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ANALYSIS OF PLANT MOTIFS IN KARELIAN EMBROIDERY. TEXTILE DESIGN

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Abstract. This study analyzes the floral motifs of Karelian embroidery of the late 18th — early 20th centuries. On the basis of written sources devoted to the flora of the North-West of Russia, and items from the collections of museums in Karelia and St. Petersburg, a study was carried out to identify plants, the images of which are transmitted through the ornamental images of Karelian embroidery.

Keywords: floral motifs, ornament, textiles, Karelian embroidery, flora of Karelia, design

For citation: Shmidt I. O., Deryabina T. Yu. Analysis of plant motifs in karelian embroidery. Textile design. Design. Materials. Technology. 2023;(3(71)):9–18. (In Russ.). DOI: 10.46418/1990-8997_2023_3(71)_9_18.

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OBTAINING THE CERTIFICATE «MONUMENT OF SCIENCE AND TECHNOLOGY» FOR THE ZIS-155 BUS UNDER THE PROGRAM OF THE POLYTECHNIC MUSEUM

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Abstract. Methodological recommendations of the Polytechnic Museum for participation in the scientific program «Monuments of Science and Technology» are considered. The object of the study is the ZIS-155 bus. The result of the study is the registration of an application for a certificate «Monument of Science and Technology».

Keywords: monument of science and technology, restoration, exhibit, ZIS-155

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KITSCH IN THE EVERYDAY SPACE OF THE URBAN ENVIRONMENT

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Abstract. The beginning of the 21st century is marked by the emergence of new forms and styles of life. Technogenic civilization has led to the loss of the previous theoretical concepts of kitsch — as a hack, bad taste, as a phenomenon of mass culture. A new reality of «postmodernism» has appeared, which by definition means «new», «innovative», the search for the new in the old, and the nature of kitsch and its origin are precisely connected with the repetition and rethinking of the old. Of course, today kitsch goes beyond purely philistine boundaries, it is transformed into a kind of artistic device in the culture of everyday life in Russia, it also manifests itself in the space of the house, in public space (streets, squares, markets), in personal bodily space (fashion, body). Consequently, modern culture considers the boundaries between «high» and «low» art, kitsch and classics, which also each time depends on the specific context.

Keywords: kitsch, urban environment, culture, architecture, public art

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FC «ZENIT» PROJECT: DEVELOPMENT OF BRANDED SOUVENIR CLOTHING WITH CLUB ATTRIBUTES

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Abstract. The article is devoted to a study conducted within the framework of a project dedicated to the development of branded souvenir clothing with attributes of the «Zenit» football club. The factors that influenced the formation of corporate identity in the creation of football players' uniforms are considered. The directions of information search are determined — the study of the assortment of well-known brands that produce sportswear, the requirements for uniform and spectacular clothing, the main figurative and compositional patterns of the form of players, as well as the study of various types of assortment of souvenirs in the style of FC «Zenit» and their processing techniques.

Keywords: corporate identity, sports uniform, souvenir assortment, FC «Zenit», logo, club attributes

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METHODS OF INTERACTION OF TEXT AND IMAGE IN THE CONTEXT OF MOTION DESIGN

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Abstract. The article discusses the analysis of existing material on the promising direction of motion design. In addition, aspects of the influence of motion design on visual communication, the influence of motion design on the perception of information and its identification are considered. The most significant and relevant principles in motion design are considered. The most effective methods used to implement the interaction of text and image in motion design are identified.

Keywords: motion design, animation, visual communications

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HOMEOSTATIC MODELING OF BALANCE MANAGEMENT. TRADITIONS AND INNOVATIONS RELATIONS IN THE TEXTILE FIELD OF ARTS AND CRAFTS

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Abstract. Tradition and innovation in the modern world play an important role in the development of society. Their interaction is actively manifested in the textile field of arts and crafts. Learning to combine Tradition and Innovation, to maintain a balance of relations between them in the textile sector is the goal of this study. This problem can be solved using the method of homeostatic modeling. An extended model of a compensatory homeostat allows one to identify the main structural elements of the system, describe the contradiction of the leading pair of opposites through the resource circulating between them, take into account external influence on the system and describe the mechanism of external control. The article provides an example of the practical application of the method.

