

SELECTIVE CLEANING OF TARNISHED SILVER-BASED ARTEFACTS USING LOCAL ELECTROCHEMISTRY

Pleco as a dedicated tool addressed to conservation practitioners

20-21 June 2022

HE-Arc Conservation-restauration, Neuchâtel

DESCRIPTION

Electrochemical techniques are well suited to surface cleaning and stabilisation of metal objects. They are usually used in a global way by immersion.

The development, by the HE-Arc CR, of the Pleco, an electrolytic pencil equipped with an electrolytic cell whose solution is continuously renewed, opens new perspectives, and in particular the definition of the adapted parameters for the local cleaning and stabilization of metallic elements within composite objects containing in addition organic components (wood, leather, even textile...) as well as their implementation.

The proposed course will allow participants to review the basic knowledge of electrochemical techniques applied to the conservation of metal objects before discovering the possibilities of using Pleco.

Participants will be trained in the assembly of a Pleco and its use in the local cleaning of tarnished silver (gold or not). They will also have the opportunity to acquire their own self-made Pleco at the end of the workshop.

TARGET AUDIENCE

Conservators and conservation scientists



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TRAINER

Dr Christian Degrigny, lecturer/researcher at HE-Arc CR. After his engineering diploma in electrochemistry, he received his PhD in analytical chemistry. Since then, he is specialised in the use of electrochemistry in conservation science. He is one of the developers of Pleco and continues his optimization.

CONTENT

Theoretical sessions

- Review of the basics : metal in solution, Ecorr and its measurement, parameters influencing Ecorr, Pourbaix diagrams, etc.
- Artificial modification of the electrochemical behavior of metal objects by an external source of current : Linear sweep voltammetry and its application in conservation.

Practical sessions

- Ecorr measurement and parameters influencing Ecorr : application to the qualitative analysis of metal objects, use of Pourbaix and modified Pourbaix diagrams
- Electrolytic devices and setting up of treatment parameters, introduction to the use of a potentiostat
- Built up of a Pleco and introduction to its use.

COORDINATION

Hortense de Corneillan, conservator and teacher at the HE-Arc

FEE

CHF 550.-

Travel expenses and accommodation are supported by the participants

