




Avec le soutien de



Fondation des sciences du patrimoine
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Foundation for Cultural Heritage Sciences



Presentation

The Foundation for Cultural Heritage Sciences structures research on tangible cultural heritage. It is a French partnership foundation running two state-funded projects, Patrima and Patrimex, in the framework of "Investments for the future" programmes. It was created in 2013 under the patronage of the French Ministry of Culture and Communication.

Objectives

The Foundation generates new research topics and creates new practices in the heritage field, by bringing together specialists from various disciplines (physic-chemical and life sciences, information science, humanities and social sciences) to pool their expertise and knowledge. It fosters the development of collaborations between cultural institutions and universities.

It structures and funds research on tangible cultural heritage along three main lines:

- development of a more intimate knowledge of heritage
- improvement of conservation-restoration processes
- promotion of a better dissemination of knowledge on heritage.



Organisation

The Foundation is run by a board of directors and a scientific committee. These two boards are composed of experts belonging to the Foundation's partner institutions. They also consult external experts, in particular for the projects' selection.

+
100
research projects or
scientific dissemination
actions

+
55
PhDs

+
170
researchers and
teachers-researchers

+
40
curators and
conservators-restorers

Members

The Foundation counts more than 15 members, the first five being the founding ones:

- Cergy-Pontoise University
- Versailles-Saint-Quentin-en-Yvelines University
- The Louvre Museum
- The Palace of Versailles (Château de Versailles)
- The French National Library (Bibliothèque nationale de France)
- The French National Archives (Archives nationales)
- The National Institute for Cultural Heritage (Institut national du patrimoine)
- The Quai Branly Museum
- The Centre for Research and Restoration of the Museums of France (Centre de recherche et de restauration des musées de France, C2RMF)
- The Centre for Research on Preservation (Centre de recherche sur la conservation, CRC), consisting of 3 teams: the CRCC team (Centre for Research on the Preservation of Collections), the LRMH team (Historical Monuments Research Laboratory) and the ECR team (Conservation and Research Team – the Museum of Music)
- The Ancient Materials Research Platform IPANEMA (Institut photonique d'analyse non-destructive européen des matériaux anciens)
- The Archaeomaterials and Alteration Prediction Laboratory (Laboratoire archéomatériaux et prévision de l'altération, LAPA)
- The team specializing on cultural heritage law of the Institute for Political Social Sciences (Institut des sciences sociales du politique, ISP)
- The National School of Architecture of Versailles (École nationale supérieure d'architecture de Versailles, ENSAV)
- The National School of Art of Paris-Cergy (École nationale supérieure d'arts de Paris-Cergy, ENSAPC)

The Foundation also includes partners such as the Rodin museum, the departmental Archives of Yvelines and Val-d'Oise, the National School of Palaeography and Archival Studies (École nationale des Chartes) and the National Audiovisual Institute (Institut national de l'Audiovisuel).

Intervention areas

More than 100 research projects have already been launched and supported by the Foundation, with 3 axes of inquiry. Here are a few significant examples.

In-depth knowledge of heritage in its historical, sociocultural and physicochemical dimensions



Research project on extraction and exploitation of underlying drawn lines in ancient manuscripts: application to Marie-Antoinette letters (REX).

The letters secretly exchanged between Marie-Antoinette and the count Axel de Fersen, kept in the French National Archives, have been partly deciphered. The text is not complete though, because it has been censored in part by blacking out the writing below, making it unreadable. The point of the study is to discover the erased parts, to set techniques allowing for the separation of contemporary inks without compromising the integrity of the original, and to develop treatment protocols for modern manuscripts.

CODEX

The Codex Borbonicus, kept in the French National Assembly, is considered as the most important « pre-Cortes » known manuscript. The project seeks to understand how it was created through an analysis of its constitutive materials, structure and lines. It uses portable instruments for non-destructive analysis. Appropriate conservation-restoration strategies will be put forward.



Improvement of conservation-restoration processes



Acoustic imaging to understand marble aging processes (SAMIA)

Sculptures in the park of Versailles Palace are mostly made of Carrara marble. Three types of disorders can affect this material: deep granular disintegration, surface deterioration and cracking. This project aims to better understand and track these alteration processes. Working with samples, it sets up a range of acoustical, non-destructive methods to assess conditions of marble, both at surface and in-depth.

