ConNext

Conservation by the Next Generation

BOOK OF ABSTRACTS

Editors
Vincent Cattersel & Sophie Glerum

October 2025

University of Antwerp
Faculty of Design Sciences

ROYAL MUSEUMS
OF ART AND HISTORY

UNIVERSITY OF AMSTERDAM

The ConNext Conference is organised by

University of Antwerp
Faculty of Design Sciences

ROYAL MUSEUMS
OF ART AND HISTORY

UNIVERSITY OF AMSTERDAM

In collaboration with

HAWK
HAWK HOCHSCHULE
FÜR ANGEWANDTE
WISSENSCHAFT UND KUNST

Technology
Arts Sciences
TH Köln

FH;P
Fachhochschule Potsdam
University of
Applied Sciences

UNIVERSITY OF
LINCOLN

ipt
Instituto
Politécnico
de Tomar

ΠΑΝΕΠΙΣΤΗΜΙΟ ΔΥΤΙΚΗΣ ΑΤΤΙΚΗΣ
UNIVERSITY OF WEST ATTICA

A...kademie der
bildenden Künste Wien
Academy of Fine Arts Vienna

inp Institut national
du patrimoine

UNIVERSITY OF DELAWARE

WINTERTHUR

La Cambre

Introduction

We are thrilled to announce the fifth annual edition of the Conservation by the Next Generation digital student conference. With this edition of ConNext, we mark half a decade of sharing knowledge and curiosity in a global and accessible environment for emerging furniture, wood, and object conservators.

Over the past five years, we have seen ConNext grow beyond what we anticipated. What started as a small initiative between Belgian, Dutch, German, and UK-based partners has evolved into a trans-Atlantic partnership across thirteen conservation training institutes. Ever since the first edition in 2021, we have been consistently impressed by the quality of student presentations. Just like this year, the presentations of past editions of ConNext have covered a broad range of topics, from conservation ethics and degradation phenomena to experimental and out-of-the-box practical approaches. Indeed, the topics and angles may be diverse, yet the essence of art conservation resonates through and connects every single presentation.

Being an art conservator remains a privilege. We are usually among the first since the makers to truly have the opportunity and time to stand eye to eye with an object, collection, or tradition and to study it up close. It is in these moments that something remarkable happens: the multilayered spaces rooted in craftsmanship, traditions, meanings, time, and history gradually unfold through the combined branches of the natural sciences, the humanities, and the arts, creating a complex narrative for future generations. Curiosity, creativity, the ability to think beyond the conventional, and an open mindset to explore and experiment with novel technologies and methodologies lie at the heart of conservation practice. These qualities truly shine in the passionate ConNext presentations given by our next generation of emerging art conservators.
Don't take our word for it, but find out for yourself in this year's edition and on our ConNext YouTube channel, featuring over 100 student and keynote papers from all past editions.

The ConNext Team,

Vincent Cattersel (University of Antwerp) – Sophie Glerum (University of Amsterdam) – Shayne Rivers
Angelika Rauch (University of Applied Sciences Potsdam - FHP)
Henning Schulze (University of Lincoln - UoL)
Julia Schultz (University of Applied Sciences and Arts Hildesheim - HAWK)
Friederike Waentig and Andreas Krupa (Cologne Institute of Conservation Sciences – TH Köln – CICS)
Ana Bidarra (Polytechnic Institute of Tomar - IPT)
Amélie Méthivier and Pauline Chassaing (Institut National du Patrimone - INP)
Monika Kammer and Heike Winkelbauer (Akadamie der bildenden Künste)
Kathy Z. Gillis (Winterthur Museum, University of Delaware)
Andreas Sampatakos (University of West-Attica)
Friederike Waentig & Andreas Krupa (Cologne Institute of Conservation Sciences - CICS)
Marie Postec and Francisco Mederos-Henry (École Nationale Supérieure des Arts Visuels de La Cambre - ENSAV)

Watch past editions

CONNEXT – EDITION 2021	CLICK OR SCAN THE QR CODE
SESSION 1 – COATINGS AND SURFACES	
SESSION 2 – DEALING WITH THE ELEMENTS	
SESSION 3 – STATE OF THE ART	
SESSION 4 – OUT OF THE ORDINARY	
SESSION 5 – MUSICAL INSTRUMENTS	

CONNEXT – EDITION 2022	CLICK OR SCAN THE QR CODE
SESSION 1 – UNDERSTANDING OBJECTS	
SESSION 2 – MODERN MATERIALS	
SESSION 3 – RARE & PRECIOUS	
SESSION 4 – CONSERVATION CONVERSATION	
SESSION 5 – DECORATIVE SURFACES	

CONNEXT – EDITION 2023	CLICK OR SCAN THE QR CODE
SESSION 1 – DISASTER RECOVERY	
SESSION 2 – UNDERSTANDING AND TREATING WOODEN SUPPORTS	
SESSION 3 – BINDERS, ADHESIVES, AND CONSOLIDANTS	
SESSION 4 – UNDERSTANDING AND TREATING SURFACES	

CONNEXT – EDITION 2024	CLICK OR SCAN THE QR CODE
SESSION 1 – MIXED MATERIALS	
SESSION 2 – CLEANING	
SESSION 3 – HOLDING IT TOGETHER	
SESSION 4 – WOOD AND TEXTILES	
SESSION 5 – DECORATIVE SURFACES	

Contents

SESSION 2 – DECORATIVE TECHNIQUES

PROGRAMME **16**

SESSION 3 – CASE STUDIES

PROGRAMME **30**

SESSION 4 – POLYCHROMY

Notes

Session 1

TECHNOLOGIES

28 OCTOBER 2025

Notes

Programme

Session 1: Technologies

EDT: 2pm – 2:20 p.m GMT: 6 pm – 6:20 pm CET: 19:00 – 19:20 EET: 20:00 – 20:20	**KEYNOTE BY PAUL VAN LAAR RESEARCH ASSOCIATE – SCIENTIFIC RESEARCH AT THE FITZWILLIAM MUSEUM, CAMBRIDGE, UK**
EDT: 2:20 pm – 2:35 pm GMT: 6:20 pm – 6:35 pm CET: 19:20 – 19:35 EET: 20:20 – 20:35	**Hessan Barazandehpay (FHP)** From a vague idea to a concrete concept: 3D-based reconstruction of a lost ornament on a Hindeloopen Cradle (1760-1820).
EDT: 2:35 pm – 2:50 pm GMT: 6:35 pm – 6:50 pm CET: 19:35 – 19:50 EET: 20:45 – 20:50	**Noa Duijsens (UvA)** Digital Reconstruction of Fragmented Archaeological 17th-Century Silk Bed Hangings from the BZN17 Shipwreck: An Interdisciplinary Visualisation Approach.
EDT: 2:50 pm – 3 pm GMT: 6:50 pm – 7 pm CET: 19:50 – 20:00 EET: 20:50 – 21:00	**Q&A**
EDT: 3 pm – 3:10 pm GMT: 7 pm – 7:10 pm CET: 20:00 – 20:10 EET: 21:00 – 21:10	**BREAK**
EDT: 3:10 pm – 3:25 pm GMT: 7:10 pm – 7:25 pm CET: 20:10 – 20:25 EET: 21:10 – 21:25	**Maurus Franck (HAWK)** Digital Measuring and Surveying techniques – integration into day-to-day conservation and restoration practice.
EDT: 3:25 pm – 3:40 pm GMT: 7:25 pm – 7:40 pm CET: 20:25 – 20:40 EET: 21:25 – 21:40	**Nicolas Hannay (HAWK)** Removal of Oxide Layers on Brass Surfaces using Plasma-Activated Water.
EDT: 3:40 pm – 3:55 pm GMT: 7:40 pm – 7:55 pm CET: 20:40 – 20:55 EET: 21:40 – 21:55	**Johanna Püschner (HAWK)** Possibilities and Limitations of Selected Soldering and Welding Techniques in the field of Conservation.
EDT: 3:55 pm – 4:15 pm GMT: 7:55 pm – 8:15 pm CET: 20:55 – 21:15 EET: 21:55 – 22:15	**Q&A AND CLOSING REMARKS**

Hessan Barazandehpay

From a vague idea to a concrete concept

3D-based reconstruction of a lost ornament on a Hindeloopen Cradle (1760-1820)

KEYWORDS
Hindeloopen Cradle; Fragmentary Ornament;
Structured Light Scanning; 3D-Based Reconstruction; CNC Milling

FH;P Fachhochschule Potsdam University of Applied Sciences

This talk presents a reconstruction project on a Hindeloopen cradle, dated 1760–1820 and made of oak, housed at the Museum Europäischer Kulturen (MEK) in Berlin. A central carved ornament on one side of the cradle was partially lost, raising the question of how such a decorative element could be reconstructed ethically and accurately, using modern methods.

Through comparative visual analysis and the study of similar objects from Hindeloopen, both in museum collections and historical publications, it became evident that the ornaments on these cradles were typically mirrored along the longitudinal axis. This finding provided a solid foundation to use the intact ornament on the opposite side as a digital reference.

A structured light scanner was therefore used to capture the intact carving on the opposite side of the cradle without physical contact. Using software, the resulting 3D-mesh was processed, mirrored, aligned with the loss area, and digitally shaped to match the missing section. A CNC-compatible model was generated and subsequently milled in oak. Careful testing of milling parameters minimized the need for manual post-processing.

The presentation will focus on the practical workflow, from initial hypothesis to finished supplement, as well as on the ethical and technical implications of using digital tools in restoration methods. Particular attention will be paid to challenges such as ensuring reversibility, achieving material and formal accuracy, and justifying the light exposure caused by the scanning process within museum guidelines.

Rather than providing a one-size-fits-all solution, this project aims to offer insight into how 3D-scanning and CNC-milling can be integrated into conservation strategies, when traditional reconstruction methods reach their limits. The talk will also reflect on how digital workflows open up new possibilities for student conservators to document, model, and test projects of reconstruction and conservation with greater precision and flexibility.

hessan-barazandehpay[at]web.de

Top: Hindeloopen Cradle (1760–1820), oak, side view showing the missing carved ornament.
© Museum Europäischer Kulturen (Berlin, DE), Hessan Barazandehpay.
Bottom: Inserted CNC-milled wooden supplement, based on a digital reconstruction of the missing ornament on the Hindeloopen cradle.
© HAWK, Hessan Barazandehpay.

