MEMORI

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Most of the photos are provided by partners and end-user of the project. The photo on the first page, top rigth side; Courtesy of Dr. Marco Ciatti.

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The content of this publication relies on the sole responsibility of its authors.

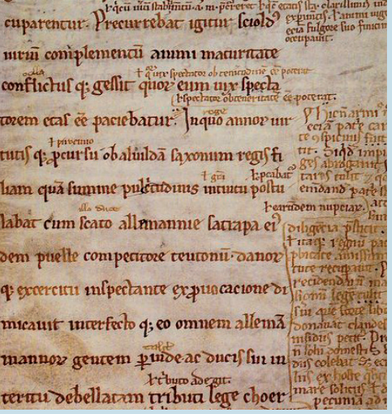
MEMORI

SEVENTH FRAMEWORK PROGRAMME

Measurement, Effect Assessment and Mitigation of Pollutant Impact on Movable Cultural Assets – Innovative Research for Market Transfer

EU FP7 – Supported Collaborative Project: 265132

- MEMORI is an EU research project funded through the Seventh Framework Programme, Environment (including Climate Change). Sub-programme Area: "Non-destructive diagnosis technologies for the safe conservation of movable cultural assets".
- The project, supported by the European Commission, Directorate General "Research & Innovation", Directorate I "Environment", started in November 2010 and will be finalised in October 2013.





The MEMORI Project

The aim of the MEMORI project is to provide the conservation market with innovative, non destructive, early warning technology for easy assessment of environmental impact on indoor cultural heritage. In addition a preventive strategy to secure the conservation of movable cultural assets in protective enclosures will be developed. To achieve this aim, the following objectives will be investigated:

- Integration of two dosimeter technologies from the previous EU projects AMECP and MASTER.
- Production of a PC software and interactive user web page.
- Assessment of the damage impact of organic acids on cultural heritage objects.
- Optimizing active and passive control regimes for protective enclosures.
- Facilitating the use of protective enclosures to save energy and mitigate climate change.
- Integrating results with existing preventive conservation strategies.
- Disseminating results and implementation of a business plan.

An Innovative Measurement Technology

Through the MEMORI project a new early warning dosimeter for the evaluation of the indoor environment will be developed. The MEMORI dosimeter will combine the advantages of the Early Warning dosimeter for Organic materials (EWO), developed by NILU within the EU-MASTER project, and the Glass Slide Dosimeter (GSD), developed by Fraunhofer ISC within the EU-AMECP project.

The new MEMORI dosimeter will be sensitive to indoor climate and light, and to the photo-oxidizing and acidic air pollutants, which are commonly present in indoor locations. By detection of the major damaging factors, the MEMORI dosimeter will be a useful early warning system. A handheld reader for in-situ measurements and results evaluation will be developed. This will improve the functionality of the dosimeter, reduce the time for results evaluation and make the system flexible.

Assessment of Environmental Impact on Organic Materials

Detailed evaluation of the impact of air pollution on indoor cultural heritage objects will be performed using accelerated ageing and advanced non-destructive analytical techniques. The damage effects of organic acids and other pollutants will be assessed on a range of materials such as:

- Varnishes
- Pigments
- Leather and parchment
- Cellulosic materials
- Textiles

Recommended levels for various environments, including maximum exposure to organic acids will be evaluated.

Mitigation Methods and Studies for Preventive Conservation Strategies

The developments in MEMORI of measurement and evaluation methodology, impact understanding and mitigation procedures will be integrated with present best practice in preventive conservation strategy. Preventive conservation involves controlling the environment around an object to minimize deterioration. Research is required to understand and minimize risks from the complex interactions between historical objects and museum environments. Highly aged objects may behave quite differently from new materials. Sealing of enclosures such as showcases and storage boxes protects cultural heritage from external risks. Within the enclosure, assessment and mitigation of residual risk that would otherwise become apparent through damage require novel sensor systems, like the MEMORI dosimeter and a new oxygen sensor, which will be developed in the project.

Participation of End-Users

The involvement of end-users in MEMORI will assure the best possible relevance of the project results aiming to satisfy the needs of stakeholders. The end-users represent conservators, curators and managers responsible for cultural heritage institutions, in addition to one privat company, which markets conservation equipment as well as consulting services. MEMORI has a strong focus on the marketing effort, and marketing strategies will be developed in close co-operation with end-users.

The following institutions are part of the end-user group:

- Istanbul University, Faculty of Letter, Department of Conservation and Restoration of Artefacts, Turkey
- Landesstelle für Museumsbetreuung, Germany
- Lithuanian Theatre, Music and Cinema Museum, Lithuania
- Museum of Cultural History, University of Oslo, Norway
- National Museum in Krakow, Poland
- National Research Institute for Cultural Properties, Centre for Conservation Science and Restoration Techniques, Japan
- PEL, Preservation Equipment Ltd., United Kingdom.