

SOCIOCULTURAL PRAGMATICS OF CHINESE CHARACTERS IN MODERN COSTUME DESIGN

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Abstract. The article discusses various approaches to the interpretation of hieroglyphs by Chinese and European designers, their classification is carried out and, based on a comparison, patterns of the use of written signs in costume decoration are revealed. In this aspect, the study of modern costume design has not previously been the subject of a comprehensive study in foreign and domestic art history. In addition, the article identifies the main problems that arise when using Chinese characters in modern clothing design: when elements of hieroglyphic writing are borrowed outside the original context, or when designers use graphic characteristics of hieroglyphs, ignoring their content and meaning.

Keywords: East-West dichotomy, fashion design, Chinese character, interpretation of the Chinese character, decor, Guo Pei, Vivienne Westwood, Dior, Burberry, Prada

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THE AESTHETIC SIGNIFICANCE OF THE ORNAMENTAL ART OF THE UDMURT CULTURE IN THE DESIGN OF MODERN INTERIORS

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Abstract. This work is devoted to the study of the graphical display of the symbolic-sign system of ornaments of the Udmurt Republic of Russia in the development of a cognitive metaphorical model of the artistic image of the dominant module — a wall mirror, an interior in a cluster of

organizing a person's living space in the living area. The study used general associative concepts associated with the customs and traditions of the ethnic culture of the Udmurts in the form of artistic images of ontological and semiotic realities that are involved in the ornamental systems of decoration of arts and crafts of the peoples of the Udmurt Republic of Russia. The result of the study is an interior project developed on the basis of a retrospective of wooden architecture in the northwestern regions of the Russian Federation. The artistic image of the design object, represented by a wall mirror in a frame with an ornamental decor, performs the insulation functions of the optical element and the overall organization of the compositional solution.

Keywords: ornamental symbolic decor, wall mirror, interior design, ethnic culture of the Udmurt Republic of Russia, fine arts

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ART OBJECT: EVOLUTION FROM MODERN SCULPTURE TO LAND ART

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Abstract. This article is devoted to the definition of an art object as part of a sculptural form and an element of land art. It is proved that the evolution of modern sculpture is conditioned by experimentation and leads to an art object as a conceptually constructed metaphor of modernity, an associative poetic model of the relationship between the artist and the world. The art object today receives an impulse of development within the framework of land art. Compositional patterns of the subject-spatial environment are identified using examples of works by leading sculptors and designers. Studying modern approaches to organizing space using art objects.

Keywords: art object, land art, collage, installation, academic plastic, design, sculpture

For citation: Druzhinkina N. G. Art object: evolution from modern sculpture to Land Art. *Design. Materials. Technology*. 2023;(2(70)):27–35. (In Russ.). DOI: 10.46418/1990-8997_2023_2(70)_27_35.

A SYSTEM-SYNERGISTIC APPROACH TO THE CREATION OF ARTISTIC IMAGES OF MODERN INTERIORS «YUMO AND YIN» BASED ON THE MYTHOPOETICS OF THE «YUGORNO» ETHNIC CULTURE OF MARIE

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Abstract. In this paper, the study of the cosmogonic mythology of the Mari ethnic groups based on the legends and tales of the heroic epic «Yugorno» by A. Ya. Spiridonov, in the implementation of post-non-classical methodology in the development of digital and cognitive art technologies, was carried out. The result of the work carried out was the creation of cognitive metaphorical models of artistic images of design objects that organize a person's living space. The images of mythological heroes made it possible to design the compositional center of the interior sleeping area, consisting of a table, a box for jewelry or bijouterie and an organizer that perform a functional and aesthetic dominant load.

Keywords: interior, mythological heroic epic, the ethnic culture of Mari, ergonomics, usability, zoning, dominant composition module, artistic image of design objects

Acknowledgments. The study was carried out with the financial support of the Russian Foundation for Basic Research within the framework of the scientific project no. 20 312 90 056.

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TEXTILE AS A KIND OF ARTS AND CRAFTS IN THE CATEGORIES OF THE «UNIVERSAL SCHEME OF CONTRADICTION»

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Abstract. Textile, as a kind of arts and crafts, is a system object. A system object has internal contradictions between its constituent parts. The article reveals the basic elements-opposites (fiber, creator, technology) and studies the contradictions existing between them. A model of the mechanism for regulating intrasystem contradictions has been developed on the basis of the tools of the categorical-system methodology. The resulting model can serve as a basis for identifying contradictions between the components of the system in the implementation of practical and design

activities of artists of arts and crafts, as well as developing skills to manage the creative process using conceptual thinking through the mechanism of regulating the identified contradictions.

