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**METAL**Consn-info



# Bulletin of the Research On METal Conservation

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# BROMECC12

## Editorial

For the first time since BROMECC's inception we are late! There are many reasons behind this. Primarily, a work overload in the past weeks has not permitted the editor and the assistant editor to spend any time on this new issue.

Autumn has indeed been full of events. In October 2004, we had the ICOM-CC Interim Metal WG conference in Canberra (Australia) that received most of our energies. Immediately after METAL 04, the editor was involved in EU COST G8 activities (Management Committee meeting and a training school in Malta (end of October)). EU COST G8 was already presented in a previous BROMECC issue (n°7). Shortly afterwards, we had the kick-off meeting of the EU STREP INCO-MPC1 PROMET project (presented in this issue). The editor of the BROMECC participates in the PROMET project as the leader of workpackage 3 and we will regularly update you on the new developments. This meeting was followed by BMC 2004 (announced in previous BROMECC issues), a major conference on the conservation of Outdoor Bronze Monuments organised by our colleague Paola Letardi and her team in Genoa. Some feedback from this conference will be presented in the second newsletter of the Metal WG.

Finally, the editor was more recently involved in the new EU COST Action G8 meetings to discuss the establishment of new COST Actions related to Cultural Heritage (COST Action G8 is finishing very soon). Some very nice proposals should come out very soon and we will continue to inform you on how you can benefit from them.

The assistant editor of BROMECC is currently studying at the Malta Centre for Restoration. He has decided to embark for a Master in Conservation. That means that both the editor and assistant editor are working together to continue giving you the best information available in our field.

Please note that Régis Bertholon (one of the two French national correspondents for BROMECC) has decided to resign. He will be replaced in his role by Marie-Anne Loeper-Attia who is currently working at the Conservation Department of the National Institute for Cultural Heritage. We thank you Régis for your contribution in the two past years and we welcome Marie-Anne hoping that she will enjoy working within our small, but active working group.

With the preparation of METAL 04 we did not see many contributions for this BROMECC issue. Still we hope that you will find it as useful and as interesting as ever.

Since we are very close to Christmas we take the opportunity of this issue to wish you a merry Christmas and a happy new year.




### Editor

Christian DEGRIGNY

### Assistant editor

James CRAWFORD

## Contents

	Page
<b>New research projects</b>	
 SMARTPLASMA project	3
 EU-ARTECH project	4
 PROMET - Innovative conservation approaches for monitoring and protecting ancient and historic metals collections from the Mediterranean Basin	6

## New research projects



### SMARTPLASMA project (HA/RAFA)

The conservator has a large range of techniques to clean the metal parts in objects of art, but until present they are not always satisfactory. Especially for composite objects, such as metal threads in textiles or daguerreotypes, cleaning the metal with minimal risk to the other parts of the object is still very difficult. The purpose of the SMARTPLASMA project is to develop a prototype that is able to clean such pieces by using atmospheric plasma.

The benefits of atmospheric plasma were studied in the thesis of K. Valiulis, which was presented in 2001. Together with the results from this study and the on-going development of atmospheric plasmas in the industrial field, this project will continue to study and develop this technique. Some of the greater benefits include the versatility to work locally and on objects irrespective of the size. Another benefit is the lower working temperature when compared with low-pressure plasmas.

This project has been submitted by the Hogeschool Antwerpen, Conservation / Restoration Department of Metals, in cooperation with the Vito ([www.vito.be](http://www.vito.be)) and the University of Antwerp, department of Chemistry.

It has been funded by the IWT ([www.iwt.be](http://www.iwt.be)) for 240.000€ and also includes input from private and public conservation studios and specialists.

The duration of the project is two full years starting January 1, 2005 (*IPCR*).

**Contact:** Patrick Storme (HA/RAFA)

**Funding:** Private 7,5 % - IWT (Flemish research support) 92,5 % through TETRA-funds (Technology Transfer)

## New research projects



### EU-ARTECH project

The primary goals of ARTECH are to enhance cooperation in conservation science that will promote the diffusion of the highest research levels, develop potential new applications and appropriate services, and offer opportunities for advanced training of young scientists and operators. At the same time, it will facilitate the sharing of best practices and the establishment of standards in conservation.

In consideration of the above listed objectives, a Consortium of thirteen European institutions operating in the field of conservation science has been established with the name EU-ARTECH (**A**ccess **R**esearch and **T**echnology for the conservation of the **E**uropean **C**ultural **H**eritage).

The thirteen research institutions are all presently operating in cooperative interdisciplinary programmes with curators, conservators, archaeologists and art-historians, and therefore represent, in their own countries, an important model for the overall community concerned with the study and conservation-restoration of cultural heritage. The co-ordinator of the project is Professor Bruno BRUNETTI – Università di Perugia (Italy).

