Original article

REUSE OF RESOURCES AS THE BASIC OF A MODERN APPROACH TO CLOTHING DESIGN

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Abstract. The article discusses the contribution of manufacturers and consumers of fashion clothing to the process of recycling resources. The characteristic of ecological problems of the fashion industry is given. The term «sustainable fashion» is analyzed. The module of the life cycle of eco-friendly clothing models is considered. The possibilities of processing industrial and consumer textile waste are determined. Innovative approaches to the design of fashionable clothes are shown, taking into account the concept of conscious consumption.

Keywords: fashion industry, environmental problems, sustainable fashion, recycling and reuse of waste, conscious consumption

For citation: Vinichenko I. V., Androsova G. M. Reuse of resources as the basic of a modern approach to clothing design. Design. Materials. Technology. 2023;(4(72)):9–14. (In Russ.). DOI: 10.46 418/1990-8997_2023_4(72)_9_14.

Original article

NEW TECHNOLOGIES IN THE DEVELOPMENT OF COSTUME DESIGN IN THE 20th CENTURY ON THE EXAMPLE OF THE ACTIVITIES OF EMPLOYEES OF THE LENINGRAD FASHION HOUSE

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Abstract. The article examines the period of transition of the fashion industry from individual tailoring to the production of clothing that is not only ready for use, but also meets new fashion trends. At this time, a favorable base was formed for the emergence of new types of activities and, as a result, new genres of art. The purpose of the author’s research is to analyze the activities of employees of the Leningrad Fashion House (LDMO) in the second half of the twentieth century in the field of new types of professional activities based on: archival documents, publications in

periodicals and memoirs of former employees. According to the results of the study, the author comes to the conclusion that such areas of activity of LDMO employees as clothing demonstration, fashion photography and graphics of fashion designers should be given more attention, since in the age of digital technologies and the active search for artistic techniques suitable for virtual space, without focusing on the properties of textile materials, it is this

Keywords: Leningrad Fashion house, clothing design, Soviet models, fashion photography, fashion graphics

For citation: Denisova O. E. New technologies in the development of costume design in the 20th century on the example of the activities of employees of the Leningrad Fashion house. Design. Materials. Technology. 2023;(4(72)):15–19. (In Russ.). DOI: 10.46 418/1990-8997_2023_4(72)_15_19.

Original article

COMPOSITIONAL EXPRESSIVENESS OF «LIQUID METAL» SILVER JEWELRY

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Abstract. This article discusses the jewelry style «Liquid metal» — a fresh fashion trend in the jewelry industry in 2022–2023. On the example of variants of execution of jewelry, the characteristic features of this style, the features of their compositional and figurative solution are considered. Taking into account the recommendations for harmonizing the design and manufacturing of jewelry, an author’s jewelry set was made, expressing calmness in a figurative solution.

Keywords: jewelry, silver, «Liquid metal» style, compositional solution, artistic image

For citation: Chernykh M. M., Ostanina P. A., Konstantinova A. A. Compositional expressiveness of «Liquid metal» silver jewelry. Design. Materials. Technology. 2023;(4(72)):20–26. (In Russ.). DOI: 10.46 418/1990-8997_2023_4(72)_20_26.

Original article

METHODS OF VISUAL PROGRAMMING IN ARCHITECTURAL DESIGN

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Abstract. The article presents design research carried out at the Department of Design of Kazan State Agrarian University. Modern experiments in the field of architectural design morphology, which are carried out in leading universities, based on avant-garde techniques, are often not consistent, and even moreover, are not oriented towards the use or development of existing production technologies. As part of the original methodology for educational architectural design, experiments are being carried out to introduce modern methods of shaping and design, aimed at the use of building information technologies (BIM) and modern methods for constructing architectural and design objects.

Keywords: design of architectural environment, design education, parametric design, visual modeling, architectural design

For citation: Belov M. I., Mikhailova A. S., Nadyrshine N. M., Safin R. S., Hafizov R. R. Methods of visual programming in architectural design. Design. Materials. Technology. 2023;(4(72)):27–33. (In Russ.). DOI: 10.46418/1990-8997_2023_4(72)_27_33.

