KUPAS SENI: Jurnal Seni dan Pendidikan Seni
ISSN 2289-4640 /eISSN 0127-9688 Jilid 13 Isu 2, 2025 (70-79)

Maklumat Artikel:
***Peroleh:** 27 June 2025 **Semak:** 13 Sept. 2025 **Terima:** 18 Sept. 2025 **Terbit dalam Talian:** 24 Sept. 2025*
**Corresponding Author: 2022663944@student.uitm.edu.my*

Color expression in lacquer painting: The interaction of materials and the "Bian Tu" technique

Yang Liding[1*], Khayril Anwar Khairudin[2], Siti Ermi Syahira Abdul Jamil[3], Zhang Yi[4]

[1, 2, 3]College of Creative Arts, Universiti Teknologi MARA (UiTM),
32600 Bota, Perak, Malaysia
[4]Faculty of Education, University Sains Malaysia, Jalan Universiti,
11700 Gelugor, Pulau Pinang, Malaysia

To cite this article (APA): Yang, L., Khairudin, K. A., Abdul Jamil, S. E. S., & Zhang, Y. (2025). Color expression in lacquer painting: The interaction of materials and the "Bian Tu" technique. *KUPAS SENI: Jurnal Seni Dan Pendidikan Seni*, *13*(2), 71-79. https://doi.org/10.37134/kupasseni.vol13.2.6.2025

ABSTRACT

This study focuses on the unique color expression of lacquer painting. From the interdisciplinary perspective of material science and optics, the interaction between lacquer pigments and materials such as gold foil and pearlescent substances in the "Bian Tu" technique is mainly explored. The research objective is to analyze the optical phenomena caused by different materials in the "Bian Tu" technique to reveal how these optical phenomena shape the unique visual effect of lacquer painting. This study adopts the qualitative research method, combining the analysis of literature content with the visual analysis of representative lacquer paintings. The relationship between the materials, techniques, and visual effects of the works is clarified by using Feldman's "four-step method." The results show that the combination of natural and synthetic materials in the "Bian Tu" technique can produce dynamic color shifts and unique visual effects. This expands the expressiveness of lacquer painting and breaks through the limitations of traditional lacquer painting techniques. The research conclusion points out that the "Bian Tu" technique is one of the most basic and expressive core techniques of lacquer painting. However, existing related research mostly focuses on qualitative analysis and historical literature review. There is a lack of research perspective that starts from the special optical mechanism caused by materials and analyzes the visual effects it finally presents. Therefore, this study provides an interdisciplinary perspective for the aesthetics of lacquer art. Providing theoretical support and practical reference for the integration of traditional crafts and modern technology and the application of lacquer painting in contemporary art.

Keywords: Lacquer painting; Color expression; Material interaction

INTRODUCTION

Lacquer painting is a traditional East Asian art form that uses natural lacquer as its core medium, with a history that can be traced back to the Neolithic period. Lacquer is made into lacquer pigment through extraction, filtration, and baking processes, and is applied to surfaces such as wood, paper, and metal. Through multiple layers of coloring, inlaying, and polishing, it forms works that combine both artistic and decorative qualities. Among them, the “Bian Tu” Technique, as a classic craft, showcases rich color depth and texture through layers of coloring, drying, and polishing (Kumanotani, 1995).

In the physical properties of lacquer painting, optical characteristics are particularly crucial in visual presentation, especially reflected in the color layering effects brought by the translucent lacquer layers. Traditional black, red, and metallic colors not only carry cultural symbolic meanings, such as black representing eternity and red representing vitality, but also reflect the integration of materials and

craftsmanship (Wei, 2022). The layering of transparent and opaque pigments creates a three-dimensional visual effect.

The uniqueness of lacquer painting not only stems from natural materials and traditional techniques but also from the interaction between the materials. For example, the compatibility between lacquer and chemical pigments, as well as the reflective properties of metal foils, directly affects color expression and the overall visual effect (Han, 2012).

This study aims to explore the impact of interactions between different materials in the "transformative coating" technique on the color expression and visual effects of lacquer paintings, and to further analyze the mechanisms of color layering and the formation of dynamic changes in lacquer paintings. Around this goal, the study focuses on two core issues: first, how the interaction between materials affects the color presentation and visual perception in lacquer paintings, and second, how artists create rich color layers and dynamic effects through specific mechanisms during the creative process.

