

STANDPOINT

in competition for academic positions "Associate Professor" in the field of higher education 5. Technical Sciences, Professional Field 5.2. Electrical engineering, electronics and automation, in speciality "Theory of electronic circuits and computerization", announced in the State Journal № 31 / 04/14/2019 for the needs of Plovdiv University "Paisii Hilendarski", EKIT Department at Physics and Technology Faculty, applicant: **Assist. Prof. Dr. Eng.-Phys. Sotir Ivanov Sotirov**

Provided the standpoint: **Assoc. Prof. Dr. Eng. Margarita Deneva**, Member of scientific jury by order of the Rector № R33-2887ot on 11/06/2019, Technical University of Sofia, Branch Plovdiv

General characteristics of the applicant's main training

In 2003 the applicant completes "Engineering Physics" as a bachelor, and in 2006 Master - "Engineer - physicist on electronic and laser technology" - both at Plovdiv University "Paisii Hilendarski". In 2015 he defended dissertation on "doctor" in the Physical Sciences, also at Plovdiv University. After graduation, assist. Prof. Dr. Sotirov has worked in manufacturing laboratories and has participated in projects (2004-2012, the KCM – JSC, Company "RIKOZ" and PU) as a physicist, expert physicist and methodologist. He has worked in maintenance and operation of specialized equipment for mechanical and spectral research on non-ferrous metals and alloys dosimetry and radiation measurements. This gives me a reason to consider that the applicant has a real experience as an engineer-physicist. Since 2012 he began working as an assistant in the Department EKIT at Plovdiv University. I regard that the experience gained from the real engineering work in manufacturing is especially useful for teaching in his work in the direction of the contest for the formation of necessary professional landmark on the real engineering. Definitely a positive attitude towards his overall engineering orientation is the completed secondary technical education in the of Mechanical Engineering Technical School, formed at the beginning of the engineering focus of his profession as an engineer - physicist.

In conclusion – the basic educational and practical work allow me to see Assist. Prof. Dr. Sotirov as a suitable candidate for associate professor - a lecturer in the direction of the competition.

Pedagogical and organizational activity of the applicant

Assist. Prof. Dr. S. Sotirov is working as a lecturer, with experience more than seven years - with lectures and laboratory exercises, since 2012 in Plovdiv University, mainly on the subject of the competition (Electrical engineering and Electronics, Optoelectronics, Analog Devices, Digital Circuits). From the provided documents is evident that his annual commitment is enough (more than 300 hours), which completely fulfills this point of the requirements for obtaining the academic position "Associate professor" on the competition subject.

Assessment and critical analysis of the professional training and scientific activity of the applicant. Importance of the achievements and personal contribution.

In the requirements for participation in the competition, the applicant provides sufficient material, associated with the engineering activity and affecting the topic of the competition, mainly in engineering and applied aspects. He participates with 25 publications and 5 applied research projects (3 with NSF, one is on FP7, one internal) as a member of the team. The presented publications and monograph create the belief that he possesses the necessary competence on the subject of the competition - in the development and implementation of complex electronic systems at modern level. Publications reflect some of the original developments in the circuits' part, in which the candidate has worked to solve specific problems in solving specific problems. This includes specified circuits, competent selection and proper connection of the element base to achieve the practical goals.

In the main part, the developments affect the elaboration and use of electronic control equipment, technology and measurements for creating specific products and specialty packaging components for pharmacy. In this respect, the activity has been a complex, which required creative solutions for a relevant modern electronic control and measuring base, and therefore complex teams were formed to solve the specific task. The perceived presence of assist. prof. eng-phys. Sotirov in publications gives grounds to conclude that electronic part was

the main task in this problem. This points to his personal contribution in this complex work can definitely give a positive evaluation of engineering and demonstrated competence of the applicant. The practical work, involving a substantial part of the engineering activity, and its importance, especially as demonstrated in such an important field as healthcare, creates conviction for my positive assessment of the candidate's performance in the competition.

The applicant presents a brief self-assessment of his contributions, and a list of 25 publications (all beyond the used in the defense of his thesis). 21 of the publications are presented in English in international journals and conference proceedings, which gives access to the international scientific community to them, four of the publications are in Bulgarian. More of the material are referenced and are marked in the international database (Thomson Reuters, Scopus - 16 documents), including in "open access". The applicant participates in at least 6-7 papers with IF and he is evaluated with h-index - 3 by Scopus (good score for university professor). The marked international presentation belongs to the main criteria for my real positive assessment of the significance of his scientific activity.

The presented monograph "Computer measurements of physical quantities" the applicant refers to the main sources of summarizing characteristics for his competence. I accept the claim of the applicant on the presentation of the book as a monograph for the competition. It contains five chapters, which present the basic theoretical and practical aspects in the development and design of computerized measuring systems with particular emphasis on the role of microcontrollers in the design of the measuring devices. The focus is on basic digital interfaces for communication between microcontrollers and specialized digital integrated circuits through which the measurements are realised. The statement includes basic block diagram of specially developed software for visualization and mathematical processing of the results, and their user interfaces. I will note that the presentation of the electronic part is at good professional level in nature.

