



Cairo University



# **The Use of Recent Methods and Materials for Dating, Treatment and Conservation of Triptych Coptic Icons Applied on A Selected Model.**

A Thesis Presented for the partial fulfillment of MA in  
Restoration & Conservation of Antiquities

Submitted by

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## abstract

The thesis investigates the dating, treatment, and conservation of Coptic triptych icons across five chapters. It explores icon techniques, key deterioration factors, and modern dating methods like radiocarbon (C-14) and electron spin resonance. Examination and analysis techniques, including microscopy and spectroscopy, help identify materials and date the artifact. An experimental study tests nanocomposites (TiO<sub>2</sub>, ZnO, Ag) with Klucel G through accelerated aging. The practical phase includes documentation, cleaning, consolidation with nanocomposite ZnO in Klucel G. This approach combines advanced scientific methods to preserve the icon.

## **Keywords**

- Triptych icons
- Dating
- Spectroscopic studies
- Pigments
- Radiocarbon
- Nano zinc oxide
- X-Ray diffraction
- Raman spectroscopy
- Consolidation
- Nanocomposites