Original article

THE MANIFESTATION OF PARADISE IN THE IRANIAN GARDEN

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Abstract. The Persian Garden is one of the earliest human landscape experiences. The body and form of the garden have been associated with numerous meanings for millennia, including that it

is a representation of paradise. The roots of this notion are clarified in this study. Pre-Islamic Iran had a belief in heaven and its earthly manifestation. Since ancient times, Iranians have been monotheists, as shown by the development of their earliest gardens, and the term paradise entered the Greek language via Persian, spreading to other languages and being used to indicate heaven. The basis of this term is «Paeri Daeza», which means «an enclosed place covered with plants» in Avesta. We want to discover why Iranians see the garden as a paradise. Iranians` views and convictions, as well as the sources of these ideas, have been acknowledged in this respect. Also investigated were the parallels between the Qur`anic paradise and the Iranian garden. Finally, it is stated that Iranians have a proclivity for creating gardens that resemble the Hereafter`s paradise. They have attempted to improve the semantic component of constructions such as carpets and gardens as a result of their spiritual knowledge and worldview. The descriptive-analytical approach was used in this study, and the data were collected utilizing the library method.

Keywords: Heaven, garden, paradise, Iran, Islam, Koran, Chaharbagh, Paeri Daeza

For citation: Abedi M., Mitrofanova N. Yu. The manifestation of Paradise in the Iranian garden. Design. Materials. Technology. 2023;(4(72)):34–41. (In Russ.). DOI: 10.46418/1990-8997_2023_4(72)_34_41.

Original article

FEATURES OF MODERN ARTISTIC SYNTHESIS IN THE DESIGN OF THE CITY

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Abstract. The features of artistic synthesis in the design of a modern city are revealed as a complex process of multilevel and multidimensional interaction of design in its most diverse manifestations with architecture, fine and plastic arts, land art and media art, kinetic and cinematic arts. This artistic interaction is largely dynamic and interactive, reflecting the technical capabilities and

features of the modern information society, meeting the needs of its consumer and turning three-dimensional forms of artistic synthesis into spatial and spatio-temporal.

Keywords: artistic synthesis in city design, synthesis of fine and plastic arts, media art, kinetic and cinematographic art

For citation: Evstratova T. A., Mikhailov S. M., Pavlovskaya E. E., Romanova A. I., Safin R. S. Features of modern artistic synthesis in the design of the city. Design. Materials. Technology. 2023;(4(72)):42–48. (In Russ.). DOI: 10.46418/1990-8997_2023_4(72)_42_48.

Original article

DAIRY PACKAGING DESIGN: A CONSUMER`S CHOICE

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Abstract. An artistic image was created using an interdisciplinary approach. The subject of the work was the design of the main images on the packaging of dairy products. Based on the material of the author`s layouts of pure-pack boxes, the data of a sociological survey of milk consumers, modern trends in artistic images were identified that determine the purchase of dairy products. In conclusion, the author draws conclusions about the views of milk consumers on product packaging design.

Keywords: packaging design, artistic images of packaging, dairy products, milk consumer, cross-disciplinary approach, Vologda Region

For citation: Shigorina V. N., Sudakova O. N. Dairy packaging design: a consumer’s choice. Design. Materials. Technology. 2023;(4(72)):49–53. (In Russ.). DOI: 10.46 418 / 1990-8997_2023_4(72)_49_53.

Original article

RESEARCH ON THE CREATION OF ARTISTIC IMAGES OF INTERIOR AND EXTERIOR SOLUTIONS IN A SCIENTIFIC APPROACH TO THE HISTORICAL AND CULTURAL HERITAGE OF ORIGINAL FOLK ART OF POLYNESIA AND OCEANIA

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Abstract. The need to preserve and revive authentic Hawaiian art requires from today's cultural life of society constant deep attention to the development of artistic images of design objects of the subject-spatial environment, which has the most ancient diverse traditions of many ethnic groups of Oceania and Polynesia, with the possibility of their implementation in modern design work theory fine arts and design.

