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FUNCTIONAL-DECORATIVE DESIGN STRATEGY: INTEGRATING MODERN MATERIALS INTO TRADITIONAL STAGE CLOTHING DESIGNS

Summary. *The subject area of the study is the identification of modern approaches and methods of applying artistic and constructive principles of functional and decorative design of traditional stage costumes in modern design and planning of fashionable clothing. The article reveals the systemic qualities of design and design activities using modern materials, which determine the potential for endless production of new forms of stage clothing. When designing clothing for artistic and cultural events, designers are increasingly interested in using various lighting effects. The systemic approach allows us to consider a comprehensive solution to compositional tasks that involve the use of light in a costume: spatial-plastic and light-color processing of clothing components; creating certain compositional accents on texture, form, color dynamics; ensuring the integrity of the costume image. As part of the study, an author's strategy for using light textiles in stage costume solutions is proposed. The methodology involves designing clothing with light distribution on the surfaces of products. Electroluminescent materials, polymers, LEDs, optical fiber are used. Each light design development differs in color, intensity and distribution on*

surfaces. Compared to other electric light sources, LEDs have the following differences: high light output, high mechanical strength, vibration resistance, long service life, low inertia, different radiation angle, low cost, safety, insensitivity to low temperatures, environmental friendliness. A special advantage is that LEDs allow you to get different color glow to achieve the goal of various design solutions. It is substantiated that the current level of development of artistic practice involves a certain specificity of the use of modern materials in the traditional design of stage clothing, namely, balancing between simple and complex, between applied and artistic and philosophical.

Key words: *functional and decorative design, stage clothing, traditional costume, modern materials, composition, stylization, luminous textiles.*

Introduction. Functional-decorative design is an extremely versatile type of design that demonstrates the level of development of socio-cultural guidelines of society and is a means of communication through visual language. It combines an artistic principle and utilitarian-applied meaning; it meets the demands of mass culture, while it can tend towards elitism. Functional-decorative design is able to both reflect artistic and technological processes and influence the trends of their development. At the same time, one of the turning points in the historical development of this type of design was the organic combination of two important principles: focusing attention on the emotional component and directing form creation to functionality in the representation of information embedded in the project [18; 20].

Conceptualization in the field of research of design activities for the production of stage clothing involves identifying its systemic qualities, which enable the invariant articulation of elements, which determine the potential for endless production of new costume samples. At the same time, there is a need for a more detailed study of modern approaches to the complex solution of compositional tasks involving the use of light in a costume - spatial-plastic and

light-color processing of clothing components, the creation of certain compositional accents on texture, form, color dynamics, ensuring the integrity of the costume image.

Literature review. An important approach to modernizing approaches to interpreting traditional stage clothing designs in a contemporary context is the integration of modern high-tech materials. In this context, it is considered a fundamental operation, which aims to endow the various possibilities of innovative fabrics and technologies integrated into them with a stage meaning. A number of scientists are convinced of this [7; 19].

Industry research has been conducted by modern scholars [1; 3; 17], who consider interpretation to be the basis of any process of changing traditional solutions in stage clothing, which assimilates various formats of perception of creative expression of personality in the field of art through costume. The designer of such clothing focuses his main efforts on the maximum disclosure of the content features and expressiveness of the artistic work, for which it is first necessary to comprehend the original author's intention, and then form his own interpretative version in the stage image.

Individual issues of interpretation of stage costume are considered by authors [2; 15], who focus on different types of interpretation, which differ in purpose and means. Scientists [9; 10] justify that the issue of competent construction of stage image is currently one of the most important in the field of musical performance, theater and choreography, because it is related to the objective-subjective relationship: the main difficulty of the process is seen as finding the optimal balance between the degree of revealing the director's original author's idea and the degree of freedom of design creativity. Despite the significant achievements of modern researchers, a number of issues remain unresolved, which emphasizes the problems of preserving the principle of interaction of styles, updating the work in the modern design space of creating stage clothing.

The purpose of the study is to substantiate the strategy of functional and decorative design of modern stage costumes by integrating modern materials into traditional stage clothing designs.

Results. The symbolic context of the stage costume under consideration consists in creating a symbol that most accurately characterizes its owner. Stage clothing, in the aspect of art historical analysis, is a system of signs and symbols endowed with information content of varying degrees, which form the corresponding specific figurative associations in the consciousness of the audience. The stage costume carries an informative load, encoded not only in the concepts of silhouette, cut, material, ornamentation and color, but also in the closely interconnected gestures, facial expressions, expressive poses of the costume owner. Actually, the main elements of this information message of stage clothing are signs and symbols, with added meanings and meanings, using composition, color scheme, texture and decorative elements.

