



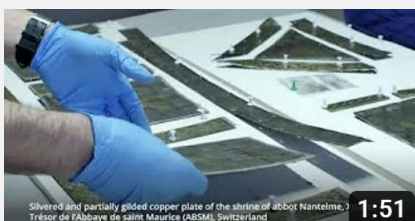
# NEWSLETTER

Here's ENDLESS Metal's second newsletter!

It's for you who showed interest in our project but don't have much time to follow us through our website and social networks. It considers the most relevant activities from April to July!

It was a period with great dynamics in which several activities took place beyond what was foreseen. So, in August, we'll take the opportunity to recharge some energy! We imagine that your work pace could also reduce a little, so you'll have more time to read this newsletter and stay up to date with the essentials of what we've been doing.

May the reading please you!



ENDLESS METAL - AN INTRODUCTION



DISCOVERY MAT

**FIVE VIDEOS**  
*To motivate and  
enable you to  
move forward  
more  
autonomously!*  
*(Click on them)*



PLECO



MiCORR - SEARCH FOR METAL FAMILIES



MiCORR - SEARCH FOR SIMILAR  
CORROSION STRUCTURES



## TWO WORKSHOPS

*For the mastery of the tools' application at a larger scale!*

THE 2<sup>ND</sup>, AT THE NATIONAL MARITIME MUSEUM & NATIONAL MUSEUM, IN GDANSK, POLAND

APRIL 11<sup>TH</sup> - 13<sup>TH</sup>

THE 3<sup>RD</sup>, AT THE NATIONAL MUSEUM, IN BUDAPEST, HUNGARY

MAY 15<sup>TH</sup> - 16<sup>TH</sup>



[ENDLESS Metal](#) team members with representatives from the [National Museum](#), the [National Maritime Museum](#), and the [2<sup>nd</sup> World War Museum](#), in Gdansk, and colleagues from the [University of Warsaw](#) and the [University of Gdansk](#).

During the workshop in Gdansk, "Interdisciplinary approaches in conservation and documentation using [MiCorr](#), [Discovery Mat](#) and [Pleco](#)", teams did their best in sharing. The presentations and experiments were very rich and captivating. Tools demonstrated to enrich the multidisciplinary perspective. Collaborative relationships strengthened between institutions and the Polish team of curators, conservators and conservation scientists.

At this extra workshop in Budapest, "Practical use of [Pleco](#) to analyse the corrosion products on silver objects", archaeological silver-based objects from the Roman Empire (1<sup>st</sup> to 4<sup>th</sup> centuries) were analysed. In small, gilded silver objects, [Pleco](#) was tested as a suitable alternative to traditional cleaning methods.

[ENDLESS Metal](#) team members with colleagues from the [Slovenian National Museum](#), in Ljubljana, the [Hungarian National Museum](#), in Budapest, and the [Archaeological Museum](#), in Zagreb, Croatia.