LITERATURE REVIEW

The discussion of the technique of "Bian Tu" in domestic lacquer painting monographs is mostly based on the core perspective of technological steps and material use. For example, Qiao Shiguang's (2000) book "Lacquer Art," as the mainstream lacquer painting textbook in colleges and universities, mainly focuses on these two dimensions when explaining the technique of "Bian Tu."

In terms of the research on the technical characteristics and application, Liu (2015) pointed out that the media used in the "Bian Tu" technique are rich in type. The texture presented by the technique also has strong randomness and uncertainty. In addition, Zhang's (2018) research focused on the actual application scenarios of the "Bian Tu" technique, and simultaneously discussed the reflection and adjustment of the technique in the creation process.

Regarding the modern transformation of traditional lacquer painting, Jin (2024) proposed that the traditional lacquer painting process has the problem of insufficient modernization from the dual perspective of the traditional inheritance path and the current market supply. It is further suggested that modern materials be introduced to adapt to contemporary aesthetic needs on the basis of retaining the core of traditional craftsmanship. On the contrary, Liu, Mou & Lian (2024) mentioned that many lacquer paintings in the current National Art Exhibition have applied modern materials. Moreover, these works have been widely recognized in the academic community and have shown excellent visual effects.

Liu, Mou & Lian (2024) further pointed out that the color language and expression techniques of modern lacquer painting have developed significantly compared with the traditional stage, and its integration of the techniques of other painting types highlights the inclusiveness, flexibility, and innovation of modern lacquer painting art.

However, the above-mentioned articles still have limitations in the analysis of the technique of "Bian Tu." Previous studies have focused on the sorting of the process flow and the listing of the materials used. There is no in-depth analysis of how the material properties (such as composition and texture), and the use of techniques affect the visual presentation.

Although Chen (2023) discussed the functional value of color in the transmission of emotions, visual impact, and artistic innovation in lacquer paintings from the perspective of visual aesthetics. It also failed to clarify the specific influence mechanism of the material properties of lacquer pigments on the color presentation effect.

In summary, there are three core gaps in the existing research on lacquer painting: first, the discussion on the technique of "Bian Tu" is mostly limited to the sorting of the process flow and the enumeration of the types of materials, and the specific influence mechanism of the material characteristics (such as the composition of the lacquer pigment and the texture of the gold foil/pearlescent substance) on the color presentation is not deeply analyzed. The internal relationship between "material selection - optical reaction - visual effect" is not clarified. Second, although some studies have mentioned the innovation of the color language of modern lacquer painting and the improvement of visual effects, they have not specifically dismantled "what kind of material and technique combination" is the key to forming a unique color and visual experience. Third, there is a lack of analysis from the perspective of interdisciplinary disciplines such as material science and optical

principles, and it is difficult to systematically explain the generation logic of the visual effect of lacquer painting.

Based on this, this study takes the variable coating technique as the core research object. The researcher combined material science with optical principles. Through literature analysis and visual analysis of representative lacquer paintings, the study analyzes how the combination of materials such as lacquer pigments, gold foil, and pearlescent substances and the technique of "Bian Tu" affect the color presentation through optical phenomena. Clarify the correlation mechanism of "material properties - technique operation - visual effect."

METHODOLOGY

This study employs qualitative research methods, utilizing the Feldman Four-Step Evaluation Method (Alashari, 2021) and content analysis (Bryman, 2016) to analyze the visual presentation of lacquer paintings and related literature. Construct a reverse deduction path of "visual effect analysis → material property inference → technique logic interpretation." By deconstructing the visual characteristics of the painting, such as color, gloss, texture, and layering. Researchers analyze the material foundation (material selection, combination, and physical properties) and technical means (the operational logic of traditional crafts) that artists rely on to achieve specific visual effects.

