

ENDLESS Metal

Training School in Porto, Portugal 09-10.10.2023

In Porto, Portugal, the ENDLESS Metal COST Innovators Grant 16215 (<https://www.cost.eu/actions/IG16215/>), the Faculty of Arts and Humanities - University of Porto (FLUP - www.letras.up.pt), and the National Museum Soares dos Reis (MNSR - <https://museusoaresdosreis.gov.pt/>) will organise, with the support of the COST Association (<https://www.cost.eu/>), the third and last Training School (TS) of the ENDLESS Metal project. FLUP and MNSR will host the training school. The activities will be developed in MNSR premises.

We will do our best to make this event fruitful and enjoyable. This document provides information about the hosting institutions, the trainers, the programme of the TS and tips for your arrival and stay in Porto.

1. Hosting institutions

The law which instituted FLUP (Fig. 1) was established by its founder, Leonardo Coimbra, who turned an old claim of the University of Porto into reality. Its history reflects Portuguese political history during the 20th century and can be divided into two phases: from 1919 to 1928 and from 1961 to the present day. FLUP was instituted by article 11, Law 861, of 27 August 1919, until it was formally extinct by Decree 15.365, of 12 April 1928. It was restored in 1961 by Decree 43.864, of 17 August.

Since 1961 and over the years, FLUP has been researching and working with tangible and intangible cultural heritage from different and complementary perspectives, considering education, valorisation, curation, fruition, preservation, examination and analyses, restoration and conservation, with a special focus on integrated risk management and preventive conservation, digital access, digital preservation, data

management, and professionals capacitation. For that, it has been working in synergy with other faculties and external (inter)national organisations. It is home to 2 hubs, the Center for Digital Culture and Innovation (CODA), on Digital Humanities, and The Research Management & Science Communication Hub (REMA), to support 9 Research and development units, all of which contribute, more directly or indirectly, to the cultural sector. Of them, the Transdisciplinary Culture, Space and Memory Research Center (CITCEM) stands out for its most voluminous contribution, with 8 research groups, specially: Education and Societal Challenges; Information, Communication and Digital Cultures; Tangible and Intangible Heritage; and Territory and Landscape.



Fig. 1 – Faculty of Arts and Humanities, University of Porto (FLUP)

MNSR (Fig. 2) has its origins in the Museum of Paintings and Prints and other objects of Fine Arts, created in 1833 by D. Pedro IV of Portugal, the first Emperor of Brazil, to safeguard assets suppressed from absolutists and convents abandoned in the civil war (1832-34). With the extinction of religious orders, works of art were collected in the monasteries of Tibães and Santa Cruz de Coimbra, among other places. Known as the Portuguese Museum, it was housed in the extinct Convent of Santo António da Cidade, in S. Lázaro Square, and was formalized by decree in 1836 by D. Maria II.

With the proclamation of the Republic, it was renamed Soares dos Reis Museum, in memory of one of the most prominent names in Portuguese Art. In 1932, it became a National Museum, a time marked by a significant reorganization by Vasco Valente, through the incorporation of collections from the Paço Episcopal do Porto (Mitra) and

the Industrial Museum, as well as the deposit of the collections of the extinct Municipal Museum. Its installation at the Palácio dos Carrancas took place as part of the National Celebrations of 1940, and the exhibition A Obra de Soares dos Reis/The Work of Soares dos Reis was inaugurated.



Fig. 2 – National Museum Soares dos Reis (MNSR)

