

CULTURAL AND CREATIVE PRODUCT DESIGN BASED ON BIOLOGY CHARACTERISTICS OF WOOD

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ABSTRACT

First, this article introduces the natural properties of wood. Wood not only has the unique wood texture, rich colours, but also has changeful shape and unique cultural attributes, what is why wood can be widely used in many fields. Secondly, the article briefly describes natural and cultural attributes, and analyzes the cultural connotation embodied in product design. The dual properties of wood meet the material and spiritual needs of people. Finally, by introducing the two cultural and creative products of writer designs to indicate the development of cultural products is a traditional material as well as the new era of the spiritual needs of the perfect combination of the way. It also plays a decisive role in reflect the wood for promoting cultural and creative product design.

KEYWORDS: Wood, nature, cultural property, product design.

INTRODUCTION

Wood is a natural material with a wide range of distribution, convenient materials and excellent properties. Besides the physical properties such as hardness, strength and toughness, wood is also connected and communicated with people on the level of vision, touch and taste. Therefore, human cognition of wood material is derived from daily production and life experience, feelings and associations of beauty (Qiu 2016). The development of wood culture is the sublimation of the cognition level of wood or wood products. Nowadays, wood still plays an important role in the design and application of new materials.

Most of the other authors analyze the chemical and physical properties of wood and ignore the most fundamental natural and cultural attributes of the wood. The purpose of this paper is to explore the wood from the aspects of texture, color, and cultural connotation.

MATERIAL AND METHODS

Materials

Unique texture

People often say: the world could not find two identical leaves. Similarly, the world could not find two pieces of the same grain. Wood can be perceived, it is more moderate compared with other materials. And it seems more flexible; it can be specific sound and smell associated; it has a legendary story, carrying the artisan's feelings. Through the years, time is also will give it more personality (Chen and Zhang 2016). Wood can become a timeless material, the most important point is that it has a unique texture, the texture of wood may be straight or curved, ripples can be like ripples, but also can be moving curly-like, delicate and clear texture, which can form the formation of pleasing decorative patterns. The transforming wood texture give the atmosphere of wood life and more rich material fun, according to the different forms of wood surface morphology, wood texture can be divided into natural texture and artificial texture (Ma 2008).

Natural textures

The natural texture of wood refers to the grain of natural wood, which is unique and non-reproducible, thus highlighting the value of wood. The wood itself grows beautiful and undecorated grain, rich natural breath, which can bring a person comfortable feeling and make people feel as if place oneself in nature general. Different wood has different natural texture, as shown in Fig. 1, that it is a common wood texture in daily life:

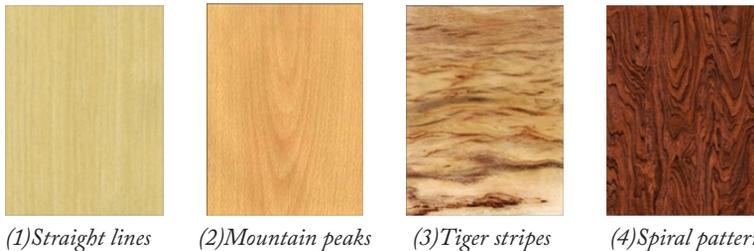


Fig. 1: Common wood texture.

Artificial texture

As the name suggests, the artificial texture of wood refers to the slabs made of chemical adhesives by using the waste material produced in the process of wood processing. The artificial texture of wood can meet people's special requirements. Through the color of wood, the shape after cutting, and the collage method, it can make up for the intangible meaning of natural texture. With the development of surface treatment technology, artificial texture has been widely used in modern design. It can reduce the same material heterogeneous feeling and the different material with the texture, thus obtained the variety of various textures effect.

The rich color

Color is the most important factor that determines the wood impression, and also the most vivid and active factor in the design. This is due to the diversity of tree species, in different colors of wood, the deposition of various pigments, resins, tannins and other oxides in the wood cells. In the color of wood, there is almost white wood, giving people a sense of light and elegant; there are also close to black wood, which gives people feelings of depressed depression; there are also a variety of hue wood, or plain quiet, or restless; or enthusiasm and fullness, or desolate. But overall, the color of wood is mainly warm color, from the sense of the sense of warmth. As shown in

Fig. 2, it is based on the Munsell Color System painted wood color map, it can be seen that the colors with higher frequency of use are mainly concentrated in the red and yellow lines and so on. But according to different material, the color of purity and chroma will produce more in a wide range of color. Because the tubular cells of wood are prone to moisture absorption, they have strong adhesion to the paint and it can be easily colored and painted (Liu and Liu 2014). Even in the case of green and blue materials, as long as the transparent color paint is used. In order to ensure that the grain lines are clearly visible, we can meet all kinds of human needs for color. Therefore, in the application of wood will not meet the consumer's demand for materials.