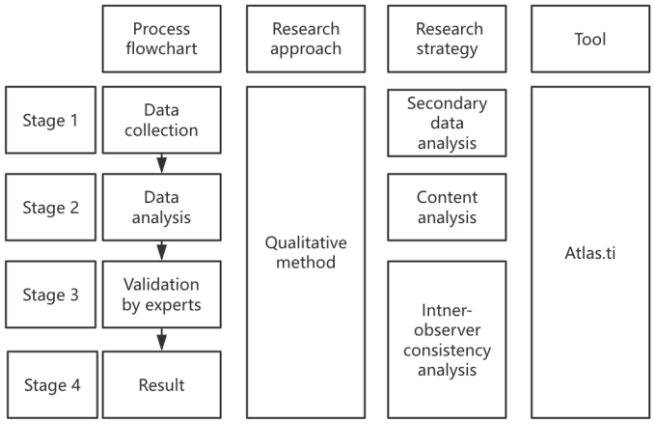

Figure 1. Process flowchart

The first phase of this study is data collection, primarily relying on secondary resources, including literature and images of lacquer paintings (Bryman, 2016). The literature section focuses on lacquer painting materials, techniques, and color expression, with particular attention to the impact of different materials on color effects in the "Bian Tu" technique.

The study employs the purposive sampling strategy in non-probability sampling proposed by Bryman (2016), selecting Tang Zhiyi and Shen Kelong, two representative artists in the field of Chinese lacquer painting, as research subjects. Their works have a wide influence both domestically and internationally, reflecting the high level of contemporary lacquer painting.

Purposeful sampling is based on research objectives, selecting typical cases that are highly relevant to the theme. In this study, the core criterion is "the impact of different materials on the color expression of lacquer paintings using the change coating technique." Ultimately, Tang Zhiyi's "Blue Moonlight" and Shen Kelong's "To the Border, Whose House No. 2" were selected. The two works contrast in terms of materials and techniques, which helps to deeply analyze the interaction between color, materials, and techniques.

The second stage is data analysis, using content analysis (Bryman, 2016), combined with text and visual analysis methods (Key & Noble, 2017), to systematically categorize and interpret the literature and images of lacquer paintings. The Feldman four-step approach used in the analysis, from description to formal analysis to interpretation to commentary, delves deeper layer by layer, and systematic deconstruction of the samples is aided by qualitative analysis software Atlas.ti.

The analysis path encompasses three dimensions: visual, material, and technique. By inferring the materials used from the visual effects of the painting, and then judging the relevant techniques based on the texture characteristics, it further reveals the materials and craft mechanisms that the color expression in lacquer painting relies on.

The third stage involves revising the coding rules and analysis framework through inter-rater reliability analysis. Ensure that different researchers have a high level of consistency in interpreting the same work, thereby enhancing the reliability of the research. Invite experts in the field of lacquer painting to review and validate the results of this study to further enhance its scientific rigor and reliability (Bryman, 2016).

In the fourth stage, draw conclusions. This study approaches from three aspects: lacquer painting materials, “Bian Tu” techniques, and color presentation, systematically analyzing the main characteristics of lacquer painting color expression. The study combines visual analysis and optical principles to reveal the impact of the interaction between materials and light on the visual layering of lacquer paintings. It also emphasizes the importance of modernizing traditional crafts, the application of new materials and technologies, and interdisciplinary research for contemporary practice and cultural heritage preservation.

RESULTS

This study focuses on the materials, techniques, and colors of lacquer painting, analyzing its artistic expression and creative patterns. The unique color effects of lacquer painting stem from the special properties of the materials and the meticulous application of techniques. The "Bian Tu" technique is the most common and fundamental technique in lacquer painting. Therefore, this study chooses to approach from this technique, focusing on analyzing the impact of materials on the color expression in lacquer painting.

In terms of the varnishing process, the research systematically outlines the complete procedure from the collection of raw lacquer to multi-layer varnishing, polishing, and burnishing, and explores the application of traditional techniques in modern creation.

In terms of color presentation, the research focuses on analyzing the impact of the thickness of the translucent lacquer layer on color presentation. At the same time, by gathering specific contemporary lacquer painting works, analyze how metal foil and mother-of-pearl materials achieve dynamic color changes through the reflection and refraction of light. Although metal foil and mother-of-pearl materials are widely used in rock painting, Chinese painting, and Japanese painting, their combination with lacquer pigments produces entirely different visual effects, showcasing the unique color expressiveness and aesthetic characteristics of lacquer painting.

Furthermore, this study also analyzes the cultural symbolic meanings of classic colors in lacquer paintings.

