# SCIENTIFIC OPINION

Regarding a Contest for an Academic Position **"Associate Professor"** in
professional field **5.2. Electrical Engineering, Electronics and Automation**,
Specialty: **Power electronics**, depart. ETM at the FITA of TU-Varna,
published in the State Gazette no. №93 / November 26, 2019
with a candidate **Dr. Eng. Angel Stanimirov Marinov**
Member of the Scientific Jury: **Prof. Dr. Eng. Vencislav Cekov Valchev**

## 1. General characteristics of the applicant's scientific research and implementation activities.

Dr. eng. Angel Stanimirov Marinov graduated from the Technical University - Varna, specialty "ETM" in 2002 with a Bachelor's Degree. In 2007 he received his Master's Degree. The candidate is awarded a Ph.D. Degree in Scientific Specialty 02.08.02 "Electronics " with the thesis topic: "Power electronic converters in combined heat and power system" (after training in the period 2008 - 2012).

He was an assistant professor in the Department of Electronic Engineering and Microelectronics (until 2016) and at the College in the structure of TU-Varna (March 2016 to January 2017). In 2017 he won a competition for associate professor at the College of TU-Varna (January 2017 to September 2017).

From October 2017 to October 2019 he works as an Electronic Engineer. Main features: System design of power supplies; Design of electronic circuits; Development of software solutions for microcontroller systems; Testing and commissioning of initial prototypes.

From October 2019 until now he is the head of scientific section at the Research Institute of the Technical University of Varna, where he is involved in the management of the department's activities and organization and carrying out of the research activity and development of research projects.

Doctor Eng. Angel Marinov has significant scientific output (60 publications), which are in the fields of: Power electronics, Industrial Electronics, Sensor Technology, Electronics. The candidate has a total of 24 publications in the Scopus database, and Hirsch index, h = 4.

In the period 2005-2019 Eng. Angel Marinov Ph.D. worked on more than 10 scientific projects, some of which are international. In recent years, Dr. A. Marinov has participated in more than 10 organized scientific events and forums.

**Meeting of the minimum national requirements for the candidates for the AP "Associate Professor":**
**Indicator A:** Existence of a dissertation for awarding the ONS "Doctor": A. Marinov, "Power electronic converters in a combined heat and power system based on biomass", TU-Varna, 2012. Dissertation for the ONS Doctor.
**Indicator group Б.** At least 100 points *(Б.3 or the sum of the points in Б.4)*
There are 13 publications in the Scopus database, with a total of 227 points.
**Indicator group Г.** At least 200 points *(Sum from Г.5 to Г.11)*
**Indicator Г.7.** Scientific publications that are referenced and indexed in world-renowned scientific information databases. There are 11 publications in Scopus databases, with a sum of 184 points.

**Indicator Г.8.** Scientific publications in non-refereed peer-reviewed journals or in edited collective volumes. 25 publications were submitted, with a sum of 224 points.
**Indicator group Д.** At least 50 points *(Sum Д.12 to Д.15)*
**Indicator Д.12.** Citations or reviews in scientific publications, referenced and indexed in world-renowned databases. There are 8 citations, totaling 80 points.
**Indicator Д.13.** Citations in monographs and collective volumes with scientific review, 6 points.
**Indicator Д.14.** Citations or reviews in non-refereed scientific peer-reviewed journals, 14 points.
Total 100 points for group E.

**Group of indicators Ж - 91 points.**

**In conclusion:** the applicant covers all groups of indicators for AP 'Associate Professor' in the Area of High Education (AHE) "Technical Sciences"**.**

## 2. Assessment of the candidate's pedagogical preparation and activity.

Academic activities:

- Lectures and laboratory exercises /Bachelor course/: 1. Power supplies; 2. Electronics 2 part; 3. Conversion technique; 4. Industrial electronics; 5. Wind energy; 6.Electronic Renewable Energy Systems
- Lectures and laboratory exercises /Master's course/: 1. Power electronic devices; 2. Measurement and information systems; 3. Analysis of modeling and design of power converters.

I have direct observations about the candidate's pedagogical activity as we are in one and the same department. He manages well with the duties of a lecturer.

## 3. Basic scientific and applied contributions

I accept the significant contributions submitted by the applicant in the publication groups related to indicators B and Г. In summary, the applicant's contributions are:

1. New and confirmatory facts have been received describing:
    - The advantages of various modern materials and structures for the realization of magnetic components in the construction of power electronic converters (PEC);
    - New and improved algorithms and electronic circuits for the management of highly efficient PEC are proposed and evaluated;
    - Improved electronic PEC circuits used in the implementation of high-efficiency electrotechnology devices have been proposed and evaluated;
    - Schemes of enhanced PEC parts of the electronic wind turbine system and in particular are proposed and evaluated;
    - Improved approaches and algorithms for the study and modeling of electrothermal devices and processes are proposed;
    - Solutions in the field of smart energy systems have been proposed.

2. Proposed and investigated are innovative and improved:
    - Schemes and structures are proposed related to the application of piezoelectric polymer elements;
    - Algorithms and software solutions using modern technical tools for e-learning in the field of electronic technology are proposed;
    - Electronic circuits related to the control and testing of electrical machines;
    - Facts specific to renewable energy generation systems.

Knowing the author and the teams he works with, I believe that defined scientific contributions are his main success.

## 4. Significance of contributions to science and practice

The impact of contributions to science may be found be the number of publications in SCOPUS database (24 issues visible as of 24/02/2020), and the Hirsch index in SCOPUS (h-index = 4, as of 24/02/2020).

The quantitative indicators of the criteria for occupation of AP "Associate Professor" in the AHE "Technical Sciences" have been met.

## 5. Critical notes and recommendations

I have no significant comments or recommendations on the materials presented to me.

## CONCLUSION

The presented scientific production and drafting of the documents are in accordance with the LPRAP, the Rules for its implementation and the Rules for the terms and conditions for occupying academic positions at the Technical University - Varna in the part for AP 'Associate Professor'.

Based on my acquaintance with the submitted scientific papers (abstracts), the submitted scientific and applied contributions and the fulfilment of the minimum national requirements, I propose Dr. Eng. Angel Stanimrov Marinov to obtain an academic position of "Assistant Professor" in the professional field 5.2 Electrical Engineering, Electronics and automation, scientific specialty: "Power electronics", depart. ETM at the FITA of Technical University - Varna.

24.02.2020

TU - Varna

Member of the Scientific Jury:

/ Prof. Dr. Eng. Vencislav Cekov Valchev /