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Article: A Proven Case of Repainted Ming Dynasty Chinese Ancestor Portrait Painting

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A Proven Case of Repainted Ming Dynasty Chinese Ancestor Portrait Painting

INTRODUCTION

Conservation of the Tsai Fu-Yi portrait painting was conducted over five years and was overseen by the Cultural Affairs Bureau of Kinmen County. The project included work in three main subject areas: art history and scientific studies from 2017 to 2018, conservation treatment from 2019 to 2020, followed by exhibition and long-term storage. After being temporarily stored in Taiwan after treatment, the Tsai Fu-Yi portrait painting was shipped back to Kinmen at the end of 2021 and exhibited in his hometown in February 2022.

Tsai Fu-Yi was born in Kinmen, a small island very close to the southeast coast of China, about an hour's flight from Taipei. Kinmen was known for its military position, cultural heritage, and kaoliang liquors. It has deep and abundant cultural and historical links to China.

Historical research was conducted by Professor Lu, Tai-Kang and Shao, Chin-Wang, the Tainan University of the Arts, and the research team. Tsai Fu-Yi was born in 1576, died in 1625, and was an intelligent and clever man. He was not only a diligent political governor who loved his people but also served a five-province governor position in the history of the Ming Dynasty. This Ming Dynasty-style Tsai Fu-Yi portrait painting was presumably completed between 1625 and 1644, nearly 400 years ago (Lu and Shao 2017, 157–158).

According to the Tsai family members of this generation (Lu and Shao 2017, 187–195), they would hang this portrait painting for worship on the winter solstice and the death anniversary of Tsai Fu-Yi in October every year. Hundreds of years of this practice gradually damaged the painting, and the scroll became too brittle to hang. Sometime between 1950 and 1960 (Lu and Shao 2017, 194), a local Kinmen resident assisted the Tsai family with repainting a large area using modern paint in the red robe and the white background.

These repainted areas had become hardened and brittle with time. After repeated hanging and rolling, the newly painted areas caused new serious damage. The Tsai family treasures this portrait so much that in 1990 the family members decided to replace the hanging scroll portrait with an A3-size framed color photo for their worship ceremonies (fig. 1). At the same time, they gradually lost their family tradition of hanging the Tsai Fu-Yi portrait painting for worship.



Fig. 1. The framed A3-size Tsai Fu-Yi photo that the Tsai family used to substitute for the original hanging scroll during ceremonies.

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Fig. 2. Images before treatment under normal light, transmitted light, and UV light.

TREATMENT

In this conservation project, there were several goals to achieve and challenges to face, including:

1. Identify a suitable solvent application method to control the direction of the softened or dissolved paint and prevent it from spreading to other areas or bleeding into the original pigment layer or paper fibers.
2. Determine whether it was possible to remove the repainted layers without damaging the original pigment.
3. Remount the restored portrait in screen format in order to prevent it from curling again, or remount it in the same hanging scroll format as the original; avoid possible damage occurring to the hanging scroll during the long-term storage and re-rolling.
4. Conduct the preservation of this precious portrait painting while considering the traditional portrait worship ceremony for the Tsai family.
5. Create a uniquely designed frame that takes into account the exhibition, shipping, and rotation between the original and replica paintings for the local museum without conservators or professional art handlers.

All these challenges needed to be completed simultaneously (figs. 2, 3).

Compared with many other traditional ancestral portrait paintings, the treatment of this painting was different and more difficult due to the coated layer of modern paint over the original mineral pigment. No one on the team had encountered a situation like this before (fig. 4).

Based on the previous research results (Lu and Shao 2017, 140–158), this artwork had been repaired at least twice before, and the newly applied modern paint on the surface was assumed to be polyurethane. According to the previous testing results and spot tests before practical treatment, as well as paint samples that were soaked and tested, a suitable solvent or treating method was not found (fig. 5).

