

STATEMENT

concerning a contest for obtaining an academic position „Associate Professor”
in the scientific specialty „Application of the principles and methods of cybernetics in
different fields of science (biomedicine)”
in the professional field

5.2 „Electrical Engineering, Electronics and Automation”

announced in State Gazette (SG) 58/18.07.2025 for Department „Analysis and Processing
of Biomedical Signals and Data”, IBPhBME - BAS

with candidate: Dobromir Petkov Dobrev, PhD, Eng., Assistant Professor

Member of the Scientific Jury: Peter Ivanov Yakimov, PhD, Eng., Professor

1. Overall characteristic of the applicant's research and scientific applied activity

Assist. Prof. Eng. Dobromir Petkov Dobrev, PhD, presented for participation in the
competition scientific publications outside the dissertation thesis for the Doctor degree as
follows:

Group of indicators	Minimum number of points	Applicant's number of points	Number of points by main indicators per group	
A	50	50	PhD Diploma № 27142 Date: 23.04.2001; Issued by: Higher Attestation Commission; Professional field 5.2 „Electrical Engineering, Electronics and Automation”; Scientific specialty: „Automated systems for information processing and control”	
B	–			
V	100	340	V3	
			V4	340
G	200	291,9	G5	
			G6	
			G7	100
			G8	191,9
			G9	
			G10	
			G11	
D	50	100	D12	100
			D13	
			D14	
			D15	
E	–	200	E26	200
Total	400	981,9		

A total of 36 scientific publications were presented under the competition. From them:

- 10 have SJR and/or IF - 9 in the list of indicator V4 and 1 in the list of indicator G7;
- 8 are published in international journals, distributed by quartiles: Q1 – 1, Q2 – 6, Q3 – 1;
- 7 are presented at international conferences and published in proceedings indexed in WoS and/or in Scopus;
- 21 are published in not referred journals with scientific review in the list of indicator G8;

Of the attached publications, 4 are independent, in 29 the candidate is the first author, in 3 he is in second place.

No declarations by co-authors have been submitted for the collective works of the candidate, so I accept that the participation of all co-authors in the publications is equivalent.

I accept that all presented scientific publications are relevant to this contest.

The candidate has presented 10 citations, all indexed in Scopus and/or in WoS editions. A Scopus reference shows a total of 170 citations to the applicant's works.

The ratio of the number of citations to the number of publications makes a good impression.

The candidate is the author of five patents, which are not required for participation in the competition for academic position „Associate Professor“, are included at the discretion of the reviewer and bring scientific production (981,9 points) significantly exceeds ($\approx 245\%$) the minimum requirements (400 points) for academic position „Associate Professor“ according to the Rules of IBPhBME - BAS.

The presented scientific production gives opportunity to evaluate highly the publication activity of the candidate.

2. Main scientific and applied science contributions

The contributions in the applicant's publications can be distributed in the following research fields:

1. Investigation on circuits for two-electrode registration and amplification of biosignals presented in the publications [V4.1, V4.2, V4.3, V4.4, V4.5, G8.1, G8.2, G8.3, G8.8].

2. Registration and processing of biosignals from phototransducers, bioimpedance, capacitive electrodes and sensors contained in publications [V4.7, V4.9, V4.10, G8.4, G8.5].

3. Filtering power-line interference from ECG signals using comb filters contained in publications [G8.15, G8.16, G8.17, G8.18, G8.19, G8.20], by phase-locked loops (PLL), presented in publications [G7.1, G7.2, G7.3, G7.4, G7.5, G8.6, G8.7, G8.9, G8.13, G8.14, G8.21] and by lock-in technique [V4.8, G8.10, G8.11, G8.12].

Contributions that propose suppression of power-line frequency interference through frequency and phase synchronization and the improvement of correlated multiple sampling techniques can be classified as scientific. They are also applicable in signal processing from other fields of technology. These contributions can be attributed to proving by new means significant new aspects of already existing scientific fields, problems, theories, hypotheses.

Contributions to the investigation and implementation of circuit solutions for differential and non-differential biosignal amplifiers without a reference electrode can be classified as applied science. They can be attributed to the creation of methods and devices with new qualities and parameters.

The contributions for the practical implementation of a phototransducer for registering a peripheral pulse from the forehead area and of circuit solutions for registering biosignals can be assessed as applied. They can be classified as obtaining confirmatory facts.

3. Significance of the contributions to the science and practice

The declared scientific and applied science contributions prove the successful research activity of the candidate. They are implemented in the globally actual area of the Biomedical engineering. Many of the results of this activity are implemented in practice and are protected by patents and certificates.

It can be concluded that the research activities of the candidate have proven their usefulness.

I have known Assist. Prof. Dobromir Dobrev since his student years, where he impressed with his profound and serious knowledge. Subsequently, during his participation in various international and national scientific forums and conferences, he has proven himself to be an erudite and competent scientist. With the results of his activities, Assist. Prof. Dobrev is recognizable in the scientific community.

I am confident that his successful activity will continue after the employment of academic position „Associate Professor“.

4. Critical remarks and recommendation

The contributions should be consolidated.

The majority of the publications presented are co-authored, which demonstrates teamwork skills and provides career development opportunities for the other co-authors.

I recommend the candidate after obtaining the academic position „Associate Professor“ to attract PhD students and lead research projects.

CONCLUSION

According to the submitted documents and the above analysis of the candidate's work, as well as in my personal opinion, I believe that Assist. Prof. Dr. Eng. Dobromir Petkov Dobrev has scientific, applied science and applied contributions to a sufficient extent, as well as significant academic activities. I believe that the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria, as well as the Regulations to the law and that of the IBPhBME - BAS have been met.

Based on the presented scientific papers, their significance and citation, the scientific, applied science and applied contributions contained in them, participation in projects and contracts, I find it reasonable to offer **Assist. Prof. Dr. Eng. Dobromir Petkov Dobrev** to take the academic position of „Associate Professor“ in the professional field 5.2. „Electrical Engineering, Electronics and Automation“ in the scientific specialty „**Application of the principles and methods of cybernetics in different fields of science (biomedicine)**“.

Date: 10.11.2025
Sofia

Member of the Scientific Jury:
/Prof. Eng. Peter Yakimov, PhD/