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## ANALYSIS AND DESIGN OF FUTURISM FASHION

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### ABSTRACT

*Traditional futurism fashion, usually with geometric or streamline profile characterization of its science and technology elements, are seeking innovation structure breakthrough. At the same time, the distinct personality of the high-tech materials is used to make the form more diverse and more unique appearance. The popularity of the global environmental protection, low carbon life concept, futuristic clothing is no longer just focus on the subject of science and technology, industry and space, and more focused on human survival environment, focus on the thinking about the future of the environment, typical and high research value. In our research, using technology perfectly to interpret the futurism style of fashion design, we will make a functional fashion design as an example, which can change temperature under the influence of the independent environment. In the concept of time and space, combining with TPO design principle, it will make the wearer feel both external models of the future feeling, also will realize comfort from the science and technology. Adding PEG (polyethylene glycol) and other compound processing of cotton and polyester cotton blended fabric on the mezzanine, the functional fashion design can store heat when the temperature rise and release heat when the temperature reduce, which makes the dress more energy-saving, environmental protection and comfortable in the future. Keywords: Futurism fashion, Heat storage, Heat releasing*



## **INTRODUCTION:**

Topic in the rich theoretical system and the development of modern clothing play a guiding role. Through the study of futuristic clothing, we try to construct the detailed contents and characteristics of the theory of futuristic dress design, so as to give a good inspiration to the modern costume design. The theory of futuristic fashion design is to summarize the characteristics of common features from the individual, to analyze its fit with the modern women's design and to be applied to the design, production, production and sales of the theoretical Of the guidance, with a certain degree of feasibility and practical application value.

### **An Overview of the Theory of Futuristic Costume Design**

#### **1.The first section of the concept of futuristic style clothing**

The exploration of the future design style is a continuous act and is present in the history of the design and continues its prevailing. It is not a clear design style, it is of all ages, all schools. It is the future design of the inquiry and innovation, so its form of ultra-modern, there is a "future" ahead of style. In all times there are people in the study of the future design of the trend, for the "current" design it is an innovation, the "future" design it can have a profound impact.

#### **2.Futuristic Style Garment Design**

How to define futuristic style of clothing design can be from two aspects.

First of all, in a broad sense, the futuristic style of clothing design reflects the designer's creativity and advance

consciousness, which is reflected in the production stage of the innovation. It is different from the past or present. It describes the future, is a time-based popular phenomenon. In different times it has different forms and trends, in modern time, it is not necessarily anti-traditional, the important thing is that you want to know what the future will face. For example, because of the realization of human lunar landing in the 1960s, clothing reflects the exaggerated cosmic style, which is also known as futurism; and now futuristic style clothing is more close to life, and we are very concerned about environmental issues. So high-tech environmentally friendly fabrics and fabrics will become mainstream. So the futuristic style of clothing design has a strong demand, it is also the needs of the times.

From the narrow sense, to define the futuristic style of clothing can be through its unique design elements. Clothing design element is the most basic units which constitute the overall style of clothing, is a distinctive feature in fashion design, can be used to decorate the body.

#### **3.Analysis of Futuristic Costume Design**

First, the theoretical aspects "Futurism" focus on the future, but it concerns the moment, the futuristic style of the property is contemporary, not the afterlife, it naturally conforms to the contemporary social aesthetic concept, but also reflects the social problems of the times, "the future Doctrine "style is to" create "the form of aesthetic, rather than just breaking the unauthorized demolition and assembly of the game. Wu Qiong's "analysis of futuristic fashion design features," a paper put forward: futuristic fashion design



reflects the innovation is the primary, to express the progress of the future society, avant-garde modeling, the use of special materials are one of the innovative approach. Moreover, the addition of modern technology, science and technology is an innovation itself, and technology is the driving force for future development, is the indispensable force of future, therefore, the combination between the futuristic clothing and technology is increasingly necessary.

Second, from the application, in the 1960's the famous "Apollo" moon project opened the competition between the US and Soviet space also set off the first round of futuristic fashion design boom, so that the entire 60's fashion's theme is the universe and the moon. In the late 1960s, futuristic design had brought out the "no-wear" misconception. With the end of the space race between the United States and the Soviet Union, people began to become more realistic, and no one continued to care. "If we live in the moon what clothes should we wear", futuristic design ideas derived from "Lunar moon program" also slowly subsided. Nevertheless, the futuristic style hasn't disappeared, but has become a genre, with its official recurrence in the 21st century. As the most prominent representative, Balenciaga designer Nicolas Ghesquière is well deserved, whether it is 2007 autumn and winter T stage models helmet-style hat, or spring and summer 2008 "flower armor", were paying a tribute to the 60's future style. In contrast, Hussein Chalayan is more dedicated to the pursuit of high-tech use, from the perspective of wearability to measure the value of such clothing, its value is not high, but these shining skirts or skirts can be lifted provide a new kind of imagination for us.