However, during the process of removing the tapes, it was observed that the repainted areas reacted to ethanol after roughly 20 to 30 minutes. After the tapes were removed, the paint was softened and swelled slightly. Following surface cleaning and wet-cleaning of the repainted paint with pure water, different ethanol concentrations and various solvent application methods were tested. By observing the reflectiveness of the paint surface, it was possible to determine the appropriate time to remove the paint in this area (fig. 6).

Test results found that 95% ethanol in a vapor state was effective at softening the paint without dissolving it, which could cause smearing. A petri dish was used as a vapor chamber, with blotter paper holding the ethanol. After several



Fig. 3. NIR and raking-light images before treatment.

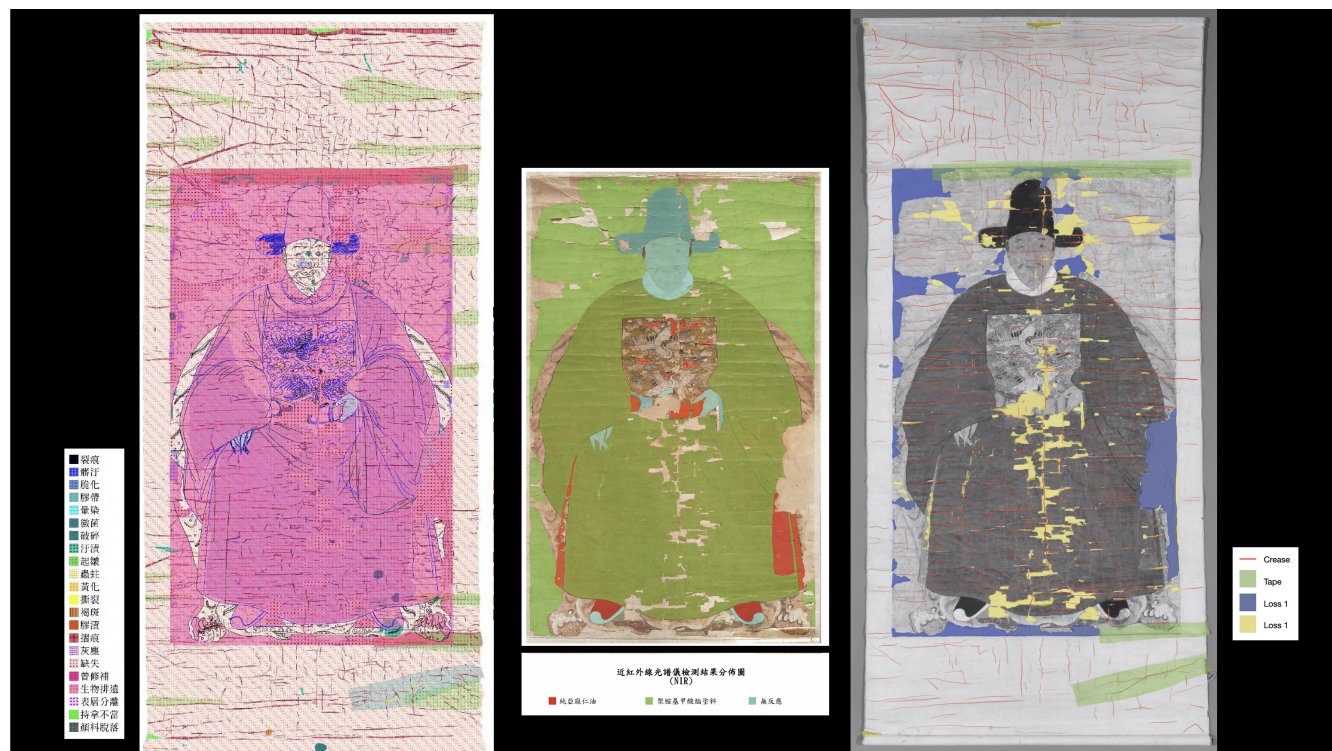


Fig. 4. Mapping of condition. The images on the right and middle are from the previous research report by Professor Lu and Shao in 2020. The middle image shows overpainted areas on the painting in green.