2. Venue. MNSR Location

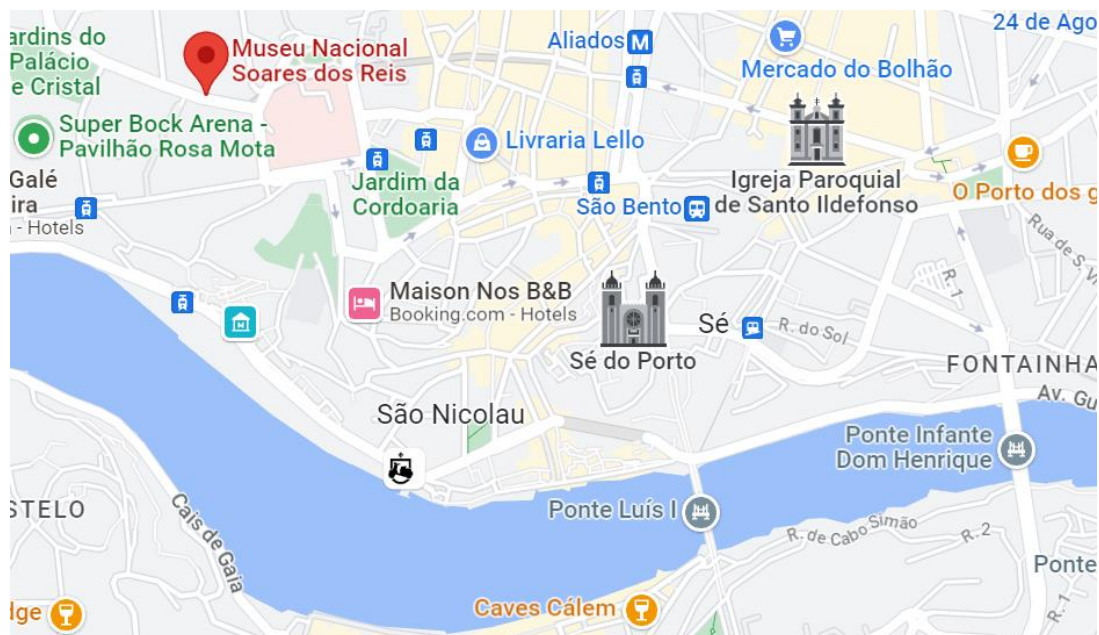


Fig. 3 - Location of the MNSR - R. de Dom Manuel II 44, Porto, Portugal

3. Training school trainers

3.1. Senior team



Dr. Christian Degrigny



Dr. Eva Menart



Romain Jeanneret

Christian Degrigny (CD) received a PhD in analytical chemistry from the University of Paris IV in 1990 on the electrolytic stabilization of aluminium based aircraft remains recovered from subaquatic environments. As an engineer in electrochemistry he specialized in the use of electrolytic processes for the diagnosis and treatment of historic and archaeological metallic objects. He has worked in public and private sector successively as conservation scientist, director of studies of a conservation school (EVTEK – Finland), director of a diagnosis laboratory (Malta Centre for Restoration) and lecturer in different conservation programmes (Amsterdam_NL, Oslo_NO, Stuttgart_DE, West Dean_UK, Malta_MT and Neuchâtel_CH). He was co-leader of the EU PROMET project (Innovative conservation approaches for monitoring and protecting ancient and historic metals collections from the Mediterranean basin) 2003-2005, organized in 2010 the Indoor Air Quality (IAQ2010) conference in Chalon-sur-Saone (FR) and was national delegate and member of the steering committee of EU COST Actions from 1999 to 2022: G7 (Artwork conservation by laser), G8 (Non-destructive testing and Analysis of Museum artefacts), TD1201 (Colour and Space for Cultural Heritage), TD1406 (Innovation in the Intelligent Management of Historic Buildings) and CA16215 (European network for the promotion of portable, affordable and simple analytical platforms). Since 2004 he is lecturer and project leader at UR-Arc CR (national and EU projects).

Eva Menart (EM) received a diploma in Chemistry from the University of Ljubljana in 2009 and a PhD in Heritage Science from University College London (UCL) in 2013. Her work in the heritage science field started in preventive conservation, namely paper degradation under different environmental conditions, lifetime modelling and pollutant sensor development, and continued with heritage object analysis, with the main focus being archaeological and historic metallic objects.

She has been working as a scientist in the Department for Conservation and Restoration of the National Museum of Slovenia since 2016 and has been the head of the department since 2021. Since 2019, she has also been working as a researcher at the Jožef Stefan Institute, focusing on non-destructive metal object analyses. She has been involved in several national and EU-funded projects (e.g. Nanorestart, APACHE and CA16215), co-organised two Indoor Air Quality conferences (IAQ2012 in London and IAQ2022 in Ljubljana) and has lectured Chemistry and Conservation students at UL on Characterisation and stabilisation of cultural heritage materials and Preventive conservation.

Romain Jeanneret (RJ) (Master of Arts in Conservation of Scientific, Technical and Horological Objects, University of Applied Science in Neuchâtel (HE-Arc CR), 2010) is the conservator of the Treasury of Saint-Maurice Abbey in Switzerland. His main activity consists of the material study and conservation of two medieval shrines: the Great Shrine of Saint Maurice and the Shrine of Abbot Nantelmus. He has specialized in applied interdisciplinary research focusing on the material study of metallic and complex cultural heritage.

