Бургаски държавен университет
„Проф. д-р Асен Златаров"
8010 Бургас, бул. „Проф. Якимов" №1
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# OPINION

on the competition for the academic position of ASSOCIATE PROFESSOR in Higher Education Area 5. Engineering Sciences, Professional Field 5.2. Electrical Engineering, Electronics and Automation,
scientific specialty "Electric Power Supply and Electrical Equipment" (Non-Conventional and Renewable Energy Sources), announced in the State Gazette, Issue No. 65 of 17 July 2026,
Candidate: Chief Assistant Professor Vasil Borisov Ivanov, PhD, Eng.
Prepared by a member of the Scientific Jury: Assoc. Prof. Liliya Anestieva Staneva, PhD, Eng.

## I. Materials Submitted for the Competition

The materials submitted to me for the competition meet the requirements of the Academic Staff Development Act in the Republic of Bulgaria, the Regulations for its Implementation, and the internal rules of Prof. Dr. Assen Zlatarov Burgas State University. The materials are carefully organized.

## II. Career Profile of the Candidate

Chief Assistant Professor Vasil Ivanov, PhD, Eng., began his professional career in 1988 at the Technical University of Gabrovo, where he worked as an electronic equipment technician at the University's Teaching and Experimental Facility. In 2013, he joined the Department of Electronics, Electrical Engineering and Mechanical Engineering at the Faculty of Technical Sciences of Prof. Dr. Assen Zlatarov Burgas State University, where he continues to work. He followed the usual course of academic advancement: Assistant Professor from 2013 to 2017 and Chief Assistant Professor since 2017. In 2015, he enrolled in a doctoral programme at the University of Ruse "Angel Kanchev", in scientific specialty 02.04.15 "Electric Power Supply and Electrical Equipment" (by industry). In 2017, he successfully defended his dissertation entitled "Investigation of the Impact of Photovoltaic Systems on Electrical Networks".

## III. Overview of the Materials Submitted for the Competition

The scientific works submitted by Chief Assistant Professor Vasil Ivanov, PhD, Eng., fall within the subject area of the announced competition and address the investigation, modelling and application of electrical engineering systems, including systems for electrical energy generation and conversion.

The candidate has submitted 14 scientific publications, of which three appeared in publications indexed and abstracted in the international Scopus database and 11 in other scientific publications. He has also submitted a monograph entitled "Investigation of Solar Voltage Inverters through Modelling and Practical Implementation", published in 2025, which is presented as his principal habilitation work.

His scientific output is supplemented by four educational publications—two teaching aids and two manuals—intended to support instruction in electrical engineering disciplines. Materials documenting the candidate's participation in research projects have also been submitted.

I accept for evaluation the 14 scientific publications, one monograph and four educational publications submitted. The scientific works correspond to the subject of

the competition and reflect the candidate's research activity in electrical engineering and electric power engineering.

**IV. Assessment of Scientific and Applied Scientific Contributions**

The scientific and applied scientific contributions of Chief Assistant Professor Vasil Ivanov, PhD, Eng., relate primarily to research on electric power systems, power electronic converters and photovoltaic systems, with an emphasis on increasing their efficiency and improving power quality.

A significant place in the candidate's research is occupied by the monograph "Investigation of Solar Voltage Inverters through Modelling and Practical Implementation". It presents models of single-phase and three-phase solar inverters developed in MATLAB/Simulink, which are used to investigate different operating modes and the effect of loading on the characteristics of converted electrical energy. Particular attention is paid to harmonic distortion of current and voltage and to the possibilities of reducing it by means of resonant filters.

The studies involving the development and application of simulation models for the analysis of electrical circuits, power transmission lines and photovoltaic systems also constitute contributions. The results obtained make it possible to assess the influence of individual parameters on operating conditions, electrical energy losses and voltage quality.

The laboratory setups developed and the experimental studies conducted on stand-alone photovoltaic systems incorporating batteries, inverters and monitoring equipment are of practical significance. The effects of climatic and seasonal factors on photovoltaic system performance have also been studied, and approaches have been proposed for monitoring and analysing their operating indicators.

The submitted scientific works also address resonance phenomena in electrical circuits, the operation of electromechanical devices and possibilities for using autonomous power sources to supply low-power consumers.

I consider the candidate's principal contributions to be of an applied scientific and practical nature. They consist in developing and using models, methods and experimental setups to investigate and optimize the operation of electrical engineering and photovoltaic systems. The results are practically oriented and correspond to the scientific specialty for which the competition was announced.