Keywords: arts and crafts, methodology, textile art, homeostatics, opposite elements

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INFORMATION TECHNOLOGIES IN THE PROCESS OF BUILDING A COMPOSITION OF DIGITAL PAINTING

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Abstract. In the article, the authors consider the evolution of the construction of an artistic composition from the classic techniques to the use of technologies for creating digital painting at the present stage using the examples of works of fine art. The goal is to analyze the ways of

building a composition in creating digital painting. In this context, the methods of historical, comparative and art history analysis of the evolutionary development of fine arts, consideration of the active introduction of computer tools of information technology and its influence on the process of building compositions in modern works of digital painting are relevant. As a result, five new ways of constructing a digital painting composition are considered, where information tools are used not only as an imitation of traditional tools, but also as a new means of creating a composition, defining its features. The authors offer their own approach to the use of artistic techniques in the process of training architects and designers in painting.

Keywords: composition, painting, information technology, digital painting, education

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NATURAL FORMS AND MOTIFS AS A CREATIVE SOURCE OF INSPIRATION IN THE DEVELOPMENT OF FASHION AND IN THE DEVELOPMENT

OF THE AUTHOR'S COSTUME

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Abstract. It is shown that natural forms and motifs are an inexhaustible resource for creativity. Based on the study of historical periods in the development of clothing and fashion, such aspects as the criticality of a person's consciousness and self-perception «in nature» and «with nature» are revealed. The analysis of the interaction of the basic concepts — «nature», «costume design» and «inspiration» as a result of a dialogue with wildlife in design activities is carried out.

Keywords: fashion, nature motifs, print, inspiration, creativity, texture, author's project

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PARURE «JOSEPHINE BONAPART» IN THE ECLECTICISM OF FILIGREE MORPHOLOGY WITH ARTISTIC IMAGES OF JEWELRY DESIGN OBJECTS IN THE EMPIRE STYLE

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Abstract. The creation of an artistic image of a design object presented by the VKIDS with LUS — «Diadem — necklace — ear- rings — ring» with a structure adequate to the Empire era in the subject-spatial environment of design objects functionally oriented to a number of anthropometric gender zones of the human figure with a given quality is investigated.

Keywords: VKIDS with LUS, diadem, necklace, necklace, earrings, ring, jewelry, artistic image of a design object, Empire style

For citation: Zhukov V. L., Haritonowa P. N. Parure «Josephine Bonapart» in the eclecticism of filigree morphology with artistic images of jewelry design objects in the Empire style. Design. Materials. Technology. 2023;(3(71)):68–76. (In Russ.). DOI: 10.46418/1990-8997_2023_3(71)_68_76.

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PRODUCTION OF SILICON DIOXIDE NANOPARTICLES

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Abstract. The article discusses the main methods for obtaining nanoparticles of silicon dioxide SiO2 and their application. The results of studies of the method for obtaining SiO2 nanoparticles in colloidal solutions by the way of heterogeneous hydrolysis of tetraethoxysilane, the stability and photocatalytic activity of the obtained solutions to degrade a methylene blue dye, and the results of microscopic studies are presented.

Keywords: nanoparticles, silica, silicon dioxide, photocatalytic degradation, modification, fibrous materials

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EVALUATION OF RELAXATION AND RECOVERY PROPERTIES OF POLYMERIC TEXTILE MATERIALS

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Abstract. The article discusses a method for conducting a qualitative assessment of the relaxation and restorative properties of polymeric textile materials according to the parameters of the mathematical model of relaxation of these materials. The advantage of the proposed method is that a qualitative assessment of the relaxation and recovery properties of polymeric textile materials does not require an expensive experiment, but it is sufficient to analyze the parameters of the mathematical model of relaxation.

Keywords: qualitative assessment, mathematical modeling, polymers, textile materials, assessment criteria, relaxation properties, restorative properties

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METHODS FOR DIGITAL PREDICTION OF BACK RELAXATION PROCESSES IN POLYMERIC TEXTILE MATERIALS

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Abstract. The article considers methods for digital prediction of the processes of reverse relaxation of polymeric textile materials. It is shown that when predicting complex relaxation processes, in particular, the processes of reverse relaxation of polymeric textile materials, it is possible to use universal mathematical models developed for simple relaxation processes, while predicting the reverse relaxation processes of these materials, results are obtained quite close to experimental ones.

Keywords: mathematical modeling, digital prediction, polymeric textile materials, deformation properties, relaxation processes, reverse relaxation

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

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DIGITAL MODELING OF DEFORMATION PROCESSES OF TWISTED POLYESTER YARNS

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Abstract. The article studies the issues of digital modeling of the deformation processes of polyester yarns of various degrees of twist. Reducing the degree of twist within acceptable limits while maintaining the necessary mechanical properties of the threads reduces the time spent on the technological process of production and brings an economic effect.

