

# Research on the Application of Ceramics in Modern Furniture Design

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## Abstract

**This article describes the application status of ceramics in modern furniture design and its main application forms, analyzes the significance of ceramics to modern furniture design, and proposes from four aspects of furniture function, product form, material expression and cultural implication, etc. The innovative approach of modern furniture product design based on ceramic materials is introduced.**

## Keywords

**Ceramics; Furniture design; Design innovation.**

## 1. The Application Status of Ceramics in Modern Furniture

Ceramics is a traditional furniture material and at the same time a new type of modern furniture material. The use of ceramics to make furniture has existed since ancient times. The shape, decoration and material selection of traditional ceramic furniture fully reflect the characteristics of politics, economy, art, technology and human life in the historical and social environment. Modern ceramic furniture uses ceramic materials as a medium and incorporates contemporary mainstream artistic aesthetic concepts. It is generally used to express themes or contents that combine the charm of traditional culture with modern life concepts. The application of ceramic materials in the design of modern furniture products can be roughly summarized into three types: modeling application, decoration application and functional application:

(1) Modeling application: Based on the appearance of the product, ceramic materials are used as the main or auxiliary materials to construct the shape of the furniture. It can be used as the main material of furniture, and the whole piece of furniture is made of ceramics; or choose ceramics with strong impact resistance and high strength as the main parts of furniture, such as desktops, cabinet doors, chair backs, etc.; Sometimes it is also used as furniture components in the form of handles, leafs, pins, casters and other accessories to realize the overall function of furniture together with other materials.

(2) Decoration application: According to different furniture styles, ceramic materials are used for artistic decoration of the surface or part of the furniture. Specifically, it can be divided into color decoration, pattern decoration and texture decoration. Inlay is the main technique used in ceramic materials for furniture products. Common techniques include carving and glazed decoration.

(3) Functional application: Use the physical and chemical properties of ceramic materials to achieve specific functions of furniture. Ceramic materials have the characteristics of high hardness, corrosion resistance, and high temperature resistance. At the same time, they have good decorative properties and are easy to clean and durable. Based on the above advantages, ceramic materials can be used as outdoor furniture materials with higher requirements for

weather resistance and absolute waterproof performance, and can also be used for functional surfaces and contact surfaces of some table and chair furniture. The coffee table expands and extends the function of the furniture according to the new needs of the new lifestyle. It makes full use of the waterproof performance of ceramics and uses the technology of plant hydroponics, see Figure 1.



**Figure 1.** Hydroponic plant ceramic furniture

Although ceramic materials have excellent physical and chemical properties, comprehensively related research and design works, the exploration and utilization of ceramic materials as new furniture materials is far from enough. The creative practice of using ceramic materials in the design of modern furniture products is still rare, and theoretical research is even scarce. The research on the application of ceramic materials in the design of modern furniture products is still at a relatively preliminary stage of exploration, and a complete theoretical system has not yet been formed.

## **2. The Significance of Ceramics Used in Modern Furniture Design**

### **2.1. Inherit and Carry Forward the Traditional Chinese Culture**

Chinese ceramic culture is extensive and profound, and it is a characteristic cultural system that has been passed down from generation to generation. The original meaning of "china" is "porcelain", but it also means "China". Foreigners first came to know China through porcelain, to understand China's cultural customs and humanities. The craftsmanship of ceramic materials and the exquisite patterns are not simply an artistic act, they also condense the excellent ancient traditional culture of our country. The application of ceramic materials in modern furniture can not only enhance the taste of living room culture, but also demonstrate the charm of my country's ceramic culture.

### **2.2. Conducive to the World's Understanding of China**

For many years, we have been emphasizing that "only the nation is the world". How can we let the world understand China and make Chinese design more valuable? Just applying traditional patterned ceramic materials to modern furniture and blindly splicing heterogeneous materials is just a low-end copy. Establishing a modern ceramic furniture system with the imprint of the Chinese nation and making it international through continuous innovation can make the Chinese nation's culture go to the world and allow more people to understand China deeply.