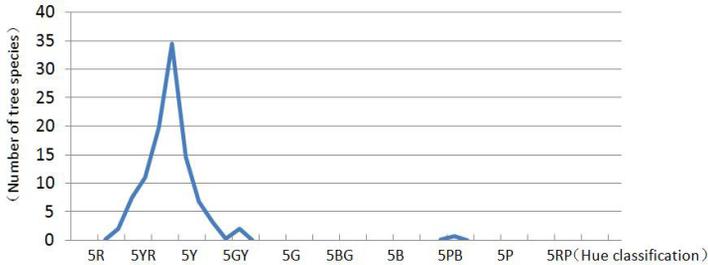


Fig. 2: Wood color distribution.

The wood color is rich and colorful, and the wood color of different tree species is different. In the same tree, there are differences in the color of different parts due to the uneven distribution of lignin. As shown in Tab. 1, it is the color change of logs, sapwood and heartwood of walnut, cherry, and teak. It can be seen that the overall color of the log is gradual, and the color gradually becomes lighter from the inside to the outside, which is also due to the length of the year the wood grows. Heartwood is the first wood to grow, the color is deep, but also has the change; the edge material is the lumber that grows year by year over time, so the color is lighter; this is also a rule for all wood.

Tab. 1: Three kinds of wood color contrast.

Wood	Crude wood	Sapwood	Heartwood
Walnut			
Cherry wood			
Teak			

Variable shape

For wood processing, it can be split sawing, planing milling, drilling, grinding, the car can be carved, can be bent to burn. You can see, the wood has many choices in the process, once

again proved that timber processing. This was that it can experience the baptism of time and still is one of the people's favorite materials. Wood molding performance accomplish the art of the wood, people put the wood as a the basic material to process a variety of plastic arts (Ou 2009).

Wood is a very efficient material because it is covered with treasure. Logs, stakes, knots, twigs, bark, roots, and even cutting methods for different types of wood will have different wood textures and wood shapes. Designer can make full use of these different parts of the wood, designed an unexpected wooden products.

As shown in Fig. 3(1), the designers directly used different lengths of wooden stakes, in the center of the stakes into a table placed candles. The entire product gives people a comfortable and quiet feeling through the simple nature of the stakes.

Fig. 3(2) the works from the artists Darryl Cox, he combined the dried branches with the photo frame and gave new strength to the branches, as if the branches were the natural continuation of the photo frame



(1)Candle lights



(2)Picture frame



(3)Tea set

Fig. 3: Different shapes of wood products.

It brought more surprises and moved. When processing dead stems, each part that including carpentry, carving and painting takes several days to finish, so this is art sublimation. In Fig. 3(3), the whole piece of wood is directly formed by a hot bending forming process. The texture is clear and the curvature is smooth and natural. With scent of tea, its lasting appeal is dye-in-the-wood.

RESULTS AND DISCUSSION

The cultural property of wood

In addition to the natural properties of trees, because people have emotional demands (cultural, spiritual, and humanistic), we give the trees a certain cultural connotation in the social practice, which also makes the trees have the cultural attributes (Yang Fan and 2015). Wood culture is the sum of the humanization, the Shared value of wood and the way of wood utilization in people's life.

In traditional Chinese culture, the description of wood is superb, and whether it is blasphemy or devaluation, it can reveal the rich connotation of wood culture. The ancient text "Spring and Autumn and Seasonality" describes: the nature of the wood, the nature of spring life, and the nature of agriculture. It refers to the fact that wood sprouts in the spring and is the origin of life. Its existence gives people a natural, rustic and warm sense of belonging, and wood is the foundation of agriculture. It is an essential material for ancient people to build a living. There is also a cloud in the "Weaving Promotion": "The husband and wife are a little relieved, but the child is mad and sleepy," the wood means numbness, dementia, and the use of thick, solid wood, alluding to a group of people who are not very clever and inflexible. The wood of the five elements also has its special meaning.

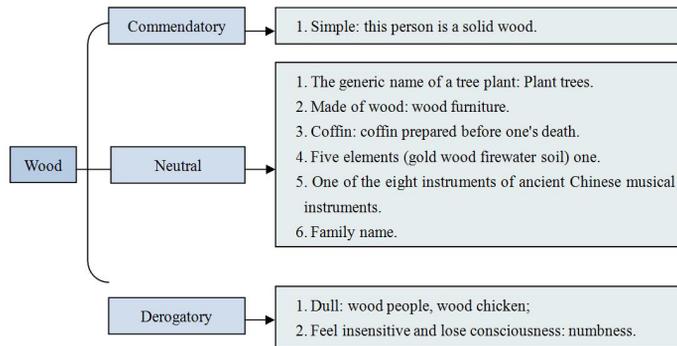


Fig. 4: On the "wood" explanation.