Already in the 20th century, the costume began to depend on the artistic idea of the work, on the thoughts of the actor, director and author. The most important function of the costume is the symbolic function [11–13]. This function conveys to the observer the most important, important information about the person, about religion, about culture, about aesthetic taste, about his social status. The costume has many other functions, such as:

- age - this function is responsible for indicating or masking a person's age: through the costume, one could easily understand a person's age, namely through the color of clothing, the color of the headdress in certain nationalities ; at the same time, the European costume always tried to hide a person's age;

- socio-gender - in every traditional, any costume, not only the gender of the person was highlighted, but also the marital status;

- class (group) - highlights belonging to a certain class or social group, as well as to a social class, or vice versa, can hide any person's status;

- professional – a suit can determine what profession a person belongs to and what their occupation is;

- regional - the costume shows regional traditions in clothing, which are associated with both the way of life of the people, with national traditions, and with the climatic features of the region - this function is closely related to the national function, since it can be used to determine which ethnic group a person belongs to;

- aesthetic – the most important thing that is manifested in a costume is the aesthetic ideal of a particular time and people.

Stage clothing ensures the creation of images in a certain individual, a character. This allows us to consider the stage costume as a multi-valued phenomenon, a specific sign of personal specifics that transmits information about a certain character. At the same time, the process of designing a complex, holistic appearance representations personality implies the presence of a whole hierarchical structure of sign systems. The signification of stage clothing performs an important function, primarily communicative, allowing the character to demonstrate the specificity of his own individuality to others.

Thus, the main task of the information and symbolic role stage clothes are seen the transfer of certain information from the character, the hero of the image to the audience, and the clothing itself is positioned as a practical way of establishing communication between social and cultural codes, a tool for forming an image, creating a certain image. Concentrating the most important specific features and distinctive features of moral, social, religious, ethical aspects of public consciousness, established way of life, stage clothing in a broad socio-cultural context represents the external metasign of a certain stage hero. Therefore, taking a direct part in the transmission of symbolism and behavioral stereotypes, stage costume acts as an influential factor of cultural identification, a means of encoding cultural meanings.

In designing the form of stage clothing, four levels can be distinguished sequentially:

- 1) structural level – internal geometric characteristics of the form and the relationship between parts (proportions, geometry, symmetry);
- 2) the degree of freedom of the suit – loose-fitting accessories;
- 3) material and decorative level – color, decor, finish, lines, properties of materials;
- 4) plastic level - plasticity of the figure in the costume [8; 16].

The study of numerous examples of folk, historical, and modern costumes convincingly shows the important role that ornament plays in the design of stage costumes. Ornament decorates the costume or its individual parts, the surface of which it covers, emphasizes, draws attention to them, enriches the artistic and figurative solution of the costume, and serves as a means of dividing the form of the costume, if the composition of the costume includes ornamented surfaces and smooth surfaces devoid of any ornament [4; 21].

Using various techniques for applying ornamentation, the designer creates a feeling of lightness or heaviness of the costume, emphasizing the properties of the material. Ornamental motifs distinguish the costume from others (this function is important for a stage costume).

The study of the symbolism and aesthetics of stage clothing, its main communication properties allows us to identify the characteristic features of design solutions, the aesthetics of costume images and approaches to solving architectonics. Traditionally, the return to the figurative language of stage clothing was due to the fact that in productions conceptual transformations are mainly implemented in the context of the scenography of the show, production, performance, which is maximally complement the key goal of artistic conception and directorial work. Analyzing the semantic reflection of stage costumes, it can be seen that modern artists in the theatrical and dramatic environment demonstrate increasingly original solutions for stage costumes and scenography in general. It

should be noted that the concepts of talent in the most complete and vivid way designer-artist manifests at the level of an elite artistic tradition, accompanied by an active transformation of the source of creativity. The elite level is characterized by a more avant-garde approach to the interpretation of form, decor and details, with both grotesque accentuation of certain components of the costume and complete rejection of others possible. This is explained by the artist's perception of individual details as secondary in the context of communication, aesthetic load or semantic meaning as a whole.

For modern scenography, and, accordingly, stage costumes, the compositional law of contrast is inherent. According to it, designers base their work on the contrast of individual elements and the whole, emphasizing the texture, expressiveness of color and shape in the process of creating a certain image. Often, such details acquire the main sound in the overall composition. Since the level of identity of current stage clothing with the original source has acquired, for the most part, an associative context, we are talking about temporal-spatial communication in the stage image, which is characterized by the reflection of the norms of social life in the modern prism of multidimensionality. The added innovative details of the costume, in this case, give a fresh context to the traditional image (primarily, in theatrical productions). Therefore, it can be argued that the modern designer's view of stage clothing is focused on the task of shocking, surprising the audience, attracting its attention with unexpected elements that will remain in the viewer's memory for a long time.