## **3. The Application of Ceramics in Modern Furniture Design**

### **3.1. The Expansion and Improvement of Furniture Functions**

The expansion and improvement of modern furniture functions no longer only focus on product size and practicability, but also extensively involve many factors such as society, culture, and environment. On the one hand, due to the changes in the original lifestyle and living

environment, some of the existing furniture forms and functions of the components are no longer meaningful or unable to meet market needs. If it is simply applied to the design of modern ceramic furniture, it will no longer have the original functional beauty. At the same time, the unique properties of ceramic materials are different from other furniture materials, and they also provide a material basis for modern furniture to achieve new functions. On the other hand, furniture consumption is shifting from pure material pursuit to spiritual and emotional satisfaction. Furniture products must not only meet practical needs such as functions, but also fully consider the emotional needs of users. Emotional elements thus constitute the internal driving force of furniture functional innovation. This requires designers to consider the needs of furniture users from both physical and psychological aspects, and in-depth study of the interaction between furniture, people and space.

### **3.2. Breakthrough in the Design of Furniture Form**

Ceramic materials not only expand the functions of modern furniture, but also bring the possibility of innovative breakthroughs in furniture form design. The basic shapes of furniture are mostly derived from geometric shapes, and the morphological elements are inseparable from the basic shapes such as square, circle and triangle. Due to the strong plasticity of ceramic materials, modern ceramic furniture can be adjusted and changed according to the original geometric furniture shape, using forging, extrusion, drawing, bending and other processing characteristics, and with the help of exaggerated deformation, cutting combination and other methods to obtain new form. Through geometrical creative change techniques, the furniture shape is extended to the three-dimensional space, such as bending a flat piece of mud to create a three-dimensional shape with visual tension; through the shape contrast of the shape, length, size, thickness and other forms to strengthen its visual impact; Use the design method of segmentation and reconstruction to create a more varied furniture shape. Using techniques such as gluing and hot pressing can also make the shape of modern ceramic furniture more varied and more stable.

### **3.3. Full Display of Material Expressiveness**

The application of ceramic materials conforms to the diversified development trend of furniture design. Make full use of the physical and chemical properties and aesthetic properties of ceramic materials, inspect and analyze the raw materials, semi-finished products and finished products of ceramic materials from macro to micro levels, explore the relationship between their composition, structure, performance and production process, and adopt modern science and technology Means to optimize and improve it, improve its toughness and abrasion resistance, make it adapt to the requirements of furniture design and production, and improve the quality of furniture shape design. At the same time, research the correlation between different furniture materials, and realize the innovative integration of ceramic materials and other materials in modern furniture design. Combining ceramic materials with wood, metal, plastic, glass, bamboo and rattan and other furniture materials can not only break through the limitations of the material itself for the artistic expression of furniture, but also achieve a rich contrast in the texture of different materials. The emergence of new forms such as ceramic metal furniture, ceramic plate furniture, plastic ceramic furniture, etc., is the embodiment of the research results in this area.

### **3.4. In-depth Exploration of Cultural Connotations**

The material existence of furniture products and their creation itself fully reflect the elements of politics, economy, art, technology and life in social phenomena. First of all, traditional furniture, ceramic art and even traditional ceramic furniture are rich in modeling forms and profound ideological connotations. In terms of ideology and context, traditional culture and its aesthetic value orientation provide the ideological foundation for modern ceramic furniture.

Research on how to extract and update the combination of traditional modeling elements to make them more in line with contemporary aesthetic appeal and emotional needs, which can be a meaningful attempt for traditional art forms to intervene in modern lifestyles. Secondly, to practice the application of ceramic materials in modern furniture, it is necessary to deeply study the lifestyles and specific situations of modern people, correctly face the problems of globalization and localization of design, and focus on the form, color, material and functional symbols of furniture products. The elements bring users' psychological feelings in the process of vision, touch and use, and then explore the function, meaning and cultural connotation of modern ceramic furniture.

#### 4. Conclusion

Ceramics have broad application prospects in the field of modern furniture because of their unique material characteristics and historical and cultural heritage. In terms of design language, ceramic materials have a mild texture, variable glaze, rich texture, and accidental production, which have the incomparable attraction of other materials. From the perspective of material function, ceramic materials have good decoration, high strength, high toughness, corrosion resistance, and high temperature resistance, which will bring more possibilities and innovation space to modern furniture design. The use of ceramic materials in furniture products can not only relieve the pressure of natural wood, but its use will not cause adverse effects on the ecological environment. The application of ceramic materials in the design of modern furniture products will extend the use space of ceramic materials, enrich the connotation of ceramic materials in the design field, and realize the new practical value and aesthetic value of ceramic materials.

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