

UNITÉ DE RECHERCHE DE LA HE-ARC CR

PLECO

A new electrolytic pencil for local treatment

The **PLECO** is an electrolytic pencil which has been designed to allow the local electrolytic cleaning of tarnished silver heritage items that cannot be immersed. It was developed in the frame of [St-Maurice project achieved in 2014](#) thanks to a close collaboration between the research unit in Conservation restoration of the Haute Ecole Arc (UR-Arc CR), EDANA team (Ergonomics, Design and Applied Anthropology) of the Haute Ecole Arc Ingénierie and FabLab Neuchâtel.

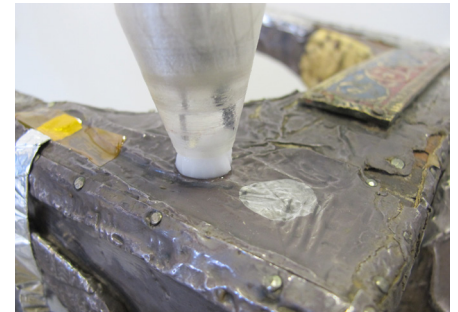
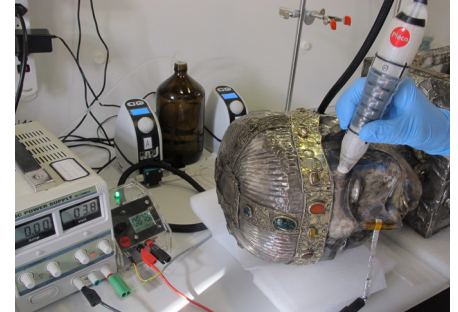
Its main innovation is the continuous supply and extraction of the treatment solution (electrolyte) to treat the metal surface (working electrode) using diaphragm pumps. The 3 electrodes cell at the tip of the Pleco is closed by a microporous pad, which is in contact with the metal surface to treat (working electrode) and which prevents any leakage of the electrolyte.

The PLECO is the result of a collaborative and open-source research approach. Anyone interested in the Pleco can build and improve its own PLECO in a FabLab from open access plan, or acquire it as a kit (<http://www.fablab-neuch.ch/pleco/plus.php?id=1>).

APPLICATIONS

The PLECO has been used to clean tarnished silver objects gilded or not such as the reliquaries of Saint-Maurice abbey and to stabilise lead seals suffering from active corrosion from the Historical Swiss Army Material Foundation.

The PLECO is currently used in the national museum of Slovenia, the National Museum of Scotland, the Wallace collection and the Rijksmuseum.



credit atelier abbaye de Saint-Maurice

FUNDING

Réseau de Compétences
Design et Arts visuels HES-SO

PROJECT LEADER

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PARTNERS

Haute Ecole Arc Ingénierie,
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DURATION

2014 - ongoing