Keywords: Oceania, Polynesia, Hawaiian Islands, artistic image, design, interior, mythology

For citation: Zhukov V. L., Smirnova A. M., Mullakhmetova D. R. Research on the creation of artistic images of interior and exterior solutions in a scientific approach to the historical and cultural heritage of original folk art of Polynesia and Oceania. Design. Materials. Technology. 2023;(4(72)):54–63. (In Russ.). DOI: 10.46418/1990-8997_2023_4(72)_54_63.

Original article

ARTISTIC FEATURES OF TRADITIONAL CHINESE CULTURE

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Abstract. Against the backdrop of rapid economic progress and increasing globalization, elements of traditional Chinese culture are found all over the world and are attracting more and more attention. The core of traditional Chinese culture is spiritual culture, which includes aspects such as state ideology, customs and beliefs. Before exploring the development of modern environmental design in China, it is necessary to fully understand the characteristics of traditional elements of Chinese culture, and on this basis, flexibly apply traditional culture in innovative environmental design projects, so that modern environmental design in China can flourish.

Keywords: traditional Chinese culture, traditional ornaments, traditional pictographic writing, traditional festivals, folk beliefs and customs

For citation: Liu Ya., Cao X., Jiang M., Yang B., Nazarov Yu. V. Artistic features of traditional Chinese culture. Design. Materials. Technology. 2023;(4(72)):64–71. (In Russ.). DOI: 10.46418/1990-8997_2023_4(72)_64_71.

Original article

EVOLVING URBAN LIGHTNING IN ST. PETERSBURG: TRACING HISTORICAL PROGRESS AND CONTEMPORARY PRACTICES

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Abstract. The article explores the historical and contemporary aspects of urban lighting in St. Petersburg, encompassing outdoor illumination as well as architectural and artistic lighting. It delves into the analysis of technologies, diverse lighting methods, and types of lighting fixtures, examining their impact on the architectural aesthetics and overall ambiance of St. Petersburg, spanning across historical and present contexts. Furthermore, it underscores the significance of preserving historical traditions when formulating strategies for illuminating the urban environment.

Keywords: light, lantern, urban lighting, outdoor lighting, St. Petersburg

For citation: Semenova V. V., Posokhina A. M. Evolving urban lightning in St. Petersburg: tracing historical progress and contemporary practices. Design. Materials. Technology. 2023;(4(72)):72–77. (In Russ.). DOI: 10.46418/1990-8997_2023_4(72)_72_77.

Original article

MODERN METHOD OF FORECASTING IN TEXTILE PRODUCTS DESIGN

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Abstract. Currently, due to various factors, forecasting methods in fashion are changing. The purpose of this study is to determine the factors influencing the directions of modern forecasting in the fashion industry. The methods used in the study are, on the one hand, based on classical statistical methods with a limited number of factors that do not reveal real forecasts in fashion trends. On the other hand, the collection of information is based on information that trend bureau employees collect during observations of potential consumers, their lifestyle, preferences in art, culture, which leads to unreliable forecasts. To fully obtain accurate data, a model is needed that includes both time series information for an individual fashion element and the relationship between that element and all related elements. Predicting the future development of the process and studying the interactions between various fashion elements are carried out using learning neural networks. Most modern fashion trend forecasting methods model each time series independently, without paying attention to the correlations between them. However, many fashion items or groups are highly correlated with each other, and these correlations can help study trend patterns. To compile an adequate forecasting model, it is necessary to consider the internal relationships between fashion elements and the taxonomy of fashion elements based on a hierarchical taxonomy with a tree structure. If we consider the relationships between fashion elements, we can identify both an internal and external hierarchy, which will further influence their respective trend sequences. Technologies that exist today make it possible to approach the process of forecasting fashion trends in textile design as a systematic analysis of data that exists in a complex hierarchy of interrelated factors. Forecasting methods in textile products design are undergoing changes due to the following factors: increasing the amount of information analyzed, personalization of textile products, using a neural network.

