

STANDPOINT

Concerning a competition for academic position Associate Professor at the University of Plovdiv "Paisii Hilendarski" - Plovdiv in the field of higher education 5. "Technical Sciences", Professional field 5.2. "Electrical engineering, Electronics and Automation" (specialization „Theory of electronic circuits and computerization") promulgated in the State Journal 31 / 14.04.2019 g with single candidate physicist Dr. Eng. Sotir Ivanov Sotirov, assist. prof. in the Department "EKIT", Faculty of "Physics and Technology" at University of Plovdiv "Paisii Hilendarski"

Opinion of member of the jury: prof. DSc. Phys. DSc. Eng. Marin Nenchev Nenchev – Technical University of Sofia

Brief notes for the applicant based on his professional training:

In 2003 he graduated "Engineer - physicist by electronic and laser technology" - level master at University of Plovdiv "Paisii Hilendarski" after his bachelor level " Engineering Physics ", ibidem. In 2015 he defended dissertation on "doctor" in the professional field 5.2. „Electrical engineering, Electronics and Automation“ at the University of Plovdiv. It is significant to note that Dr. Phys-Eng. Sotirov has certain real practical experience as an engineer-physicist after graduation to work in industrial laboratories and project works (2004-2012, the KCM - JSC Company "RIOKOZ"). 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. I believe that the experience gained from real engineering work in manufacturing is particularly useful for teaching in the direction of the competition for forming the necessary professional view of real engineering activity. Also, I am definitely positive about the completed secondary technical education in the technical school, which from a very young age forms a professional view in the scientific and technical field.

So, the basic educational and practical activity give me reason to assume that Eng. Sotirov a definitely suitable candidate for associate professor is being considered –a lecturer in the direction of the competition.

Critical analysis with evaluation of the professional competence of the candidate, significance of his accomplishments and reflection in scientific works, with which he represents in the competition. Personal contribution.

The candidate is presented with sufficient material requirements for participation in the competition, related with engineering activity, concerning the competition topic of the contest mainly in applied aspects. From the presented monograph and publications it can be estimated that he has necessary competence in the contest topic - in the design and development of complex electronic systems on modern level. This includes specified electronics to solve problems, including originality, by a competent selection and proper connection of the element base to achieve the practical goals. The publication reflected a number of original moments of this activity.

The developments are related in large part to the electronic control equipment, technology and measurements in direction of creating products and specialized packaging components for pharmacy. The activity is complex, requiring creative solutions to relevant modern electronic control and manipulation base. Throughout the work is complex, requiring complex working teams. The applicant's task was the electronic part, and the assessment of the constant and systematic presence of publications, requiring solutions in electronics, shows a personal contribution to this complex work. In that aspect of the meaningfulness of significant developments for this important area of health care, can definitely give a positive evaluation of engineering and competence of the candidate. The meaningfulness and practical real significance of the work, involving as a substantial

part the engineering activity and the related results of the applicant, is a key point in the positive evaluation of its performance.

It is presented a brief self-evaluation of main author contributions and a list of 25 scientific papers, except the used in defense of the thesis. 21 publications are presented in English, which gives access to the international scientific community to them and 4 - in Bulgarian. A significant part of them (12) of recent years are referenced in the international literature Abstracts - (Thomson Reuters, Scopus), participate in at least 6-7 articles with IF and the candidate is evaluating h-index = 3 Scopus, which belongs to good assessments university professor (a frequent background of zeros, 1 and 2). For the reviewer, that international presentation is the main criteria for assessing real significance of the research.

The main sources of summarizing characterization of the applicant's competence and his work is the presented monograph "Computer measurements of physical quantities." I accept the pretension of the applicant on the presentation of the book as a monograph for the competition. In it he examines the basic theoretical and practical aspects in the development and design of computerized measuring systems. He considers in details the use of microcontrollers in the construction of the measuring devices. It is also provided the main digital interfaces for communication between microcontrollers and specialized digital integrated circuits that convey the measurements. The exposed material is accompanied by basic block diagrams of specially developed software for visualization and mathematical processing of the results and their user interfaces. I note the analyses of the structure and main modules and assemblies; it is presented also the electrical circuits of the devices. The moments related to performance of the electronic parts are good professional level as nature and presentation.

