

臺灣木質彩繪文物修復填料之研究與應用

The Research and Application of Restoration Fillers in Taiwan Polychrome Wood Objects

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摘 要

木質彩繪文物之劣化可能藉由修復步驟減緩原件材料損毀的速度。修護人員使用的「修復填料」，能補足舊木質彩繪層及地仗層的缺失、加強榫接鬆動處及腐蝕後鬆軟的結構，提高整體外觀的一致性，使視覺上達到完整，是修護師維護保存文物重要的步驟。

修護材料於戶外氣候下往往面臨許多挑戰，因此施作於彩繪層上的填補材料之耐候性亦顯得相對重要。然而過去少有針對適合臺灣氣候與環境使用填料之研究，對於相關材料的配方與使用方式也缺乏系統性的紀錄。有鑒於此，本研究從修復填補材料在臺灣氣候的適用性出發，經文獻搜集與田野訪談後，選出四種填充材混合六種結合劑，各按照比例混合後，分別填補於闊葉木、針葉木以及壓克力材質的試板上作為樣本。

研究之試驗流程分為二階段，第一階段操作性測試後，篩選出 24 種配方、各 2 種濃度，並進入第二階段的 Q-UV 老化試驗；同時搭配現地大氣暴露試驗，以實際戶外環境檢驗並對照老化試驗之結果。經老化試驗的樣本，分別以顯微拍攝觀察，以及色差量測、接觸角、強度與 pH 值等，藉由各項檢測，歸納分析彩繪木質文物修復的適用填料和分級程度，期望提供一相對性的準則供修護人員操作時的參考。

關鍵詞：木質文物、修復填料、填補材料、彩繪層填補

Abstract

The degradation of artifacts can be slow down by restoration procedure through control the damage of the original material. The “Restoration Fillers” used by restorator can fill the lack of old painted layers and mantle layers, strengthen the loose joggle and the soft structure where are corrosion, improve the unity of the overall appearance, and make the visual complete. It is the important steps for the restorator to conserve artifacts.

Using restoration materials in outdoor climates will face with many challenges, so the weather ability of fill materials which applied to the painted layer become more important. However, the studies about fillers suitable for Taiwan’s climate and environment are rare, and the formulation and use of related materials did not record systematic. In view of this, this study starts from the applicability of the repaired filling materials in Taiwan’s climate. After the literature review and field interviews, four kinds of fillers are selected and mixed with six kinds of binders, which are mixed in proportions and filled in hardwood, soft wood and acrylic sheets as a sample for experiment.

The test process is divided into two phases, in the first stage, operating performance test was conducted and selected 24 formulations with 2 concentrations by using the evaluation scale for accelerated aging test which was performed in the second stage. At the same time, in order to increase the reliability of the test, local

atmospheric exposure tests were added to test the actual outdoor environment and be compared with the result of accelerated aging test. The applicable fillers and the grades of painted wood artifacts restoration were summarized and analyzed and expected to provide a relative criterion for restorator as a reference during the work.

**Keywords: Wood Artifacts, Restoration Fillers, Wood Artifacts
Fillers, Gap-Fillers, Infills, Fill Materials**