## **Futuristic fashion design new look**

### **1. The first section of the futuristic style under the influence of new areas of fashion design**

As the emergence of new fashion design concept, futuristic fashion design is no longer the previous way, it is a new look in the new field, our previous design ideas and design methods have a great impact. In the 1960s, futuristic fashion design was produced in the form of cosmic style and developed to this day. It is not only in the external form to predict and express the future, its trend continues to be closed to the design of green environmental design and technology.

#### **(1) Futuristic clothing green design**

Green clothing is also known as eco-clothing, based on the concept of environmental protection, designed to be pollution-free, which is also beneficial to health and ecological environment. Produced in the industrial development, The clothing of environmental friendly arouse the awareness and concern about the energy waste, environmental pollution, ecological damage and other issues in the future developing process, it belongs to a form of expression in the futuristic fashion design.

Under the influence of green environmental protection, the design of futuristic clothing is expressing its keynote as saving resources, protecting the environment and wearing comfortable, arouse people to love and protect nature. According to the three aspects, futuristic green environmental design forms including: the use of environmentally friendly fabrics, accessories, design works can be recycled, simple shape of the life of the use of green,

environmental protection, environmental protection, Long, safe, non-toxic to protect human health. From the following two aspects to introduce: the first aspect, green fabric ,which requires fabric in the production process is pollution-free, wearing up on the human body without poison, after use can be recycled, in natural conditions can be degraded. The second aspect, simple style. With technology developing and the development of sustainable strategies, green design advocate save the energy and reduce fabric consumption. Simple style of futuristic costume design will remove the complex decoration, stress the human instincts and the inherent expression of temperament. This simple design can reduce the consumption of materials. Designers can add details in the minimalist style , so that the simplicity will not be crude.

## (2) New technology, new materials

Fierce competition is not only in the design of the style, but also the competition in the material is very intense, while the

development of new clothing materials and the development of new technologies is closely related, such as sanitarian fabrics, smart fabrics and some functional fabrics.

In order to create a sense of the future design, a wide range of decorative materials, high-tech functional materials is provided for the designers. Because of the development of new technologies, the production of high-tech fabric is excessively futuristic. Attempts for new clothing materials and secondary creative design are a very important step in the "futuristic" style of creative ideas. In the conceptual design of futurism, high technology is an essential element. In the futuristic fashion design, light and electricity will be used more frequently, such as sensors, LED tubes or solar cells and so on. Philips for the 2020 human life Imagination design project, the use of a sensor designed to reflect the feelings of the wearer's (Fig. 1), which can switch the clothing's color according to people's mood.



*Fig. 1 Philips perceived futuristic clothing*

From the famous French philosopher Paul Virilio's article "disappeared aesthetics", Ying Gao Dress designer, Ying Gao was inspired to design this quite psychedelic smart dress (Fig. 2). It uses the light gauze material and set the built-in visual tracking sensor, when others is staring at this dress, you will find the light in the above slowly move, in order to achieve "human clothing interaction" purposes. Although it looks like a nightdress, this dress can undoubtedly make people become the focus of attention in the night.



Fig. 2 Ying Gao human interaction



New technology and new materials in the future of fashion design is increasingly important. Different from the 1960s' futuristic clothing, now futuristic high-tech clothing has gradually gotten rid of the dull robot image, while designers is trying new materials and 3D printing and other production techniques, improving the sustainability of clothing ,or achieve something impossible in the past.

### **Analysis and Design Practice of Futuristic Style Costume Design**

#### **Section I Analysis on the Design Method of Futuristic Style Costume in Section**

##### **1. Deepen the design concept**

The basic framework of Futuristic style of clothing design concept is the future of science, science and technology and ecology, which is the navigator of our futuristic fashion design. The future of the information age makes the global trend towards synchronization, these propositions also reflected in the futuristic style of clothing design. This design concept involves science and technology, natural form and life ethics. Technology innovation in the field is fast, the product is strange, all-encompassing, which determines the futuristic style update fast, design style is presenting a variety of characteristics. But there is always something unchangeable, that is, these designs reflect the influence of cutting-edge technology. Therefore, when are in the futuristic fashion style design practice, there must be a clear design concept, combining with the design method, and gradually master the style of futuristic fashion design. We carry out a series of inspiration collection through future forecast and expectation.