## ORAL PRESENTATIONS

*To spread the word about the tools and share experiences!*



**Diagnostiquer les métaux patrimoniaux: une compétence à la portée de tous ?**

Christian Degriigny

CULTURAL SEASON  
2022-23

CHÂTEAU DE GERMOLLES,  
MELLECEY, FRANCE

CHRISTIAN DEGRIGNY

MAY 4<sup>TH</sup>

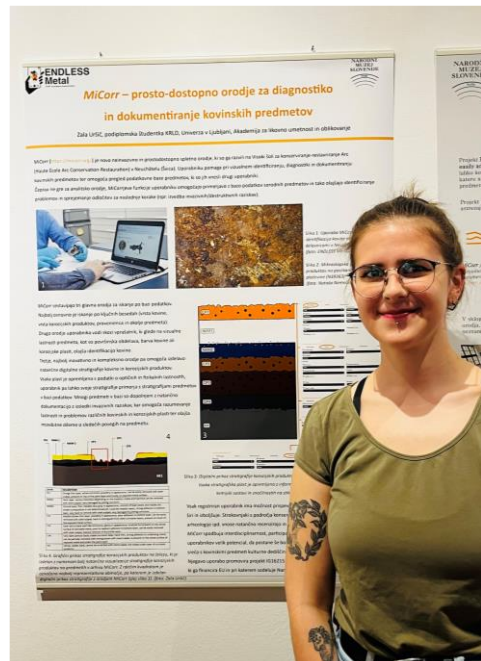


23<sup>RD</sup> CONSERVATOR-RESTORERS' PROFESSIONAL MEETING

THE POSAVJE MUSEUM BREŽICE, SLOVENIA

EVA MENART & ZALA URŠIČ

MAY 22<sup>ND</sup>







## ORAL PRESENTATIONS

*To spread the word about the tools and share experiences!*

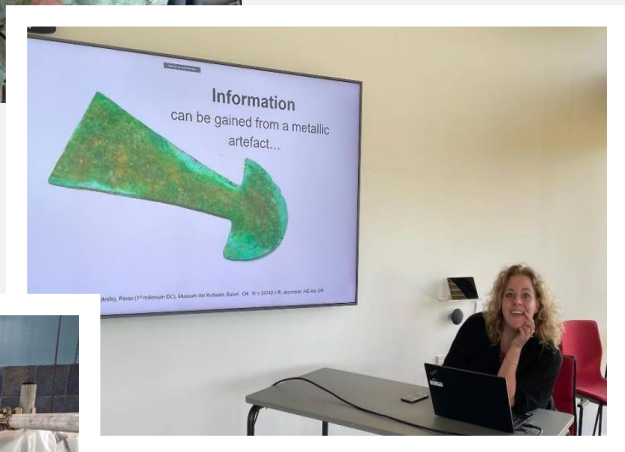


2<sup>ND</sup> ANNUAL MEETING OF THE NORDIC ASSOCIATION OF CONSERVATORS (NKF-DK)

THE MOESGAARD MUSEUM, DENMARK

IDA LANGEMARK

MAY 31<sup>ST</sup>



PROJECT "POLISH - CROATIAN EXCHANGE OF EXPERIENCES IN THE FIELD OF THE UNESCO CONVENTION FOR THE PROTECTION OF UNDERWATER CULTURAL HERITAGE"  
INTERNATIONAL CENTRE FOR UNDERWATER ARCHAEOLOGY IN ZADAR, CROATIA  
KATARZYNA SCHAEFER-RYCHEL  
JUNE 12<sup>TH</sup>





COST 3<sup>rd</sup> Communication Seminar  
Brussels, June 21<sup>st</sup>

### TWO COST ACTIVITIES

*To enable the team to better face the challenges of the project!*

COST training on How to Prepare a Business Plan for CIG grantees  
Brussels, June 29<sup>th</sup> & 30<sup>th</sup>







## FIVE SHORT-TERM SCIENTIFIC MISSIONS (STSM)

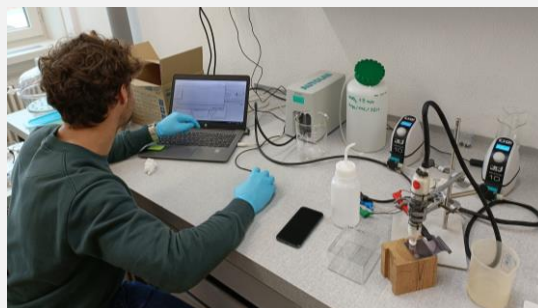
*Supporting mobility, strengthening networks and fostering collaboration!*

**NICOLA RICOTTA** UNIVERSITY OF FLORENCE, ITALY

OPTIMISATION OF THE USE OF PLECO TO LOCALLY AND SAFELY CLEAN THE TARNISHING DEVELOPING ON STERLING SILVER HERITAGE ARTEFACTS