Noa Duijsens

Digital reconstruction of fragmented archaeological 17th-century silk bed hangings from the BZN17 shipwreck

An interdisciplinary visualisation approach

KEYWORDS
photogrammetry; gaussian splatting; BZN17 shipwreck; 17th-century silk; archaeological textile.

UNIVERSITY OF AMSTERDAM

This research presents an innovative documentation and imaging methodology for severely fragmented archaeological textiles. The study focuses on 34 silk textile fragments recovered from the 17th-century BZN17 shipwreck ('Palmhoutwrak') that was discovered near Texel and currently in the collection of the Huis van Hilde. It addresses the challenge of understanding and presenting highly deteriorated cultural objects, which often do not speak to the imagination of a non-expert audience.

The interdisciplinary approach involved examination of the fragments, including size measurements, weave structure, embellishments, and construction techniques against period visual sources, and surviving textile examples. This art historical research led to meaningful interpretations that identified the fragments as curtain panels and valances from a four-poster bed, making up luxurious furnishings that would have demonstrated significant social status.

Digital visualisation techniques were then applied to illustrate these interpretations while preserving the fragile materials. Photogrammetry and Gaussian splatting techniques created detailed 3D models of individual fragments, minimising physical handling and capturing fine structural details of the fragments' current state. This methodology demonstrates how computational approaches can complement established conservation practices. The digital reconstruction serves dual purposes: as rigorous research methodology and accessible public engagement tool. By visualising how severely degraded fragments once formed complete furnishings through an appealing reconstruction, the study bridges the gap between archaeological conservation and public understanding of material heritage.

This research contributes to textile conservation by establishing a scalable framework for archaeological textile reconstruction that prioritises object preservation while maximising research potential. The methodology addresses growing challenges in heritage conservation: how to study and present fragmented objects without compromising their material integrity. The results achieved with this case study demonstrate that digital reconstruction is a valuable approach for conservators when researching and presenting severely damaged textiles, offering new pathways for research, documentation, and public engagement while respecting conservation ethics and material limitations.

n.duijsens[at]gmail.com

Top – A selection of the BZN17 fragments. Inv. no.: top left: 6263-051; top middle: 6261-015; top right: 6263-102. All images courtesy of Huis van Hilde (Castricum, NL).

Bottom – Rendered images of the bed furnishings reconstruction.

Maurus Franck

Digital measuring and surveying techniques

Integration into day-to-day conservation and restoration practice

KEYWORDS
conservation – restoration, digital survey, photogrammetry, laser scanning, Structured-Light-Scanning

HAWK HOCHSCHULE FÜR ANGEWANDTE WISSENSCHAFT UND KUNST

The precise documentation and analysis of art and cultural objects is a key prerequisite for successful conservation and restoration measures. In recent years, digital measurement and surveying techniques – in particular photogrammetry, structured light scanning and laser scanning – have been used repeatedly for this purpose. This allows for efficient and largely contactless handling of art and cultural assets.

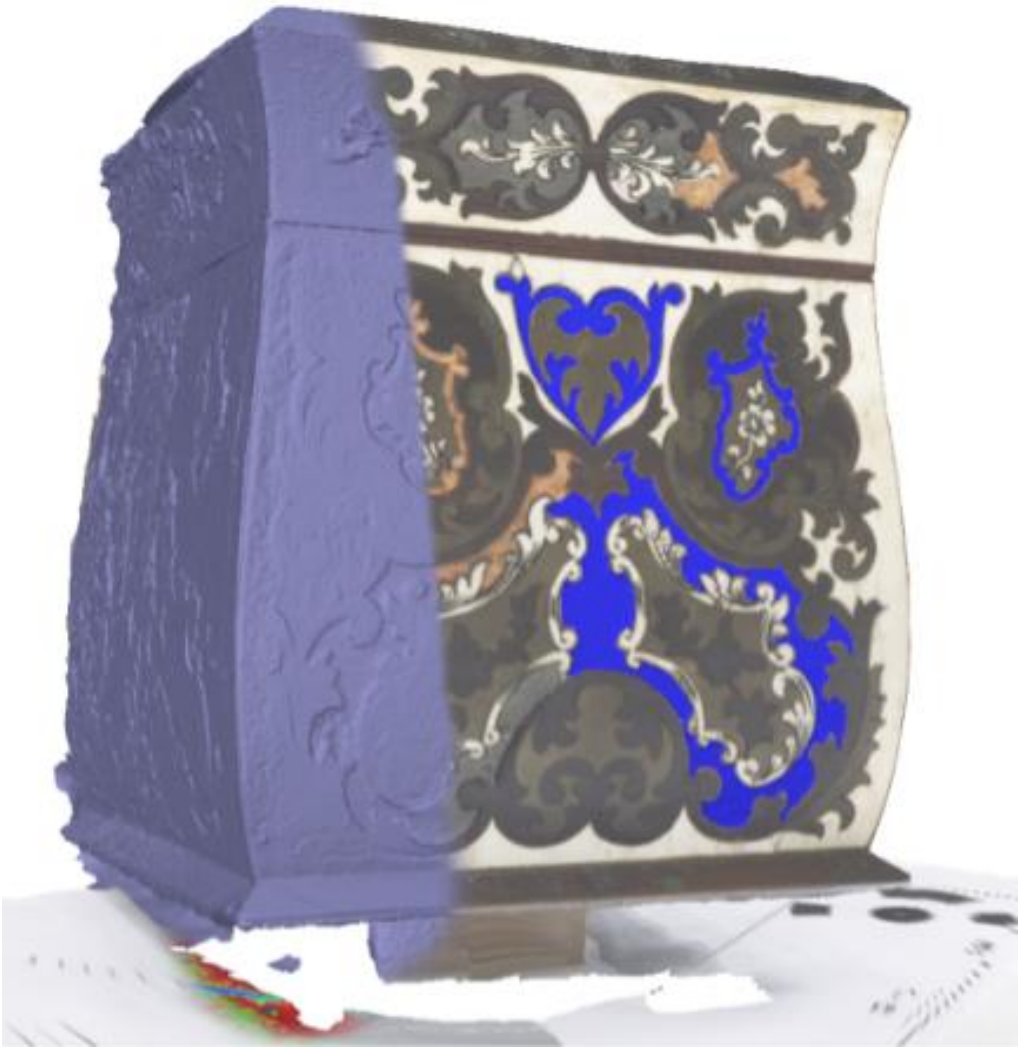
The presentation will provide an overview of the use of modern digital techniques in restoration and discuss their potential for capturing a wide variety of objects. The application of these techniques allows three-dimensional capture of art objects of various sizes and materials. The collected data not only supports the assessment and documentation of damage, but also allows preventive analyses and the development and evaluation of conservation and restoration measures.

Using examples from studies at HAWK in Hildesheim, the basic functionality and workflow of the various recording techniques, from data acquisition to integration into conservation or restoration measures, will be explained and compared in terms of their application, accuracy and possible limitations. The focus will be on two application examples:

- How photogrammetry can be used to restore damaged marquetry.
- How multiple digital measurement and surveying techniques can be used in tandem to create comprehensive digital documentation bases.

Digital measurement techniques offer a wide range of possibilities for conservation and restoration. Their integration into everyday restoration work is an important contribution to the preservation and research of cultural heritage.

maurus.franck[at]web.de



A composite view of a digital reconstruction effort of a small chest with metal and ivory inlays.
© HAWK Hildesheim, Schloss Fasanerie (Fulda, DE; inv.no.: FAS M 2169), Maurus Franck.

Nicolas Hannay

Removal of oxide layers on brass surfaces using plasma-activated water

KEYWORDS
plasma-activated water (PAW); plasma-activated hydrogel (PAH); brass; oxide layer; corrosion

HAWK HOCHSCHULE FÜR ANGEWANDTE WISSENSCHAFT UND KUNST

This presentation focuses on the work carried out during my master's thesis, "Removal of Oxide Layers on Brass Surfaces using Plasma-Activated Water (PAW)."

The removal of oxide layers on historical objects must be thoroughly evaluated due to the stress and potential risk of eliminating original material. Traditionally used methods of oxide removal all come with certain advantages and disadvantages. Recent findings regarding the removal of oxide layers on silver using gaseous plasma, along with promising initial results with PAW during my bachelor's thesis, prompted my investigation into whether plasma-activated water could be successfully applied to brass, a metal commonly found on furniture (e.g. Boulle marquetry).

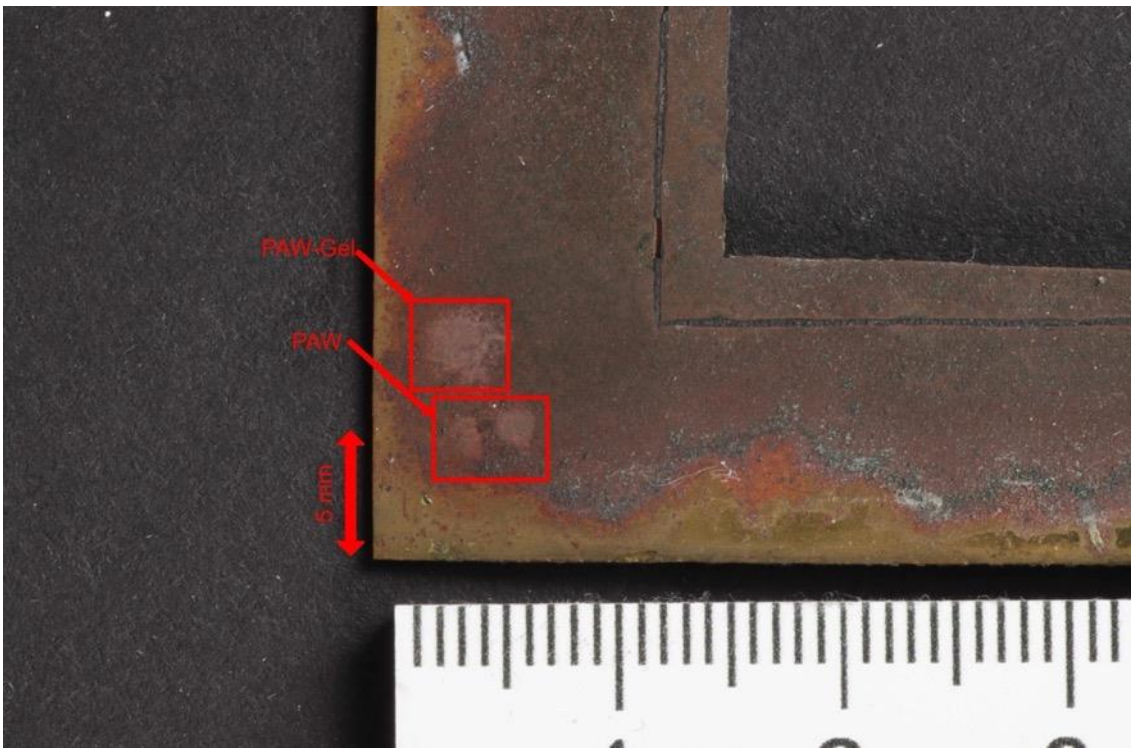
PAW is generated by treating demineralised water with gaseous plasma, enriching it with positively charged ions leading to the formation of Reactive Oxygen and Nitrogen Species (RONS). These RONS then react with the surfaces to which PAW is applied. PAW is used in medicine as a disinfectant and due to its wound-healing properties and in agriculture as a pesticide and fertilizer.

