

THE RESEARCH OF RHINOCEROS SKIN LACQUER CRAFT IN MODERN DESIGN

Zhang Xinrui¹ & Noppadon Sangwalpetch²

^{1,2} Faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University, Thailand.

Email: s66563832013@ssru.ac.th¹, noppadon.sa@ssru.ac.th²

Abstract

This study aims to explore how the rhinoceros skin lacquer technique can be revitalized in modern design. Rhinoceros skin lacquer is an intangible cultural heritage of China, with its unique craftsmanship, colors, and textures possessing a distinctive Oriental classical charm. This paper will outline the history, material, craftsmanship and uniqueness of rhinoceros skin lacquer craft by reviewing relevant information. Through case studies, it will then explore and focus on the benefits and applications arising from its use in modern design.

The research findings can be summarized as follows:

1. Rhinoceros-skin lacquer uses natural raw lacquer as paint, which is resistant to high temperature, moisture and corrosion, and the texture of rhinoceros-skin lacquer is naturally formed rather than artificially painted. The craftsmanship of rhinoceros skin lacquer is very delicate, combining artistic value, practicality and collection value.

2. In modern design, the texture of rhinoceros skin lacquer can be used to create a unique visual effect. Rhinoceros skin lacquer can be adapted to the modelling of modern design. The availability and cost of materials for rhinoceros skin lacquer need to be considered to ensure the quality and sustainability of the work. The complexity of the rhino skin lacquer process requires consideration of time cost and production volume in modern design.

Keywords: rhinoceros skin lacquer, traditional craftsmanship, modern design, innovative design.

Introduction

Chinese lacquer art has a history spanning over eight thousand years, possessing a profound cultural heritage (Zhang Zhigang, "The Beauty of Lacquer," Wuhan: Huazhong University of Science and Technology Press, 2023: 5). Since the Neolithic period, people have understood the properties of lacquer and used it to create utensils. Over time, lacquer craftsmanship has continuously developed and expanded. Among these techniques, the rhinoceros skin lacquer method has evolved into a unique craftsmanship with its own artistic style.

Walter Gropius, the founder of the German Bauhaus, once stated, "True tradition is the product of continuous progress. Its essence is movement, not stagnation; tradition should propel people to move forward constantly." This means that traditional art is not a fixed set of rules and methods, but rather has temporal and technological contexts, and is continuously evolving. Against the backdrop of ongoing development in modern society, the traditional Chinese rhinoceros skin lacquer technique and its artistic style have also attracted the attention of contemporary artists.

Modern artists, while pursuing craftsmanship and depth in their works, are increasingly focusing on practicality, creating pieces that embody traditional charm while meeting people's practical needs.

This research will not only promote the inheritance of traditional culture, but also have a positive impact on the economy, society and culture.

For the economy, this research can give rise to new product forms and market demand, thus promoting industrial development, leading to innovation and upgrading of the industry, increasing economic returns, and also providing more jobs.

For the society, this research can bring more people into contact with the traditional craftsmanship of rhinoceros skin lacquer, thus enhancing the aesthetic level of the whole society, and also promoting cultural exchanges.

For culture, integrating rhinoceros skin lacquer craft into modern design can enrich the connotation of cultural diversity, which not only inherits and promotes the culture of birth pains, but also expands and innovates new designs.

Research Objectives

To study the history, materials, techniques, and uniqueness of rhinoceros skin lacquer craftsmanship, uncovering its traditional value and aesthetic characteristics.

To explore the potential applications and benefits of rhinoceros skin lacquer techniques in modern design through case analysis.

Methodology

This study employs a comprehensive research approach using methods such as literature review and case analysis.

Literature Review Method: Examining books, journals, and academic papers related to rhinoceros skin lacquer art to understand its historical background, development process, artistic characteristics, relevant techniques, and cultural connotations. This provides theoretical support for subsequent practical applications.

Case Analysis Method: Through in-depth analysis of specific cases, this study explores the application and development of rhinoceros skin lacquer techniques in modern design.

Result

Definition of Rhinoceros Skin Lacquer

Rhinoceros skin lacquer is not actually made from real rhinoceros hide. It is called "rhinoceros skin lacquer" because its texture resembles the skin of a rhinoceros. The surface of rhinoceros skin lacquer is extremely smooth, with patterns formed by layers of lacquer in different colors. The lines are irregular and unpredictable, creating a highly aesthetic appearance.