Fig. 5. Preliminary paint sample preparation and dissolving tests with different solvents.



Fig. 6. Overpaint dissolving tests in different concentrations of ethanol. In the lower left and right, the paint is dissolved and glossy on the surface indicating the effect of ethanol.

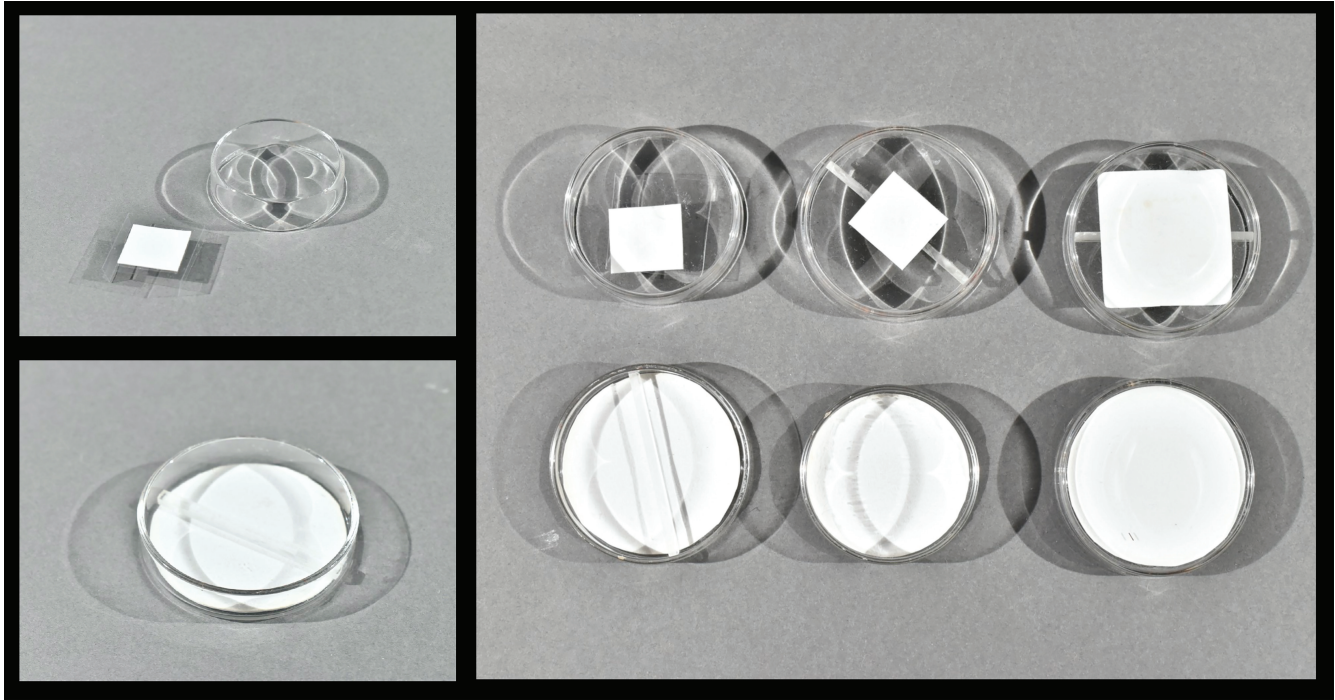


Fig. 7. Different types of lids were used for ethanol vapor in treatment.

improvements to the design, the effectiveness of the reaction apparently improved (fig. 7). During the paint removal, the waiting time for different areas varied—generally, 8 to 45 minutes. A cotton swab dipped in ethanol was then used to slowly and repeatedly remove the paint in a rolling manner. During removal, it was also necessary to avoid downward force, which would risk compressing the softened paint into the original pigment and paper fibers.