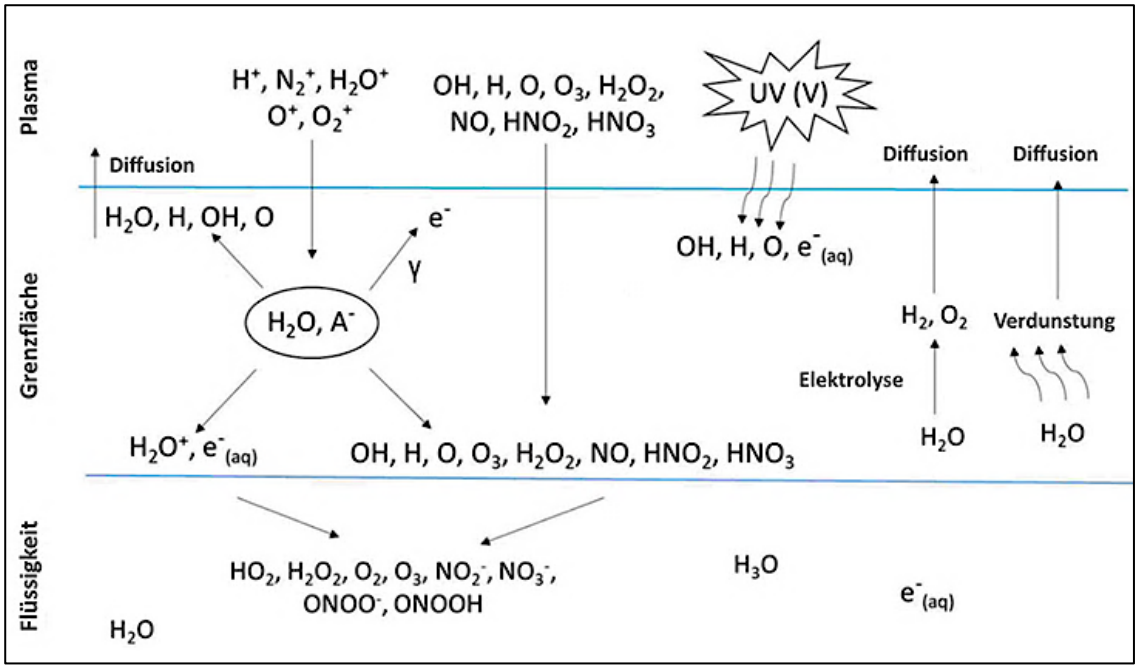
The thesis aimed to evaluate PAW's cleaning effect on both artificially aged samples and historical objects to determine if PAW could be a potential medium to remove oxide layers in the context of conserving furniture. In addition, comprehensive investigations were conducted into PAW's pH stability and explored the potential for producing Plasma-Activated Hydrogels (PAH) to enable more targeted application. The evaluation was based on the measurement of colour and gloss.

PAW treatments resulted in a high gloss and brightening of the surfaces, which suggested the removal of dull, overlying oxide layers. However, the original tone of the brass could not be achieved in any case. The surfaces remained redder and changed significantly a□er treatment. pH analyses confirmed PAW's stability in closed, dark containers, while storage exposed to air or at elevated temperatures caused a decrease in pH.

Due to the strong colour differences after treatment, the ongoing changes to the surface, and the risk of acidic residues, PAW cannot currently be recommended for removing oxide layers in restoration. However, its corrosion-removing properties open up potential applications in the (pre-)treatment of metals.

nichannay[at]gmail.com





Top: Marqueterie after the application Plasma-activated Water and Plasma-activated Hydrogel
Bottom: Schematic Representation of Reactions in PAW Production
All images © HAWK, Nicolas Hannay.

Johanna Püschner

Possibilities and limitations of selected soldering and welding techniques in the field of conservation

KEYWORDS
soldering; welding; laser;
arc welding; brazing

Metals have been worked and processed for thousands of years. Over time, this has resulted in the creation of many historic art objects (e.g. furniture), often combining different materials. Today, the metal components exhibit a variety of phenomena, including fractures and cracks. In some cases, the preservation of the objects depends on reconnecting these separated components.

Such problems are encountered on a daily basis in conservation and restoration. Research is constantly being conducted to determine which methods are most suitable and gentlest for the objects. The preferred option is gluing, but this is not always applicable. For example, if the adhesive does not provide the required stability due to static problems. The question arose as to what extent brazing, a technique used for thousands of years to join metal parts, and new technological advances such as arc welding and laser beam welding are applicable to such problems. The individual methods were researched and their theoretical principles listed. In the practical section, test strips of new and historical brass, iron, and silver were broken and rejoined using the three methods.

All three techniques were able to successfully reconnect the individual parts. The soldering process negatively altered the surface of all metals except silver due to the high heat exposure over a large area. This was most noticeable on the historical metals. The stripping required by the process further exacerbated this phenomenon. Neither arc welding nor laser beam welding caused any negative changes to the surface. Laser beam welding was even gentler and easier to use.

Consequently, laser beam welding is the best option and can be used in all cases. Arc welding is also excellent, with only minor negative points. Soldering is only suitable for specific objects and certain problems.

johanna.pueschner[at]t-online.de

Page intentionally left blank

Notes

Session 2

DECORATIVE TECHNIQUES

11 NOVEMBER 2025

Notes

Programme

Session 2: Decorative Techniques

EDT: 1pm – 1:20 p.m GMT: 6 pm – 6:20 pm CET: 19:00 – 19:20 EET: 20:00 – 20:20	**KEYNOTE BY AVALON DISMUKES** **MATERIALS ANALYTICAL CHEMIST, INDEPENDENT RESEARCHER**
EDT: 1:20 pm – 1:35 pm GMT: 6:20 pm – 6:35 pm CET: 19:20 – 19:35 EET: 20:20 – 20:35	**Milena Deutsch and Viktoria Veitenhansl (HAWK)** Reconstruction and consolidation methods for glue-based coloured inlays on 19th century furniture.
EDT: 1:35 pm – 1:50 pm GMT: 6:35 pm – 6:50 pm CET: 19:35 – 19:50 EET: 20:45 – 20:50	**Vadim van Meenen (UA)** Eternal mother-of-pearl: research and conservation of a rare seventeenth-century European lacquer technique on a table for Louis XIV.
EDT: 1:50 pm – 2 pm GMT: 6:50 pm – 7 pm CET: 19:50 – 20:00 EET: 20:50 – 21:00	**Q&A**
EDT: 2 pm – 2:10 pm GMT: 7 pm – 7:10 pm CET: 20:00 – 20:10 EET: 21:00 – 21:10	**BREAK**
EDT: 2:10 pm – 2:25 pm GMT: 7:10 pm – 7:25 pm CET: 20:10 – 20:25 EET: 21:10 – 21:25	**Nina Dijkstra (UvA)** “Black and shining, and pleasing to the eye” Black chemical stains on Dutch 17th century ebony furniture.
EDT: 2:25 pm – 2:40 pm GMT: 7:25 pm – 7:40 pm CET: 20:25 – 20:40 EET: 21:25 – 21:40	**Anton Waldt (HAWK)** Exploring Materials and Modifications: Conservation of a 19th-Century Cabinet from Marienburg Castle in Germany.
EDT: 2:40 pm – 2:55 pm GMT: 7:40 pm – 7:55 pm CET: 20:40 – 20:55 EET: 21:40 – 21:55	**Carolina Pause (FHP)** A tea caddy 'à la mosaïque' - Roentgen or not Roentgen?
EDT: 2:55 pm – 3:15 pm GMT: 7:55 pm – 8:15 pm CET: 20:55 – 21:15 EET: 21:55 – 22:15	**Q&A AND CLOSING REMARKS**

Melina Deutsch &
Viktoria Veitenhansl

Reconstruction and consolidation methods for glue-based coloured inlays on 19th century furniture

KEYWORDS
animal glue; coloured inlays; 19th century furniture; consolidation; imitation materials

The examination of two objects from the Marienburg Castle near Pattensen (Germany) revealed that coloured inlays based on animal glue, fillers and dyes were used to imitate expensive materials such as ivory, mother-of-pearl and tortoiseshell. Today they have a characteristic damage pattern with cracks, warping's and losses. To prevent further material losses, it is necessary to develop a suitable consolidation method. This required further knowledge about the composition and historical manufacturing methods of the inlays.

Material analyses (ATR-FTIR, XRF) and solubility tests combined with heat identified animal glue as the main component. Research into historical recipes from the 19th century, the objects' period of origin, provided further information about possible fillers and dyes. Based on these recipes the coloured inlays were recreated. The selected recipes specifically described the manufacturing of imitation materials using animal glue or gelatine. Consulting these sources provided a deeper insight into the functions and historical applications of the imitation materials. The reconstruction resulted in a range of imitations of ivory, mother-of- pearl and tortoiseshell, each produced using different ingredients and methods, leading to varying degrees of resemblance to the original materials. The successful recreation of coloured inlays, achieved by modifying an ivory recipe, further enhanced the understanding of the ingredients and processing steps relevant to their application in furniture making.

