

REPORT

of dissertation for the acquisition of:

educational and scientific degree " doctor "	X
scientific degree "Doctor of Science"	
	the true is indicated by the sign "X"

Author of the dissertation:

		MARGARITA	MARINOVA	KOLEVA	UCTM - Sofia
academic position	scientific degree	name	middle name	last name	workplace

Topic of the dissertation:

New ecological methods for the processing of leather sheepskins
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Scientific area:

5	Technical Sciences
code	name

Professional area:

5.10.	Chemical Technologies
code	name

Scientific specialty:

Leather and Fur Products and Tanning Technology
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The report was written by:

Associate Professor	PhD	Petar	Todorov	Todorov	UCTM - Sofia
academic position	scientific degree	name	middle name	last name	workplace

1. Meeting the minimum requirements under the Regulations:

A) The candidate meets the minimum requirements	20 points	X
B) The candidate doesn't meet the minimum requirements	0 points	
		one of the answers given is marked with the sign "X"

It is mandatory to fill in if answer B is marked. The publication activity of the candidate is analyzed. The response of the results achieved (quoted) is analyzed.

Eng.Margarita Koleva's PhD-thesis contains sufficient scientific and applied results that are of original contribution and meet the requirements laid down in the Law on the Development of the Academic Staff in the Republic of Bulgaria, and the relevant Regulations of UCTM-Sofia.

2. The relevance of the topic of the dissertation:

A) The topic is relevant and new (there are no known results on the topic by other authors)	8 points	X
B) The topic is relevant and results from other authors are known	6 points	
C) The topic is not relevant, but results from other authors are known	2 points	
D) The topic is not relevant and no results from other authors are known	1 point	
E) The topic does not correspond to the level of dissertation	0 points	
		one of the answers given is marked with the sign "X"

The evaluation of the relevance of the dissertation must be substantiated

The applicant's basic research is presented in 5 scientific publications and is entirely in the field of scientific area "Leather and Fur Products and Tanning Technology". The research is completely up-to-date and the results obtained can be related to enriching the scientific field with new knowledge. Today, the development of new eco-friendly methods for the manufacture of any material (organic/inorganic), especially leather and leather products, is of the utmost importance in order to protect the environment.

PhD student Eng. Koleva has participated in 6 scientific forums with posters and reports on the topic of her PhD-thesis. There were also 8 citations of publications, which is an indication of the quality and topicality of the published results.

3. Type of research:

A) Theoretical	4 points	
B) Applied	4 points	X
C) Theoretical with application elements	4 points	
D) It does not correspond to the level of dissertation	0 points	
		one of the answers given is marked with the sign "X"

The level of research must be substantiated if answer D is marked.

From the review of the PhD-thesis, it can be summarized that the type of research carried out is of the fundamental and the applied character with more significant on the applied part. For the first time, hair-saving unhairing technology for sheepskins with preliminary alkaline immunization of the wool has been developed. Complete eco-friendly technologies for sheepskins processing have been developed that meet the standardized requirements for clothing and non-polluting (waste water and solid waste) with Cr⁶⁺.

4. Objectives of the research:

A) Realistic and of scientific and / or applied interest	8 points	X
B) Realistic, but not of scientific and / or applied interest	3 points	
C) Unattainable (unrealistic)	0 points	
		one of the answers given is marked with the sign "X"

Objectives must be specified. The type of the set objectives must be justified.

The PhD-student gave a detailed description of ecological problems in leather production, construction and composition of raw hide and skin, as well as materials and methods for ecologically improved pre-tanning/chrome-free tanning of leather, which corresponds completely with the purpose of the PhD-thesis. It is clear from the literature review that Eng. Margarita Koleva is very familiar with the scientific literature on the subject and she is free to handle it. On this basis, the purpose of the PhD-thesis is precisely and clearly defined and the corresponding 4 tasks for implementation are defined.

The aims set of the studies carried out are realistic and the results achieved on them have significant scientific and applied interest.

5. Contributions of the dissertation:

A) With lasting scientific and / or applied response, they form the basis for new research and applications	20 points	X
B) They are of significant scientific and / or applied interest, complete and / or summarize previous research	16 points	
C) They are of scientific and / or applied interest	12 points	
D) Lack of significant contributions	8 points	
E) Lack of contributions	0 points	
		one of the answers given is marked with the sign "X"

Contributions must be specified. The type of results achieved must be justified.

The main scientific contributions of Eng. Margarita Koleva from the presented results give the PhD-thesis a fundamentally applied character and can be summarized as follows:

- The parameters for conducting enzymatic postsoaking, unhairing and degreasing with the Bulgarian enzyme preparation Protozin have been established.
- Hairsaving unhairing technology for sheepskins with preliminary alkaline immunization of the wool has been developed for the first time.
- Wool obtained from the unhairing process can be used in the other industries.
- For the first time, tanning preparations based on sumac, Bulgarian origin, and various metal ions have been obtained, which simultaneously tanned and dyed skin tissue.

- Complete environmental technologies have been developed for sheepskin processing that do not pollute the environment.
- The proposed environmental methods lead to economic and social impact.

6. Conclusion

A) The evaluation of the dissertation is POSITIVE	This evaluation is assigned to a total number of at least 40 points	X
B) The evaluation of the dissertation is NEGATIVE	This evaluation is assigned to a total number below 40 points	
		one of the answers given is marked with the sign "X"

To be filled in at the request of the member of the scientific jury

Eng. Margarita Marinova Koleva's PhD-thesis contains sufficient scientific and applied results, which are of original contribution and meet the requirements laid down in the Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB), the Regulations for the Implementation of the ZRASRB and the relevant Regulations of the UCTM-Sofia.

Therefore, I am convinced of my positive assessment of the results achieved in the PhD-thesis and propose to the scientific jury to award the educational and scientific degree "Doctor" of Eng. Margarita Marinova Koleva in the field of higher education: "Technical Sciences", professional field 5.10. "Chemical Technologies", Scientific specialty "Leather and Fur Products and Tanning Technology".

	The report was written by:	
14.01.2020	Assoc. Professor PhD Eng. Petar Todorov	
date		signature