Eventually, the process revealed the painting's original beautiful red cinnabar color that had previously been observed under XRF analysis. And the detailed Ming Dynasty-style ink drawing lines that were previously only visible in IR images were at last revealed (fig. 8). This response to the Tsai family's inheritance record of this painting and the stories of their

ancestor Tsai Fu-Yi confirms the inferences of art historians on the creation period of this portrait (figs. 9, 10).

The repainted layer not only covered the original painting but also hardened the paper and caused the damage and curling conditions to become severe. After removing as much of the repainted surface as possible, ethanol was used to clean the repainted area several times. At this time, blotting paper placed below the painting was used to reduce residues of the modern paint underneath the painting. However, a small amount of paint remained in the pigment and paper fibers, which could be seen under ultraviolet inspection.

The remainder of the treatment process included removal of old backing layers, washing, adjusting the painting

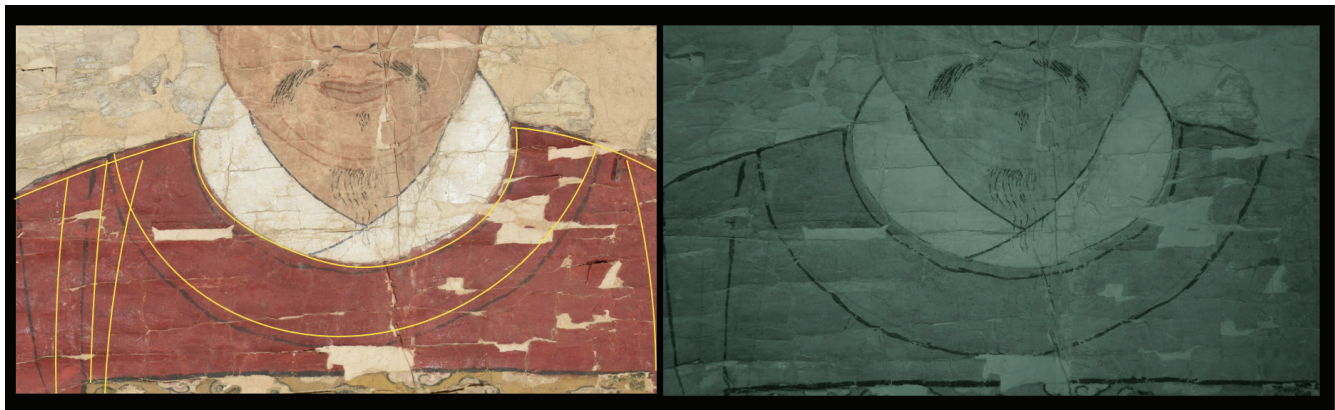


Fig. 8. Ming Dynasty-style ink drawing lines are revealed under the IR image. The yellow lines indicate the locations of those lines.



Fig. 9. Surface paint removal using cotton swabs. The original drawing lines appeared after the red overpaint was removed in the image on the right.

fragments to their correct positions, and re-lining. Acrylic-dyed pineapple-fiber paper was used to perform inlays from the front of the painting to replace lost areas of the portrait (fig. 11).



Fig. 10. The overpainted ink drawing lines (green arrow) were removed and then revealed the original lines (yellow arrow).

While the portrait was originally a hanging scroll, there were debates about remounting the painting in this format as continued rolling could result in the cracks lifting again. Initially, remounting the portrait in a screen format was considered a more appropriate option. However, after many discussions with the project committee, the painting was remounted into the same hanging scroll format as its original style but stored unrolled. Xuan paper was used as a decorative material, similar to the original mounting material, then two layers of pineapple-fiber Xuan paper were applied for backing to provide better strength for hanging.

A protective wooden frame was designed, made of a combination of two wooden lattice window boards, acid-free museum mat boards, and silk mounting fabric; the hanging scroll was set on the lower board. For display, only the upper board needs to be removed. If the painting needs to be rolled in the future, it can be easily removed from the display frame (fig. 12).