Keywords: arts and crafts, methodology, textile art, universal scheme of contradictions, opposite elements

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SOUND AS A TOOL FOR ORGANIZING THE DESIGN OF THE URBAN ENVIRONMENT

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Abstract. Using an interdisciplinary approach, the article examines sound as a component of the synesthetic and multisensory system in urban design. Examples are given of the integration of sound in the design activities of urban environment designer as a cultural aspect (cognitive tours in the city, local musical actions) and in the implementation of urban environment objects (sound landscape, sound installation and sculpture, sound accompaniment of processes, etc.). The use of sound as a tool for integrated design-projecting and as a component of a modern territorial brand is proposed.

Keywords: sound landscape, sound design, sound in the city, architectural environment design, urban design

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STEREOTYPES OF PERCEPTION OF ARTIFICIAL INTELLIGENCE DISCODIFFUSION WORKS AND THEIR DIFFERENCES FROM HUMAN VISUAL CREATIVITY

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Abstract. This article describes an experiment of demonstrating to the audience of an exhibition of graphic works images created using artificial intelligence. The purpose of the experiment was to study the peculiarities of people's perception of AI creativity in the context of various social, cultural, and other stereotypes and to study these stereotypes themselves. Special attention in this work is paid not only directly to the goals and objectives, but also to the description of the actual methodology and the course of the experiment. It is proven that artificial intelligence allows conducting a complex of experiments that were previously impossible or difficult to implement, allows studying the perception of participants in the process of production and consumption of fine art objects with minimal or controlled influence of the subjective factor of the researcher on the result of the study.

Keywords: creative artificial intelligence, stable diffusion, artificial intelligence creativity, generative art, perception of artificial intelligence creativity, sociology of artificial intelligence art

For citation: Mirin I. G. Stereotypes of perception of artificial intelligence DiscoDiffusion works and their differences from human visual creativity. *Design. Materials. Technology.* 2023;(2(70)):59–66. (In Russ.). DOI: 10.46 418/1990-8997_2023_2(70)_59_66.

URBAN DESIGN: IN SEARCH OF A MODEL OF HISTORICAL DEVELOPMENT

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Abstract. The paper reveals the evolution of the concepts of «urban design», «urban environment design» and «urban design» in the historical development of design methods of organization of the object-spatial environment of the city. The models of representation of design history with revealing of their most optimal forms as applied to describe the historical development of city design depending on the purposes of such representation are considered.

Keywords: urban design, urban environment design, urban design, object-spatial environment of the city, design-artistic synthesis, the model of the historical development of urban design

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INTERACTIVE DESIGN SOLUTIONS OF BOOKS FOR CHILDREN OF PRIMARY SCHOOL AGE

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Abstract. The article explores a modern printed book with the inclusion of interactive content for primary school children. The book, in its classical sense, obeying the conditions of modern reality, adapts to the cultural changes taking place in society. Printing design ceases to be only an educational commodity, the readership goes for ideas, for art form and uniqueness — an art object. Production capabilities allow print publications to reach a new level of user interaction, cover not one plane of space, but three, while using all human sensory systems. Such «contact» is possible using interactive components: inserts, non-standard materials and formats, inclusion of augmented reality (AR) technology and 3D objects. However, not every interactive solution is universal for each of the age groups. The tasks are to study the market for an interactive printed book, to identify solutions available for understanding and comfortable use by children aged 6 to 12 years. The compliance of solutions with the psychophysiological development of children is investigated on the basis of the age periodization of L. S. Vygotsky. As a result of the analysis, a classification of design solutions with an interactive component in print media marked with a 6+ sign was formed in accordance with Federal Law no. 436-FZ of 29.12.2010 «On the Protection of Children from Information Harmful to Their Health and Development».

Keywords: book design, children's interactive book, book for children of primary school age

For citation: Lakisenko E. D., Kazakova N. Yu. Interactive design solutions of books for children of primary school age. Design. Materials. Technology. 2023;(2(70)):75–79. (In Russ.). DOI: 10.46 418/1990-8997_2023_2(70)_75_79.