HOST: EMPA'S JOINING TECHNOLOGIES AND CORROSION LABORATORY, DÜBENDORF, SWITZERLAND

MAY 8<sup>TH</sup> - 12<sup>TH</sup>



**AHMAD ABU BAKER** YARMOUK UNIVERSITY, JORDAN

THE USE OF MICORR APPLICATION TO DIAGNOSE THE CORROSION OF ARCHAEOLOGICAL BRASS ARTEFACTS FROM JORDAN

HOST: HAUTE ECOLE ARC CONSERVATION-RESTAURATION, NEUCHÂTEL, SWITZERLAND

JUNE 1<sup>ST</sup> - 9<sup>TH</sup>



**PABLO GENERAL TORO** CATHOLIC UNIVERSITY OF PORTO, PORTUGAL

COMBINING USER-FRIENDLY ELECTROCHEMICAL HARDWARE AND A FREELY ACCESSIBLE APPLICATION FOR THE CHEMICAL ANALYSIS OF MODERN COPPER-BASED ALLOYS

HOST: HAUTE ECOLE ARC CONSERVATION-RESTAURATION, NEUCHÂTEL, SWITZERLAND

JUNE 5<sup>TH</sup> - 9<sup>TH</sup>



**VALENTINA LJUBIĆ TOBISCH** TECHNICAL UNIVERSITY OF VIENNA, AUSTRIA

TRAINING IN THE ANALYTICAL POSSIBILITIES OF THE ELECTROLYTIC PENCIL PLECO AND COMPARISON WITH A SIMILAR, SELF-MADE PENCIL