A cushioned wooden box was built, which can safely ship the painting long-distance from Taipei to Kinmen and move between storage and exhibition halls in the museum for exhibition rotations.

REPRODUCTION

The Tsai Fu-Yi portrait painting has unique historical value. It is likely the only Ming Dynasty ancestor portrait painting kept in private collections and still used in actual ancestor worship ceremonies in the Taiwan area.



Fig. 11. The treatment process of the painting. A: Backing paper removal. B, C: Lining paper removal. D: Adjusting the painting fragments. E: Lining. F: Infilling losses.

During the treatment period, this painting was designated a significant treasure under the Taiwanese Cultural Heritage Preservation Act. It is the first significant treasure of cultural heritage in Kinmen and has worthy meanings to the Tsai family and Kinmen. The Cultural Affairs Bureau of Kinmen

County provided extra government resources, with the expectation to preserve and display this painting and to continue the Tsai family ancestor worship traditions. Therefore, as required in the project, four reproductions were made after treatment: three returned to the Tsai family, and one retained for display rotation.

A professional reproduction team assisted us in scanning and printing the painting. A Cruse Synchron Table Scanner 4.0 CS295 and an EPSON SureColor P-9000 large-format printer were used to scan and print the reproduction paintings. The reproductions were mounted in traditional Chinese hanging-scroll format.

Every step of reproduction was carefully undertaken, and it initially seemed like the reproductions were perfect copies of the original.

An instructional session for the Tsai family was held in Kinmen to introduce and explain the conservation treatment process and to educate them on how to properly roll and unroll hanging scrolls. One reproduction painting was brought to the session as teaching material. More than 20 elder Tsai family members participated in the class, and all of them had seen the Tsai Fu-Yi painting when they were younger.

During the course, one of the family elders said to the others that the reproduced Tsai Fu-Yi seemed “chubbier” than what he remembered from childhood. Others

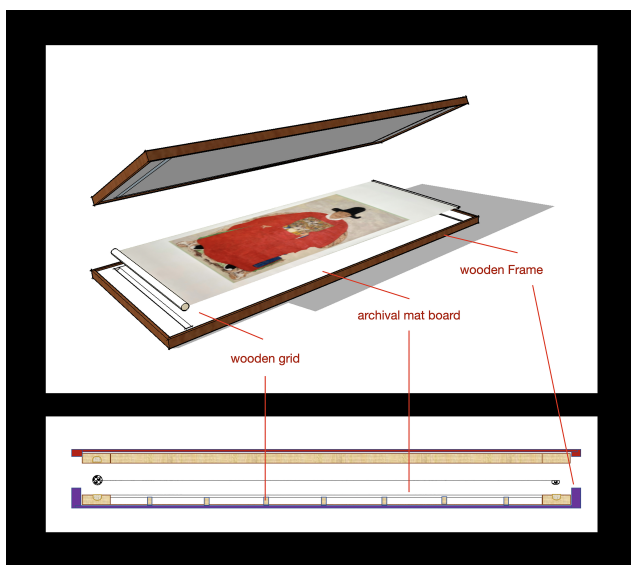


Fig. 12. Structure of the storage and display frame.



Fig. 13. Display of the reproduction of the Tsai Fu-Yi portrait painting.

reassured him it was because he hadn't seen the painting in so long and remembered it incorrectly. The reproductions are printed on machine-made paper. In this case, with the traditional Chinese wet-mounting process, the painting image swelled by about 0.9 to 1.4 cm overall. Thus Tsai Fu-Yi's face was in fact "chubbier"—it expanded by approximately 0.3 cm. The family elder had an incredible memory.

A different printing and mounting method was sought to prevent this distortion of the portrait. Digital editing of the images was considered, as well as reducing the water levels during the mounting process. Eventually a hot-mounting process was adopted and no dimensional changes occurred (fig. 13).

