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Conserving History: Evaluating and Selecting Effective Restoration Methods for a Fragment Mural Painting from Amarna

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Abstract : In the present study, a comprehensive investigation has been undertaken into an Egyptian mural painting with feet wear slippers approach to choose the most successful restoration methods. The mural painting under examination dates back to the Amarna period; it was detached from a wall of an unknown tomb in Egypt, and currently, it is initially displayed in a showcase at the Egyptian Museum – Tahrir Square – Cairo, Egypt. The main objectives of this research were to (a) reveal the pigment used in the mural painting, (b) reveal the medium used with colours, (c) determine the technique of manufacturing, (e) determine the ground support, and (f) reveal the main deterioration aspects. The analytical techniques used for investigation were Optical Microscopy, Raman, X-ray Florescence, X-ray diffraction, and Fourier transform infrared coupled with attenuated total reflectance "FTIR-ATR". The investigation revealed that the vital deterioration factors affecting the object. This research aims to examine and analyze the mural painting to choose the suitable method for the restoration process (a) define the colours through comparative analysis to choose the suitable material for cleaning, (b) define the natural structure of the ground support layer, which appeared as mud layer (c) determine the medium used with colours (d) diagnosis the presence of the white wash layer, and (e) choose the suitable restoration methods according to the results. Conclusion: This study focused mainly on the physical and chemical properties of the mural painting compound and the main changes that happened to the mural painting material, which caused deterioration and fall down of the painting parts, so we can find the best and optimum restoration ways for this object.

Keywords : mural paintings, Tal Al-Amarna, digital microscope, Raman, XRF, XRD, FTIR
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