History of Rhinoceros Skin Lacquer

The exact origin of the rhinoceros skin lacquer technique remains inconclusive. Currently, there are two theories regarding its origin. One is the "saddle origin theory." Tang Dynasty scholar Zhao Lin believed that the inspiration for rhinoceros skin lacquer came from horse saddles. Due to long-term friction, saddles developed mottled textures. Lacquer artisans, inspired by these saddles, replicated the effect on lacquerware, evolving into the rhinoceros skin lacquer technique. This theory was cited by Yuan Dynasty scholar Tao Zongyi. In "Chuogeng Lu," it is stated: "The Western skin lacquerware is called Western skin, which people mistakenly think refers to the rhinoceros of rhinoceros horn, but it is not. It is from Western horse saddles, changing from black to red, from red to yellow, alternating over time, with five colors overlapping. Where the stirrups rub, creating depressions, brilliant patterns form, which are then imitated in lacquerware" (Li Zhao, Zhao Lin, "Tang Guo Shi Bu · Yin

Hua Lu," [M] Shanghai: Shanghai Ancient Books Publishing House, 1979). The other theory is the "rhinoceros navel belt theory." "Pi" means navel. The navel of a rhinoceros has a unique texture, and in ancient times, nobles from the Western Regions often made decorative belt ornaments from the skin around a rhinoceros's navel. These ornaments influenced popular aesthetics, prompting lacquer artisans to imitate the texture, gradually forming the rhinoceros skin lacquer technique.

Regardless of which theory is correct, both indicate that ancient artisans discovered and appreciated this naturally occurring texture that required no deliberate patterning, and subsequently imitated it, leading to the creation of the rhinoceros skin lacquer technique.

To date, the earliest unearthed rhinoceros skin lacquer ware is the yellow-rimmed winged cup with rhinoceros skin pattern excavated from the tomb of Zhu Ran from the Three Kingdoms period (Figure 1). This lacquerware is entirely lacquered, with inlays originally on the double handles and rim, which have now fallen off. The inner wall features the rhinoceros skin technique in red, black, and yellow, with vivid and irregular patterns.



Figure 1: Yellow-rimmed winged cup with rhinoceros skin pattern (from Zhu Ran's tomb), Image source: Culture and Tourism Bureau of Jiangning District, Nanjing City

Wang Shixiang stated in "Explanations of Xiushilu": "Rhinoceros skin lacquer existed in the Tang Dynasty and became more popular in the Song Dynasty." (Wang Shixiang, Explanations of Xiushilu: Research on Traditional Chinese Lacquer Crafts, Cultural Relics Press, 1998) The "Xihulaoren Fanshenglu" mentions "rhinoceros skin daily utensils," where "daily utensils" refers to household items, indicating that rhinoceros skin lacquer ware had become very common. The colored lacquer Tenmoku stand (Figure 2) corroborates this point. A Tenmoku stand is a cup holder. This lacquerware has thick layers of lacquer. The tea cup has a round mouth and round belly, while the stand is rounded and slightly flares upward. The overall shape is dignified and substantial. The inner wall of the tea cup is plain red lacquer, while the outer wall is decorated with rhinoceros skin lacquer, displaying bright and natural colors that are visually appealing.



Figure 2: Colored lacquer Tenmoku stand (Song Dynasty), Image source: Personal library

Rhinoceros skin lacquer experienced significant development during the Tang and Song dynasties, with its craftsmanship and techniques becoming more sophisticated. By the Ming and Qing dynasties, the artistry reached its peak. Wang Shixiang collected a Ming dynasty rhinoceros skin lacquer box (Figure 3) and described it in "A Precious Ming Rhinoceros Skin Lacquer Box" as follows: "The lid is domed and raised, with an archaic design. It has a leather body, a tea-brown interior, and a black lacquer base, with short L-shaped feet at the four corners. The pattern flows like clouds and water, with red surfaces interspersed with black patterns and including dark green. The shape is more fluid than a round box, with distinct color distributions that create a floating, elusive effect, giving a sense of unpredictable change" (Wang Shixiang, "The Collector," Issue 08, 2002).



Figure 3: Rhinoceros skin lacquer box (Ming Dynasty), Image source: Baidu search

The Qing dynasty has left the largest number of rhinoceros skin lacquer artifacts. The Palace Museum houses many such collections, including pieces made by the Imperial Workshop as well as tribute items from various regions. Many private collectors and artists also possess rhinoceros skin lacquer items from the Qing dynasty. For instance, this eggplant-shaped rhinoceros skin lacquer tea canister (Figure 4) mimics the shape of an eggplant, appearing playful and charming. Its patterns flow naturally, resulting in an exquisite piece.