##### **2.Capture the design inspiration**

When the design concept is clear, the most important part of the futuristic style design is to find the source of inspiration and to collect material. Coca Chanel said: "Fashion is not only in the clothing. Fashion exists in the sky, the streets, fashion and ideas, our way of life and the events that are closely related to the surrounding." Futuristic style must follow Scientific and technological progress and the pace of social development, pay close attention to the factors that can determine the future development of society, which is the source of inspiration for designers. The style of the doctrine is characterized by fashionable elitism, the color of humanistic science and other characteristics, so the inspiration of futuristic design can be focused, small start, refining the reality of the future. Inspired capture is usually seen as a collection of elements contained in futuristic designs that have been analyzed in front of the article, including styling, detail, color, fabric, pattern decoration, and so on.

##### **3.Explore the design method**

So far has obtained inspiring material, the next is to find the information you have integrated, the futuristic creativity of the centralized, figurative. To this stage of the design approach, the futuristic design in progress has a clear understanding of all the key elements clearly visible and fully explored, the following to expand and improve the process. Color, pattern, fabric and clothing modeling and other factors will gradually clear, will inspire the color of inspiration, images, in a fresh way to combine. Design is a holistic process among people, clothing, technology and life and so on. The current form of human

design can only be in the long, wide, high and time space within the scope of the futuristic design needs in the clothing form space to break through. Many futuristic fashion designers in the three-dimensional space to expand visual effects, in the future design of the wind, on the basis of the original experience of doing space experience will be a very worthwhile content. Specific visual elements can be more clearly expressed the theme, contribute to the next step in the design work started.

## Section II Futuristic Style Instance Design

### 1. The application of phase change materials in thermostat clothing

PCM (phase changematerials) is a chemical material that utilizes phase change latent heat to store energy and energize. Since the 1930s, especially the impact of the 80's energy crisis, the basic theory and application of phase change heat storage (LTES) research in developed countries

(such as the United States, Canada, Japan, Germany, etc.) rapid rise and continue to develop The Materials science, solar energy, aerospace technology and engineering thermophysics and other fields of mutual penetration and rapid development of phase change heat storage research and application to create the conditions, and phase change materials in the field of textile and apparel applications, especially in the thermostat function of textiles Aspects of the application is also more and more people's attention. The so-called "thermostat clothing" is a new type of intelligent clothing, which contains the phase change material can be based on changes in the ambient temperature of the "liquid - solid", "solid - liquid" reversible change (Fig. 3), can absorb heat Stored in the clothing inside, can also be stored in the clothing inside the heat release, so that the formation of clothing around the temperature is basically constant micro-climate, to achieve temperature adjustment function.