Finally, analyze the color expression characteristics of the "Bian Tu" technique in contemporary lacquer paintings. Summarize the unique value of lacquer painting in terms of optical characteristics, artistic expression, and cultural symbolism.

Lacquer pigment and common materials

The material properties of lacquer painting mainly stem from the interaction between its natural components and artificial additives. Raw lacquer sap is obtained from the lacquer tree, with urushiol as its main component. In a high-humidity environment, it undergoes a polymerization reaction triggered by lacquer enzymes, forming a hard polymer matrix. This polymerization process differs from Western lacquers (such as shellac, varnish, polyurethane, and acrylic lacquer), which rely on solvent evaporation for drying, giving lacquer materials excellent durability and solvent resistance (Kumanotani, 1995).

Raw lacquer sap collection and processing process

The creation process of lacquer painting is complex and time-consuming. The core material, lacquer sap, must be collected under specific conditions (such as low temperatures in the early morning). Its

yield is extremely low, referred to as "A hundred miles and a thousand cuts yield only one ounce of lacquer," highlighting the scarcity of raw lacquer (Quang, 2005.

The processing of raw lacquer after collection includes filtering impurities, stirring and dehydrating, and adding auxiliary materials (such as curing agents). These steps have strict requirements for the processing environment and consume a lot of materials. During the processing, the lacquer will stratify, and different layers require different treatment methods. One of the layers can be used to create translucent lacquer, which is key to achieving the unique color effects of lacquer paintings (Nguyễn, 1995).

Lacquer pigment characteristics

The color and transparency of the lacquer directly affect the visual color effect of the artwork. Traditional lacquer painting often uses vermilion (HgS), carbon black, orpiment (As_4S_4), and other mineral or plant pigments. Due to their chemical structural stability and historical application value, they are widely used (Lin, 2016). Lacquer pigments are made by mixing refined raw lacquer with color powders and can be divided into two categories: translucent and opaque. Due to the yellow-brown color of the lacquer after refining, its original hue is altered when mixed with color powders. This causes the final lacquer pigment to be darker and yellower than the color powder, making it difficult to achieve bright or pure colors (Nguyễn, 1995). Moreover, modern synthetic materials such as drying agents, while improving process efficiency, have not yet been widely accepted due to their impact on the purity of traditional craftsmanship (Quang, 2005).

After discussing the color expression in contemporary lacquer painting, it is necessary to further understand the selection of lacquer pigments and their key role in lacquerware production. Lacquer pigments are divided into two categories: natural pigments and synthetic pigments. Natural pigments are highly durable but lack vivid colors, while synthetic pigments are bright but have poorer stability. When using it, one must consider its chemical properties to avoid discoloration caused by reactions with urushiol. In addition, natural lacquer pigments are sensitive to light and can fade with prolonged exposure, so strong light should be avoided during display and storage (Kumanotani, 1995). The selection of suitable pigments must balance color effects and durability to ensure the beauty and practicality of the work (Zhang, 2006).

Common materials for lacquer painting

According to Su (2023), the commonly used materials in lacquer painting are carefully constructed on the lacquer surface to create a concave and convex texture effect, which can be mainly divided into three categories:

> The commonly used medium materials in lacquer painting include natural mediums, synthetic mediums, and thinners. Natural media such as eggshells, mother-of-pearl, ramie, and rice are used to enhance the texture and decorative quality of the painting through techniques like inlay and embossing, creating effects like cracks, light refraction, or rough textures. Synthetic media such as metal powders, plastic sheets, and foam paper have a strong visual impact and modern feel and can be used to construct abstract structures or industrial-style images. Thinners such as turpentine, tung oil, and camphor oil are used to adjust the fluidity and drying speed of the paint. It not only affects color blending but can also be used to create natural cracking or flowing textures, enriching the visual layers of the artwork.
>
> The interaction of these materials gives lacquer paintings rich texture expressions, providing artists with a broad creative space while promoting the innovative development of traditional crafts in the context of modern art.