Keywords: textile products, fashion industry, forecasting, fashion trends, neural networks

For citation: Kovaleva O. V., Bondarenko M. V., Volkodaeva I. B. Modern method of forecasting in textile products design. Design. Materials. Technology. 2023;(4(72)):78–83. (In Russ.). DOI: 10.46 418/1990-8997_2023_4(72)_78_83.

Original article

HISTORICAL AND STYLISTIC INSIGHTS INTO OUTDOOR ADVERTISING IN ST. PETERSBURG FROM THE 18TH TO THE 21ST CENTURY

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Abstract. The article delves into the history of outdoor advertising in St. Petersburg, identifying key chronological stages in its development. It explores historical nuances, assesses the various types of outdoor advertising, and gauges the extent of European influence. Additionally, the article analyzes its stylistic characteristics, highlighting the historical and artistic uniqueness of signs, billboards, and posters in St. Petersburg from the 18th to the 21st centuries.

Keywords: advertising, signs, poster, font, urban environment, St. Petersburg

For citation: Semenova V. V., Posokhina A. M. Historical and stylistic insights into outdoor advertising in St. Petersburg from the 18th to the 21st century. Design. Materials. Technology. 2023;(4(72)):84–90. (In Russ.). DOI: 10.46 418/1990-8997_2023_4(72)_84_90.

Original article

DECORATION OF ARTIFICIAL FUR BY SUBLIMATION PRINTING

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Abstract. The article is devoted to the study of the method of sublimation printing for decorating artificial fur. The aim of the study is to study the possibility of expanding the scope of sublimation printing as a way of decorating and customizing basic models of faux fur clothing. Problems solved: the most popular types of artificial fur for clothes were identified, the criteria for choosing fur for decoration by sublimation printing and the optimal mode were determined, image stability was tested by dry cleaning. During the experiment, it was found that the stability of the image is preserved both on samples with short and long pile. Sublimation printing can be recommended as one of the ways to decorate and customize faux fur products.

Keywords: sublimation printing, print stability, artificial fur, customization

For citation: Fot Zh. A. Decoration of artificial fur by sublimation printing. Design. Materials. Technology. 2023;(4(72)): 91–95. (In Russ.). DOI: 10.46 418/1990-8997_2023_4(72)_91_95.

Original article

RECYCLING OF GARMENT PRODUCTION WASTE TO THE INDUSTRY OF REHABILITATION GOODS

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Abstract. Rehabilitation products are a specific product of the clothing industry. Unlike clothes, such things are in demand for operation under certain conditions. The requirements for operational reliability, ergonomics, and a high level of protection against the adverse effects of the environment are imposed on the design and technological solution of rehabilitation products. Such a complex of properties can be provided by including modern synthetic materials in the confection package. Since the period of operation of rehabilitation products is limited, the corresponding products are disposed of with unused potential. The accumulation of synthetic waste negatively affects the ecological well-being of the planet. The authors studied the experience of using sewing waste and proposed a method for manufacturing rehabilitation sewing covers for injured limbs of consumers from inter-pattern lunges formed at enterprises that mass-produce household clothing from synthetic materials.

Keywords: synthetic textile materials, clothing production, lunges, rehabilitation products, people with disabilities

For citation: Gusev I. D., Andreeva E. G., Guseva M. A., Eremina A. A., Getmantseva V. V. Recycling of garment production waste to the industry of rehabilitation goods. Design. Materials. Technology. 2023;(4(72)):96 –104. (In Russ.). DOI: 10.46 418/1990- 8997_2023_4(72)_96_104.

Original article

STUDY OF THE SHAPING OF FLAT GLASS PRODUCTS SINTERED FROM CHIPS

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Abstract. The article contains a research of the influence of the bulk weight of the glass chips and the fraction size on the profile of surfaces, diametrical dimensions and the thickness of fused flat products. It shows the influence of surface tension, gravity and friction forces on the shaping of products during fusing.