DIGITAL TECHNOLOGIES (AR/VR) IN MODERN GRAPHIC DESIGN

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Abstract. The paper reveals the potential of digital technologies in graphic design, namely the implementation of AR/VR technologies in graphic design. The problem lies in the contradiction between traditional means of graphic design and the use of digital technologies in graphic design. The relevance lies in the disclosure of the potential of all means of graphic design, the introduction of new technologies, in the formation of a new understanding of graphic design today. The purpose of the work is to explore and analyze the use of AR/VR technologies in modern graphic design, to identify their advantages and disadvantages, as well as the prospects and opportunities for the development of graphic design using digital technologies. The results of the study are to determine the role of digital technologies in modern graphic design.

Keywords: digital technologies in graphic design, graphic design, augmented reality (AR), virtual reality (VR)

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CONDUCTING A SYSTEMATIC AND QUALITATIVE ANALYSIS OF THE OPERATIONAL PROCESSES OF ARAMID TEXTILE MATERIALS

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Abstract. The article discusses methods of systematic and qualitative analysis of operational processes of aramid textile materials. Knowledge of viscoelastic characteristics of aramid textile materials for the purpose helps to make the best choice of materials with certain deformation properties. Computer methods of system analysis of their deformation properties are being developed to determine the deformation characteristics of aramid textile materials.

Keywords: system analysis, mathematical modeling, textile materials, operational properties, aramids

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INVESTIGATION OF ANISOTROPY OF DEFORMATION PROPERTIES OF FUR FABRICS MADE OF MATRIX ELEMENTS

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Abstract. The paper determines the relevance and rationality of the production of fur webs from matrix elements; the study of the anisotropy of the deformation properties of fur webs from matrix elements cut at different angles to the ridge line of the semi-rickat; the influence of the direction of cutting matrix elements on the relaxation characteristics of the formed webs is determined; the optimal directions of cutting matrix elements in order to obtain high-quality form-resistant fur products.

Keywords: fur semi-finished product, rational use, matrix element, layout, deformation property

For citation: Androsova G. M., Kosova E. V., Yuferova L. V., Fot J. A. Investigation of anisotropy of deformation properties of fur fabrics made of matrix elements. Design. Materials. Technology. 2023;(2(70)):94–99. (In Russ.). DOI: 10.46 418/1990-8997_2023_2(70)_94_99.

ANALYSIS OF DESIGN AND TECHNOLOGICAL SOLUTIONS OF POCKETS WITH AN ADDITIONAL ENTRANCE IN CLOTHING MADE OF RAINCOAT MATERIALS

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Abstract. The market of clothing made of raincoat materials is diverse and is represented by products for various purposes. Pockets are one of the most frequently used elements of shoulder clothing made of raincoat materials. They determine the functional purpose of the product and its appearance. Pockets with an additional entrance area fashion trend of recent seasons. Options for processing overhead, in the seams and slotted external pockets with an additional entrance, which in most cases has a zipper closure, are presented in the article. The proposed processing methods are of practical interest for industry enterprises in solving the problem of improving the quality of products. The generalized graphical model of the assembly of the node is developed on the example of processing methods of a slotted pocket with a leaflet and an additional entrance with a zipper. The generalized graphical model will create prerequisites for the work on the unification and typification of the structural and technological solutions of the node, reduce the time spent on the design of the technological process.

Keywords: clothing made of raincoat materials, classification of pockets, additional entrance to the pocket, processing methods, generalized graphical model

For citation: Starovoitova A. A., Alekseenko I. V. Analysis of design and technological solutions of pockets with an additional entrance in clothing made of raincoat materials. Design. Materials. Technology. 2023;(2(70)):100–105. (In Russ.). DOI: 10.46 418/1990-8997_2023_2(70)_100_105.

INFLUENCE OF PHOTOGRAPHIC LENS DESIGN ON OPTICAL IMAGE QUALITY

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Abstract. In this paper, the history of the development of photographic lenses is considered as the history of the struggle for optical image quality, which led to the production of technically perfect, but inexpressive lenses, devoid of certain artistic properties. A relationship has been established between optical aberrations and the effects observed in the image due to them.