Types of "Bian Tu" Technique

The "Bian Tu" technique originated from the ancient “Zhang Xiu” technique (a traditional Chinese decorative lacquer application method), first seen in Huang Cheng's *Record of Lacquer Decoration* from the Ming Dynasty. The “Zhang Xiu” technique was mainly used in ancient times to decorate

lacquerware, forming a unique artistic style. During the Three Kingdoms period, it was introduced to Japan, and after being improved by Japanese lacquer artists, it formed the "Bian Tu" technique. In the 1930s, the "Bian Tu" technique was reintroduced to China, enriching the forms of expression in Chinese lacquer art (Liu, 2020; Zhang, 2018; Zhang, 2016).

The formation of texture in the “Bian Tu” technique mainly relies on three methods: lacquer pigment texture, medium texture, and diluent texture (Qiao, 2000).

Lacquer texture is created by adjusting the viscosity of the lacquer and using brushes, scrapers, and other tools to carve or tap on the uncured lacquer surface, producing a three-dimensional effect or flow marks. The texture created by the medium is achieved by embedding materials such as eggshells, mother-of-pearl, or metal wires into the lacquer layer, or by pressing leaves or fabrics onto the surface and then removing them, leaving behind decorative patterns. The texture created by thinners is achieved by adding thinners such as turpentine and camphor oil, which alter the drying behavior of the lacquer, resulting in natural cracking or textural effects, with a certain degree of randomness and experimental nature. These techniques enrich the texture of lacquer paintings, enhancing their visual layers and artistic expressiveness (Qiao, 2000).

There are also some special production techniques, such as the irregular raised viscous lacquer dot texture technique, scraping texture technique, grain sprinkling texture technique, and floating dilute lacquer texture technique. Contemporary lacquer artists have made innovative attempts based on the change coating technique, such as using new texture tools like water droplets, enriching the expressive forms of the change coating technique (Liu, 2020). According to Lin (2016), traditional techniques achieve a subtle balance of light and dark layers by precisely controlling the thickness of the lacquer and the degree of polishing, showcasing the unique visual charm of lacquer painting.

In the "Bian Tu" technique, commonly used tools can be divided into two categories: natural materials and artificial materials. Natural materials mainly include leaves, eggshells, mother-of-pearl, etc. These materials can be directly used for stamping, inlaying, or collage due to their unique shapes and textures, thus forming natural textures and decorative effects. Artificial materials include hard brushes, scrapers, engraving needles, sandpaper, plastic films, metal meshes, etc. These tools intervene in the paint surface through different operating methods, such as brushing, scratching, grinding, stamping, or peeling, thus creating rich surface textures (Su, 2023).

Case Analysis of the Application of “Bian Tu” Techniques

When discussing the lacquer painting technique and its visual expression effects, the works of Tang Zhiyi and Shen Kelong provide very representative examples. The works of both artists use the technique of changing the painting to show the unique charm of lacquer painting in visual expression.

Shen Kelong is a professional lacquer painting artist whose works have been selected and awarded multiple times at national exhibitions and have been widely exhibited both domestically and internationally. His lacquer paintings blend traditional lacquer techniques with modern artistic concepts, with a style that lies between representational and abstract, showcasing profound Chinese philosophy and aesthetics. He often uses natural lacquer as a medium, employing techniques such as layering, polishing, and carving to present a unique texture and profound artistic conception (Lin, 2015).

In the work "To the Border, Whose House No. 2" (Figure 2), the author employs the technique of "bian tu" and auxiliary tools to create naturally irregular patterned textures, showcasing the warm and subtle quality of lacquer materials. By integrating modern compositional concepts, the author explores contemporary expressions of traditional themes. He skillfully uses the reflective properties of metal foil to distinguish light and dark areas in the composition, with the cranes inlaid with eggshells as the focal point of the piece. The gray areas are polished and buffed in sections, using light reflection to create a richly layered visual effect.

Figure 2. To the border, whose house No. 2

Tang Zhiyi is an important contemporary lacquer painting artist in China. He is currently a professor and doctoral supervisor at the College of Arts, Xiamen University, and holds multiple positions in various art institutions. His works have been selected and awarded multiple times in national art exhibitions, blending traditional lacquer art with modern aesthetics, gradually evolving from figurative to symbolic and conceptual expressions (Lin & Tang, 2007).