Based on this knowledge, test samples were produced to investigate possible consolidation methods. The coloured inlays are moisture and heat sensitive, but these parameters are necessary to make the brittle material more flexible to minimise the risk of further breakages during consolidation. Different combinations of heat and moisture supply were tested. To evaluate the success of the methods, mainly visual methods were used. The test samples were examined in VIS, UV and grazing light to observe any possible changes. In addition, the surface was examined microscopically, and crack widths were measured. The fragments of the samples were tapped to detect cavities acoustically. The most promising method seems to be the combination of working with indirect heat and moisture using an infrared lamp and a humidity chamber.

deutsch.mil[at]gmail.com – v.veit@protonmail.com

Top: Detail of a cabinet on stand with coloured inlays, 19th century.
© Marienburg Castle Foundation, inv. no.: 0154; Milena Deutsch.
Bottom: Detail of a secretary with coloured inlays, 19th century,
© Marienburg Castle Foundation, inv. no.: 1517; Julian Witthaut

Vadim van Meenen

Eternal mother-of-pearl

Research and conservation of a rare seventeenth-century European lacquer technique on a table for Louis XIV

KEYWORDS
European lacquer; mother-of-pearl; consolidation; reconstruction; 17th-century furniture

University of Antwerp
Faculty of Design Sciences

In 2022, the City of Antwerp and the Flemish Heritage Board requested the University of Antwerp to investigate the degradation phenomena affecting a rare decorative lacquer technique on a seventeenth-century display table from the former collection of Ridder Smidt Van Gelder. The table was commissioned in 1663 by the young French king Louis XIV and executed by ébéniste Pierre Gole for his residence at the Château de Vincennes. Since surviving the devastating fire in Museum Smidt Van Gelder in Antwerp (1987), the table has been preserved in the depot facility of the City of Antwerp.

This table is remarkable for its combination of exotic materials and rare decoration techniques. Both the tabletop and the base are richly embellished with faunal and floral motifs, painted on parchment placed beneath a sheet of transparent horn. The most visually striking decorative technique of the table is a rare European imitation of Japanese raden lacquerwork, in which irregular fragments of mother-of-pearl are embedded in a matrix of black lacquer; the so-called lacque burgauté.

As part of the Belgian Science Policy FED-tWIN HOME-AGE project, a master's thesis project was developed within the Conservation-Restoration program at the University of Antwerp to address this question. This research project consisted of a two-part study: (1) a material-technical study of the table and the lacquerwork, and (2) an evaluation of potential consolidants and techniques to determine the optimal consolidation method for the lacque burgauté.

Research into the optimal consolidation method began with an extensive literature review on consolidation materials and techniques for historic lacquerwork. Based on this review, three natural and four synthetic consolidants were selected. These were then tested and compared on reconstructions of lacque burgauté in order to evaluate material compatibility, adhesive strength, elasticity and penetration capacity. Based on the research results and a test consolidation, it was concluded that 15% sturgeon glue, with the addition of funori, demonstrated the most favourable properties within the evaluated parameters, and was therefore preferred as the consolidant for the delaminated lacquerwork on the table. This talk will shed light on the results of the material-technical study, as well as the evaluation process undertaken to select the optimal consolidant for this treatment.

vadimvanmeenen@hotmail.com

Top: Display table made by Pierre Gole in 1663 for the French king Louis XIV for his residence at the Château de Vincennes. © De Peuter fotografie, City of Antwerp – Collection Smidt Van Gelder, inv. no.: SM_0720.
Bottom: Detail of the delaminated lacque burgauté (Dino-Lite image, 25x).
© University of Antwerp, Vadim Van Meenen

Nina Dijkstra

"Black and shining, and pleasing to the eye"

Black chemical stains on Dutch 17th century ebony furniture

KEYWORDS
ebony; furniture; chemical stains; X-Ray Fluorescence (XRF)

UNIVERSITY OF AMSTERDAM

During the Dutch 17th century, black was one of the most fashionable colours: the upper classes dressed in black and filled their houses with black furniture. The most luxurious choice of wood for this purpose was ebony, which has long been esteemed for its naturally deep black and shiny appearance. One such ebony object is a 17th century cabinet by Herman Doomer from the collection of the Rijksmuseum in Amsterdam. During its restoration conservators discovered – aided with XRF – that the ebony veneered surfaces had been treated with an iron containing black stain. As this stain was also present in areas that had not been touched since the inception of the cabinet, it is likely that it is original to object. This was unexpected, as it has been suggested that ebony received hardly any surface treatment at all in the 17th century. This present research deals with the question whether other Dutch 17th century ebony furniture may also have been stained to enhance the black colour of the ebony, or if the Rijksmuseum cabinet is unique in its surface treatment.

To answer this question ten objects from the Rijksmuseum collection were selected. On each of these three to nine spots on the ebony surfaces were measured with handheld XRF. The results of this survey showed that there were nine measurements spread over five objects that suggested the presence of iron sulphate, and three measurements on one other object suggesting the presence of copper sulphate. Iron sulphate is found in many black stain recipes and could therefore indicate the presence of an iron containing black stain on these objects. The copper sulphate cannot at present be linked to a black stains but may still indicate some chemical treatment of the ebony surface. However, due to the limitations of this research these results remain tentative and further research will be necessary. This survey may serve as a starting point for future research on chemical stains on ebony. This future research may provide further insights not only into the practical processing of ebony, but also into 17th century attitudes towards luxury materials in general.

ninadijkstra[at]live.nl

Top: Kast, Herman Doomer, 1632, Rijksmuseum Amsterdam (inv. no. BK-2020-1).

Anton Waldt

Exploring materials and modifications

Conservation of a 19th-century cabinet from Marienburg Castle in Germany

KEYWORDS cabinet on stand; 19th-century furniture; composite material consolidation; XRF- and FTIR-spectroscopy

HAWK HOCHSCHULE FÜR ANGEWANDTE WISSENSCHAFT UND KUNST

This presentation will focus on the conservation and restoration of a 19th-century cabinet, undertaken over three semesters as part of the bachelor's programme at HAWK Hildesheim, in collaboration with three fellow students. The object originates from Marienburg Castle near Pattensen (close to Hanover) and is part of the art and cultural heritage of the collection from the Welf family. It is specifically linked to King George V of Hanover and Marie of Saxe-Altenburg, as evidenced by their coats of arms displayed at the centre of the cabinet's doors. The terminus post quem for the cabinet is likely 1843, corresponding to the year of their marriage.

The uniqueness of this cabinet lies in the exceptional variety of materials and craftsmanship: alongside various imitation materials, it features inlays, marquetry, bead embroidery, plaster and metal elements, wave mouldings, carvings, and woodturning. This diversity posed a range of conservation and restoration challenges. Moreover, examination of the lower section revealed numerous indications of previous modifications.

The overall aim of the project was to conserve and restore the cabinet for its intended future exhibition at Marienburg Castle. To achieve this, cross-section analysis, XRF- and FTIR-spectroscopy, and visual-structural examination were conducted to document materials, construction, and later modifications. Based on the findings, a conservation and restoration concept was developed and subsequently implemented.

Our work focused on the material-appropriate dry and wet-cleaning, securing of loose parts, with particular attention devoted to the treatment of the delicate white inlays on the cabinet doors. Restoration measures included targeted thinning of the varnish and reconstruction of missing elements in order to preserve the cabinet’s legibility and visual coherence.

This presentation showcases strategies for dealing with multi-material objects and highlights not only practical approaches, but also raises further questions, offering a foundation for subsequent investigations and interdisciplinary exchange.

antonwaldt[at]live.de

Nineteenth century cabinet, front view.
© Marienburg Castle, inv.no.: 0154; Anton Waldt.

Carolina Pause

A tea caddy 'à la mosaïque'

Roentgen or not Roentgen?

KEYWORDS
tea caddy box; David Roentgen; marquetry;
à la mosaïque; dendrochronology

FH;P
Fachhochschule Potsdam
University of
Applied Sciences

Boxes attributed to the Roentgen workshop are highly sought after. One such box, which is decorated using the 'à la mosaïque' marquetry technique and dating to around 1768–1780, was examined as part of this bachelor's thesis to determine its position within Roentgen's body of work. 'À la mosaïque' describes a technique made famous by David Roentgen, in which motifs are sawn into millimetre-thin sections and stained in three shades, mostly blue, to create shadows and depth.

This talk will present the findings derived from various examination approaches, including art-historical comparisons, technological examinations, and non-destructive analyses. 3D digital microscopy was used to identify the wood. Materials such as wood stains, coatings and metals were detected using FTIR, mobile XRF, UV-Vis and Raman spectroscopy. Computed tomography scans provided information about the construction. Dendrochronological analysis was used to determine the age and origin of the oak substrate. A brief description of the marquetry technique and its manufacturing process will also be provided. A box of the Roentgen workshop with a similar marquetry design from the Cologne City Museum (Stadtmuseum Köln) was examined closely using a range of comparative techniques. The results of the investigation are compared with those of other Roentgen objects, evaluated and presented.

carolina.pause[at]gmail.com

Front view of the box © FH Potsdam, Carolina Pause.

