OPINION

by Dr. Eng. Todor Stoyanov Djamiykov, Professor at the Technical University of Sofia

on the competition for awarding the academic position "Professor" in the field of higher education 5. Technical Sciences, professional field 5.2. Electrical Engineering, Electronics and Automation (Elements and Devices of Automation and Computing Technology), announced in State Gazette No. 61/29.07.2025, for the needs of the Institute of Robotics – BAS.

Sole candidate: Assoc. Prof. DSc. Eng. Iliyan Hristov Iliev

1. General overview of the procedure and the candidate

By Order No. 116/26.09.2025 of the Director of the Institute of Robotics – BAS, I was appointed a member of the scientific jury for the competition for the academic position "Professor" in the field of higher education 5. Technical Sciences, professional field 5.2. Electrical Engineering, Electronics and Automation (Elements and Devices of Automation and Computing Technology), announced in State Gazette No. 61/29.07.2025, for the needs of the Institute of Robotics – BAS. I received all documents of the sole candidate – Assoc. Prof. DSc. Eng. Iliyan Hristov Iliev. All documents required for the competition for the position of "Professor" were submitted within the legal deadline. The complete set of materials fully complies with the list of requirements according to the procedure for awarding the respective academic position, in accordance with the Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB), its Implementing Regulations, and the internal rules of the Institute of Robotics – BAS.

2. Brief biographical data of the candidate

Assoc. Prof. DSc. Eng. Iliyan Hristov Iliev obtained his Master's degree in Electrical Engineering from the Technical University of Gabrovo, Faculty of Electrical Engineering and Electronics, in 2001. In 2016, he defended his PhD degree at the Department of "Power Supply and Electrical Equipment" of TU-Gabrovo. In 2024, he successfully defended his Doctor of Technical Sciences degree. His professional career began as an electrician at "Knauf Gipsfaser" JSC, Vidin. He successively held higher positions in electrical enterprises in Vidin, and in the period 2008–2011 he was head of a regional division for the Vidin and Montana regions at "CEZ Distribution Bulgaria" JSC. Since 2011, he has been working in Sofia—initially at the Energy and Water Regulatory Commission (EWRC). Between 2017 and 2024, he was part of the academic staff of the University of Mining and Geology "St. Ivan Rilski", Sofia, where he obtained the academic position of Associate Professor and was elected Head of the Department "Power Supply and Electrical Equipment". Since 2024, he has been part of the research team of the Institute of Robotics – BAS.

3. Opinion on the submitted materials

The candidate submitted a habilitation work (monograph) in group B3, and a set of 21 publications meeting the requirements of groups G7 and G8. The list of citations, listed in reference group D, includes 50 citations. The total score for group D indicators is 114 points. The summary table presents the total number of points achieved by the candidate and the

minimum required points according to the scientometric indicators, as defined in the national minimum requirements under ZRASRB. The table shows that Assoc. Prof. DSc. Iliyan Iliev exceeds the national requirements by almost 40% for the professional field 5.2 Electrical Engineering, Electronics, and Automation.

Group of indicators	Minimum required points	Candidate's points
A	50	50
B	-	100
C	100	100
D	200	202
E	50	114
F	150	200
Total	550	764

4. Evaluation of contributions

I accept the candidate's declared scientific contributions as presented in the submitted materials for each of the publications. The contributions are mainly concentrated in the field of power supply and electrical equipment of industrial enterprises, aimed at optimizing energy efficiency, minimizing power losses, compensating reactive loads, and improving the quality and reliability of power supply systems. Despite their common orientation within the field of the competition, they can be grouped and analyzed as follows:

Scientific contributions:

1. Establishment and study of a correlation between electromagnetic compatibility and power supply reliability through the application of probabilistic-statistical methods.

Scientific-applied contributions:

1. Development of a comprehensive methodology for quantitative assessment of additional costs arising from deterioration in power quality, accounting for pulsating/deformation power and reduction of equipment lifetime.
2. A probabilistic-statistical methodology has been developed for assessing the influence of power quality on equipment reliability and operational life.
3. The effect of deteriorated power quality on the reliability of medium-voltage cable lines has been studied, showing that their lifetime is approximately halved.

Applied contributions:

1. It has been proven that when power transformers are loaded below 25%, it is economically feasible to disconnect one supply cable or transformer, leading to energy savings of 5-7%.
2. Through the application of longitudinal compensation of reactive loads, a significant improvement of the power factor (above 0.9) is achieved, as well as reduction of voltage fluctuations and asymmetry.
3. A new technical solution has been implemented for optimizing deviations in trunk networks under an optimal angle, achieving an economic effect of about BGN 850 per year for a single branch.
4. A universal methodology has been developed for assessing the payback period (Tpay) of compensation devices, taking into account losses and improvement in power quality.

5. Personal impressions, critical remarks, and recommendations

I have known Assoc. Prof. DSc. Iliyan Iliev since his time as Head of Department at the University of Mining and Geology. At that time, we discussed professionally the future program of an academic discipline for students. My impression of him is that he is an erudite, competent, and proactive scholar. Critical remarks: • The summaries and evaluations of publication results could be presented more precisely, which would lead to a more accurate and representative description of the contributions. • The submitted documents lack a clear vision of future research activity, which is important in a habilitation procedure. Recommendations: I recommend that the candidate focus on an extensive and detailed theoretical generalization of the established correlation between electromagnetic compatibility and power supply reliability using probabilistic–statistical methods, and that he actively publish the results in prestigious international journals with high impact factor.

Conclusion

After carefully reviewing all materials submitted by the candidate, I have found that they fully comply with the requirements of the Law on the Development of the Academic Staff, its Implementing Regulations, and the internal rules of the Institute of Robotics – BAS. No plagiarism has been found in the candidate's scientific works. Therefore, I confidently give my positive assessment of the research conducted, the submitted materials, achieved results, and contributions, and I propose to the esteemed scientific jury to award the academic position "Professor" to Assoc. Prof. DSc. Iliyan Hristov Iliev in the field of higher education 5. Technical Sciences, professional field 5.2 Electrical Engineering, Electronics and Automation (Elements and Devices of Automation and Computing Technology).

12.11.2025

Prepared by: .....

(Prof. Dr. Todor Djamiykov)