Figure 4: Eggplant-shaped rhinoceros skin lacquer tea canister (Qing Dynasty), Image source: Baidu search

Principle of Pattern Formation in Rhinoceros Skin Lacquer

The pattern formation in rhinoceros skin lacquer is primarily based on its unique crafting process. During production, an uneven surface is created on the object. This is followed by the application of multiple layers of different colored lacquers, resulting in variations in the height of the lacquer layers. Due to these height differences between lacquer layers, after polishing, the object's surface forms concentric rings of different colored lacquer layers.

Characteristics of Rhinoceros Skin Lacquer

Material Properties of Rhinoceros Skin Lacquer: Rhinoceros skin lacquer uses natural raw lacquer as a coating, which has physical properties of heat resistance, moisture resistance, and corrosion resistance. The resulting lacquerware is not only glossy and aesthetically pleasing but also durable and resistant to damage over long periods. It combines artistic value, practicality, and collectible worth, making it a treasure of ancient Chinese culture.

The patterns of rhinoceros skin lacquer have unique visual effects, primarily manifested in:

1. **Naturally Formed Patterns:** The unique patterns of rhinoceros skin lacquer are naturally formed during the production process, rather than being deliberately carved by artisans. The pattern of each piece is unique and irreproducible. This naturally occurring

texture, which requires no deliberate patterning, possesses a vivid aesthetic appeal. It resembles clouds, water ripples, or flowers, providing infinite space for imagination and is full of artistic sensibility.

2. **Diverse and Changeable Patterns:** There are many unpredictable factors in the production process of rhinoceros skin lacquer, such as the not entirely controllable variations in lacquer layer thickness and inconsistencies in polishing pressure. Consequently, the patterns produced each time are different. This characteristic of variability gives rhinoceros skin lacquer high flexibility, randomness, and creativity, which is also the unique artistic charm of rhinoceros skin lacquer.

Rhinoceros Skin Lacquer Techniques

1. Base Material Preparation:

Traditional rhinoceros skin lacquer is applied to bases made of porcelain, wood, bamboo, and other materials. When selecting the base, multiple factors such as the object's shape, size, and purpose must be considered to choose an appropriate material. As society progresses and technology advances, the base materials for lacquerware continue to evolve. Some artists have become proficient in using aluminum bases, which not only avoid the fragility of porcelain but also circumvent the moisture susceptibility of wood and bamboo bases. In recent years, some young artists have employed 3D printing technology to create bases. This allows for the production of more complex object shapes in a shorter time, improving efficiency, while the resin material is lighter and harder.

Before lacquering, the base requires some basic preparation. The surface is sanded with fine sandpaper to create uneven scratches, facilitating lacquer adhesion. Before applying colored lacquer, the surface is often coated with several layers of raw lacquer to stabilize the base.

2. Lacquering Process

After the base preparation is complete, the lacquering process begins. The main steps of this process include creating texture, applying colored lacquer, polishing to reveal patterns, and final polishing for clarity.

Creating texture is crucial for forming the rhinoceros skin lacquer pattern. Tools are used to create raised points on the base, forming height differences. There are no specific rules for the size, height, shape, or density of these points; they depend entirely on the artist's ideas, skills, and experience. Various tools can be used for this step, with common ones including loofah pulp and sponge balls. This means that each rhinoceros skin lacquer piece is unique and cannot be replicated.

Applying colored lacquer involves brushing different colored lacquers onto the textured base. Depending on the size of the object and the artist's vision, this can involve anywhere from over ten layers to thirty or fifty layers, with some lacquerware even reaching hundreds of layers. The more layers applied, the richer the depth and complexity of the final piece.

Polishing to reveal patterns occurs after the lacquer application is complete. The object's surface is polished to smoothen the uneven texture. At this stage, the cross-sections of the lacquer layers reveal fine, fluid patterns, forming the flowing and dynamic rhinoceros skin texture.

Cleaning and final polishing are done to give the object texture and luster. After the pattern is revealed through polishing, there may still be microscopic scratches on the surface invisible to the naked eye. The purpose of cleaning is to fill these scratches, making the object even smoother. This is typically done by applying a thin layer of raw lacquer using cotton or silk, allowing it to dry in the shade, and repeating 2-4 times. For the final polish, a small amount of vegetable oil is applied to the surface, followed by sprinkling a little polishing powder and

rubbing repeatedly until the lacquerware exhibits a warm, lustrous sheen. The cleaning and final polishing steps can be alternated until the lacquerware achieves the artisan's desired texture and finish.