He spent four years as a research assistant for Christian Degrygn's projects at the HE-Arc CR research unit (UR-Arc CR). He combined his time working on various research, such as the development of an electrolytic pen for the cleaning of silver tarnishing (Pleco), the development of a schematic representation method to understand, document, and valorize the functioning of technical objects as well as the development of the MiCorr database, an online diagnosis tool for heritage metal objects. For the past 3 years, he worked as a scientific collaborator at the University of Neuchâtel for the study of the astronomical and horological collections of the Observatory of Neuchâtel financed by the Swiss National Science Foundation (SNSF). In addition, he teaches drawings and computer graphics to Bachelor & Masters students at the HE-Arc CR. He also works as an independent conservator since 2011, mainly on goldsmith, technical collections, and other metallic or composite objects.

3.2. Junior team



Pablo General Toro



Dr. Valentina Ljubic Tobisch



Ida Langemark

Pablo General Toro (PGT) is a sculpture conservator-restorer trained at Scuela Superior De Conservación Y Restauración De Bienes Culturales De Galicia - ESCRBC in Spain, and holds a Master's degree from the Universidade Católica Portuguesa, specializing in the conservation and restoration of reinforced concrete sculpture. Currently, he is a Ph.D. candidate in Conservation and Restoration at the Universidade Católica Portuguesa, supported by the Fundação para a Ciência e Tecnologia - FCT (SFRH/BD/137253/2018). His research focuses on the study of bronze works by the Portuguese sculptor António Soares dos Reis (1847 - 1889). This research encompasses the physicochemical analysis of the artist's sculptures, the natural corrosion that occurs on them, and the study of preservation solutions for such works.

Valentina Ljubic Tobisch (VLT) holds an academic title in metal conservation from the University of Applied Arts and in physical chemistry from the University of Vienna. She was head of the Conservation Department of the Vienna Museum of Technology. She worked as Senior Lecturer for metal conservation at the Department of Conservation and Restoration at the Academy of Arts in Split, Croatia. Her interests are practical, sustainable, and preventive conservation strategies. For more than a decade, she has been intensively involved with early photography and electroplating as well as photomechanical reproduction processes. In 2013, she was awarded the TÜV Austria Science Prize for developing the strategy for treating museum objects containing asbestos. In 2021, the Austrian Academy of Sciences granted her the interdisciplinary heritage science project "The impact of early photography and electrotyping media on the creation of images and contemporary art".

Ida Langemark (IL) is doing her master's degree at The Royal Danish Academy of Fine Arts (KADK), with specialization in Cultural History Objects. She obtained her bachelor's degree from the University of Gothenburg (GU) in 2020 and spent the following year doing supplementary courses on archaeology and the care and conservation of archaeological collections from Umeå University and Studies in Conservation peer-reviewer David Harvey. Before initiating the master's programme in Copenhagen, she worked as a conservator at the Department of Metal/Archaeology at the Kiruna Centre for Conservation of Cultural Property (SFMV), including studies on the use of gels in conservation treatment of historical and archaeological metals. She participated in IG16215 - ENDLESS Metal young conservation professionals in Neuchâtel January 2023, and chose to continue the exploration of the digital Decision Support system (DSS) MiCorr in her master's thesis project, using MiCorr in the documentation and diagnosis of a collection of archaeological bronze figures from ancient Egypt.

4. Programme

The TS will consist of 4 sessions and will last one full day and a half.

Monday 09 October (am & pm)

Session 1 – Introduction

(Auditorium)

9:00	Check In	MNSR Team
9:15 - 9:25	Welcoming words	António Ponte, MNSR Director Paula Menino Homem, FLUP local organizer
9:25 - 9:45	IG16215: philosophy, objectives and achievements	Christian Degryny (CD) & Eva Menart (EM), Chair & Vice-chair of ENDLESS Metal

Session 2 – *DISCOVERY MAT*: Qualitative analysis of metal artefacts

(Educational Services Room)

10:00 - 10:15	Possibilities & limits	CD
10:15 - 10:30	Application: analysis of a series of bronze alloys	PGT
10:30 - 10:45	Coffee break	
10:45 - 11:45	Series of measurements (3 setups in parallel)	PGT, RJ & CD
11:45 - 12:30	Data processing & interpretation	PGT & CD
12:30 - 12:45	Discussion & perspectives	PGT, CD & all
12:45 - 14:30	Lunch break	
	NOTE: For those who wish, it is possible to provide a brief visit to the museum's long-term exhibition, from 14:00 to 14:30. In this case, this indication must be given, and the lunch time must be managed accordingly.	