Paper-based artwork reproductions without wet processing were unfamiliar to the team. It is recommended to avoid the wet-mounting method for reproducing paintings. Digital calibration of the image before printing may also be an efficient way to reduce deformation. The aim was to represent the appearance of the artwork and to preserve people's memories and emotions.

MOUNTING AND DIMENSIONS

In the early stage of treatment, the authors uncovered pencil drawing lines under the mounting material on the edges of the painting. The authors postulated that the pencil lines may

have been drawn according to a traditional Chinese measurement system, the Luban Ruler.¹

The Luban ruler is a type of carpenter's ruler named after Lu Ban, a Chinese carpenter during the Zhou Dynasty. It is still commonly used today. Besides measuring distances, the Luban Ruler is divided into sections to indicate whether the measured distance is auspicious or not.

The window size marked by the original pencil lines indicated an "auspicious" measurement according to the Luban ruler, so the reproductions were remounted at this original size; thus, the mounting size of the original painting was enlarged to preserve and present the entire painting but also to align with this traditional custom (fig. 14). The size of the display frame and outer wooden box were all selected to accommodate the "auspicious" measurement. For ancestor portraits, conservation not only preserves its physical materials but also concerns traditional beliefs (fig. 15).

EXHIBITION

Beginning in February 2022, the restored Tsai Fu-Yi portrait painting was exhibited in his hometown, Kinmen. The original painting and reproduction were exhibited and rotated regularly in a newly designed, environmentally controlled gallery, along with related research and treatment information. The exhibit allows the public to appreciate this ancestor portrait hanging scroll (fig. 16).



Fig. 14. The Tsai Fu-Yi portrait painting was mounted in new dimensions and exhibited in Kinmen.



Fig. 15. Re-hanging the portrait painting for the worship ceremony in the Tsai ancestral hall.

CONCLUSION

Conservation of the Tsai Fu-Yi portrait painting revealed its original, beautifully ink-drawn lines and bright, cinnabar red color.

The Tsai family received an almost identical reproduction painting of the original to worship, reinstating the family ceremonies that were once interrupted. Descendants of the Tsai family and people in Kinmen can regularly visit the Tsai Fu-Yi exhibition to see the painting and learn about its conservation (fig. 17).

Through the conservation and reproduction of this portrait, the cultural significance and interest in the Ming Dynasty governor Tsai Fu-Yi has been renewed. Cultural activities relating to Tsai Fu-Yi will continue to be carried out by Tsai descendants and the people of Kinmen.

The Tsai Fu-Yi portrait painting was registered as a significant antiquity in 2020 by the Ministry of Culture of Taiwan. This conservation project connects not only art history research and conservation but also the government, cultural heritage, and residents.

ACKNOWLEDGMENTS

Cultural Affairs Bureau of Kinmen County, Taiwan
Liu-Bin Tsai, Descendant of Tsai Fu-Yi



Fig. 16. Rotation of the original hanging scroll and reproduction.