Tang Zhiyi's work "Blue Moonlight" (Figure 3) is a typical example of the translucent lacquer transformation technique. The work uses lacquer and metal foil as materials, creating rich horizontal textures and a profound sense of space through horizontal scraping, multilayer lacquering, and polishing. In the creation process, lines are first constructed with lacquer paint, then metal foil is attached to the base layer, followed by layering blue translucent lacquer to enhance the color depth. Finally, polishing reveals the underlying lines and metallic luster, creating a water-like play of light and shadow, endowing the work with a visual experience that embodies both flow and tranquility.

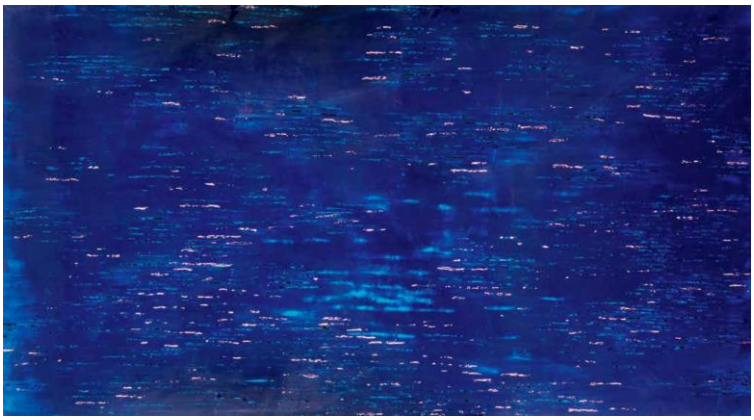

Figure 3. Blue moonlight

Presentation of lacquer painting color

The visual uniqueness of lacquer painting stems from the synergy between materials and craftsmanship. Taking the work "Blue Moonlight" in Figure 6 as an example, the multilayered blue transparent lacquer on the surface forms a translucent medium, while the underlying layer is inlaid with silver metal foil, creating a Fresnel effect. When light passes through the paint layers with different refractive indices and the metal interface, partial reflection and refraction occur (Faul, 2019), thereby enhancing the sense of color layering and dynamic color shift effect (Quang, 2005).

As shown in Figure 4, there are complex optical phenomena in the multilayer coating of lacquer paintings. For the sake of explanation, taking light from a single direction as an example: when light L_1

enters the lacquer surface, part of it is reflected at the surface of the translucent lacquer layer to form L_2, while another part penetrates the lacquer layer and is refracted to form L_3. L_3 is then reflected by the underlying reflective material to form L_4, and L_4 is refracted back through the lacquer layer to form L_5. There are also rays like L_6 that enter the plane vertically and are directly reflected by the surface. Multiple reflections and refractions give the lacquer painting a rich and unique optical effect.

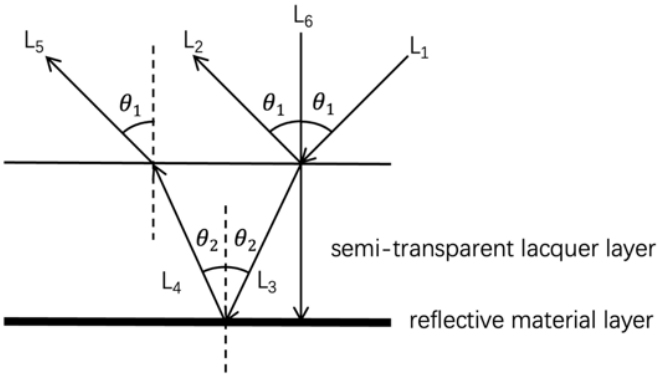

Figure 4: Optical phenomena in multilayer paints: A physical model and coordinate system

When light hits the surface of the lacquer painting, reflection, refraction, and scattering occur, which are closely related to the physical structure of the lacquer layer. Because the surface of the painting is not evenly polished, it results in an uneven lacquer thickness. And the residue of tiny particles or bubbles generated during the paint application process can cause light scattering (Karplus, 1951). Xia et al. (2005) pointed out that the absorption, scattering, and substrate reflection of the lacquer layer together determine its bidirectional reflectance distribution function (BRDF), which helps explain the complex visual effects of lacquer paintings.

In addition, the use of metal foil and mother-of-pearl materials further enhances the visual layers of color. Metal foil can strongly reflect light, while pearlescent materials exhibit color shifts with changes in viewing angle due to directional reflection, creating a flickering and dynamic visual experience (Lin, 2016). The interaction of these optical phenomena gives lacquer paintings a unique color expression and sense of space.

