

О P I N I O N

Regarding: a competition for the occupation of an academic position of "associate professor", scientific specialty „Electrical power supply and electrical equipment”, in professional direction 5.2 Electrical engineering, electronics and automation, regarding to a competition announced by the University "Prof. Dr. Asen Zlatarov" – Burgas.

Candidate: chief assistant professor, eng. Mladen Antonov Proykov, Ph.D

Member of the scientific jury: associate professor, eng. Radoslav Ivanov Kyuchukov, PhD,
University of Rouse "Angel Kanchev”

1. GENERAL INFORMATION

The competition for the academic position of "associate professor" in the field of "Technical Sciences", professional direction 5.2 Electrical engineering, electronics and automation, scientific specialty "Electrical power supply and electrical equipment", for the needs of University "Prof. Dr. Asen Zlatarov" - Burgas, has been announced in the State Gazette, issue 97/21.11.2023. As a candidate participates chief assistant professor, eng. Mladen Antonov Proykov, Ph.D.

The scientific jury for the procedure has been appointed by order № RD-67 from 22.02.2024. of the Rector of the University "Prof. Dr. Asen Zlatarov" - Burgas. The documents related to the competition have been submitted on time and meet the requirements of the Law on the development of the academic staff in the Republic of Bulgaria, the Rules for its implementation and the internal regulations of the University "Prof. Dr. Asen Zlatarov" - Burgas.

Eng. Mladen Antonov Proykov, Ph.D has been graduated in 1999 from the Technical University - Varna with a Master's degree in the specialty "Electrical power supply and electrical equipment of industrial enterprises".

In 2018, he has defended a dissertation for the acquisition of the ESD "Doctor" on the topic "Research, analysis and recommendations for achieving electromagnetic compatibility in power supply systems in reduced load mode".

From 2019 to the present, he have worked as a chief assistant professor in the Department of "Electronics, Electrical Engineering and Mechanical Science", at the University "Prof. Dr. Asen Zlatarov" - Burgas

2. SCIENTIFIC PUBLICATION ACTIVITY

The candidate submits a total of 29 publications and one monograph for participation in the competition, as follows:

- Monograph: "Reliability of power supply (theoretical foundations of reliability in power supply systems), 2023, co-authored with associate professor Rumens Kirov, PhD;
- Scientific publications in journals referenced and indexed in world-renowned databases of scientific information – 8;

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- Scientific publications in non - refereed journals with scientific review or in edited collective volumes, including reports at international scientific conferences in Bulgaria – 21;
- Publications in English – 27;
- Self-publishing – 9;
- Co-authored publications in which the applicant is first – 11;
- Scientific works submitted for the acquisition of the ESD "Doctor" – 7;
- Handbook's – 2, self-authored;
- Textbook in 2 separate, separately published parts, co-authored.

A Citation Report of the candidate's publications have been presented: 14 citations in scientific publications, referenced and indexed in world-renowned scientific information databases or in monographs and collective volumes; 6 citations in non-refereed peer-reviewed journals.

3. PARTICIPATION IN PROJECT DEVELOPMENTS

The candidate has participated in the development of 6 scientific projects:

- Scientific leader of a project financed by the "Research and Artistic Activity" fund;
- Member of the scientific team of 5 intra-university scientific projects.

4. EDUCATIONAL ACTIVITY

During the last three academic years, the candidate has worked as a chief assistant professor on a basic employment contract in the Department of "Electronics, Electrical Engineering and Mechanical Science", at the University "Prof. Dr. Asen Zlatarov" – Burgas and has participated in the learning process of the disciplines:

- „Electrical engineering and electrical measurements“, for "Computer Systems and Technologies" and "Software Engineering" specialties;
- „Theoretical electrical engineering“, for "Computer Systems and Technologies" and "Software Engineering" specialties;
- „Theoretical electrical engineering“ (I and II part), for "Electronics, "Medical Electronics" and "Automotive Electronics" specialties;
- „Theoretical electrical engineering. Electric drive, Electricity supply, Lighting technology“ , for "Electrical Engineering" specialty.

During the period 2017 – 2023, the candidate has defended 18 graduates.

5. CONTRIBUTIONS OF THE CANDIDATE

5.1. Applied scientific contributions in scientific publications:

- Research, analysis and improvement of the energy efficiency of electrical networks; [2.2, 2.3, 2.5, 2.8, 3.3, 3.4, 3.5, 3]
- Research, analysis and evaluation of the quality indicators of electrical energy and electromagnetic compatibility in electrical networks; [2.1, 2.4, 2.7, 3.1, 3.14]

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- Study of models of photovoltaic systems and study of their influence on electricity supply systems; [2.6, 3.19, 3.20]
- Study of the reliability of power supply systems; [3.12, 3.13, 3.18]
- Research the operation of the control and protection devices electrical networks and electrical equipment. [3.8, 3.9, 3.17, 3.21]

5.2. Scientific and applied contributions in the monograph:

- Basic concepts, indicators and characteristics of reliability in power supply systems have been systematized;
- Energy criteria for practical assessment of the reliability of power supply systems have been considered;
- Methods for predicting and improving reliability have been proposed;
- The power losses of the industrial sites as a result of interruption of the power supply have been considered.
- Mathematical models of the reliability of power supply systems of different complexity have been developed.
- The reliability of real power supply systems of different complexity have been analyzed;
- A quantitative assessment of the influence of the human factor in predicting the reliability of power supply systems have been made.

5.3. Applied contributions:

- Development of a device for automatic transverse compensation of reactive energy;
- In a specific enterprise - the power losses at different loads of power transformers have been appreciated, as a result of the deteriorated indicators of electrical energy, with the application of reactive power compensation and increasing the reliability of the power supply system;
- Solutions based on photovoltaic systems have been specified for implementing building energy management.

5.4. Educational methodical contributions:

They are released:

- Handbook for laboratory exercises in Relay Protection and Automation. Author Mladen Proykov;
- Handbook for seminar exercises "Reliability of Electricity Supply". Author Mladen Proykov;
- Textbook "Operation of electrical equipment". First part (theoretical and practical basics of operating electrical equipment,). Co-authors: Rumén Kirov and Mladen Proykov;
- Textbook "Operation of electrical equipment". Second part (theoretical and practical basics of operating electrical equipment,). Co-authors: Rumén Kirov and Mladen Proykov.

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The topic and content of the exercises from the handbooks and both parts of the textbook include the candidate's developments containing a contribution nature. They are intended for the training of students, but may be useful to specialists in the field of electricity.

6. CRITICAL NOTE

The critical note has the character of a recommendation. It is related to the general assessment of the candidate's work, as a necessary addition to his academic profile:

- To direct his research, publication and application activities to towards complex solutions in the field of intelligent power supply systems where the candidate has experience and potential.

CONCLUSION

The materials presented in connection with the procedure prove that eng. Mladen Antonov Proykov, PhD, as a university teacher with high scientific, professional and teaching-methodological qualifications in the field of lighting technology. I have no reservations regarding the candidate's personal contribution to the creation of the evaluated scientific production.

Based on the above, I propose that chief assistant, eng. Mladen Antonov Proykov, PhD, be elected to the academic position "assisiate profesor" in the scientific specialty "Electrical power supply and electrical equipment", in professional direction 5.2. "Electrical Engineering, Electronics and Automation", at the University "Prof. Dr. Asen Zlatarov" - Burgas.

Ruse
April, 2024

**Prepared the opinion,
member of the scientific jury:**

(associate prof., eng. Radoslav Kyuchukov, PhD)

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