**V. Assessment of the Candidate's Teaching Activities**

The teaching activities of Chief Assistant Professor Vasil Ivanov, PhD, Eng., involve the education of students in the Professional Bachelor's, Bachelor's and Master's degree programmes at Prof. Dr. Assen Zlatarov Burgas State University.

The candidate delivers lectures and practical classes in "Electrical Measurements", "Electrical Engineering and Electrical Measurements", "Electromechanical and Pneumatic Devices", "Non-Conventional and Renewable Energy Sources", "Diagnostics and Control of Electromechanical Devices", and other subjects in electrical engineering and electronics. According to the submitted statement of teaching workload secured for the competition, the total amounts to 865 academic hours.

Chief Assistant Professor Vasil Ivanov, PhD, Eng., has developed course syllabi for various degree programmes at the Faculty of Technical Sciences and the Technical

College. He is the author of four educational publications issued in 2025, designed to support students' practical training in "Electrical Measurements" and "Electromechanical Devices". The teaching materials include practical exercises, circuit diagrams, tests and questions for independent study and assessment of acquired knowledge.

The candidate has also been actively involved in supervising diploma theses. According to the submitted statement, 20 students in the Master's programme in Electrical Engineering successfully defended their diploma theses under his supervision during 2016–2026. The topics cover electrical measurements, electrical machines, electric power supply and photovoltaic systems.

I assess the teaching activities of Chief Assistant Professor Vasil Ivanov, PhD, Eng., positively. The submitted materials demonstrate accumulated teaching experience, involvement in curriculum development and commitment to students' practical training. I consider that the candidate possesses the teaching qualifications and experience necessary to hold the academic position of Associate Professor.

**VI. Fulfilment of the Minimum National Requirements**

According to the submitted declaration of compliance, Chief Assistant Professor Vasil Ivanov, PhD, Eng., meets the minimum national requirements and the requirements of Prof. Dr. Assen Zlatarov Burgas State University for the academic position of Associate Professor in Professional Field 5.2. Electrical Engineering, Electronics and Automation.

Under indicator group "A", the candidate has 50 points for holding the educational and scientific degree of Doctor (PhD), and under group "V" (B), 100 points for the submitted habilitation work—a monograph.

Under indicator group "G" (Г), covering scientific publications, the candidate has 280 points against a minimum national requirement of 200 points and an internal university requirement of 220 points.

Under indicator group "D" (Д), relating to citations of scientific works, 90 points have been reported against a minimum national requirement of 50 points and an internal university requirement of 60 points.

Under indicator group "E" (E), covering participation in and leadership of research projects and published teaching aids, the candidate has 110 points.

The total number of points declared across all indicator groups is 630. The results presented exceed the minimum requirements in the respective groups, which gives me grounds to conclude that the candidate meets the quantitative criteria for the academic position of Associate Professor.

**VII. Personal Impressions**

I have been familiar with the professional and teaching activities of Chief Assistant Professor Vasil Ivanov, PhD, Eng., since 2020, when I joined the staff of the Department of Electronics, Electrical Engineering and Mechanical Engineering at Prof. Dr. Assen Zlatarov Burgas State University.

My impressions of him are of a responsible, conscientious person who approaches assigned tasks professionally. He is exceptionally modest and hardworking and demonstrates perseverance and responsibility in fulfilling his

commitments and pursuing established goals. I value positively his consistency in research and teaching.

**VIII. Critical Remarks and Recommendations**

I have no substantial critical remarks regarding the scientific works and materials submitted for evaluation in the competition. I recommend that the candidate continue his research activities and expand his publication record in internationally refereed and indexed scientific journals and proceedings.

**IX. Conclusion**

My assessment of the overall research, applied scientific and teaching activities of Chief Assistant Professor Vasil Borisov Ivanov, PhD, Eng., is positive. The scientific works submitted, the contributions achieved and the teaching experience acquired meet the requirements of the Academic Staff Development Act in the Republic of Bulgaria, the Regulations for its Implementation and the internal rules of Prof. Dr. Assen Zlatarov Burgas State University.

This gives me firm grounds to recommend that the esteemed Scientific Jury elect Chief Assistant Professor Vasil Borisov Ivanov, PhD, Eng., to the academic position of Associate Professor in Higher Education Area 5. Engineering Sciences, Professional Field 5.2. Electrical Engineering, Electronics and Automation, in the scientific specialty "Electric Power Supply and Electrical Equipment" (Non-Conventional and Renewable Energy Sources).

27 October 2026 г. MEMBER OF THE SCIENTIFIC JURY:

Burgas (Assoc. Prof. Liliya A. Staneva, PhD, Eng.)