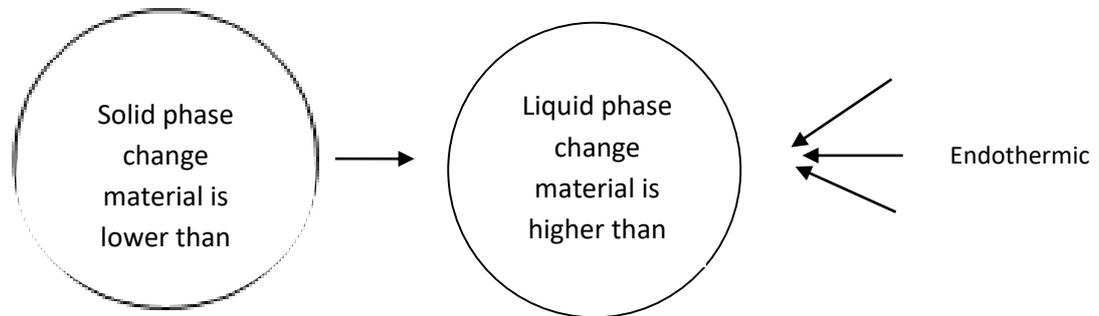


Fig. 3 solid-liquid phase change material phase change principle

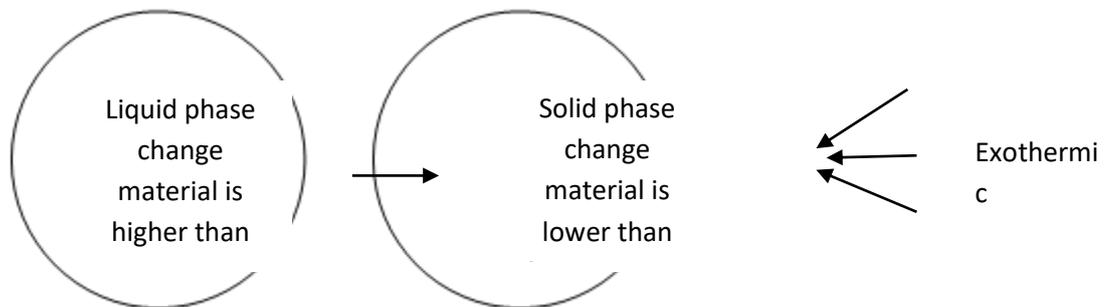
## 2. The temperature change clothing in the role of phase change material mechanism

When the ambient temperature or human skin temperature reaches the melting point of the phase change material in the garment, the phase change material absorbs heat and converts it from the solid state to the liquid state, producing a cooling effect in the garment layer ( Fig. 4). The heat energy may come from the human body. May be from the external warm environment, once the phase change material is completely dissolved, the end of energy storage; if the phase change material clothing is lower than the freezing temperature of phase change material used in cold environment, clothing temperature is lower than the conversion temperature, liquid phase change material will be converted back Solid, to release the energy to achieve a short heating effect (Fig. 5). This heat conversion in the clothing from the buffer effect, can reduce the skin temperature changes, extend the wearer's thermal comfort. When applying phase change materials on clothing, the phase transition temperature range should be similar to the human body temperature range to help maintain a constant skin temperature. General clothing on the phase change material used in the phase transition temperature of 25 ~ 29 °C. When the phase change material is in the phase change state, a part of the solid phase change material is melted into a liquid state, so that the skin temperature is too high; and the

other part of the liquid heat condensation solidification, release heat, does not cause the skin temperature drop is too low. When the degree of human activity and metabolic heat changes, phase change material clothing can absorb the body due to exercise a lot of heat, to provide temporary cool effect; when the body is in a quiet state phase change material re-curing heat release (assuming low air temperature At the skin temperature) The In the hot environment, the phase change material from the solid to the liquid to absorb heat, only the phase change material to absorb enough heat (the human body can not be dissipated through the clothing to the accumulation of heat), can effectively improve the thermal comfort of clothing. If the temperature of the inner layer of the garment is higher than the ambient temperature, the phase change material of the inner layer of the temperature control garment melts faster; if the ambient temperature is higher than the temperature inside the garment, The phase change material of the outer layer of the thermostat garment melts fast. In this way, the design of temperature control clothing, it should also consider the inner and outer layers with different fabrics, the inner fabric requirements of good thermal conductivity, easy to phase change material to absorb the heat emitted by the body; and the outer fabric theory should have a certain resistance Thermal effect, in order to make full use of temperature control clothing in the phase change material to absorb the body heat.



*Fig. 4 Refrigeration of Phase Change Materials*



*Fig. 5 Phase change material heating effect*

### **3. The temperature change service in the application of phase change material**

(1) the phase change material filled into the hollow part of the fiber, before weaving, the use of special methods will be hollow Partially sealed.

(2) the phase change material is sealed in the microcapsules, spun into the fiber or in the fabric surface coating. Microcapsule technology is to use film-forming materials to transform the formation of small particles of particles, to avoid the material in the liquid flow easily lost characteristics. Coated within the capsule called the capsule heart (also known as the core

material, the core), the external coating material called wall material. Generally made of phase change microcapsule diameter, the specific surface area, particle size, and the external material contact surface, with good heat transfer effect.

(3) the use of spinning directly to the phase change material spinning in the fiber inside, and the fiber surface of the epoxy resin treatment to prevent phase change material from the fiber precipitation.

(4) the phase change material into a square or some other shape of the sealed bag, in the clothing design of a number of specific pockets, the use of sealed bags into the pocket of clothing.



## CONCLUSION

This article I study the futuristic style of clothing from three aspects. First of all from the early futuristic clothing began to study the formation of futurism, development, and influence, and analysis of futuristic fashion design, the definition of futuristic style of clothing design. Through the analysis of some futuristic fashion design master works, the study of futuristic trends, which found the futuristic fashion design of the current popular new look. And then from three aspects of the futuristic design methods, based on the previous futuristic design style of the theoretical overview, popular analysis, application analysis, the theory and futuristic fashion design practice combined with a self-warming futurism Clothing to show that hope for the futuristic style as the theme of modern clothing design provides a combination of theory and practice reference.

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