Under different light sources and viewing angles, lacquer paintings exhibit three-dimensional, deep, and richly varied color effects through the interplay of reflection, refraction, and scattering. The translucent lacquer layers cause light to repeatedly reflect between multiple layers, enhancing the sense of color depth and spatial perception, creating a composite visual experience (Quang, 2005). In addition, the lacquer painting pigments are stable and highly saturated, which helps the colors remain vibrant over time. The differences in lacquer film thickness and polishing degree, as well as the combination of polishing and texture, further create a visual layer of "mutual generation of reality and illusion," enhancing the expressiveness of the painting (Quang, 2005).

At the technical level, the “Bian Tu” technique not only enriches the texture through multi-layer superposition, carving, and polishing, but also further affects the light propagation path, enhancing the complexity and dynamic effect of color. The comprehensive application of these techniques enables lacquer painting to display rich optical properties in different environments, giving it a unique artistic charm.

DISCUSSION

This study systematically analyzes the interaction mechanisms between materials, techniques, change-painting methods, and color presentation in lacquer paintings. The results indicate that the embedding of metal foil and mother-of-pearl materials in the change-coating technique can produce dynamic color shifts. The optical mechanism involves Bragg scattering and Fresnel equations (Lvovsky, 2013). This

finding is consistent with Quang's (2005) description of the "interplay of reality and illusion" effect in traditional lacquer paintings and aligns with related optical research on materials.

Through the visual and material analysis of typical artists' works, the study reveals the interactive relationship between color expression and the triad of materials, techniques, and visual effects in lacquer painting. However, due to the use of purposive sampling, the sample is concentrated on works with strong representativeness, failing to encompass the diversity of regional styles and creative paths, which limits the generalizability of the research findings (Bryman, 2016).

Despite its limitations, this study, by integrating modern materials with traditional techniques, shifts the focus from previous research that emphasized the reproduction of traditional crafts (such as Lin, 2016) to the impact of the physical and optical properties of materials on visual performance, providing a new perspective for understanding dynamic color shift and depth.

CONCLUSION

In summary, the color representation of lacquer paintings relies on the interaction of various optical phenomena, including reflection, refraction, scattering, and the multilayer optical effects of translucent lacquer layers. The use of metal foil and pearlescent materials allows lacquer paintings to exhibit dynamic color changes under different light sources and angles, enhancing the visual depth and spatial sense. In addition, the technique of "Bian Tu" (multiple coating) involves using a variety of tools and materials (such as eggshells, mother-of-pearl, metal powders, and plastic sheets) on the lacquer surface to create raised and recessed textures. These textures are then revealed through multiple layers of colored lacquer application and polishing. Further influence the path of light propagation, making the colors more complex and varied. The combination of these optical characteristics with artistic techniques not only enriches the visual expressiveness of lacquer painting but also highlights its unique aesthetic value, providing important theoretical foundations and practical guidance for the innovation of contemporary lacquer painting art.

REFERENCES

Alashari, D. (2021). The significance of Feldman method in art criticism and art education. *International Journal of Psychosocial Rehabilitation*, *25*(2), 877-884.

Amirshahi, S. A., Hayn-Leichsenring, G. U., Denzler, J., & Redies, C. (2013). Color: A crucial factor for aesthetic quality assessment in a subjective dataset of paintings. In *AIC 2013 Congress*.

Bryman, A. (2016). *Social research methods*. Oxford University Press.

Chen, Y. (2023). The visual beauty of modern lacquer painting colors. *Frontiers in Art Research*, *5*(16).

Faul, F. (2019). The influence of Fresnel effects on gloss perception. *Journal of Vision*, *19*(13), 1–1.

Han, Q. (2012). From “use” to “appreciation”: Ancient Chinese lacquer craftsmanship. *Zhuangshi (Decoration)*.

Hu, N. (2023). The visual beauty of modern lacquer painting color and its application. *Technology and Art*, *2023*(12), 39–41.

Jin, Y. (2024). Research on the Application of Lacquer Painting Techniques in Modern Handicrafts. *Frontiers in Art Research*, *6*(9).

