

Technical considerations for Electrorestoration in historical metal products

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Abstract:

Electrochemical restoration is considered a technique dealing with the treating of historical metal products and the repairing of the distortion occurred in them because of multiple factors and to achieve this, electrochemical formation processes are used with different metals, whether they are precious such as silver and gold and their alloys or non-precious as copper and its alloys by taking advantage of the unique properties of these metals.

Hence, the corrosion process has many problems and defects effect on historical metal products, that may cause visible distortion in the product.

Therefore, there are technical considerations affecting the quality of the electrochemical restoration process, which are represented in several factors related to precise control during the procedure as controlling the temperature of the solution, current density, and the concentration of metal ions in the solution..... and other factors.

Where the failure to pay attention to the control factors will lead to undesirable results in the part properties that is being restored, especially the mechanical and chemical properties.

So, the success of the electrochemical restoration process depends on the accuracy of attention to these technical considerations, and then obtaining the required technical specifications in the places that are being restored.

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research problem:

- the need to identify the most important different technical factors affecting the electrochemical restoration process of historical metal products.

research aim:

- is to develop a scientific methodology to determine the most important factors affecting the cathodic electrochemical systems for the restoration and treatment of historical mineral products by conducting the analytical study and knowing its methods and the most important solutions used in it and standing on the aesthetic, economic and environmental values added to the product.

Research Hypothesis:

That the precise control of the various parameters of the electrochemical restoration process achieves a great deal of accuracy in treating the deformations caused by the various corrosion agents in historical metal products.

Research Method:

The research follows the descriptive analytical method.

Keywords:

Electrochemical restoration, electrodeposition, Purification, polishes