HOST: HAUTE ECOLE ARC CONSERVATION-RESTAURATION, NEUCHÂTEL, SWITZERLAND

JUNE 5<sup>TH</sup> - 9<sup>TH</sup>

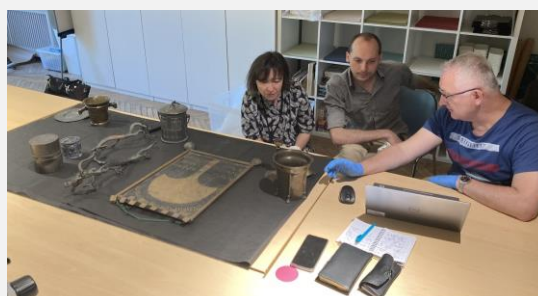


**CHRISTIAN DEGRIGNY** HAUTE ECOLE ARC CONSERVATION-RESTAURATION, SWITZERLAND

THE APPLICATION OF ENDLESS METAL ANALYTICAL TOOLS IN THE CONTEXT OF POLISH CULTURAL INSTITUTIONS

HOST: NATIONAL MUSEUM GDANSK; 2<sup>ND</sup> WW MUSEUM GDANSK; NATIONAL MARITIME MUSEUM GDANSK AND TCZEW

JUNE 19<sup>TH</sup> - 23<sup>RD</sup>





## APPLICATION AND IMPROVEMENT OF TOOLS ARE MOVING FURTHER

*Always, with your help!*

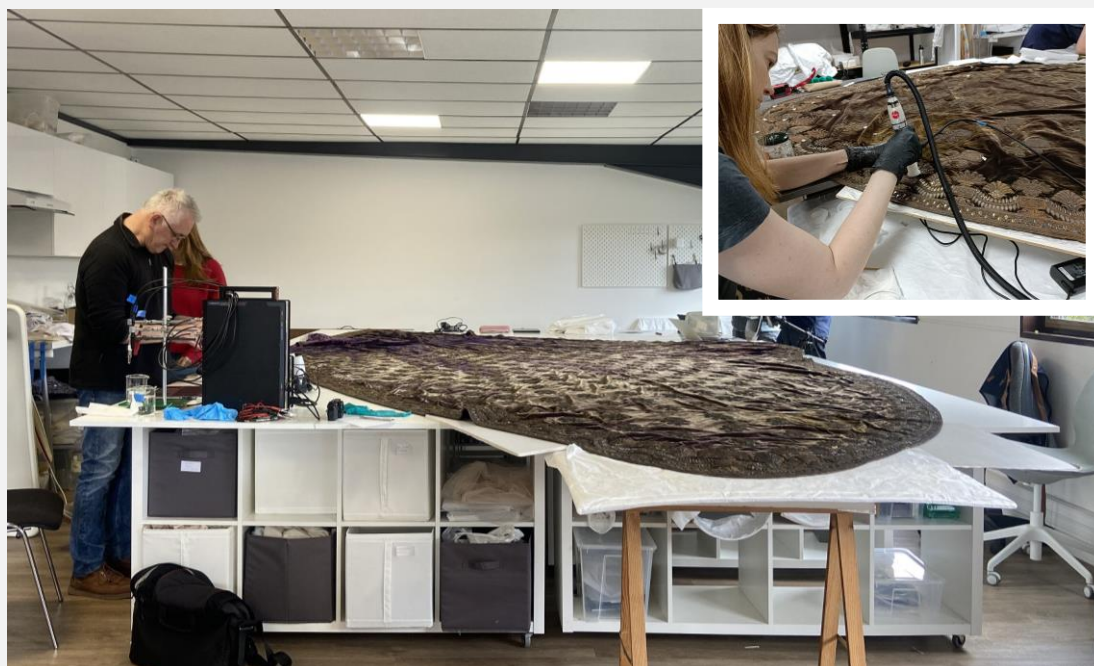
*A decision of some, an  
example and  
encouragement for  
others?*



At the [Convent of the Jacobins](#), in Toulouse, MATERIA VIVA team uses [Discovery Mat](#) to find out what the reliquary of Saint Thomas Aquinas, is made of.



The results show that this masterpiece from the 19<sup>th</sup> century is made of gilded brass and not gilded bronze. Crucial information for communication and preservation management and for guiding the conservation intervention.



At the [Palais du Tau](#), Reims, France, the coronation mantle of Charles X (King between 1824 and 1830) is the only surviving coronation mantle of a French king. It is made of velvet and rich embroidery of gilt silver threads. With their complex and fragile surface, it was impossible to clean all metal decorations with conventional techniques, and the conservation team wanted to test [Pleco](#) as an analytical tool to determine the nature of the black tarnish and as a cleaning tool. Results showed evidence of thick, compact silver sulphide. Local cleaning, by reducing the  $\text{Ag}_2\text{S}$  to  $\text{Ag}$  and then dissolving the reduced  $\text{Ag}$  to  $\text{Ag}^+$  to recover the golden aspect, is underway.





## APPLICATION AND IMPROVEMENT OF TOOLS ARE MOVING FURTHER

*Always, with your help!*

*A decision of some, an example and encouragement for others?*

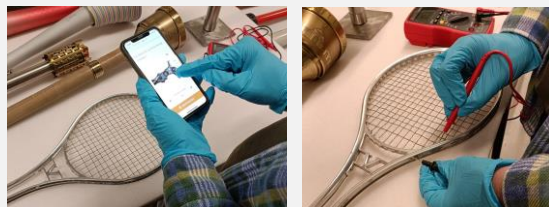
*No doubt! The example is contagious...*

*Join these powerful relationships.*

*Join us!*



At the [University of Oslo](#), master's students explored the [Discovery Mat](#) and the [MiCorr](#) applications as part of an introductory course on heritage metals and their corrosion, developed by Christian Degryny. They tested [MiCorr](#) on a painted model aircraft. The hypothesis deduced from the application was that it was probably a zinc alloy, which was confirmed by XRF analysis.



At [The Olympic Museum \(TOM\)](#) in Lausanne, Rayan Ammon, a bachelor student at the [Haute École Arc Conservation-Restoration](#), carried out his 3<sup>rd</sup>-year diploma internship on the examination of aluminium-based objects, using [MiCorr](#) to validate the materials' identification and [Discovery Mat](#) to define their specific composition.

**A great boost to advance knowledge!**



*Want more insights about these?  
Please, take just a little of your time and have a glimpse at:*