Session 3

CASE STUDIES

25 NOVEMBER 2025

Programme

Session 3: Case Studies

EDT: 1pm – 1:20 p.m GMT: 6 pm – 6:20 pm CET: 19:00 – 19:20 EET: 20:00 – 20:20	**KEYNOTE BY MECKA BAUMEISTER** **CONSERVATOR, OBJECTS CONSERVATION THE METROPOLITAN MUSEUM OF ART, NEW YORK**
EDT: 1:20 pm – 1:35 pm GMT: 6:20 pm – 6:35 pm CET: 19:20 – 19:35 EET: 20:20 – 20:35	**Carl Maggaro (Winterthur/UoD)** Balancing Ethics, Evidence, and Interpretation: Varnish Treatment & Removal from a Late 18th-Century Cabinet.
EDT: 1:35 pm – 1:50 pm GMT: 6:35 pm – 6:50 pm CET: 19:35 – 19:50 EET: 20:45 – 20:50	**Helena-Sophie Weßling (FHP)** Cleaning of soot on wood using laser technology: Comparative analysis of parameters on different coatings and wood species.
EDT: 1:50 pm – 2 pm GMT: 6:50 pm – 7 pm CET: 19:50 – 20:00 EET: 20:50 – 21:00	**Q&A**
EDT: 2 pm – 2:10 pm GMT: 7 pm – 7:10 pm CET: 20:00 – 20:10 EET: 21:00 – 21:10	**BREAK**
EDT: 2:10 pm – 2:25 pm GMT: 7:10 pm – 7:25 pm CET: 20:10 – 20:25 EET: 21:10 – 21:25	**Aspasia Kopsida (UniWa)** Investigation of construction technology and later alterations of a 19th-century Comtoise longcase clock.
EDT: 2:25 pm – 2:40 pm GMT: 7:25 pm – 7:40 pm CET: 20:25 – 20:40 EET: 21:25 – 21:40	**Sarah Fernandes (INP)** Study and Conservation-Restoration of a Wooden Scale Model of the Steam Engine from the Warship Algésiras (1853–1855), held at the French National Maritime Museum in Paris.
EDT: 2:40 pm – 2:55 pm GMT: 7:40 pm – 7:55 pm CET: 20:40 – 20:55 EET: 21:40 – 21:55	**Miriam Courelas (IPT)** From the Factory to the Conservation and Restoration Laboratory: The Journey of a Zoological Anatomical Model.
EDT: 2:55 pm – 3:15 pm GMT: 7:55 pm – 8:15 pm CET: 20:55 – 21:15 EET: 21:55 – 22:15	**Q&A AND CLOSING REMARKS**

Carl Maggaro

Balancing ethics, evidence, and interpretation

Varnish treatment and removal from a late 18th-century cabinet

KEYWORDS
furniture; surface finish; Py-GC-MS;
decision making; varnish

This presentation examines the ethical decision-making process behind the treatment and removal of degraded varnish from a late 18th-century cabinet treated at Winterthur Museum, Garden, & Library.

The cabinet, likely used during the Transatlantic Slave Trade, features internal drawer labels referencing major trade ports, indicating its probable use in documenting the exchange of goods, including enslaved individuals. With a proposed interpretation focusing on how functional furniture contributed to the shaping of early America, the object was selected for display one of the museum's period rooms. Prior to treatment, the cabinet exhibited significant surface degradation: cleaved and embrittled finish, accretions, surface blooming, and wear-related losses. The condition compromised both the visual unity of the piece and its ability to support its interpretive narrative. However, the removal of original or historic finishes carries substantial ethical implications, particularly for objects with charged histories.

To inform conservation decisions, collaborative discussions between conservation and curatorial teams were grounded in material evidence. Scientific analysis including UV-induced fluorescence imaging, reflected light microscopy, Fourier transform infrared spectroscopy (FTIR), and pyrolysis gas chromatography-mass spectrometry (Py-GC-MS) was conducted to characterize the varnish and investigate the finish layering chronology of the cabinet's upper and lower sections. Ultimately, the decision to remove the degraded varnish was made to enhance the cabinet's interpretive clarity, supported by evidence indicating that the layers had likely been applied later in the object's life. This case highlights the importance of interdisciplinary collaboration and technical analysis in navigating ethical conservation choices, especially for objects linked to difficult histories.

carl.magarro[at]gmail.com

Top: Upper cabinet, front view, closed, before treatment.
Bottom: Upper cabinet, front view, closed, after treatment.

Helena-Sophie Weßling

Cleaning of soot on wood using laser technology

Comparative analysis of parameters on different coatings and wood species

KEYWORDS
wood restoration; laser technology;
soot; laser cleaning

FH;P
Fachhochschule Potsdam
University of
Applied Sciences

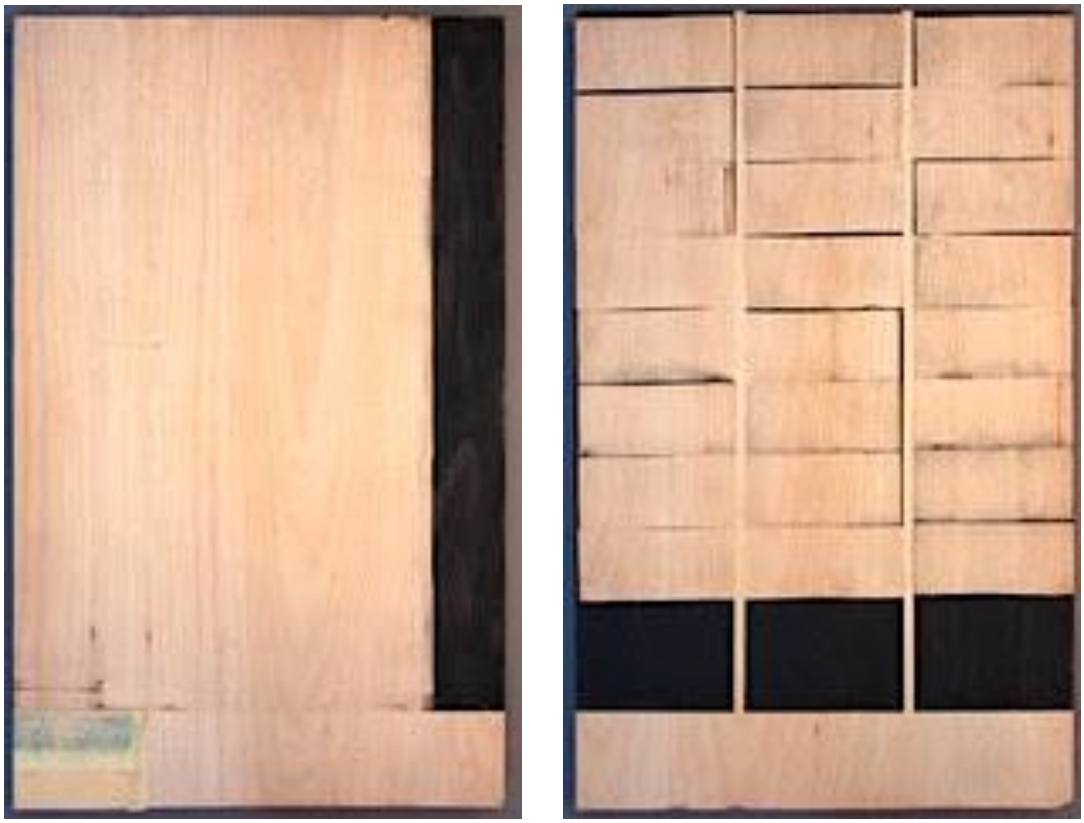
Laser technology has been an established cleaning method in stone restoration since the 1970s. The removal of soot on wooden surfaces because of a fire requires a very specialized cleaning concept and has not been part of many studies so far.

In this talk the suitability of laser technology for the removal of soot will be discussed and evaluated. As part of my bachelor's thesis tests have been carried out on three different historically used coating systems (oil, wax, shellac). Each coating was applied to two different types of wood (maple and walnut) using sample panels.

Lasering was performed using a CL50G-BRP low-power laser system. Small test areas were used for pre-selecting parameters by trial and error, to determine the optimal combination. These findings were then transferred to larger areas. The results of the laser treatment were evaluated using a multifaceted approach encompassing a range of assessment criteria. These criteria were derived from both experiential and scientific principles, thereby ensuring a comprehensive evaluation of the findings. Assessments included straightforward methods such as testing soot remnants by running a finger over the sample area, as well as colour measurements by spectrophotometry.

The aim of the study was to provide conservators with practical recommendations on cases in which laser cleaning can be considered for the cleaning of sooty surfaces.

helena.wessling[at]web.de



Top: Panel Ö-A-1, Maple Panel with oil coating after parameter pre-selection.
Bottom: Panel Ö-A-2, Maple Panel with oil coating after parameter transmission.

Aspasia Kopsida

Investigation of construction technology and later alterations of a 19th-century comtoise longcase clock

KEYWORDS
19th-century comtoise clock; tool marks;
faux graining; traceology; material analysis

Comtoise longcase clocks are a distinctive form of vernacular timepiece that originated in the Franche-Comté region of eastern France. Characterized by their tall wooden cases, pear-shaped silhouettes, decorative pendulums, and repoussé metal dials, these clocks were produced from the late 17th century and reached peak popularity during the 18th and early 19th centuries.

This presentation focuses on the examination and documentation of the wooden carcass of a comtoise clock from a private collection in Athens, Greece, undertaken as part of a BA thesis at UNIWA. The case displays several characteristic features of rural 19th-century comtoise design, including violin-shaped sides, faux wood graining, and engraved floral decorative motifs. However, numerous and extensive structural and surface alterations are evident, which have significantly impacted the object's current condition.

The primary objective of this study was to investigate the construction techniques and materials used in both the wooden structure and decorative layers, and to distinguish the original components from later modifications and restoration treatments. Research into the historical and social context of the clock, primarily through bibliographic sources, provided insight into its intended use, construction practices, and broader cultural significance. A comprehensive multi-method approach was adopted, beginning with detailed visual examination under visible and raking light, followed by microscopy (wood identification, cross-sections), imaging techniques (UV, IR, X-ray), and selected analytical methods (FTIR, XRF, SEM-EDX), where applicable.

Particular attention was given to identifying coating materials, overpaint layers, and the extent of both structural and aesthetic alterations. The physicochemical similarities between original materials and later interventions, compounded by the object's deteriorated condition, presented unique challenges and highlighted the complex biography of the clock.

A thorough investigation and documentation of the clock's condition, including deterioration and craquelure patterns and the layered nature of previous restoration and structural treatments, formed the basis for a future conservation proposal. This research contributes to a broader understanding of the comtoise clockmaking traditions, historic wooden case construction, and the conservation complexities posed by historically layered and heavily restored objects.

aspkopsida[at]gmail.com

Top: Front view of the comtoise clock case, showing numerous structural and aesthetic alterations, including missing mouldings, a mismatched plinth, and multiple non-original varnish and paint layers.
Bottom: VIS (left) and UV (right) images of the clock's front & side panels. The variation in UV fluorescence—dark areas indicating overcoating, and yellow-green fluorescence revealing original elements such as the hood and upper mouldings—illustrates the complexity of the layered surface treatments resulting from multiple restoration interventions.

Sarah Fernandes

Study and conservation-restoration of a wooden scale model of the steam engine from the warship Algésiras (1853–1855), held at the French National Maritime Museum in Paris.