In the present form, the monographic book I accept as useful, but quite modest for the aims and objectives of the direction in which is this competition. Generally, to be this monograph at good level, it needs to include questions, which clarify and supplement the issue in it as a monographic book. It was necessary to extend the presentation of complementary and basic moments in some explanations, and the use of more appropriate literature, both basic and for the affected problems. I pay attention to Chapter 2 - "Measuring the spectral characteristics of electromagnetic radiation" occupying a negligible part of the book (19 pp. / 163 pp.). The chapter deals with measurements referring to the light. Therefore, it would be appropriate, even briefly, to present an introduction to the presentation of light as an electromagnetic wave (so the characteristics of electromagnetic radiation are discussed). Also, in a further edition of the book, it is necessary to cite additional and established Bulgarian literature, presenting well at understable level these problems so that the reader can supplement the information in discussed problems in the chapter.

Also, as a critical remark, I note the absence of any mention of some of today's modern measuring devices of higher grade based on the idea of using the Michelson interferometer for modern precision wavemeter; Spectrum devices based on the interferometer of Fabry-Perot, and also wedge interference structures. The publication day of the monograph is 2019, and for the noted above points have enough information. Regardless of the fact that they are not a direct subject of the review in the monograph, the marking of these innovations enriches and gives the book its modernity and relevance. There are sufficient literary sources, including high-level Bulgarian textbooks at reputable universities and publishers based on high-level Bulgarian literature, which did not mention in the monograph, including the issues addressed there. Significant matters for consideration, including the entire book is that basic serious questions are ignored - such as what is the behavior of the equipment at the analysis of short light pulses - until which time durations work given apparatus (main problems in nowadays applications of the spectrum analysing systems) .

The stage of the competition, I accept the presented monograph as useful to fulfill the requirements for habilitation. But in the next edition of the book I hope the noted questions to be supplemented.

Evaluation of the personal contribution of the applicant

In the articles, the applicant is basically co-author, in 1 article he is first author, and in 2 papers is the only one author. It is noteworthy that in most of the articles the author's team is numerous. This, I suppose, is related to the volume and complexity of the work for obtaining the results reflected in the articles. In view of the practical value and usefulness of such results, the formation of such groups is necessary and permissible. An important point is that every participant has contributed his competence to the obtained result.

Evaluation and summary and of the main results

As a result, the analysis of scientific and applied contributions of Assist. Prof. Dr. Sotirov shows consistent and purposeful development of his scientific interests (theses, practical experience, and dissertation) in respect of the competition to reach the level of the required position. There is a systematic build-up of different scientific potential and aspiration the developments to have a real practical usefulness. The five major research projects, in whose team he participated, are with included work on the topic of the competition.

Critical remarks and recommendations

Such are noted and discussed above in the necessary details, related with the nature of the research results, shown in the monograph. Summarized, they are - the electromagnetic wave in its presentation as light, work of the developed electronic devices at short light pulses; precision spectroscopic analyzers based on interferometers of Fabry-Perot, Michelson, and wedge interference structures; inclusion of relevant literature for more appropriate presentation (particularly in the monograph of Bulgarian language - a recognized base Bulgarian literature). The critical comments do not violate my opinion of my overall positive assessment. I believe that the notes will be taken into account hereinafter.

Conclusion

Based on presented materials and the discussion before, I consider that the applicant in the competition. **Assist. Prof. Dr. Mag. Eng Phys. Sotir Ivanov Sotirov** is built specialist with the required high level of skills in the field of the present competition for "associate professor" of Professional field 5.2. "Electrical engineering, electronics and automation" ("Theory of electronic circuits and computerization. The results of his scientific and applied activities are of definitely usefulness and of a given applied value in such important applied field - pharmacy (with his contributions to developments in Electronic measuring and technological activities and equipments). He has active and sufficient pedagogical activity and experience. The activity of Assist. Prof. Dr. S. Sotirov is also presented at the international level (16 articles found in Scopus, with h- index 3), by which he is recognized of the international community as a scientist and specialist.

In conclusion, the applicant, with aggregation of his activities and results, meets the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for its implementation and the Rules for the conditions and procedure for occupying academic positions at the Plovdiv University "Paisii Hilendarski " for obtaining the academic position "Associate Professor ". I recommend a positive vote in support of **Assit. Prof. Dr. Eng.-Phys. Sotir Ivanov Sotirov** for occupying the academic position "**Associate Professor**" and I give, as a member of the Scientific Jury, my positive vote for this.

Plovdiv

05.09. 2019

Member of the jury:

Assoc. Prof. Dr. Eng. Margarita Deneva