

Ying Dong Wu

postgraduate student

Graduate University of Mongolia, Art studies

Ulan Bator, Mongolia

Shajinbat A.

researcher

Institute of Philosophy of the Mongolian Academy of Sciences

Ulan Bator, Mongolia

DOI 10.31483/r-112874

**RESEARCH ON THE CREATION CONCEPT
OF "BEAUTIFUL MATERIAL AND SKILLFUL WORKMANSHIP"
IN MODERN PRODUCT DESIGN**

***Abstract:** in contemporary society, product design is no longer limited to simple functional considerations, but has gradually evolved into a comprehensive discipline that integrates art, technology and humanities. As the three core elements of product design, material, aesthetics and technology play a vital role in shaping product shape, improving user experience and transmitting cultural connotation. This paper aims to deeply explore the creation concept of "material beauty and workmanship" in product design, through the analysis of Chinese traditional creation concept and pragmatic aesthetics, as well as the study of the post-industrial era and personalized consumption trend, combined with the relationship between materials, aesthetics and technology in modern product design, to explore its application value in contemporary product design. It is hoped that these studies can provide useful inspiration and reference for the development and innovation of product design field.*

***Keywords:** material beauty, technical beauty, practical beauty, design function.*

У Ин Дон

магистр, аспирант

Монгольский университет поствысшего образования

г. Улан-Батор, Монголия

Шажинбат Ариунаа

д-р искусствоведения, исследователь
Институт философии Монгольской академии наук
г. Улан-Батор, Монголия

ИССЛЕДОВАНИЕ КОНЦЕПЦИИ СОЗДАНИЯ КРАСИВОГО МАТЕРИАЛА И ИСКУСНОГО ИСПОЛНЕНИЯ В СОВРЕМЕННОМ ДИЗАЙНЕ ИЗДЕЛИЙ

***Аннотация:** в современном обществе дизайн продукции больше не ограничивается простыми функциональными соображениями, а постепенно превращается во всеобъемлющую дисциплину, объединяющую искусство, технологии и гуманитарные науки. Являясь тремя основными элементами дизайна продукта, материал, эстетика и технология играют жизненно важную роль в формировании формы продукта, улучшении пользовательского опыта и передаче культурного подтекста. Целью статьи является глубокое изучение концепции создания «материальной красоты и мастерства исполнения» в дизайне изделий посредством анализа китайской традиционной концепции создания прагматичной эстетики, а акцентирование внимания на постиндустриальной эпохе и тенденциях персонализированного потребления в сочетании с взаимосвязью между материалами, эстетикой и технологиями в современном мире. Авторы надеются, что исследование послужит полезным источником вдохновения и ориентиром для разработки и внедрения инноваций в области дизайна продукции.*

***Ключевые слова:** материальная красота, техническая красота, практическая красота, дизайнерская функция.*

1. Introduction.

Pragmatic aesthetics holds that creativity and innovation come from practical experience and practice. The ancient people gradually formed the creation concept of "beautiful materials and skillful workmanship" in the process of a lot of practice. "Material beauty and workmanship", as the name suggests, is that the material should be beautiful, the process should be ingenious. Pay attention to the exquisite use of

materials, give full play to the attributes and characteristics of different materials, the use of superb skills, superb design, superb aesthetic concepts, so that the attributes of materials and products perfect integration, highlight the personality and connotation. In ancient times, people's choice of materials was almost natural, and there was no mature design concept now, but the ancients still tried to pursue the combination of science and technology and art, based on "skillful", to make the works more practical and aesthetic. "Material beauty" and "artistry" are not only the simple selection of appropriate materials and techniques by the creator, but also the artistic views and values of the creator shown in the process, and in the context of the collision and integration of contemporary multiple artistic concepts, giving it stronger vitality.

2. The design expression of material beauty and artifice."

The creative spirit of experience and practice advocated by pragmatic aesthetics and the concept of "beauty and workmanship" are in sharp contrast to the differences between industrial workers and traditional artisans in the industrial era. Traditional artisans show greater autonomy and creativity through their joy for labor and intrinsic desire to make, while industrial workers are limited by the technical system and mechanical manufacturing and lack the same degree of will to create.