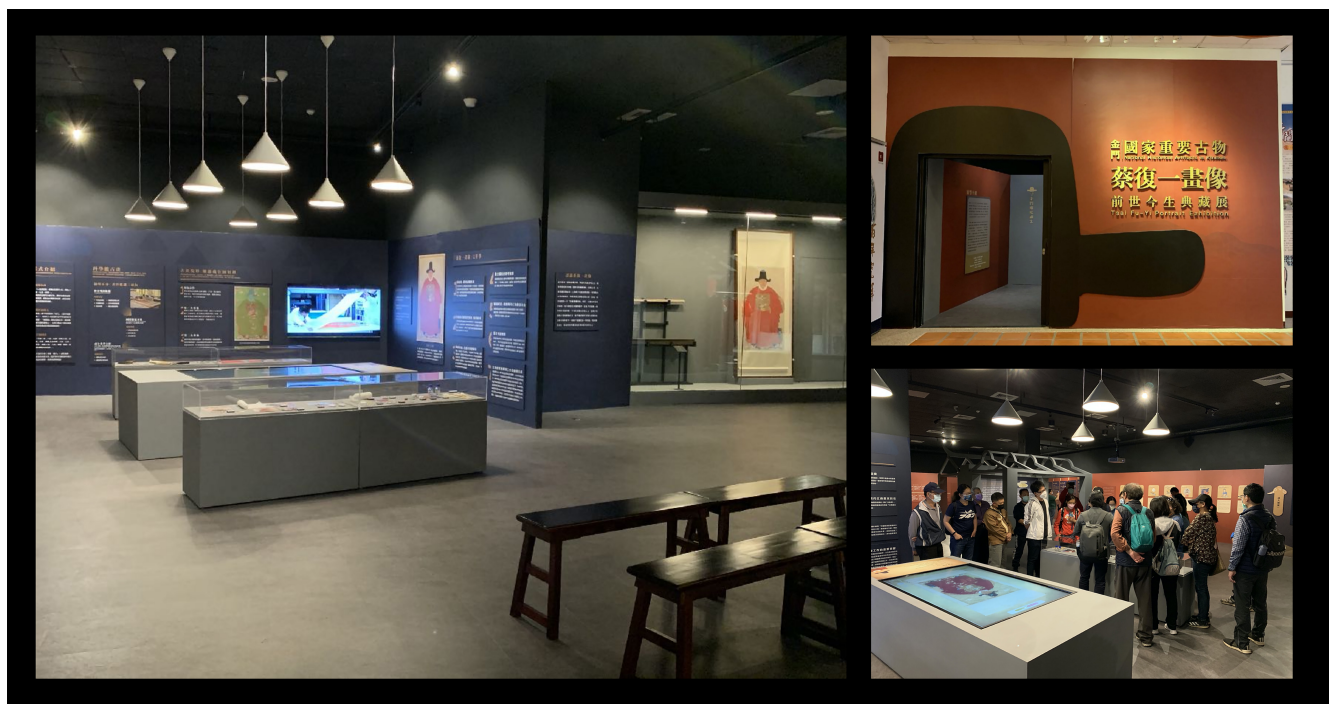


Fig. 17. Tsai Fu-Yi portrait exhibition in his hometown, Kinmen.

Tai-Kang Lu, Associate Professor, National Tainan University of the Arts

Chin-Wang Shao, Assistant Professor, National Taiwan University of Arts

Sun-Hsin Hung, Associate Curator, National Palace Museum, Taipei

PJ Chen, Research Assistant, National Taiwan Museum

Su-Fen Yen, Department Head, National Palace Museum, Taipei

Tsung-Wei Kuo, Conservator

Li-Ling Lin, Conservator

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NOTE

1. For further information on the Luban ruler, please see: Ruitenbeek, Klaas. 1993. *Carpentry and Building in Late Imperial China: A Study of the Fifteenth-Century Carpenter's Manual Lu Ban Jing*. Leiden; New York: E. J. Brill.

REFERENCE

Lu, Tai-Kang and Chin-Wang Shao. 2017. *The Research Report: Assessment of the Cultural Value of Tsai Fu-Yi Portrait Painting in Kinmen, Taiwan*. <https://cabkc.kinmen.gov.tw/asset?uid=75&pid=9>

FURTHER READING

Lu, Tai-Kang and Chin-Wang Shao. 2022. *The Vivid Look: A Study in Tsai Fu-Yi Portrait Painting, the significant antiquity of Kinmen, Taiwan*, Kinmen, Taiwan: Cultural Affairs Bureau of Kinmen County.

Tsai Fu-Yi Portrait Painting Introduction. "<https://cabkc.kinmen.gov.tw/asset?uid=75&pid=9>"

Tsai Fu-Yi Portrait Painting Treatment video. "<https://www.youtube.com/watch?v=vpkEyqRLgs>"

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