KEYWORDS
conservation; wooden scale model;
steam engine; warship Algésiras

Institut national du patrimoine

My fifth year of study at the Institut National du Patrimoine (Paris, France) was dedicated to the study and conservation of scale model, entirely made of wood, and held at the Musée national de Marine in Paris. This model represents the steam engine of the warship Algésiras, designed by the engineer Henri Dupuy de Lôme and built at the Toulon arsenal between 1853 and 1855.

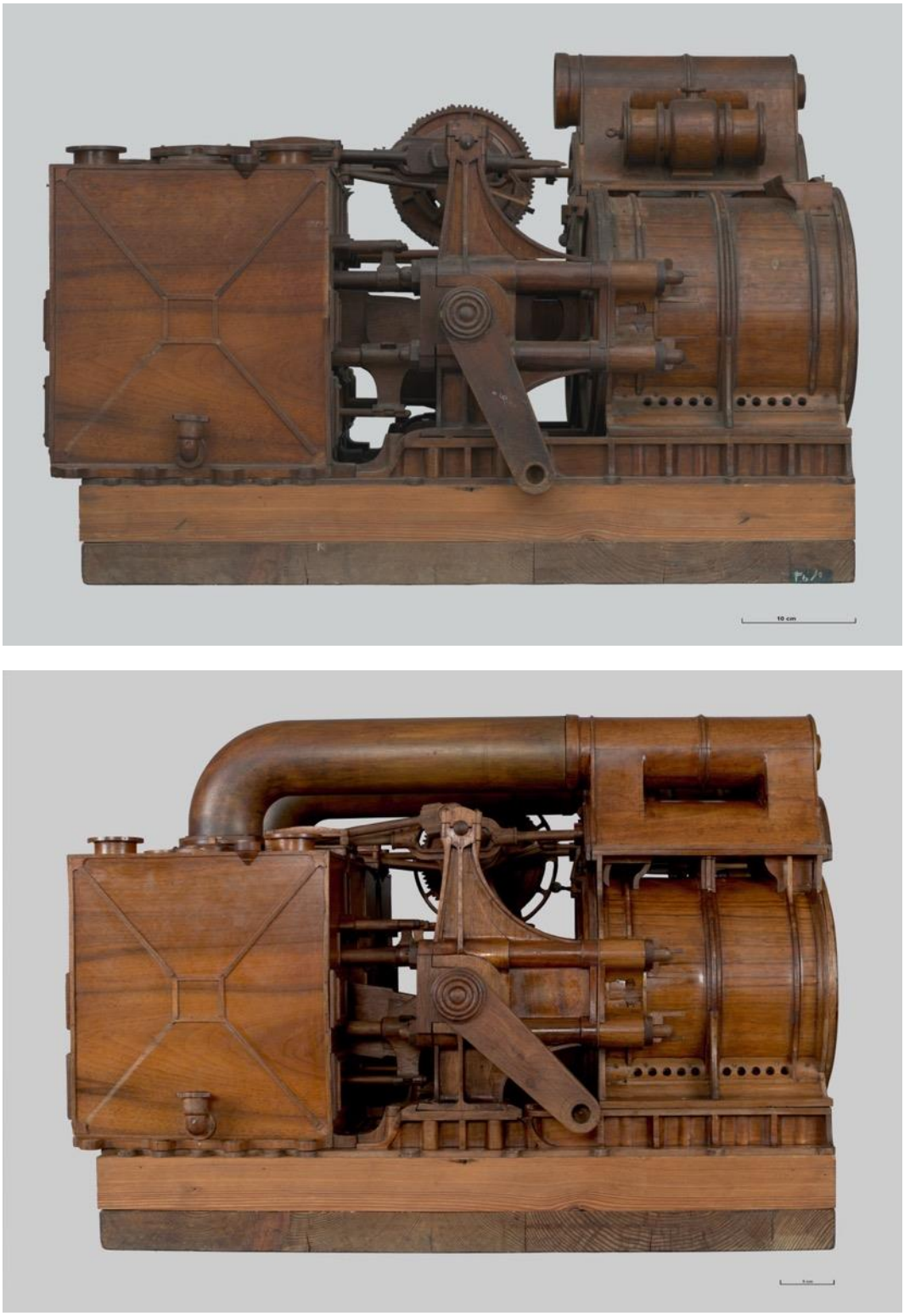
This technical object (75x50x65 cm) was intended to be operated during demonstrations. It illustrates the arrangement of the engine's components and the functioning of its main mechanisms. A similar metal model, created for the 1855 Exposition Universelle in Paris, is held at the Musée des Arts et Métiers.

This project, carried out in collaboration with Emmanuel Salcède, an engineering student, aimed to understand the significance of the object through the analysis of its historical context, comparisons with the original ship's engine, and the metal counterpart. These insights helped to deepen knowledge of the model and to refine the diagnostic examination, in order to guide the proposed treatment measures while minimizing the risk of misinterpretation.

The restoration focused on stabilizing structural and surface deterioration, and on improving the object's legibility. This involved the dismantling of major components, the repositioning of displaced elements, the removal of a later finish and varnish, and the reintegration of elements essential to understanding the machine.

This project highlights the specific challenges associated with the conservation of functional technical objects, and the value of an interdisciplinary approach combining the history of technology, engineering, and conservation.

fernandesarah[at]hotmail.fr



Top: Scale model of the steam engine from the warship Algésiras, before treatment.
Bottom: Scale model of the steam engine from the warship Algésiras, after treatment.
All images © Musée national de la Marine de Paris, INP (inv. no.: T6/2), Sarah Fernandes.

Miriam Courelas

From the factory to the conservation and restoration laboratory

The journey of a zoological anatomical model

KEYWORDS
zoological anatomical models;
conservation-restoration; sculpture

The zoological anatomical models, once used as a teaching resource for Veterinary Sciences, are today regarded by universities as objects of great value and historical-scientific interest, a part of their cultural heritage that must be cared for. The partnership between the Polytechnic Institute of Tomar – Department of Conservation and Restoration (IPT) and the Higher Institute of Agronomy of the University of Lisbon (ISA-UL) led to the admission into the IPT Sculpture Conservation and Restoration Laboratory of several zoological anatomical models from ISA's collection.

Within this protocol, one of the pieces treated was a clastic (disassemble) zoological anatomical model representing a sheep and made of polyester resin, produced between 1953 and 1989 by the workshops of SOMSO® Model Manufacture (former GDR), now SOMSO Modelle GmbH, based in Germany. The technological study of the piece, together with the careful assessment of its conservation state, guided the choice of techniques and materials used during the conservation and restoration intervention. Due to the semi-industrial character of the sculpture, the intervention posed several challenges, namely the study of the technological process given the diversity of parts and the complexity of their assembly, the mixed use of industrial and artisanal manufacturing techniques that make each model a unique piece; the fixing of the polychromy along superficial cracks; and finally, the mimetic chromatic reintegration, achieved through the use of various tonalities of the same colour to reproduce the texture corresponding to the representation of the fleece.

Although the sculpture was composed of several polyester resin parts with different densities and resistances, the use of traditional conservation and restoration materials and techniques proved successful, restoring to the sculpture a coherent reading consistent with its original function. The aim of the collaboration between the two Institutions is to conserve, restore, and valorise these objects in order to preserve them, so that they may integrate the collections of the future ISA Museum. In this way, the project seeks to foster public curiosity and understanding of the domains of teaching and scientific research, while highlighting the historical, scientific, and artistic character of these works.

miriam.courelas0[at]hotmail.com

Notes

Session 4

POLYCHROMY

9 DECEMBER 2025

Programme

Session 4: Polychromy

EDT: 1pm – 1:20 p.m GMT: 6 pm – 6:20 pm CET: 19:00 – 19:20 EET: 20:00 – 20:20	**KEYNOTE BY PROJECT POCO** **SRAL – THE CONSERVATION INSTITUTE**
EDT: 1:20 pm – 1:35 pm GMT: 6:20 pm – 6:35 pm CET: 19:20 – 19:35 EET: 20:20 – 20:35	**Linus Meidinger (HAWK)** From Self-Adhesive to Re-activatable: An Experimental Study on Coatings for Facings in the Conservation of Paintings and Polychrome Wooden Objects.
EDT: 1:35 pm – 1:50 pm GMT: 6:35 pm – 6:50 pm CET: 19:35 – 19:50 EET: 20:45 – 20:50	**Daniel Pincho (IPT)** Art historical and technical analysis in the context of the conservation of a baroque polychrome wooden sculpture.
EDT: 1:50 pm – 2 pm GMT: 6:50 pm – 7 pm CET: 19:50 – 20:00 EET: 20:50 – 21:00	**Q&A**
EDT: 2 pm – 2:10 pm GMT: 7 pm – 7:10 pm CET: 20:00 – 20:10 EET: 21:00 – 21:10	**BREAK**
EDT: 2:10 pm – 2:25 pm GMT: 7:10 pm – 7:25 pm CET: 20:10 – 20:25 EET: 21:10 – 21:25	**Lisa Anna Limmer (HAWK)** Investigations on possible applications of the IADS (Insect Activity Detection System) in conservation practice.
EDT: 2:25 pm – 2:40 pm GMT: 7:25 pm – 7:40 pm CET: 20:25 – 20:40 EET: 21:25 – 21:40	**Amalia Boura (UniWa)** Preliminary study on the gilding techniques, materials and aesthetics of Russian icons from the Benaki museum collection.
EDT: 2:40 pm – 3:00 pm GMT: 7:40 pm – 8:00 pm CET: 20:40 – 21:00 EET: 21:40 – 22:00	**Q&A AND CLOSING REMARKS**