2.1. Relationship between material, process and design.

In product design, the choice of materials directly affects the appearance, texture and performance of the product. Different materials have different physical, chemical and mechanical properties, so it is crucial for the designer of the product to choose the right material. The characteristics of the material determine the manufacturing process and processing method of the product, but also provide designers with inspiration and limitations for creation. Designers need to fully understand the properties and characteristics of materials in order to better play the advantages of materials and achieve the design goals of products. Closely related to the material is the process technology. Process technology is the key step of transforming materials into final products, which includes the processing, molding, assembly and other processes of materials. Different process technologies have different requirements for materials, some materials are suitable for a particular process, and for another process is not

suitable. Therefore, in the process of product design, designers need to take into account the matching between materials and processes, and choose the appropriate process technology to realize the design concept.

Design is the integration of materials and processes to achieve the final presentation of the appearance, structure and function of the product. Designers need to consider the characteristics of materials, process limitations and market needs, creative design and program planning. Design is not only the pursuit of aesthetics, but also the comprehensive embodiment of functionality, practicality and user experience. Therefore, designers need to take into account the impact of materials and processes on product design in the design process, find the best balance point, and achieve the perfect combination of product design and manufacturing.

2.2. Influence of various material configurations on product design.

In modern product design, the configuration of various materials is often used to achieve richer product forms and better performance. The configuration of diverse materials can give full play to the characteristics of various materials and bring more possibilities and inspiration to the design of products. For example, metal materials are often used for structural support and shell packaging of products, plastic materials are often used for exterior parts and internal isolation parts of products, and rubber materials are often used for seals and shock absorbers of products. Through the rational allocation of these materials, the functional partitioning and performance optimization of the product can be achieved, and the overall quality and competitiveness of the product can be improved.

In addition, the configuration of various materials can also achieve the beauty of the form and harmony of the product. To achieve formal beauty and harmonious beauty, designers need to consider the choice of materials, the use of technology and the design of creativity, to find the best design scheme and implementation. In this process, as a designer, we first need to fully understand and be familiar with the characteristics and application range of various materials, and choose materials suitable for product design. For example, you can consider the texture, color, transparency, strength and other characteristics of the material, as well as its compatibility and

complementarity with other materials. Secondly, it is also necessary to make reasonable use of process technology to transform the design concept into the actual product form and structure. Different process technologies have different requirements for the shape and structure of the product, and designers need to choose the appropriate process technology to achieve the design objectives according to the design requirements of the product and the needs of the market. Finally, designers need to exert their creativity and imagination, through innovative design concepts and formal expression, to achieve the beauty of the form and harmony of the product.

3. The inspiration of "material beauty and artifice» to modern product design.

Materials and processes are the basic elements and basis of creative activities, in the material material is extremely rich, the rapid improvement of technical conditions at present, designers have more space for the choice of materials and processes, while the modern design environment is increasingly complex, people are more knowledgeable, which also puts forward higher requirements for designers' aesthetic and design skills.

3.1. Technical beauty in modern product design.

Technical beauty refers to the aesthetic expression of the technological level and manufacturing technology embodied in the process of product manufacturing. First of all, technical beauty is the guarantee of product quality. Modern consumers have increasingly high requirements for product quality, and they hope that the products they buy not only have good appearance and texture, but more importantly, excellent performance and reliable quality. Excellent technical beauty can ensure the manufacturing accuracy and quality stability of the product, and improve the service life and reliability of the product. Secondly, technical beauty can improve the performance of products. The pursuit of modern product design is not only the beauty of the appearance and the comfort of the texture, but more importantly,

the functionality and performance advantages of the product. Through the use of advanced manufacturing technology and process means, the functional zoning and performance optimization of products can be realized, and the overall performance and competitiveness of products can be improved. Finally, the technical beauty enhances the market competitiveness of the product. In the fierce market competition

environment, the technical beauty of the product can establish a good brand image and market reputation for the enterprise, attract more consumers and customers, and improve product sales and market share.

3.2. The relationship between the aesthetic value and the utilitarian value of the product.

Aesthetic value and utility value are two important concepts in product design, and there are both connections and differences between them. Aesthetic value refers to the aesthetic expression of the appearance and structure of the product, emphasizing the artistic charm and visual effect of the product; Utilitarian value refers to the functional and performance advantages of the product, emphasizing the practicality and economic benefits of the product. In product design, aesthetic value and utility value have both unity and difference.

