineering and energy, which are in the field of the candidate's scientific interests. This gives me a reason to believe that the main contributions to the works submitted for the competition are his work.

5. Critical remarks and recommendations

The publication activity of the candidate corresponds to the regulations both quantitatively and as content. It is obvious however, that there is no determination of contributions in areas and in characteristics, i.e. scientific, scientifically – applied or simply applied. A determination like this would emphasize more significant achievements of the candidate and would make estimation of his publication activities easier.

No textbooks are included in the candidate's list of works. As the academic position "Associate professor" is mainly about teaching, it would be good for the candidate to pay more attention to this activity in the future.

CONCLUSION

For the purpose of the competition Angel Marinov has presented a considerable amount of scientific production aimed at solving real problems in the field of electronics, microelectronics and power electronics convertors. The presented works are of high theoretical level and meet the requirements of the regulations. The candidate also has the necessary pedagogical experience, which gives me enough reason to recommend him for the academic position "Associate professor" in the Department of "Electronics and microelectronics" at the Faculty of Computing and Automation of the Technical University of Varna in the professional field 5.2. "Electrical engineering, electronics and automation", specialty "Power electronics Convertors".

15.06.2019

MEMBER OF THE JURY:

/Prof. PhD Eng. Ch. Alexandrov/