Currently, known technologies for applying patterns to fabric are being actively improved and new ones are emerging. In the use of textile ornamental techniques in recent years, a trend has emerged towards layering different decoration techniques on one fabric, for example:

- weaving pattern, then printed ornamental motif with the addition of embroidery, applique, sequins, beads;

- thermal printing or applique with fabrics and materials with a printed pattern;
- thermal printing on the surface of the material with a " crash " effect;
- thread embroidery, bead embroidery, " Richelieu " and many other techniques.

At the material and decorative level, chemical modification of the fiber-forming polymer is often used. It consists in the fact that during the wet-heat treatment at the stage of steaming the garment, a technological solution is introduced into the steam working medium, the composition of which depends on the fiber composition of the fabric. Such a functional and technological effect is used in the manufacture of dimensionally stable garments from cellulose and hydrated cellulose fabrics [5; 14].

The modern transformation of design approaches to creating functional stage clothing involves rethinking traditional motifs through new artistic symbols, practical solutions and abstract forms, assimilation classical elements with innovative aesthetics. It should be noted that special attention in this context is required by experiments with textiles that involve the use of non-traditional materials (organza, mesh), a combination of embroidery with three-dimensional printing, elements made using laser printing, etc. [6].

" Smart " solutions form a special niche and remain currently understudied in the context of functional and decorative design of stage clothing. Within the framework of this study, the author proposes to consider the potential of using innovative **light textiles**. **In particular**, it is proposed:

- use of electroluminescent threads – they can effectively glow using electric current to accentuate certain ornaments on clothing, geometric elements, and edging;
- the use of light-emitting diodes (LEDs) through their direct integration into the fabric of the stage costume.

The functional-decorative design strategy of LED elements in stage costumes combines ergonomics, safety, and visual expression, integrating LED sources into the textile structure to ensure artist mobility, reliable communications, and artistic expression during the show. The main technologies used to create luminous textiles are LED filaments, fiber optic filaments, and electroluminescent elements (Table 1).

Table 1

Lighting technologies in stage clothing: comparative characteristics

Light source	effect	Features	Main advantages	Key disadvantages	Specificity of application
Light-emitting diodes (LED)		Small, bright lights integrated directly into the suit fabric	Quite high brightness, possibility of setting programmable lighting effects	The light is spot-like, LEDs require batteries	Highlighting ornaments on belts, collars, shirts for greater expressiveness of the image
Fiber optic		Thin threads that transmit a light effect along their entire length and	Design flexibility, uniformity of light	Quite complicated installation, limited brightness potential	Creating bright ornamental patterns on outerwear and dresses
Electro luminescent filaments	-	A thin fiber that creates a light effect when exposed to an electric current.	Not susceptible to heat, quite flexible	Requires uninterrupted high voltage, low filament brightness	Accentuating geometric elements of clothing, edging of costumes
OLED panels		Flexible light panels	Energy efficiency, high brightness	Fragility, delicacy, high cost	Creating a dynamic show by synchronizing lighting effects with music

In general, the key decorative aspects are considered to be light accent (underlining constructive cut lines or creating dynamic visual illusions), programming effects (synchronizing color changes and flicker frequency with

musical accompaniment and overall stage lighting), and masking elements (integrating LED strips and pixels under translucent fabrics or a mesh to diffuse light). For example, during a dance, patterns can change colors, emphasizing their meaning. At the same time, modern technologies provide for technical integration: flexible connections are provided by using conductive threads and quick-installation connectors, and modularity is ensured by creating removable light blocks for easy care of the suit and washing of the textile base.

The main functional stages of design include: ergonomic analysis, taking into account the amplitude of the actor's movements to avoid wire tension and contact breakage; weight distribution, which involves placing batteries and controllers in areas of minimal load (lower back, back); thermal regulation to ensure ventilation and heat dissipation from powerful LEDs; power safety through the use of low-voltage elements (5V–12V) to protect against electric shock.

The main stages and principles of design include:

1) the conceptual-semiotic stage, with the definition of the role of light as the language of culture, emphasizing the director's intention, the character of the character, and the psychological dynamics of the scene;

2) the structural and ergonomic aspect of ensuring the actor's safety, ease of movement, and concealment of power sources, controllers, and wires within the fabric structure;

3) light-optical calculation: selection of textures, degree of transparency, reflectivity and color temperature of textiles to interact with the overall lighting design of the scene;

4) technological integration – the introduction of flexible LED matrices, embroidery with conductive threads or sensor modules without losing the plasticity of the material.