Excellent product design should consider not only the appearance and texture of the product, but also the function and performance of the product. Good aesthetic value can enhance the brand image and market competitiveness of products, stimulate consumers' desire to buy; The excellent utilitarian value can meet the use needs and experience of consumers, and enhance the user satisfaction and loyalty of the product. In product design, aesthetic value and utility value do not exist in isolation, but complement each other and promote each other. Good product design should not only have excellent aesthetic effect, but also

have practical function. Through the unification of aesthetic value and utility value, the comprehensive benefit of products and the promotion of market competitiveness can be realized. But in some cases, the aesthetic value and utility value of the product may have certain contradictions and conflicts. For example, there may be a choice between the appearance design and the functional layout of the product, and trade-offs between the two need to be made. In this case, designers need to find the best design scheme and implementation according to the positioning and market demand of the product, considering the aesthetic value and utility value.

3.3. Case Analysis.



Fig. 1. Renewable Bamboo Product Design

Source: Pinterest Web Collection

The lighting design in this case (figure 1) is a typical modern design product combining traditional Chinese bamboo weaving techniques. We can see from it that the first thing is material selection. Bamboo is a fast-growing plant with a particularly short growth cycle and high hardness, which is not easy to deform. As a result, materials are easy to find and inexpensive. Secondly, the ancient people were familiar with the planting methods and characteristics of bamboo, invented the bamboo weaving process, and the process has been passed down from generation to generation, and gradually improved, there are countless bamboo weaving utensils to meet the daily life of ancient people. However, the traditional design and function is difficult to meet the contemporary people's aesthetic and needs, contemporary designers make full use of the bamboo weaving technology "beautiful and skillful" characteristics, redesigned the fashion of lamps, so that this craft can continue to pass on. The design above is clever and detailed. Through the combination of several single pieces, the finished product is perfectly reflected in the material and process, which is a typical case of "material beauty and craftsmanship".

In modern product design, the practical significance of "material beauty and dexterity" is very important. Xu Hengalcohol et al in "Practical technology aesthetics" when talking about "product regularity" pointed out: "All products are based on objective laws, the selection of certain materials, in accordance with a certain structural form, through a certain process". The ancient sages have long summarized the principles of "integration" and "proper" use of various materials. The "Examination of

work" stipulates the principle of "knowing the creation of things", that is, the fine standard of creation: "The sky is sometimes, the earth has gas, the material has beauty, and the work is clever". If you combine these four, then you can do good. "The ancients attached great importance to the precise combination of "heaven, earth, material and work". Zhang Daoyi pointed out that the four conditions of "time of heaven, air of earth, beauty of materials and dexterity" are mutually compatible and indispensable. Especially in the age of handicraft, the material is taken from nature, and its fine and exquisite technology is the key to the manufacture of fine utensils.

In the modern mass production of industrial products today, due to the emergence of synthetic materials, materials are not directly derived from nature. However, the regularity of "conforming to material nature and making art by materials" is still worthy of respect and inheritance. In modern design, the "material and material requirements are beautiful, and the processing requirements are exquisite" still has practical significance. The correct choice and use of materials is directly related to whether the beauty of design can be reflected. At the same time, the engineering technology in art design also lies in how to choose and use good materials. Therefore, the "harmonious beauty" of the product is based on the familiarity and treatment of the material, that is, whether it can fully grasp, use and play the properties and characteristics of the material.



Fig. 2. Solid Wood Clothes Rack Design

Source: Pinterest Web Collection

The picture shows a clothing hanger designed by a new Chinese designer that has become a global hit (figure 2). This design was also selected for the German Red Dot Supreme Award, which is a great affirmation for the designer. Hanger combined with

traditional Chinese wood art skills, it looks very simple structure, but cleverly interwoven into a clothes hanger model to simulate the fork of a tree, the ancients may be directly cut off a branch slightly processed and polished can be used as a clothes hanger. Therefore, this design is connected with tradition, and the design is very fashionable and combines contemporary aesthetics. At the same time, the shape of the tree branch is an important carrier for people to pursue nature and resonate with the traditional way of life. The clever structural design makes the hanger can be disassembly at will, which is convenient for transportation and storage. The designer's perfect combination of material process and structure of the product makes this design a hit as soon as it is launched. It is a successful design case.