In terms of human nature, it refers to a person's ability to judge a person's height, appearance and character and so on. As shown in Fig. 4, wood has different interpretations in different situations, but it all bears the human understanding of wood from different perspectives. We can also see that wood itself has been given a variety of meanings by humans in order to express people's feelings and bear the human pursuit of life and nature (Gao et al. 2014).

Wooden products

The natural feeling that wood products bring to human beings cannot be replaced by any kind of material. Cultural and creative products are mainly concerned with the symbolic value and aesthetic value of the product's cultural symbols (Peng et al. 2016a). Wood products are made by different processing techniques, which make full use of the texture, color and shape of wood to design creative products that can express certain cultural implication. In fact, through the mining of cultural symbols and making full use of the texture and color of the material, designers can make products become a psychological comfort to meet consumers. When ordinary wood encounters a creative designer, it will be given new vitality. The design of wood products is not only a process of creating a beautiful and moving beauty, but also a carrier bearing unlimited feelings. The materials used in these wood products are permeated with the consciousness and experience of the craftsmen (Peng et al. 2016b).

Spontaneous wood affection

As shown in Fig. 5 and Fig. 6, it is the two cultural and creative products that the author designed according to her own school. As shown in Fig. 5, this bookmark uses rosewood as the main material which texture is clear and the color is bright. The entire shape of the bookmark is a rectangular box after rounding. However, the upper and lower rounded corners are different, making it difficult to produce fatigue. In the middle of the bookmark is the logo of Central South University of Forestry and Technology, behind the simplicity of the design of the university's motto: Seek truth and innovation, Plant trees and educate students. The bookmark is divided into two chapters: the first chapter, one flower and one wood. In the April of the university, the leaves of the library were flying in the sky, and the fragrance made the sea of knowledge more like a little girl's charm. Almost all year round on campus is a lush, where as many as 200 species, although some not call names, students still like to pick up the leaves caught in the book in spare time, so petals and leaves collection within the bookmarks, you can always see memory of alma mater. The second chapter, one word and one draw. Putting some motivational words in it can

play an inspiring role. First, we can paint down the landmark buildings of the school, such as the school gate, life science building, chief teaching building, library and bishop foreign language building. Then, put the finished painting in a bookmark. Finally, I can evoke thoughts about my alma mater when I open the book.



Fig. 5: Wooden bookmarks.



Fig. 6: Desktop business card holder.

As shown in Fig. 6, the desktop business card holder was designed with the theme of “Lotus” in Hunan Province. Its main material is Hedgehog rosewood. It can be used to combine business card holders with a sturdy structure, vivid shapes and smooth beautiful curves to create a business card holder that fits the use of office furniture. The desktop business card holder not only satisfies the function of placing a business card, but also can classify the business card. It is a fashionable decoration when no business card is placed. The entire top shape is in the shape of a flower. The lotus in the middle is three-dimensional, the lotus of the four sides is the plane, and it has a variety of vertical and horizontal directions, which enriches the layers of the top layer. The petals of the lotus flower are freely curved and the flower is delicate. The grade of the entire business card holder increases instantly. Transparent hard plastic can clearly see grain texture, color and make this business card frame whole empty spirit, lightsome. In the profile of the card frame, there are small changes; the inner concave radian makes the single shape livelier. The logo and the school motto on the pedestal are clearly defined. The bottom of the business card holder is the exposed squat structure and the delicate structure display reflects the fineness of the design of the entire business card holder.

These two cultural and creative products of Central South University of Forestry and Technology include the author of college deep affection. It makes full use of the school culture, such as school badge, school motto, representative plants and landmarks as the design thrust, which considering the product is easy to process and carry, so the design is mainly based on light weight. The choice of materials still is wood of the most traditional materials, with its clear and elegant texture, beautiful atmospheric color to win, and as if you can smell a touch of wood (Ge et al. 2016).

CONCLUSIONS

In the complex modern society, people yearn for a natural and simple life atmosphere. When we deeply study the chemical and physical properties of wood, we can always grasp the most primitive properties of wood. The features of Wood are natural, green and environmentally friendly, and it is in line with people's needs. The affinity, diversity and value of wood are also the reasons why humans love it. The cultural property of wood is the accumulation of its natural properties over time. The development of wooden cultural and creative products is an organic whole that connects the cultural connotation, the ecological environment and the economy.

While fully satisfying the material needs and spiritual needs of human beings, it can make nature and humanities infiltrate each other. In recent years, wooden cultural and creative products have been highly sought after by consumers, and it not only promotes the development of wooden cultural and creative products, but also inherits the wood and wood culture.

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