Keywords: fusing, glass chips, glass products, bulk weight, fraction size

For citation: Chernykh M. M., Eseneeva A. I., Zagoruiko A. A. Study of the shaping of flat glass products sintered from chips. Design. Materials. Technology. 2023;(4(72)):105–109. (In Russ.). DOI: 10.46 418/1990-8997_2023_4(72)_105_109.

Original article

PHASE TRANSITION MATERIALS FOR TEXTILE PRODUCTS WITH HEAT-STORING PROPERTIES: REVIEW

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Abstract. The purpose of the work is a systematic review and analysis of modern phase change materials (PCMs) and their application in the creation of products with heat-storing properties for various industries. Phase-transition heat-storing materials of organic and inorganic chemical nature are considered and analyzed. A comparison was made of the key physical characteristics of the PCM: temperature and energy of phase transition, thermal conductivity, density. Organic PCMs are widely used in the construction, agriculture, aerospace, healthcare and textile industries. The significance and prospects for the development of phase-transition heat-storing textile materials are shown.

Keywords: materials, phase transition, thermal conductivity, density, encapsulation

For citation: Pryadeznikova A. A., Pryadeznikov B. Yu., Moskalyuk O. A. Phase transition materials for textile products with heat-storing properties: review. Design. Materials. Technology. 2023;(4(72)):110–114. (In Russ.). DOI: 10.46 418/1990-8997_2023_4(72)_110_114.

Original article

DIGITAL FORECASTING OF OPERATIONAL PROCESSES OF ORIENTED POLYMERS — THE BASIS FOR A QUALITATIVE ASSESSMENT OF THEIR FUNCTIONALITY

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Abstract. Traditionally, predicting the operational processes of oriented polymers faces certain objective difficulties caused by the het- erogeneity of the rheological structure of these materials. The widespread use of oriented polymers in various fields of technology — from household polymers to the lining of space rockets and deep-sea vehicles — dictates the need to develop modern methods for predicting increased accuracy of their functional properties, including various deformation-relaxation processes. The development of new methods for predicting the functional properties of polymer materials is justified by the need to design new innovative products based on these materials that have the required functionality and increased competitiveness.

Keywords: polymer materials, deformation processes, forecasting, performance properties, competitiveness

Acknolegments. The work was funded under a grant from the President of the Russian Federation for state support of leading scientific schools of the Russian Federation no. NSh-5349.2022.4.

For citation: Demidov A. V., Makarov A. G. Digital forecasting of operational processes of oriented polymers — the basis for a qualitative assessment of their functionality. Design. Materials. Technology. 2023;(4(72)):115–120. (In Russ.). DOI: 10.46 418/1990-8997_2023_4(72)_115_120.

Original article

DEVELOPMENT OF A METHODOLOGY FOR QUALITATIVE ANALYSIS OF DEFORMATION PROCESSES OF ARAMID MATERIALS

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Abstract. The article develops a methodology for qualitative analysis of deformation processes of aramid materials. The deformation processes of these materials are studied in the area of non-destructive loads close to their operating conditions.

Keywords: aramid materials, mathematical modeling, computer forecasting, deformation, plasticity, relaxation, creep

Acknolegments. The work was funded under a grant from the President of the Russian Federation for state support of leading scientific schools of the Russian Federation No. NSh-5349.2022.4

For citation: Kiselev S. V., Makarov A. G. Development of a methodology for qualitative analysis of deformation processes of aramid materials. Design. Materials. Technology. 2023;(4(72)):121–126. (In Russ.). DOI: 10.46 418/1990-8997_2023_4(72)_121_126.

Original article

CRITERIA FOR QUALITATIVE EVALUATION OF RELAXATION PROCESSES OF POLYMER TEXTILE MATERIALS — THE BASIS FOR INCREASING THEIR COMPETITIVENESS

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Abstract. A method for calculating the relaxation characteristics of polymer textile materials, developed using mathematical models, makes it possible to conduct a qualitative assessment of the performance properties of these materials. The developed criteria for qualitative assessment of the relaxation processes of polymer textile materials can serve as the basis for improving their functionality and increasing their competitiveness.