Linus Meidinger

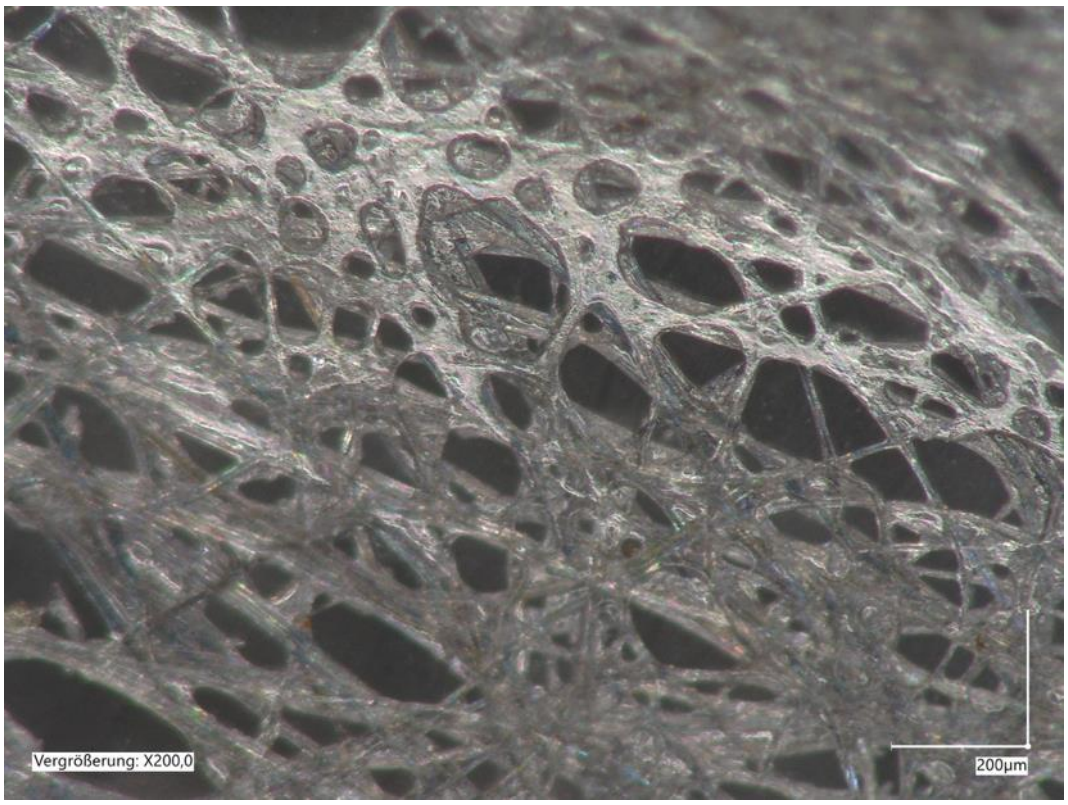
From self-adhesive to deactivatable

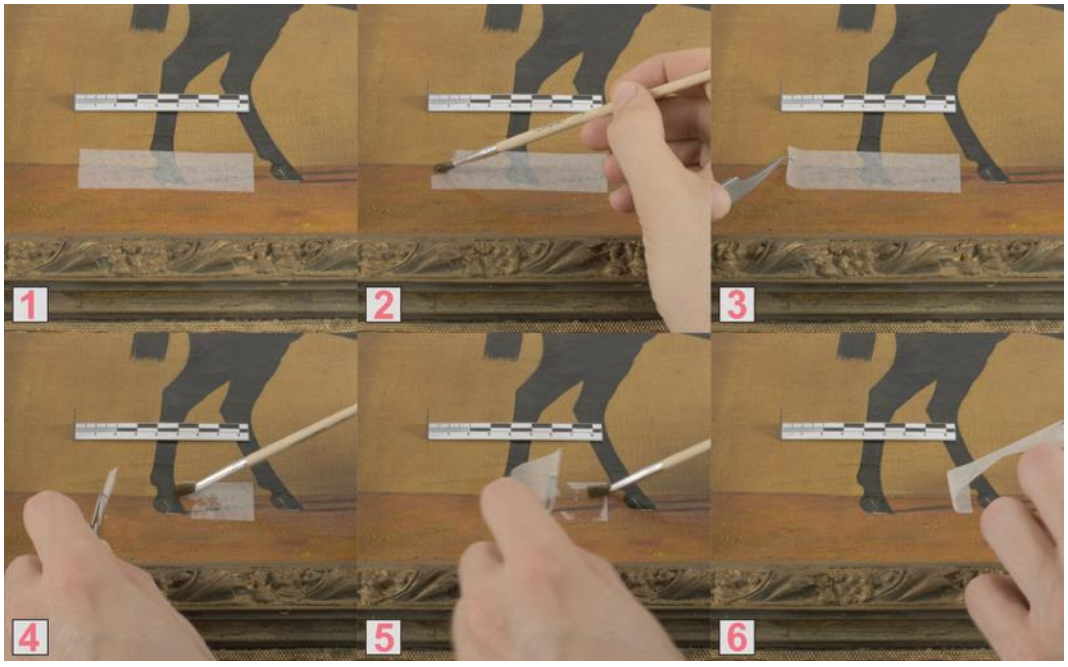
A study on self-adhesive and reversible facings for facings for the conservation of paintings and polychrome wooden objects

KEYWORDS
pressure-sensitive facings; reversibility;
Lascaux 303 HV; aliphatic hydrocarbons; peel-test

The subject of this master's thesis was the development of self-adhesive and reversible facings for the conservation of polychrome wooden objects and paintings. Facings have a wide range of applications, especially as temporary measures for securing loose material. With conventional facings, a carrier is usually coated with a water-soluble adhesive and activated on the object using moisture. This can cause stress on the original surface (swelling, leaching, clouding) and, in particular, tensile stress due to the volume loss of the carrier.
As an alternative, a facing based on the acrylic dispersion Lascaux® 303 HV was investigated. Its low glass transition temperature (-35 °C) enables pressure-sensitive adhesion, eliminating the need for moisture during application. The goal was a self-adhesive facing that could be removed with water or aliphatic hydrocarbons. The aim was to reduce adhesion completely and leave as little residue as possible, similar to water-soluble facings.
During the experiments, different coatings with water-soluble/sensitive additives such as Methocel A4M, Aquazol 500, Lascaux 498 HV, and Evacon-RTM were compared using a peel test to control adhesive strength and reversibility. The deliberate disruption (via foaming or thinning) of the previously closed and dense coatings optimized solvent penetration and reduced adhesion (reduced contact area). Observed residues were documented microscopically, but leaching from the sample into the solvent (after 3 days) could not be detected using FTIR. The results showed that the expected loss of adhesion did not occur with a water-based removal using the chosen parameters. However, one of the mixtures in particular (foamed, 2% Methocel A4M + Lascaux® 303 HV 2+1 Volume-parts) could be removed from selected substrates (glass substrate, dispersion paint, painting dummy) adhesion-free with aliphatic hydrocarbons after an application time of two days. The decisive factors for successful removal were a disrupted film structure and the lowest possible adhesion, allowing the only weakly effective solvent to overcome the adhesive strength. This work shows that self-adhesive facings could represent a promising alternative. However, further research into long-ter stability, hygroscopic effects, and the observed residues is necessary. Changes in adhesion should be particularly considered, as excessive adhesion can complicate optimal removal. The results this provide a basis for the further development of gentle facings in conservation practice.

linus.meidinger[at]gmail.com





Top: Detail of foamed 2% Methocel™ A4M + Lascaux® 303 HV (2+1 Volume-parts) coating on Japanese paper (8,8g/m2) with open/disrupted film at 200X magnification.
Bottom: 1: For application, the facing tissue is simply pressed onto the surface with a finger. 2 – 6: The removal can be performed like conventional facing tissues using a brush, but in this case, aliphatic hydrocarbons are used.

Daniel Pincho

Art historical and technical analysis of the Baroque polychrome sculpture 'Angel Seraphim' from the Sardoal Mother Church (Portugal)

KEYWORDS
baroque polychrome sculpture; technical analysis;
articulated wings mechanism; chromatic integration; conservation-restoration

Baroque sculptures represent tangible evidence of a period strongly linked to spirituality, theatricality, and technical-artistic experimentation. The sculpture of the Angel Seraphim, from the Sardoal Mother Church (Igreja Matriz do Sardoal) and part of the Portuguese National Baroque, is a paradigmatic example of the devotional expressiveness and constructive complexity that characterize this period. The recent conservation and restoration work has enabled a more in-depth analysis of its materiality and symbolism, revealing previously unknown specificities.

The sculpture, made of carved chestnut wood, is composed of six blocks joined by metal elements. One of its most notable and unique features is the presence of an articulated mechanism in the lower wings, which gives the sculpture some movement. This functionality suggests an exceptional performative and liturgical dimension, in keeping with Baroque scenic principles, where sensory and emotional impact were central to the religious experience, seeking to engage the viewer. The sculpture combines different polychrome techniques, with the flesh-tones being oil-painted, and the wings being water-gilded and partially decorated with estofado. In the gilded areas, the wings are also decorated with punchwork.

The intervention was based on in-depth knowledge of the damage observed during the conservation analysis, carrying out procedures such as cleaning, structural review, deoxidation of metal elements and chromatic reintegration (two reintegration approaches). This intervention was based on the core criteria of a conservation-restoration intervention, which are recognition, reversibility, compatibility, and minimal intervention, preserving the original integrity of the piece. In addition to physically stabilizing the piece, aiming to restore and enhance its aesthetic value, the intervention allowed us to identify unique construction techniques and deepen our understanding of the iconography of Baroque sculpture in Portugal. This study reinforces the importance of conservation and restoration as an essential tool for interdisciplinary research, contributing to the appreciation of artistic heritage and the rediscovery of forgotten works. The case of the Angel Seraphim offers a significant contribution to understanding the aesthetic and technological strategies of the Portuguese Baroque, revealing the symbolic richness and technical sophistication at the service of the period's spirituality.

aluno24900[at]ipt.pt

Top: (A) Before the intervention. (B) After intervention.
Bottom: Polychrome wood sculpture during treatment.
© IPT, Daniel Pincho.