Keywords: digital modeling, polyester yarns, textile materials, deformation properties, relaxation

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For citation: Egorov I. M., Egorova M. A. Digital modeling of deformation processes of twisted polyester yarns. Design. Materials. Technology. 2023;(3(71)):91–96. (In Russ.). DOI: 10.46418/1990-8997_2023_3(71)_91_96.

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PROMISING AREAS OF APPLICATION OF VACUUM BENDING TECHNOLOGY FOR FLAT GLASSES

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Abstract. The article presents a summary review of the work done on the development of the method of vacuum grinding of flat glasses, as well as promising areas of use of this technology in the manufacture of glass products.

Keywords: method, vacuum mollification, technology

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IMPROVING THE RELIABILITY OF DIGITAL PREDICTION OF DEFORMATION PROCESSES OF POLYMERIC TEXTILE MATERIALS

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Abstract. The issues of improving the accuracy of digital prediction of deformation processes of polymeric textile materials, which are important both from the scientific and practical side, are considered, since this allows obtaining recommendations for the creation of new promising materials with desired functional properties. The article considers a method for optimizing mathematical modeling of the fundamental deformation-operational modes of polymeric textile materials.

Keywords: reliability enhancement, mathematical modeling, numerical prediction, textile materials, polymers, deformation modes of operation

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METHODS FOR PREDICTING THE DEFORMATION AND RELAXATION PROPERTIES OF POLYMER SEA ROPES

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Abstract. The article considers methods for predicting the deformation and relaxation properties of polymer sea ropes. Such a study is based on mathematical modeling of the viscoelasticity of these materials. It is shown that as the basis of mathematical models of relaxation and deformation processes of polymer sea ropes, it is advisable to choose the integral function of the Cauchy probability distribution, which has the additivity property.

Keywords: forecasting, mathematical modeling, polymer sea ropes, deformation properties, relaxation properties

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COMPUTER SIMULATION OF DEFORMATION PROPERTIES OF POLYMERIC TEXTILE THREADS FOR PARACHUTING

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Abstract. The article deals with the issues of mathematical modeling of the deformation properties of polymeric textile threads used in parachute construction in the manufacture of parachute lines. For this mathematical modeling, two types of models of relaxation and deformation processes are proposed.

Keywords: computer simulation, polymer parachute lines, operational properties, relaxation processes, deformation processes

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COMPUTER SIMULATION OF VISCOELASTICITY OF ORIENTED POLYMER TEXTILE MATERIALS

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Abstract. The article describes the issues of computer simulation of viscoelasticity of polymeric textile materials. One of the generally accepted variants of computer simulation of the viscoelasticity of polymeric materials is the variant based on the analytical approximation of experimental «families» of relaxation and deformation curves by normalized relaxation and deformation functions on the logarithmic scale of the reduced time.

Keywords: viscoelastic properties, computer simulation, oriented polymeric materials, textile materials, relaxation processes, deformation processes

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COMPUTER MODELING AND DIGITAL PREDICTION OF ELASTIC, VISCOELASTIC AND PLASTIC PROPERTIES OF SYNTHETIC THREADS

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Abstract. The article deals with the issues of computer modeling and digital prediction of elastic, viscoelastic and plastic properties of synthetic threads. Methods are proposed for dividing the total strain and the mechanical work of deformation of synthetic yarns into elastic, viscoelastic, and plastic components that are essential in determining the functionality of these yarns.

Keywords: computer simulation, digital forecasting, textile materials, synthetic threads, elasticity, viscoelasticity, plasticity

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INTEGRATED DESIGN TECHNOLOGIES IN MODERN ENGINEERING PRODUCTION

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Abstract. The features of integrated and complex design of surfaces in modern machine-building production are considered. The contradiction observed in modern mechanical engineering is described, which consists in the complication of the required forms and the complexity of their design using modern computer-aided design systems (CAD). A description of the complexity of using parametric design of objects with surfaces of a high degree of curvature is given and ways to simplify this process are described. Particular at tention is paid to the process of using polygonal modeling tools to obtain complex-profile surfaces in a digital model. A technique for converting polygonal models into a surface model and then into a solid model is disclosed, which makes it possible to directly integrate the obtained objects into the systems for generating control programs for shaping equipment with numerical control. The materials of the article are of practical value for enterprises of the machine-building complex in connection with the simplification of the process of designing digital models using polygonal modeling tools, followed by transformation into a solid model and automation of production using CAD tools.

Keywords: computer-aided design systems, polygonal modeling, solid modeling, technologies

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