Evaluation statement

For the competition for the academic position of "Associate Professor" in field - 5 "Technical sciences", in the professional field - 5.2 "Electrical engineering, electronics and automation" (Power supply and electrical equipment),

announced in the State Gazette, issue 87 of 19.10.2021 on behalf of Burgas Free University (BFU).

There is a single candidate: Assistant Professor Eng. Ginko Angelov Georgiev PhD.

Member of the scientific jury: Prof. DSc. Eng. Mihail Petkov Iliev

1. General description of the research activity and scientific-applied activity of the candidate

Dr. Eng. Ginko Angelov Georgiev is participating in the competition for the academic position of Associate Professor, presenting 27 scientific papers, distributed as follows:

- 1 monograph;
- 23 publications;
- 1 textbook;
- 2 teaching aids.

From the presented scientific papers, 5 publications, 1 textbook and 2 textbooks have been written independently. I was not presented with a protocol for the contribution of the authors in the collective publications, therefore I accept the contribution of the co-authors as equal.

As of the date of writing the opinion, Dr. Eng. Ginko Georgiev has two works printed in publications that are referenced and indexed in world-famous databases with scientific information. The candidate has provided information on 12 citations. Dr. Ginko Georgiev has worked on 6 research projects, two of which had him as the lead author.

2. Evaluation of the pedagogical preparation and activity of the candidate

Dr. Eng. Ginko Angelov Georgiev graduated from the Technical University of Varna. In 2012 he obtained the educational and scientific degree Doctor of Philosophy (PhD) at VVMU N. J. Vaptsarov, Varna. He has been successfully elected assistant and chief assistant at the Burgas Free University (BFU), where he is leading lectures and practical exercises in various disciplines in bachelor's and master's courses. He is the author of 1 textbook and 2 teaching aids. He was the scientific supervisor of 22 students successfully graduated from various specialties of BFU. In general, the educational and pedagogical activity of Dr. Eng. Ginko Angelov Georgiev is diverse and meaningful.

3. Main scientific and scientific-applied contributions of the candidate

The candidate has done research work is in 4 main areas:

1. Contributions on the topic of electrical equipment [M, P0, P4, P10, P12, P13, P15, P20, P22, P23]

- Analysis and research on the main problems of the theory of electric machines 1. Contributions in the direction of electricity supply [P24, P25, P26, P27, P31, P32]
- An analysis has been made and the influence of various factors on the reliability of electricity supply in the sectoral structure of the country has been studied;
- Confirmatory results from experimental studies have been obtained.concerning the control of electric drives
- Propositions for solutions of basic equations describing processes in asynchronous machines;
- Simulation and physical models have been synthesized and studies of asynchronous electric drives have been conducted, thus proving statements about energy indicators and processes in them;
- Proposed evidence for the effectiveness of vector control for suppression of low-frequency interference;
- Various electric drives have been studied and recommendations for improving their quality indicators have been formulated;
- Proposition for a complex system for restoration of the power supply.

2. Contributions on the topic of electricity supply [P24, P25, P26, P27, P31, P32]

- An analysis has been made and the influence of various factors on the reliability of electricity supply in the sectoral structure of the country has been studied;
- Confirmatory esults from experimental studies have been obtained.

3. Contributions on the topic of quality of electricity [P1, P3, P14, P16, P28, P29]

- Experimental results were obtained from the images of the space vector of voltage and current, as well as the phase currents when working with asymmetric and nonlinear loads, powered by a synchronous generator;
- The power supply systems of enterprises have been studied and recommendations have been made to improve their operatios in terms of reliability;
- The use of the space vestor as a significant factor for the quality of electricity supply is justified.

4. Contributions to the use of energy from renewable sources and energy storage [P17, P22]

- Studies have been conducted on the production of hydrogen from a fuel cell using electricity obtained from a photovoltaic plant;
- Based on experimental data on the amount of solar radiation for certain periods of time, results have been obtained for the amount of hydrogen produced by energy from photovoltaic panels;
- A complex system of practical training sessions on technological processes for the production of electricity from renewable sources, for the production and storage of hydrogen, and the inverse conversion of energy into electricity has been developed;
- Software applications for processing, visualization and archiving of data received from the meteorological station of BFU have been created;
- Software applications for calculation and visualization of saved greenhouse gas emissions during the operation of a photovoltaic plant have been created;
- A mobile application, which provides real-time information on energy production from a photovoltaic plant, has been developed.

4. Significance of contributions to science and practice

I evaluate the contributions of Dr. Eng. Ginko Angelov Georgiev as scientific and practically applied and classify them as follows:

- Enrichment of knowledge and systems by formulating innovative approaches in existing scientific fields;
- Creation of modified algorithms, methods and schemes for obtaining confirmatory facts.

5. Critical remarks and recommendations

I have no significant remarks on the materials presented for participation in the competition. I advise the candidate:

- To focus his research activities in a narrower field, in order to obtain more significant results and publish them in leading scientific journals;
- To look for opportunities to form a team of young scientists to work on the topic and to participate in important national and international research projects.

Conclusion

The scientific papers proposed for participation in the competition meet the scientometric requirements set in the Academic Staff Development Act and in the normative documents of the Burgas Free University for acquiring the academic position of Associate Professor. Dr. Eng. Ginko Angelov Georgiev has performed the necessary teaching and research work.

Considering the above, I propose that Dr. Eng. Ginko Angelov Georgiev be elected Associate Professor in the professional field 5.2. "Electrical Engineering, Electronics and Automation" ("Power supply and Electrical Equipment") at Burgas Free University.

21.01.2022 г.

Prof. Dsc. Eng. Mihail Petkov Iliev