

ABSTRACT

The master's thesis contains: 110 pages, 32 fig., 17 tables, 4 apps, 39 sources.

Relevance of work. The process of cutting biopolymer materials is a complex resource-intensive process that depends on many factors. The increase in production of biopolymer materials, in particular leather and fur, leads to increased competition in this field and requires improved production quality. Therefore, optimizing the process of cutting biopolymer materials will reduce the amount of waste, reduce the cost of the final product, improve the quality of such products and make it competitive.

Relationship with working with scientific programs, plans, topics. The work was performed within the framework of scientific research 16.02.49 DB «Physico-chemical bases of formation of special purpose biopolymer materials».

The aim and objectives of the study. The aim of the work is to optimize the process of planning cutting of biopolymer materials. The objectives of the study are to analyse the existing automated systems for leather cutting planning; formalization of the task of cutting the leather; optimization of leather cutting planning process; development of a software module for optimization of cutting schemes of leather material.

The object of the study is the technological process of cutting the material on the details of leather goods.

Research Methods - Computer Modeling, Optimization Theory.

The practical significance of the results. The proposed algorithm for optimizing the cutting process of biopolymer material can be recommended for practical use. The created software can be applied as part of software of information-computing systems for optimization of the existing productions using these processes, or for new enterprises planning to use the specified technology.

Evaluation of the results of the thesis. Presentation of research results was carried out at scientific-practical and scientific-technical international conferences: the main provisions and results of work were announced at the 7th international scientific-practical conference "Computer Modeling in Chemistry and Technology

and Systems of Sustainable Development - KMHT-2019", Kyiv (2019) and the 5th International Scientific and Technical Conference "Computer Modeling and Optimization of Complex Systems - CMOSS-2019, Dnipro (2019).

Publications. The main findings and results of the study are published in the conference materials "Computer Modeling in Chemistry and Technology and Systems for Sustainable Development - KMHT-2019" and "Computer Modeling and Optimization of Complex Systems - KMOSS-2019".

BIOPOLYMER MATERIAL, PATTERN CUTTING, COMPUTER SIMULATION, SOFTWARE, STARTUP PROJECT