Session 3 – *PLECO*: Qualitative analysis of corrosion layers on metal surfaces

(Educational Services Room)

14:30 - 14:45	Possibilities & limits	RJ
14:45 - 15:00	Application: Pleco versus other electrolytic pencils	VLT
15:00 - 16:00	Demonstration and tests on silver-based objects	VLT, RJ & EM
16:00 - 16:15	Research in progress: silver tarnish on pure silver vs sterling silver	CD
16:15 - 16:30	Coffee break	

16:30 - 17:00	Optimisation of Pleco: pumping device & reference electrode	RJ & CD
17:00 - 17:30	Discussion & perspectives	VLT, CD, RJ, EM & all

Tuesday 10 October (am)

Session 4 – *MICORR*: Study of the corrosion structures developed on metal artefacts

(Educational Services Room)

9:00 - 9:15	Summary of the work carried out on Monday, 9 October	PGT, VLT & CD
9:15 - 9:30	Possibilities & limits	CD
9:30 - 9:45	Application: MiCorr as a documentation and diagnostic tool in the assessment of archaeological bronzes from ancient Egypt	IL
9:45 - 10:30	Practical exercise: examination of corrosion structures of a series of metal artefacts	IL & CD
10:30 - 10:45	Coffee break	
10:45 - 11:15	Schematic representation of corrosion structures	IL & CD
11:15 - 11:45	Digital construction of corrosion structures	IL & CD
11:45 - 12:15	Questioning of MiCorr database	IL & CD
12:15 - 12:30	Discussion & perspectives	IL, CD & all
12:30 - 12:45	How to fill your reimbursement form	CD
12:45 - 14:30	Lunch break	

4.1. Optional additional activity

The TS will finish by the end of the morning of October 10th. In the afternoon, a **Workshop** will be held dedicated to another search engine associated with MiCorr, with another participant profile. If you wish to, optionally and additionally, participate in the Workshop, please, you must give that indication no later than by the end of October 6th.

Tuesday 10 October (pm)

Workshop - *MICORR*: Identification of the metal family of metal artefacts (Educational Services Room)

14:30 - 15:00	Possibilities & limits	CD
15:00 - 16:15	Testing MiCorr application on a selection of objects from MNSR	CIG team & all
16:15 - 16:30	Coffee break	
16:30 - 17:00	Discussion	CIG team & all
17:00 - 17:30	Perspectives	CIG team & all

5. Grant

The grant provided is in two parts: travel costs for distances over 100kms [flight/train/bus tickets reimbursed on real costs up to 500€ (long distances: outside Portugal and Spain) and 100€ (short distances)] and daily allowances (170€/day) which cover accommodation, meals and local transport (under 100kms). COST always takes into account the days of travel to an event in the reimbursement. Local participants (who do not need accommodation) are reimbursed on a basis of 40% of the daily allowance.

Reimbursement takes place after the event. As indicated in the TS programme, we will explain to you how to fill out your reimbursement form.

6. Tips

6.1. Accommodation

The venue is in the very centre of Porto, meaning there are many hotels, hostels and apartments at different price ranges available within walking distance.

6.2. Transportation

The nearest airport is Francisco Sá Carneiro International Airport, which is located 13km from the city centre.

Detailed information about public transportation to get to and from the airport may be found at the ANA Airport website. Please, explore:

<https://www.aeroportoporto.pt/en/opo/access-parking/getting-to-and-from-the-airport/public-transportation>

To get to MNSR, plan your journeys according to your location:

- Using the metro. Metro of Porto lines A, B, C, E, F leaving at Carolina Michaelis station and Line D leaving at S. Bento station, both at a 20-minute walk from the MNSR. Please, explore: <https://en.metroporto.pt/>
- Using the bus. STCP lines with stops near the museum are: 200, 207, 302, 300, 601, 602, 507, 501, and 201. Please, explore: <https://www.stcp.pt/en/travel/timetables/?t=linha>