Keywords: qualitative assessment criteria, relaxation, functional properties, optimization, polymer textile materials

Acknolegments. The work was financed as part of the implementation of the state task of the Ministry of Science and Higher Education of the Russian Federation, Project no. FSEZ-2023-0003.

For citation: Pereborova N. V. Criteria for qualitative evaluation of relaxation processes of polymer textile materials — the basis for increasing their competitiveness. Design. Materials. Technology. 2023;(4(72)):127–133. (In Russ.). DOI: 10.46 418/1990–8997_2023_4(72)_127_133.

Original article

METHODOLOGY FOR CONFIDENT PREDICTION OF RELAXATION PROCESSES OF POLYMER TEXTILE MATERIALS

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Abstract. The issues of methodology and adequacy of mathematical modeling of relaxation processes of polymer textile materials are considered. The developed integral criteria for confident prediction of relaxation processes of polymer textile materials are based on minimizing the integral convolution functional corresponding to the defining equation of state. The introduction of the developed criteria for confidence prediction of relaxation processes of polymer textile materials is possible thanks to their computerization.

Keywords: relaxation, polymer textile materials, mathematical modeling, forecasting, optimization criteria

Acknolegments. The work was financed as part of the implementation of the state task of the Ministry of Science and Higher Education of the Russian Federation, project no. FSEZ-2023-0003.

For citation: Pereborova N. V., Makarov A. G. Methodology for confident prediction of relaxation processes of polymer textile materials. Design. Materials. Technology. 2023;(4(72)):134–140. (In Russ.). DOI: 10.46 418/1990-8997_2023_4(72)_134_140.

Original article

METHODS OF SYSTEM ANALYSIS WHEN STUDYING THE DEFORMATION PROPERTIES OF MEDICAL TEXTILE MATERIALS

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Abstract. The article provides a systematic analysis of the deformation properties of polypropylene and polyvinylidene fluoride threads for surgical purposes used for the manufacture of endoprostheses. The degree of influence of the properties of threads on the characteristics of mesh endoprostheses based on them has been established, which makes it possible to purposefully find ways to improve the quality of mesh endoprostheses. It has been shown that the elasticity of endoprostheses is mainly determined by their mesh structure, while remaining proportional to the elasticity of the thread.

Keywords: medical materials, system analysis, deformation, elasticity, mechanical properties, mesh endoprostheses, polypropylene threads, polyvinylidene fluoride threads

Acknolegments. The work was funded under a grant from the President of the Russian Federation for state support of leading scientific schools of the Russian Federation no. NSh-5349.2022.4.

For citation: Wagner V. I., Kozlov A. A., Klimova N. S., Egorova M. A. Methods of system analysis when studying the deformation properties of medical textile materials. Design. Materials. Technology. 2023;(4(72)):141–148. (In Russ.). DOI: 10.46 418/1990-8997_2023_4(72)_141_148.

Original article

QUALITATIVE ANALYSIS OF CREEP PROCESSES IN POLYPROPYLENE AND POLYVINYLIDENE FLUORIDE MEDICAL THREADS

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Abstract. The article presents the results of research, modeling and qualitative analysis of short-term creep of polypropylene and polyvinylidene fluoride threads for medical purposes, and a physical analysis of such creep of these threads is carried out.

Keywords: medical threads, modeling, mechanical properties, deformation, elasticity, creep, polypropylene threads, polyvinylidene fluoride threads

Acknolegments. The work was funded under a grant from the President of the Russian Federation for state support of leading scientific schools of the Russian Federation no. NSh-5349.2022.4.

For citation: Egorov I. M., Kiselev S. V., Kozlov A. A. Qualitative analysis of creep processes in polypropylene and polyvinylidene fluoride medical threads. Design. Materials. Technology. 2023;(4(72)):149–154. (In Russ.). DOI: 10.46 418/1990-8997_2023_4(72)_149_154.