Thus, the functionality of luminous textiles in a stage costume can be positioned as a modern progressive solution for transforming familiar structures into a light show, contributing to the implementation of the director's most daring

ideas on stage and enhancing the artistic and aesthetic impact on the viewer. The author's strategy for using luminous textiles (in particular, its elements - electroluminescent fabrics, fiber optics, LED elements built into the fabric, etc.) in the functional and decorative design of stage clothing is based on the awareness of its most important functions, assimilating artistic, technical and psychological aspects. In particular, the following were taken into account:

- aesthetic and artistic function that provides greater visual expressiveness of the stage image (using luminous textiles, it is possible to create the effect of a "live" image that instantly attracts the viewer's attention), optimizes the formation by emphasizing the silhouette or plasticity of movements with light lines, and also allows for instant dynamics of the mood of the stage by changing the nature or color of the illumination of the actors' clothing;

- symbolic-dramatic function, which finds practical expression in emphasizing a certain character of a character, focusing on a certain actor or location of the scene, which contributes to strengthening the semantic accents of the stage action;

- a technical function that expands the possibilities of using the play of light and darkness, allowing for better visibility of the artist on a darkened stage, achieving light synchronization of the stage costume with musical accompaniment or the general stage lighting system using DMX control.

Electronic embroidery technology offers another design opportunity, allowing LEDs to be integrated directly into the fabric without an additional plastic sheet underneath. This way, the fabric itself becomes a component of the design, and the technology itself can be applied to fabrics of variable thickness, even transparent ones. Although LEDs provide a very dynamic lighting effect and rarely blend seamlessly with textiles, the material can be used quite effectively to achieve different visual effects depending on the costume design.

It is suggested to give preference to placing LEDs directly on the outer layers of stage clothing to enhance the light effect and thus emphasize the stage

image. In some cases, where a strong light accent is not very desirable, LEDs can be used in conjunction with translucent surfaces or design components to create blurred lighting effects. To achieve a less dramatic lighting effect, the LED strips can be directed towards the inside of the garment.

In addition to using light as a decorative or functional element, design development can also include conceptual ideas, such as controlling the hue or saturation of light using the Internet of Things or creating an interaction between the costume and the space. Further use of light will increase the expressiveness and functionality of the garment, as well as create opportunities for its customization in connection with programmable devices.

Considering the results, the prototype of the illuminated stage costume can achieve its maximum functional, aesthetic and expressive goals. As a result of the study, it was found that the use of LEDs under the main part of the fabric is the most convenient and practical way to hide electronic mechanisms behind illuminated techno-couture designs.

The desired lighting effect in the costume can be achieved by placing LEDs on the back of the fabric (facing the body) across the seam lines and using vertically arranged transparent layers as open cutouts in the fabric.

Conclusions and prospects. As the results of the study demonstrate, the narratives of the development of modern functional-decorative stage clothing design demonstrate the assimilation of aspects of traditional designs and ethnic motifs with the innovative technological capabilities of modern textile solutions. The integration of modern "smart" elements into traditional stage clothing designs is now viewed not simply as an attractive, bright or sensational picture for the viewer, but primarily as a cultural and social meaning conveyed in a visual way.

The strategy of using modern light materials in traditional stage costume solutions proposed in the study provides a number of practical advantages: the functionality of stage clothing increases due to greater resonance of the costume with the image, the mobility and energy efficiency of productions increase, the

director's idea is realized as effectively as possible through the creation of fantastic, grotesque images, and finally, the trend finds a response in the modern audience, as it successfully synergizes classics and innovations.

The costume can be synchronized with music or the overall lighting design of the stage, helping to establish visual contact with the viewer, ensuring the transfer of emotions and ideas through light images.

This study, which considers light as a new design element that enhances the expressiveness of stage clothing, aims to offer an alternative to traditional costume designs with examples that incorporate lighting technologies. In accordance with the main structure, research questions and design concept, the study examines contemporary design examples using various lighting technologies with appropriate visual materials.

The current use of light in stage clothing is limited by various small art projects and did not achieve more than accessibility at the present time. The design features and solutions proposed in the study can be applied to real-life tuning of stage costumes. Ago research has broader value, offering a clear overview using lighting technologies and introducing transparent and a detailed design development process.

The study can be a starting point for future interdisciplinary projects. Future research should focus on practical testing of the approach proposed in the study.

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