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. Miglena Marinova Paneva**

Thesis of the Dissertation work: **"INNOVATIVE METHODS FOR TECHNOLOGICAL DIAGNOSTICS OF AUTOMATIC MACHINES AND LINES"**

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 work is dedicated to the analysis of technological diagnostics of automatic machines, in order to increase productivity and improve reliability and quality. The presented concept for equipment of a factory for thin-walled rolled profiles and their quality control 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 163 references, of which 46 are in Cyrillic, 79 in Latin and 38 are Internet addresses, which shows a good knowledge of the problem discussed in the dissertation. As a result of the review, the doctoral female student formulates conclusions and determines the main tasks she sets for her development.

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

The doctoral female student divides the tasks into groups and forms a methodology for solving existing problems, which corresponds to the objectives of the dissertation. As a result, it successfully classifies the options for intelligent research and defines methodologies for their implementation.

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 accept the developed methodologies to the Scientific-Applied ones for testing through a

test body, for the design of an innovative holder for measuring geometric characteristics, for which there is a protected "Utility Model", as well as for spectral analysis of a metal test body for machining and research of the hardness and roughness of working shafts. 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 5 are independent, as one of them is indexed in SCOPUS and 2 are in a team. In the process of work, an innovative holder was developed, for which a utility model document was obtained. 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 of master eng. Miglena Marinova Paneva is on current topics, completed in sufficient volume and is the personal work of the doctoral female student. The goals of the dissertation are clearly defined and sufficient applied and scientific-applied contributions have been achieved during the development. The presented plan for commercialization of the development proves 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. Miglena Marinova Paneva educational and scientific degree "Doctor" in professional field 5.2. " Electrotechnics, Electronics and Automation ", scientific specialty "Automated systems for information processing and control".

На основание
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Date: 18.04.2022

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