

Study of the effect of various damage factors on the damage of the glass artifacts kept in historical stores and the methodology of treatment and conservation applied on the glass artefact kept in Museum of Islamic Art in Cairo

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Abstract:

Glass is a relatively stable material in the normal preservation environment, compared to other materials, as its rate of deterioration is somewhat slow, and does not appear clearly until long periods have elapsed. Because the impact of the different deterioration factors of glass effects varies according to conservation conditions, Therefore the research discusses the factors and causes of the damage of glass effects kept in historical stores.

The research presents a case study for the restoration of glass artefact preserved in the Museum of Islamic Art in Cairo, the aim of the research is to study the chemical composition of the artefact, its components, and the extent of its damage in addition, the restoration and storage operations were carried out. Therefore, many different examinations and analysis were used, including imaging with the portable optical microscope, scanning electron microscopy and analysis using scanning electron microscope provided with (EDX) unit and XRD analysis. Glass restoration and conservation operations have been carried out, including mechanical and chemical cleaning, assembly and completion of the missing parts. The storage process was carried out using materials that were mostly acid-free and in a supportive manner to preserve the impact during the storage process.

Key words:

Glass artefacts, Factors and aspects deterioration, corrosion of glass, Examination and Analysis, Treatment and conservation.