However, one monograph, as a rule, requires plugging its essential complex with necessary related clarifying or introductory moments. In this integrity, the monographic book in its type, I accept as useful introductory reading for students of the field, but in subsequent its editions should be expanded the presentation of complementary and base moments and use of more appropriate literature, both basic and discussed aspects. In the present variant, it is quite modest. Especially, quite poor is chapter two with the significant volume of the book - "Measuring the spectral characteristics of elektromagnitnototo radiation." In this chapter the measurements are associated with light. For this reason, at least in the shortest way would be better to give an introduction of 1-2 pages for the electromagnetic wave as manifestation as light, as the title is a spectrum of electromagnetic waves, however the discussion is about the light. Almost mandatory, in the next issue of the book that is in Bulgarian, also to be cited established Bulgarian literature highlighting good and understandable recent issues that the reader to have an idea as introductory or complementary on these issues.

Also, the statement does not mention even modern measuring devices – higher level classes, ideologically based on Michelson's interferometer - modern precision wavemeters, spectrum analysers based on Fabry-Perot interferometer, as well as wedge interference structures. I do not discuss about the explanation of the substance of these questions in details in the monograph, but for me it is necessary the reader to have an idea about them. There is enough literature on these topics, also at a high level - particularly Bulgarian textbooks of authoritative universities and publishing houses, based on Bulgarian literature at a high international level, which was not mentioned in the monograph for them, including matters treated therein. Also, as a general rather significant question, throughout the book – it is omitted the reference to basic serious questions, such as the behavior of the instruments in the case of analysis of short light pulses - to which lengths of time the given devices operate, as main points in the current applications of spectroscopic systems.

I believe that the desirable further re-publication of the book the questions will be more deeply discussed. I accept the monograph for the stage with a useful potential that meets the requirement for habilitation.

Pedagogical and organizational activity of the applicant

Assist. Prof. Dr. S. Sotirov worked as a lecturer - with lectures and laboratory exercises since 2012 years in University of Plovdiv "Paisii Hilendarski" mainly on the subject of the competition. Usually, the occupation exceeds 300 hours a year. I consider that teaching activity of the applicant is sufficient as part of the requirements for obtaining academic position "Associate professor" on the tender subject.

Evaluation of the personal contribution of the candidate

The articles are on average with 4-5 co-authors, which I connect with the significance, volume and complexity of the work. It is important that the obtained results are practically valuable and useful. Undoubtedly, every participant has contributed in respect of his competence. An important point is the intelligibility and usefulness of the common work.

Cumulative summary and evaluation of the main results

The results from the analysis of the scientific and applied contributions of Dr. Sotirov show methodical and consistent development of his scientific interests in respect of competition to reach the level for the required position. Starting from his diploma works, practical experience in production and topic of his thesis, it is seen the systematic accumulation of versatile scientific potential plus intention the developments to have a real practical utility. He has participated in teams of five major research projects included work on the topic of the competition.

Critical remarks and recommendations

They were noted and discussed in details, related to discussing of the nature of scientific results, mainly synthesized in the monograph. The key observations with the idea that the reprinting of the book they will be counted and supplemented, were given thereit – the electromagnetic wave manifestation as light, work of the developed electronic devices at short light pulses, precised spectrum analyzers based on Fabry-Perot and Michelson interferometers, based on wedge interference structures, wealthy presentation of relevant literature, particularly in the monograph of Bulgarian language - a recognized Bulgarian base literature. I do not consider these recommendations as critical for my positive overall assessment, but I believe that they will be properly taken into account.

Conclusion

On the basis of the materials and my foregoing discussion, I consider that the applicant in the competition assist.prof. Dr. Mag. Engineer-Physicist Sotir Ivanov Sotirov is built specialist with a high level qualification in a competition for "associate professor" of professional field 5.2. "Electrical engineering, Electronics and Automation". The results of the research and scientific activity have significant utility and application value in important application field - pharmaceutical industry (with his contribution to the developments in Electronic measuring and technological activities and equipments). He has active and sufficient pedagogical activity and experience. Of significance is that the activity is referenced internationally (Scopus, articles, h- index 3), with which he is internationally recognizable as a scientist and specialist.

I consider that the presentation of the candidate in the competition meets the requirements of the development of academic staff in the Republic of Bulgaria, of the Rules of its application and the Regulations of the University-applicant to obtain academic position "associate professor" in the announced competition. I recommend a positive vote for awarding assist. prof. PhD engineer-physicist Sotir Ivanov Sotirov to this academic position for which I will also vote.

Sofia
03.09. 2019

Member of the Jury:
Prof. DSc. Phys. DSc. Eng. Marin Nenchev Nenchev