Lisa Anna Limmer

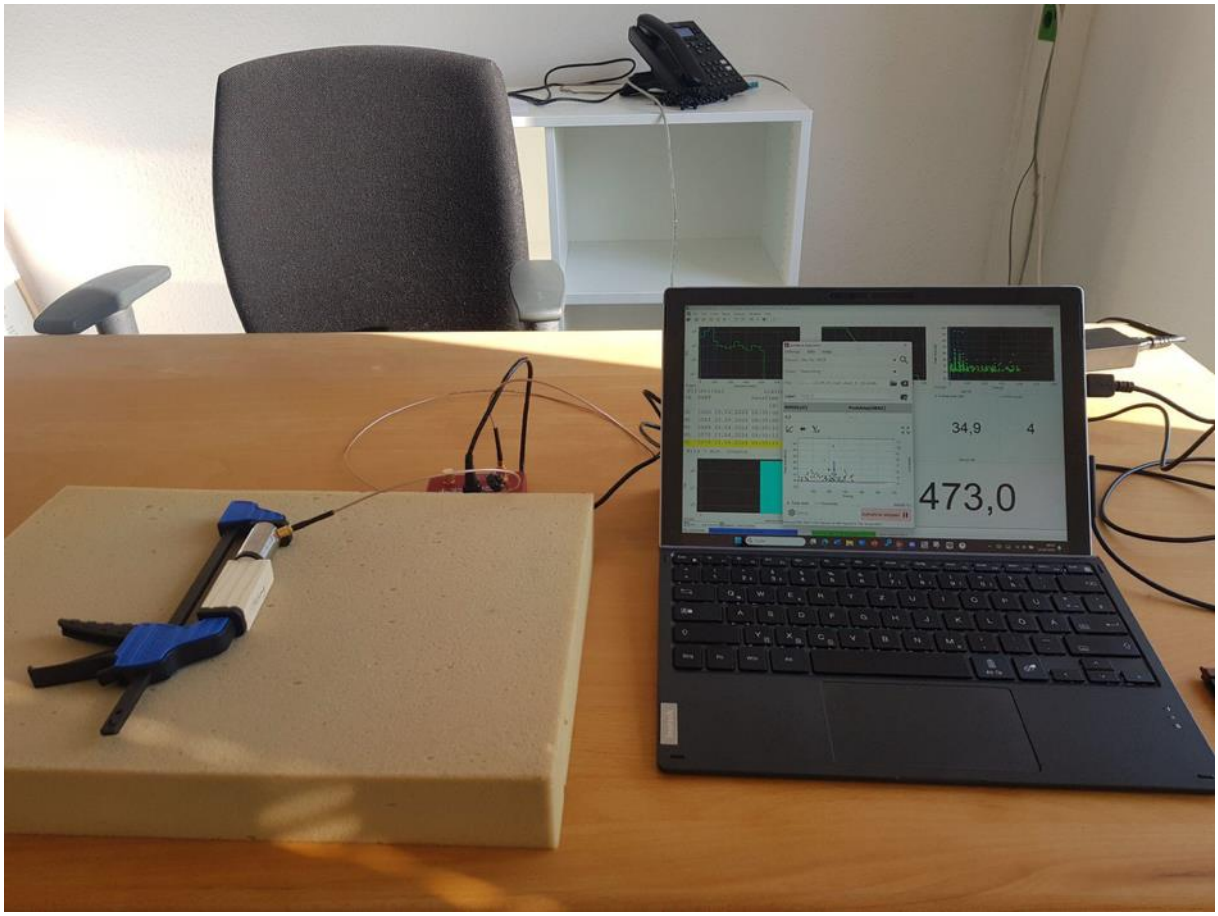
Investigations on possible applications of the Insect Activity Detection System (IADS) in conservation practice

KEYWORDS
IADS; wood; insects; larvae;
acoustic detection; analytical method

HAWK HOCHSCHULE FÜR ANGEWANDTE WISSENSCHAFT UND KUNST

The preservation of wooden art and cultural artifacts is severely threatened by the infestation of wood-boring insects. Distinguishing between active and inactive infestations in practice poses a significant challenge, often leading to unnecessary treatments or delayed actions. This presentation focuses on the examination of the Insect Activity Detection System (IADS), an innovative acoustic emission (AE) measurement device for the detection of feeding noises of wood-boring larvae. Starting with an overview of the theoretical framework and a proposal for useful measurement and data analysis practices, the results of experiments, which examine some of the basic parameters of the device, are shown. These include coupling the sensor to a wooden surface in a non-destructive way while ensuring satisfactory signal transmission, trying to measure larvae activity from two insect species most often encountered in wood conservation, Hylotrupes bajulus and Anobium punctatum, testing the sensor reach and additional experiments and field tests. It was proven that the IADS is generally well suited for the detection of larval activity in wooden cultural artifacts. Additionally, future research possibilities and practical applications of the IADS in the conservation of art and cultural heritage and beyond are discussed.

lisaannalimmer[at]gmx.de



Example of the IADS setup for a measurement. On the left, the sensor is attached to a test specimen via clamp with a foam pad underneath; on the right is the computer displaying the incoming measurement data.

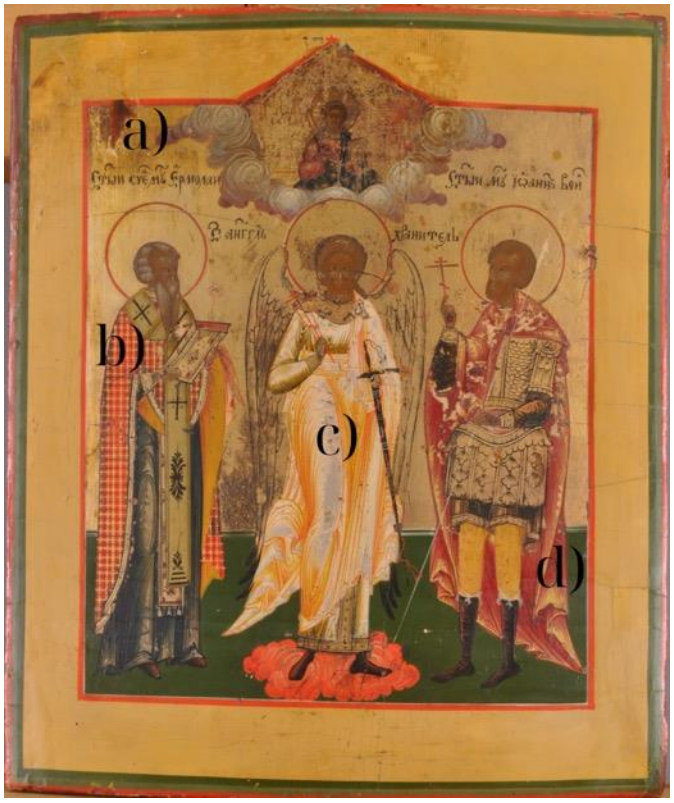
Amalia Boura

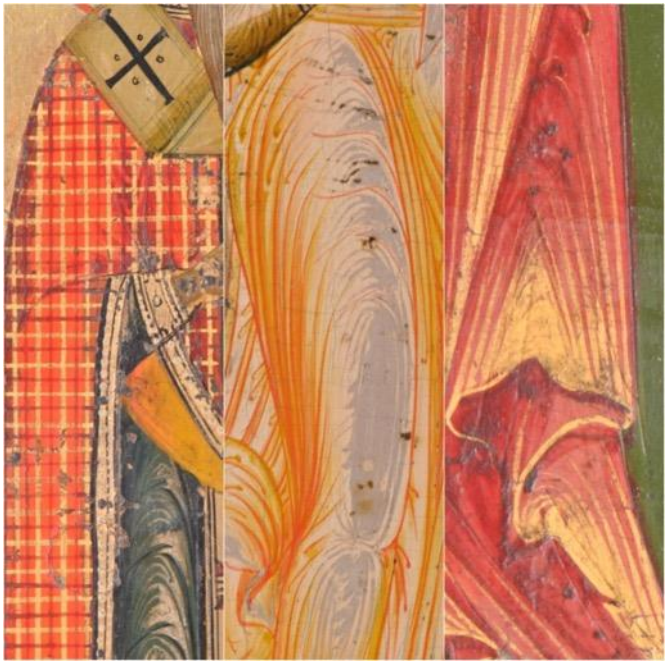
Preliminary study on the gilding techniques, materials and aesthetics of Russian icons from the Benaki museum collection (16th – 19th century)

KEYWORDS
Russian icons, non-destructive analysis,
gold imitation, metal leaf, metallic dust pigments

This research explores the gilding materials and techniques of 19 Russian icons dating between the 16th and 19th century from the Benaki Museum collection non-destructive methodology. The ultimate scope of this research was to correlate the findings with aspects of the artistic creation process and the artist's intention.
For this research, non-destructive analytical and photographic techniques were applied for the evaluation of the gilding techniques and materials on Russian icons. Imaging techniques, respectively macroscopic and microscopic examinations, as well as raking light photography were used for the examination of the substrates, the type of gildings, the decorative techniques and to distinguish the form of metal leaves or metallic dust pigments on backgrounds, halos and gilded details. In addition, ultraviolet imaging was used for the detection of gold imitation varnishes and IR reflectography was used to reveal the limits of metal leaves underneath the paint layer. Lastly, handheld pXRF spectrometer Niton XL3t GOLDD+ 980 with Ag tube (Anode type), both quantitative and qualitative method, was used for the identification of the elemental composition of gildings.
On Russian icons the application of metal leaf on the background shared similar techniques to the western "water gilding" and "oil gilding" but referred with different terminology: "gilding with poliment" and "gilding without poliment", "poliment" mainly focusing on the presence of the characteristically red coloured substrate.
The application of pure gold seems to have been used until the 17th century, and it was related to the high artistic and material quality of icons. Afterwards, different metals such as silver, copper, zinc, tin and their alloys have been purposely used in various concentrations to imitate gold or to give off different hues therefore adding a new dimension and aesthetics to the artistic values of gildings on icons that was previously solely thought as way to lower the cost of production. This is highlighted in icons where as much as three different elemental compositions/concentration were found on the gilded details on the same icon. Another characteristic group of icons is that of 19th century mass-produced icons with silver leaf where imitation varnish has been selectively used on the surface of the same icon.

amaliaboura[at]hotmail.com





Top: Saint Hermolaus, Archangel Michail and Saint John the Russian – Undated (25832). Visible light photography a)Water gilding (Gilding with poliment), gold leaf b) metallic dust pigment Au/Zn, c) metallic dust pigment Ag/Cu/Zn d)metallic dust pigment Au/Ag/Zn. Use of different concentrations of metals for the metallic dust pigments to give of different hues.
Bottom: Saint Hermolaus, Archangel Michail and Saint John the Russian – Undated (25832). Visible light photography details, use of different concentrations of metals for the metallic dust pigments to give of different hues for each saint.

Notes