Tomas Bata University in Zlín
Faculty of Technology

Vavrečkova 5669
760 01 Zlín

Supervisor's Review of a Master's thesis

Student's name and surname:	**Dennis Ugochukwu Uwaezuoke**
Degree programme:	N0722A130002 Polymer Engineering
Degree course:	Polymer Engineering
Specialization (if the degree course is divided into specializations):	
Department:	Polymer Engineering
Supervisor of the Master's thesis:	Prof. Ing. Pavel Mokrejš, Ph.D.
Academic year:	2023/2024

Title of the Master's thesis:

Preparation of Soaps from Animal Fat

Assessment of the Master's thesis using the ECTS grading scale:

	Assessment criteria	Assessment according to the ECTS
1.	Topicality of the literature sources consulted	**B – Very good**
2.	Application of knowledge gained from literature	**A – Excellent**
3.	Theoretical aspect dealt with in the thesis	**A – Excellent**
4.	Description of experiments and implementation methods	**A – Excellent**
5.	Level of quality of processing of the results	**B – Very good**
6.	Interpretation of the results achieved and discussion thereof	**B – Very good**
7.	Formulation of the conclusion of the thesis	**A – Excellent**
8.	Student's approach to the Master's thesis	**A – Excellent**

Select the option the submitted thesis for defence and propose the following assessment:

A – Excellent

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Comments on the Master's thesis:

The thesis deals with the possibilities of processing waste fat from game meat into potassium soaps.

In the theoretical part, the task of the diploma student was to focus on using animal and vegetable fats and oils for food processing, biodiesel production, and other applications. In addition, it focuses on the potential of fat by-products resulting from the processing of animal raw materials. In the context of the topic addressed in the practical part of the thesis, summarize and evaluate the procedures for preparing and testing soaps. The objectives of the theoretical work were met. The diploma student critically evaluated the literature study and found that the processing of waste fats from game meat is currently not adequately addressed. The theoretical study then resulted in the determination of the objectives and hypotheses of the thesis.

The experimental part of the work focused on the study of selected process factors in the boiling method of processing venison fat into potassium soaps. The technique of planned experiments was used, which are used in research and industrial practice, to test the significance of combinations of different levels of process factors on the dependent variable. The process factors studied were the amount of saponification solution, the saponification temperature, and the amount of NaCl during desalting. The degree of conversion of the fat to the prepared soaps was monitored and the prepared soaps were tested by standard methods. Using a statistical program, the effect of the studied process factors on the dependent variables was evaluated. A sensory evaluation of the soaps was also carried out.

The thesis is one of the minimum works of its kind and its results are a significant contribution to practice and further research. It is unique, especially in the type of raw material processed. The graduate has demonstrated that unused fat from fallow deer can be processed into soaps by suitable free process conditions. He critically evaluated the thesis results and proposed the optimal conditions for processing the fat from fallow deer into soaps.I appreciate how the Master's student handled the time-consuming experiments in which he had to deal with many problems related to processing an unusual raw material. The chosen methodological approach to the work fully corresponds to the profile of the future engineer. Furthermore, I would like to highlight his very careful and active approach, high independence and interest in the problem solved, and excellent communication with all the staff in the department. The thesis assignment was fulfilled. The thesis is an original work and its results are important for practice as well as for further research. The Theses.cz system has detected percentage of similarity with other documents amounting to a maximum of 3 %.

It is an authentic thesis.

Questions to be asked by the Master's thesis supervisor:

In Zlín on **22. 05. 2024**

Signature of the Master's thesis supervisor