CORDOBA

Gold leathers, also called Cordovan leathers, were greatly popular in Europe between the 16th and 18th centuries. This project analyses the chemical composition, thickness and corrosion factors of the silver leaf used in these decorations. Comparing physic-chemical data with stylistic attributes, it tries to identify features peculiar to a workshop or region of production. It also plans to provide insights into alteration processes and refine conservation-restoration methods.



Spreading knowledge on heritage



The robot as mediation tool in museums and model of an emerging aesthetic sense (BERENSON)

Testing the ability of anthropomorphic robots to serve as mediation tools in museums is the topic of two doctoral projects, which also investigate a neuronal model of the emergence of aesthetic sense. A humanoid robot is used to explore visitors' aesthetic reactions in museums and to show that gaining an aesthetic judgement enhances cognitive functions, which can be applied outside the museum.

Versailles in perspective (VERSPERA)

This project creates 3D models from digitized old plans, allowing the preservation and promotion of a fragile collection. Thanks to recent 3D-model technologies, it brings about a better representation and understanding of architectural evolutions and enables to understand how a royal residency was lived in and used in early modern times.



Patrimex

Patrimex is a sociotechnical network dedicated to the description, conservation and restoration of all kinds of tangible heritage (monuments, statues, paintings, manuscripts, archives, ancient musical instruments).

It gathers research tools based on interactions between waves and matter. Those innovating tools are made available to the scientific community and partner institutions of the Foundation for Cultural Heritage Sciences, as well as public and private actors involved in the field of heritage protection. They target to reach other socio-economic sectors as well.

The Foundation is expanding its activities internationally.

International cooperation



A mobile platform supervised by the Historical Monuments Research Laboratory (LRMH) enables to conduct on-site analysis for immovable works and historical monuments.

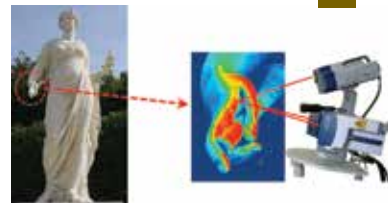


The new beamline PUMA of SOLEIL synchrotron is dedicated to the study of heritage materials. Handled by IPANEMA, it explores the core of matter in a non-destructive way, thanks to the radiation produced by electrons circulating close to the speed of light.

4
branches

At the University of Cergy-Pontoise, new laser tools are being developed to meet the challenges of cultural heritage characterization and restoration. The results will contribute to a more intimate knowledge of heritage, paving the way to new restoration techniques

Collected data will be digitally stored and made available to all involved parties thanks to an innovative database, a true information system dedicated to the study of tangible heritage and dissemination of related knowledge.



Non-French museums and research centres are involved in our projects as external partners.

Examples: Victoria and Albert Museum, Bodleian Library, Institute of Marine Sciences of Bologna, National Museum of Athens, Getty Conservation Institute and Universidade Estadual Paulista de Sao Paulo.

The Foundation is setting up partnerships with foreign education and research institutions in the field of heritage sciences.

For instance, it cooperates with the School of Cultural Heritage of Xi'an Northwest University (China) and builds exchanges with institutions of the Shaanxi province in charge of cultural heritage.

We are involved in European projects, such as COST Action WoodMusICK, which promotes research on and preservation of wood musical instruments.

The Foundation is a key actor of E-RIHS France. E-RIHS is a European Research Infrastructure dedicated to the study of cultural and natural heritage materials. It provides transnational access to advanced technologies and scientific archives, as well as their related methods. ESFRI (European Strategy Forum on Research Infrastructures) and France have inscribed E-RIHS on their 2016 roadmaps for infrastructures. It should be operational by 2022.

A periodical call for project is specifically designed to enhance international mobility and cooperation. Open to every member of the Foundation, it enables both to host foreign professionals and researchers in France and to send our own experts abroad.

Uwe Bergmann (Stanford) was our first invited professor, followed by the Armenian Gagik Shmavonyan. As far as outgoing mobility is concerned, the British Museum welcomes a French researcher to work on medieval seal matrices and the MoMA laboratory is associated to a project on self-adhesive plastic films used in architectural drawings during the second half of the 20th century.