For product designers, they not only need to understand the chemical properties of materials, but also need to fully grasp the physical properties of materials. The material related forming process and processing characteristics should be more familiar, only in this way, the designer can change the shape of all kinds of reasonable and ingenious, show creative play. However, to this day, designers are still debating whether simply accepting all materials and conventional process methods prevents valuable solutions from being produced. In "Design Aesthetics", Mr. Li Chaode pointed out that "materials are called the first element of design beauty": "In particular, designers are required to be good at playing the characteristics of materials under different conditions of use, and give materials beautiful attributes". Material is the basis of product structure and molding. Without the right material, there will be no corresponding process. The process technology is the intermediary of the ideal realization of materials and people, and there is no process modeling without process technology. Process technology takes the processing and transformation of materials as the object, and completes a specific purpose through certain production tools. It is not only a means, but also a process, is the unified product of means, process and purpose. Materials and technology are tangible and intangible carriers of product modeling, which play a certain role in design, play a certain role, and even bring a certain impact. This effect can be positive or negative, positive or negative. In short, they shape the overall appearance of the product and build the social effect of the

product. Therefore, design is the material, technology, these inanimate matter into the soul, so that it becomes a living product. Products should conform to human ideals, rather than destroy nature and corrode society.

Conclusion

"The beauty of material, the beauty of work", the traditional Chinese creation concept emphasizes the combination of experience and practice. Traditional artisans are well aware of the basic elements of creation, such as the nature, the atmosphere, the beauty of materials, and the craftsmanship. They not only respect the laws of nature, but also are good at observing and learning from the form and structure of nature, and integrate this observation and understanding into product design and production. They have a deep understanding of people's actual needs, and through continuous practice and experience summary, Master the characteristics and processing techniques of various materials, and then create beautiful and practical products. With the continuous development of science and technology and the continuous progress of society, people have gradually broken the shackles of "nature, time and atmosphere", so the creative concept of "beauty and workmanship" has become more and more important in the rapid development of modern design and material technology. Future research can further explore how to use traditional cultural resources and innovate product design concepts to meet the growing individual needs of consumers; At the same time, we can also deeply study the impact of new materials and new processes on product design, explore more cutting-edge and innovative design ideas and methods, and create products that meet the aesthetic needs of modern people.

References

1. Hu Fei. Rethinking of "the beauty and dexterity of nature, earth, air and materials". *Packaging Engineering*. – 2007. – No. 05. – Pp. 84–87.
2. Hu Fei. *Exploration of traditional Chinese design thinking mode*. Beijing: China Architecture and Construction Press, 2007.
3. Guo Min. The Misuse of Flatness: Mondrian's Neoplasticism and Popular Culture. *Jiangnan Forum*. – 2012. – No. 8. – Pp. 78–81.
4. Shen Xiaochen. On Papanek's design ethics – taking «Designing for the real

world» as an example. *Art Education Research*. – 2017. – No. 07. – P. 98.

5. Tian Weiling. The status quo and significance of traditional handicraft in modern life. *Art and Design (Theory)*. – 2017. – No. 9.

6. Xu Xiaoyan. Beautiful materials and Skillful workmanship – the modern enlightenment of the creation thought in Kaogong Ji. *Art Education*. – 2011. – No. 07. – P. 141.

7. Fan Qi. The craft thought of «Kaogong Ji». *Journal of Historical Science*. – 2005. – No. 10.

8. Wu Deming. On the humanistic concern complex of science and technology thought in Kaogong Ji. *Journal of University of Science and Technology Beijing (Social Science Edition)*. – 2010. – No. 02.

9. Ling Jiyao, Xu Hengchun. *Art and Design*. Shanghai: Shanghai People's Publishing House, 2000. – P. 37.

10. Song Yingxing. *Natural work opens things*. Guangxi People's Publishing House, 1976.

11. Hangjian. *History of Chinese craft Aesthetics*. People's Fine Arts Publishing House, 2007.

12. Peng Xiaoying. The development mode of traditional craft in modern design – taking furniture design as an example. *Popular Literature and Art*. – 2016. – No 24. – P. 77.

13. Zhang Qingsong. *Clever work to create things test work record vernacular diagram*. Changsha: Yuelu Press, 2017.

14. Shi Lin. *Study on artisan Culture of Zhou Li*. *Cultural Heritage*. – 2020. – No. 02.

15. Wu Tinghai. *Study on the time when Kaogong Ji was written – Also on the knowledge system of Kaogong Ji craftsmen*. *Decoration*. – 2019. – No. 10.

16. Yin Dingbang. *Introduction to Design*. Changsha: Hunan Science and Technology Press. – 1999. – P. 25.

17. Luo Jun. *The context and ethical concept of creation art*. *Art of Design*, 2004.

18. Yang Guobin. *Application of Functional Beauty in Modern design*. Grand View, 2018.