Karplus, R., & Neuman, M. (1951). The scattering of light by light. *Physical Review*, *83*(4), 776.

Kumanotani, J. (1995). Urushi (oriental lacquer) — A natural aesthetic durable and future-promising coating. *Progress in Organic Coatings*, *26*, 163–195.

Li, C., & Chen, T. (2009). Aesthetic visual quality assessment of paintings. *IEEE Journal of Selected Topics in Signal Processing*, *3*(2), 236–252.

Li, X., & Lin, X. (2023). A study of the color in Chinese lacquer art during the Ming and Qing dynasties. *Journal of Chinese Lacquer*, *42*(4), 10–13.

Lin, G. (2015). You should read Shen Kelong: An interpretation of Shen Kelong’s lacquer painting works. *Art Life, (1)*, 38–43.

Lin, G., & Tang, Z. (2007). The modern value orientation of traditional lacquer art: A dialogue with Tang Zhiyi. *Art Life, (2)*, 49–52.

Lin, J. (2016). My view on the schema language and innovation of modern lacquer painting. *Meishu, (12)*, 140–141.

Lin, Z. (2020, September). Inheritance and transmutation: Discussion on the artistic features of Chinese lacquer painting. In *4th International Conference on Art Studies: Science, Experience, Education (ICASSEE 2020)* (pp. 607–612). Atlantis Press.

Liu, G. (2015). Variable coating in lacquer painting creation: The versatile technique. *Beauty and Times (Middle Edition)*, (2), 22–23. https://doi.org/10.16129/j.cnki.mysdz.2015.02.005.

Liu, J. (2023). Color and texture: The visual tension of form language in contemporary abstract lacquer painting. *Journal of Guangzhou College of Technology*, *2023*(12), 50–51.

Liu, J., Mou, X., & Lian, C. (2024). The 14th National Art Exhibition: A review of art design, arts and crafts, ceramic art, and lacquer painting. *Art Observation*, (11), 17–23.

Munsell, A. H. (1919). *A color notation*. Munsell Color Company.

Nguyễn, D. Q. (1995). *Sơn mài Việt Nam* [Vietnamese lacquerware]. Tre Publishing House.

Qiao, S. (2000). *Lacquer art*. China Academy of Art Press.

Quang, V. (2005). *Hội họa sơn mài Việt Nam* [Vietnamese lacquer painting]. Nhà Xuất Bản Mỹ Thuật.

Ren, S. (2024). The study of lacquer art color and its inspiration for creativity. *Oriental Collection*, *2024*(1), 159–161.

Su, G. (2023). *Lacquer painting creation tutorial*. People's Fine Arts Publishing House.

Wei, P. (2022). [Retracted] Emotional cognitive expression in lacquer colors based on prior knowledge. *Journal of Environmental and Public Health*, *2022*(1), 1151676.

Welwood, J. (1977). On psychological space. *The Journal of Transpersonal Psychology*, *9*(2), 97–115.

Xia, X., Ren, D., & Tan, H. (2005). Influence of medium absorption and scattering on the bidirectional reflectance characteristics of semi-transparent coatings. *Journal of Infrared and Millimeter Waves*, *24*(5), 361–365.

Zhang, F. (2006). Lacquer color pigments. *Journal of Chinese Lacquer*, *25*(2), 43–49.

Zhang, Y. (2018). *The application of the* "*variable coating*" *technique in lacquer painting creation* (Master's thesis, Yangzhou University). CNKI. https://kns.cnki.net/kcms2/article/abstract?v=d7HKHDfP4kfJYWgKOSmrPsjq0tSYeUh6odCFQIMyCo6iQRxqSR80pvuermPiIzZSQGpWlaQ9q8vHhkyq00IV0fqxZW8MKd9zGX2_hFi-6BzyEex9YBSQVyOdRsbjntPL1Ygfk-Xjob_0vCqmArF7hV7nC2X5POKTxY1oy3Zf_32YOB6GxqtEeA==&uniplatform=NZKPT&language=CHS

Zhao, J., & Zhang, D. (2023). "Black lacquer on the outside and red lacquer on the inside": The aesthetic culture of color in Qin and Han lacquerware. *Journal of Shandong University of Arts and Design*, *2023*(6), 91–93.