

## Characterization of Pigments in an Egyptian Icon

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**Abstract :** Icons are a significant group of cultural heritage objects that deserve to be maintained and conserved, as these icons are performed according to religious standards and norms. The ideal structure of icons is five strata, the lower layer is a wood plate, and the upper layer is the varnish layer that is exposed to photo-oxidation, that is turned into a fragile yellow layer. In addition, the components of the icons are important in dating these icons, so X-Ray Fluorescence (XRF), X-Ray Diffraction (XRD), and Scanning Electron Microscopy with energy dispersive X-ray spectroscopy (SEM-EDX) patterns were used. SEM-EDX pattern revealed that the red pigment was vermilion (HgS), that was used in the late period, with a slight difference from the synthesized pigment. Pigments were subjected to chromatic alteration due to different agents, such as microbial agents and pollutants, in particular SO<sub>2</sub>, whereas the pigment-based pigments are more sensitive. Moreover, cleaning, varnish removal, and retouching are important processes in the conservation of icons.

**Keywords :** conservation, cultural heritage, Egyptian icon, pigments

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