

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:

chemist		Margarita	Marinova	Koleva	UCTM
academic position	scientific degree	name	middle name	last name	workplace

Topic of the dissertation:

New ecological methods applicable in processing sheep skins for the leather industry

Scientific area:

5	Technical Sciences
code	name

Professional area:

5.10	Chemical Technologies (Technology of leather and fur products and tanning agents)
code	name

Scientific specialty:

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The report was written by:

Prof.	D. Sc.	Todor	Minkov	Dudev	SU "St. Kliment Ohridski"
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.

The candidate presents 5 scientific papers, 3 of which are published in peer-reviewed international journals possessing impact factor/rank. The papers have been cited 10 times in the scientific literature.

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	
B) The topic is relevant and results from other authors are known	6 points	X
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 topic of dissertation is highly relevant and related to the problem of paramount importance for the contemporary society – environmental protection and decreasing the harmful emissions from industrial pollutants such as leather industry.

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.
The candidate has developed a series of approaches/methods for treatment of sheepskin, which are highly efficient and, at the same time, environmentally friendly.

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 Ph.D. thesis goals are focused on developing/creating of novel ecological methods for treatment of sheepskin to be used in leather industry. This is an important step in the process of developing “green” technologies especially in the field of leather industry, which very often appears to be the major pollutant and source of toxic substance emitted in the environment. In this sense, the ideas and effort by the applicant and her mentors should be highly appreciated.

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 Ph.D. thesis represents a complete, focused and very carefully conducted investigation, dedicated to developing of novel, environmentally friendly technologies for sheepskin processing. More specifically, the candidate (1) has established parameters for carrying out enzymatic refinement, hair removal and degreasing by employing Bulgarian enzymatic preparation Protozin; (2) has developed for the first time technology for hair removal of sheepskin with preserving the integrity of the removed wool by pre-alkaline immunization of the hair; (3) the technologies developed by the candidate for pre-tanning preparation of sheepskin decrease substantially the pollution and alkalinity of the waste waters.; (4) tanning preparations have been obtained for the first time based on Bulgarian sumac and various metal cations, which simultaneously tan and dye the sheepskin; (5) ecologically friendly technologies have been developed for sheepskin treatment which comply with the existing standards and do not contaminate the environment with Cr⁶⁺; (6) The ecological methods/approaches, offered by the candidate, have potential 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

The Ph.D. thesis presented comply fully with the requirements of the Law (and even goes beyond those) for acquiring scientific titles and degrees in Republic of Bulgaria. Therefore, I suggest that the Honorable jury votes positively for granting doctoral degree to Margarita Marinova Koleva.

03.01.2020	The report was written by:	
date	Prof. D.Sc. Todor Minkov Dudev	signature