Prospects for Rhinoceros Skin Lacquer Art

The preceding sections have provided an overview of the historical background, formation principles, material characteristics, texture features, and craftsmanship techniques of rhinoceros skin lacquer. It is evident that China's rhinoceros skin lacquer craft has continuously progressed and developed throughout history. The key to revitalizing modern rhinoceros skin lacquer craftsmanship lies in several factors: Inheritance and innovation of techniques: Introducing modern materials, processes, scientific technologies, and new design concepts into traditional techniques to inject new vitality into rhinoceros skin lacquer art. Adapting to contemporary society's material and cultural needs: Increasing public awareness and acceptance of rhinoceros skin lacquer art, enabling more young people to understand its artistic value, and enhancing public interest and attention to rhinoceros skin lacquer art. Broadening the scope of lacquerware: Integrating rhinoceros skin lacquer art into other products, achieving cross-disciplinary collaboration, enhancing the market value of rhinoceros skin lacquer art, and realizing the modernization of tradition.

Analysis of Rhinoceros Skin Lacquer Technique Application in Modern Design

With ongoing social development and technological progress, people's demands for products have elevated. They now require products to be not only practical but also aesthetically pleasing, giving rise to the concept of functional beauty. Functional beauty is a practical concept between utility and aesthetics, integrating functionality with aesthetics. It requires designers to constantly pursue a harmonious unity of product form and practicality. In fact, over two thousand years ago, the Chinese Confucian scholar Xunzi, when considering the function of art, proposed the concept of "beauty and goodness in harmony." He posited that art is a higher form of human aesthetic appreciation. It does not exist in isolation and should not solely emphasize entertainment, but rather serve people to be truly "beautiful" and "good."

As a traditional craft, the unique texture of rhinoceros skin lacquer has found innovative applications in modern design, such as in the design of this lighter (Figure 5).



Figure 5: Rhinoceros skin lacquer lighter, Image source: Dongguan Flagship Store

Lighters are common products in daily life. Designers have combined the rhinoceros skin lacquer technique with lighter production, fully showcasing the smooth surface, fluid patterns, and rich color layering characteristics of rhinoceros skin lacquer. This integration not only preserves the traditional ignition function of the lighter but also endows it with a unique appearance and texture, embodying traditional cultural connotations. This enhancement elevates the overall aesthetic appeal and artistic value of the lighter, while also increasing its market value and collectible worth.

Conclusion and Discussion

Through the analysis of the historical background, formation principles, material characteristics, texture features, craftsmanship techniques, development prospects, and case studies of rhinoceros skin lacquer, the author believes that the application of rhinoceros skin lacquer techniques in lighter design represents a successful attempt and innovation. In recent years, the nation has placed greater emphasis on the development of traditional culture and craftsmanship. As an ancient traditional craft of China, rhinoceros skin lacquer will find broader applications in modern design fields, integrating into people's lives in younger, more fashionable, and more everyday ways.

The characteristic elements of the rhinoceros skin lacquer process can be summarised as follows:

Material: Natural lacquer comes from the lacquer tree, which is non-toxic and harmless, high temperature resistant, moisture resistant, corrosion resistant and good glossy.

Technology: Unique creating texture, applying colored lacquer, polishing to reveal patterns, and final polishing for clarity can enhance the thickness and strength of the lacquerware, making the lacquer surface show a warm lustre.

Texture: The naturally formed and varied texture gives people unlimited space for reverie and is full of artistic sense.

Suggestions

1. Should study more about rhinoceros skin lacquer in modern design application areas, such as home decoration, fashion accessories, furnishings in public space, etc.
2. Consumer opinions can be studied, questionnaire surveys, according to the consumer's aesthetic orientation and practical needs for design.

References

- [1]Zhang Zhigang. The Beauty of Lacquer[M].Wuhan: Huazhong University of Science and Technology Press, 2023: 5
- [2]Li Zhao, Zhao Lin.Tang Guo Shi Bu · Yin Hua Lu[M]. Shanghai: Shanghai Ancient Books Publishing House, 1979
- [3]Wang Shixiang, Explanations of Xiushilu:Research on Traditional Chinese Lacquer Crafts:[M]. Cultural Relics Press, 1998
- [4]Wang Shixiang, The Collector[J]. Issue 08, 2002