

## OPINION

on dissertation work for obtaining educational and scientific degree “Doctor”  
in professional field 5.2. „Electrotechnics, Electronics and Automation“  
scientific specialty 02.21.07. "Automated information processing and  
management systems"

Author of the Dissertation work: **master Eng. Peter Pavlov Panev**

Thesis of the Dissertation work: **„Innovative technologies to increase  
efficiency in the production of tubular furniture“**

Member of the scientific jury: Prof. Eng. Pancho Krastev Tomov, PhD,  
TU-Sofia, Faculty of Mechanical Engineering, Department of Automation of  
discrete production.

### **1. Relevance of the problem developed in the dissertation.**

The presented dissertation is dedicated to the analysis of technology for the production of tubular furniture, in order to increase productivity and improve reliability and quality. The presented concept of equipping a pipe furniture factory and increasing the efficiency of production is a current problem in the industry. From the point of view of modern market conditions it is up-to-date and timely.

### **2. Degree of knowledge of the state of the problem.**

The list of used sources has a total of 100 references, of which 41 are in Cyrillic, 35 in Latin and 24 are Internet addresses, which shows a good knowledge of the problem discussed in the dissertation. As a result of the review, the doctoral student formulates conclusions and determines the main tasks he sets for his development.

### **3. Correspondence of the chosen research methodology and the set goal and tasks of the dissertation with the achieved contributions.**

The PhD student considers innovative approaches and methods for increasing the efficiency and productivity of automatic machines and lines for table legs, forming methods for analysis of the technological process to achieve high productivity in packaging, using a mechatronic approach with modern software, in accordance with the purposes of the dissertation.

### **4. Contributions to the dissertation work.**

The contributions of the dissertation are mainly Scientific-applied, and some of them would be good to combine in order to present more accurately. I adopt

innovative approaches and methodologies to the Scientific-Applied ones for the design of machines for automatic punching of the heel and cup, structural layout of an innovative automatic packaging line and others. I would suggest that some of the contributions claimed to be scientifically applied be included in the applied contributions.

#### **5. Evaluation of the dissertation publications:**

The main achievements and results of the dissertation have been published in 7 scientific publications in national and international conferences. A good impression is made by the fact that there are publications during the whole period of the dissertation development as 3 are independent, as one of them is indexed in SCOPUS and 4 are in a co-authorship. In the publications with presented ideas, which were later used in the dissertation.

#### **6. Opinions, recommendations and remarks.**

In the dissertation I did not find any fundamental errors and incorrect use of other people's works. As a recommendation, it would be good in her future developments to specify the presentation of the sources used in the accepted sequence, which is currently not followed. The submitted notes are of editorial and technical nature, which does not diminish the merits of the presented dissertation. I accept the applied and scientific-applied contributions of the doctoral female student without remarks.

#### **7. Conclusion**

The dissertation work of master eng. Peter Pavlov Panev is on current topics, completed in sufficient volume and is the personal work of the Ph. D. student. The goals of the dissertation are clearly defined and sufficient applied and scientific-applied contributions have been achieved during the development. The systematic approach presented in Chapter 4 in the design and construction of innovative automatic machines and lines illustrates the implementation of the project, proving the applicability of the proposed approach.

As a result of the above, I consider that the dissertation fully satisfies the requirements contained in the current Law on the Development of the Academic Staff in the Republic of Bulgaria for the conditions and procedure for obtaining scientific degrees. I propose to the esteemed scientific jury to award the master Eng. Peter Pavlov Panev educational and scientific degree "Doctor" in professional field 5.2. " Electrotechnics, Electronics and Automation ", scientific specialty "Automated systems for information processing and control".

Date: 18.04.2022

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