Keywords: photographic lenses, history of lens, optical aberrations, artistic optics, pictorial art

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DEVELOPMENT OF RECOMMENDATIONS FOR THE DESIGN OF MEDICAL TEXTILE MATERIALS BASED ON CRITERIA FOR THE QUALITATIVE ASSESSMENT OF THEIR OPERATIONAL PROPERTIES

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Abstract. The article is devoted to the development of recommendations for the design of textile materials for medical purposes. Recommendations are obtained on the basis of a qualitative analysis of the operational properties of the studied materials, carried out according to the developed criteria for evaluating their functionality.

Keywords: design, mathematical modeling, polymers, textile materials, implants

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INVESTIGATION OF VISCOELASTIC PROPERTIES OF ARAMID TEXTILE MATERIALS

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Abstract. The article describes the main viscoelastic properties of aramid textile materials and methods of their research. Primary information about the viscoelasticity of the studied materials can be obtained from experimental stretching diagrams, and for a more detailed study of viscoelastic properties, mathematical modeling of relaxation or deformation processes is necessary.

Keywords: viscoelastic properties, mathematical modeling, aramid textile materials, relaxation processes, deformation processes

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RESEARCH OF DEFORMATION PROCESSES OF MEDICAL TEXTILE ELASTOMERS

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Abstract. The article presents methods for studying the deformation processes of medical elastomers used in implantology. The basic relaxation processes and creep deformation processes are selected as the main deformation processes of medical elastomers.

Keywords: mathematical modeling, elastomers, textile materials, deformation properties, relaxation, creep

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CARRYING OUT THEORETICAL AND EXPERIMENTAL STUDIES OF THE PROCESSES OF OPERATION OF MEDICAL TEXTILE ELASTOMERS

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Abstract. The article discusses the issues of theoretical and experimental studies of the processes of operation of medical textile elastomers, which are important for determining the functionality of these materials. A detailed step-by-step plan for conducting such studies is proposed and the technical characteristics of a representative group of polymer textile materials used for the manufacture of medical elastomers for implantology are given.

Keywords: research, mathematical modeling, elastomers, textile materials, deformation properties, relaxation, creep

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MATHEMATICAL MODELING OF RELAXATION MODES OF OPERATION OF MEDICAL TEXTILE ELASTOMERS FOR IMPLANTOLOGY

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Abstract. The article presents the most popular variant of mathematical modeling of relaxation of textile elastomers used in implantology. On the basis of the proposed version of the mathematical model of relaxation, the corresponding parameters of this mathematical model are determined, which are essential for carrying out a qualitative assessment of the relaxation properties of the studied materials and for determining their functionality.

Keywords: research, mathematical modeling, elastomers, textile materials, relaxation properties, relaxation

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DIGITALIZATION OF PREDICTION OF VISCOELASTICITY PROCESSES OF POLYMER TEXTILE MATERIALS

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Abstract. The article discusses the issues of digitalization of forecasting viscoelastic modes of operation of polymer textile materials. The basis of mathematical models of viscoelasticity, the main of which are relaxation and deformation processes, is the spectral-time theory. The practical use of methods of confidence prediction of viscoelastic processes of polymer textile materials is simplified due to digitalization.

Keywords: digitalization, forecasting, polymer textile materials, deformation properties, viscoelasticity

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CONCEPTUAL DESIGN AND TECHNOLOGY OF MANUFACTURING UNMANNED AERIAL VEHICLE «LUN»

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Abstract. The paper describes the process of manufacturing an unmanned aerial vehicle, from idea to implementation. The concept of the external bypass of the apparatus based on the biological prototype of the harrier bird is proposed. According to the developed working drawings, a three-dimensional model of the apparatus was created, for realistic visualization, the object was colorized, and light sources were installed. Some aspects of the manufacturing technology of the device are also described, a model of the product was created using additive printing.

Keywords: unmanned aerial vehicle, conceptual design, biological prototype, three-dimensional modeling, visualization, manufacturing technology, composite materials

For citation: Abbasov I. B., Baranova Yu. V. Conceptual design and technology of manufacturing unmanned aerial vehicle «Lun». *Design. Materials. Technology.* 2023;(2(70)):157–161. (In Russ.). DOI: [10.46418/1990-8997_2023_2\(70\)_157_161](https://doi.org/10.46418/1990-8997_2023_2(70)_157_161).