The website can be viewed at: <http://becu.chm.unipg.it/euartech/HOME.htm>

The activities of the project are articulated as follows:

1. **Networking**, is devoted to exchanging knowledge, diffusing good practices in conservation, defining common protocols and/or standards, and supporting other common work-parameters that improve the quality of research, and conservation-restoration. This activity is shared in two parts:

- NI – Sharing knowledge and resources
- N2 – Materials and methods

2. **ACCESS**, is offered by a single high-level infrastructure (C2RMF) and by a unified group of joint infrastructures (UNI-PG, CNR-ICVBC, OPD, INOA – see below for the full names), open to users working in Europe and associated countries. There are two components to ACCESS:

- A1 – AGLAE (Accelerator Based System for Ion Beam Analysis) where non-destructive elemental analyses are carried out with high sensitivity and precision is situated in a unique environment of scientists having a large expertise on artwork materials;
- A2 – MOLAB (Mobile Laboratory) where a unique collection of portable or transportable instrumentation, together with staff competent on methods and materials, allows performing in-situ non-destructive measurements for studies on artworks and for the evaluation of conservation-restoration methods (directly in a museum exhibition room, or on the scaffold of a restoration workshop, or on an archaeological site). Ten instruments will be available.

3. **Joint research activities**, are devoted to improve the performances of the participating infrastructures.

- JRA1 – Development and evaluation of new treatments for the conservation of outdoor stone and bronze monuments. The objective is to clarify and define

advantages and limitations of new conservation treatments on outdoor monuments, compare new and traditional methods and encourage their use, based on clear scientific and ethical criteria (i.e. choice of methods and materials only after a careful scientific study of the artwork's state of conservation, in the full respect of its aesthetic and historical value).

- JRA2 – New methods in diagnostics: imaging and spectroscopy. The involved teams will develop new diagnosis methods through innovative in-situ non-destructive and non-contact measurements, thereby enhancing the quality of the services that are offered to the cultural heritage community.

All these activities are interconnected and, since they converge to strengthen cooperation between Consortium and external institutions, they have the critical mass needed to create a good level for European research area in this field.

EU-ARTECH started on June 1, 2004 and will last 5 years. Every six months, general meetings, associated with or without dedicated seminars or workshops, are planned throughout the whole duration of the project.

### Participants

All the institutions that participate are systematically involved in the study and/or with the conservation of artworks, cultural heritage artefacts and monuments in their country. Some of them are scientific infrastructures directly interfaced with relevant European museums, some have responsibility at a national level for the study, safeguard and conservation-restoration of Cultural Heritage, and others are Universities or public research centres active in the field of methods and materials applied to the scientific study and the conservation/restoration of cultural heritage.

The 13 participating institutions are:

- Università di Perugia (UNI-PG) - Italy
- Centre de Recherche et de Restauration des Musées de France – Paris (C2RMF) - France
- Consiglio Nazionale delle Ricerche, Istituto per la Conservazione e Valorizzazione dei Beni Culturali – Firenze (ICVBC) - Italy
- The Scientific Department of the National Gallery of London (NGL) – United Kingdom
- Opificio delle Pietre Dure – Firenze (OPD) - Italy
- Bayerische Landesamt für Denkmalpflege – München (BLFD) - Germany
- Ormylia Art Diagnosis Centre – Ormylia (OADC) - Greece
- Instituut Collectie Nederland – Amsterdam (ICN) – The Netherlands
- Laboratório Nacional de Engenharia Civil – Lisboa (LNEC) - Portugal
- Institut Royal du Patrimoine Artistique – Bruxelles (IRPA) - Belgium
- Rheinisch Westphälische Technische Hochschule - Aachen (RWTH) - Germany
- Università di Bologna (UNI-BO) - Italy
- Istituto Nazionale di Ottica Applicata – Firenze (INOA) - Italy

**Contact:** J-L. Boutaine (C2RMF)

**Funding:** EU 6<sup>th</sup> Framework Programme, Structuring the European Research Area - Research Infrastructures

## New research projects



### PROMET - Innovative conservation approaches for monitoring and protecting ancient and historic metals collections from the Mediterranean Basin

PROMET is a three-year European Union funded project under the auspices of the Sixth Framework Programme, priority INCO (Specific Measures in support of International Cooperation). It aims to establish and promote a conservation strategy designed for the Mediterranean region by developing an approach to monitor and protect metal artefact collections using state of the art portable analytical techniques and new corrosion inhibitors and/or coatings that are safe and effective to use. There are 23 partners involved from 13 different countries in Europe and the Mediterranean Basin. There is a total budget of around 4 million euros.

In particular, the problems and needs of artefacts made of iron, copper and precious metal alloys (including gilded objects), from the Mediterranean Basin will be identified. New prototype portable techniques, Laser-Induced Breakdown Spectroscopy (LIBS) and micro X-Ray Fluorescence ( $\mu$ XRF) will be developed as complementary analytical tools for metal characterisation. Also, commonly applied analytical techniques will be used for quickly surveying large metal collections. These analytical tools together with statistical methods will be applied to survey collections in the different countries in the Mediterranean Basin, specifically Egypt, Greece, Italy, Jordan, Malta, Morocco, Spain, the Syrian Arab Republic, Tunisia, and Turkey. Pilot studies will be carried out to highlight the problems and needs of the collections (workpackage 2).

In parallel, safe corrosion inhibitors (derived from vegetable oils, mature tobacco, and tannins from wood), and barrier films (Physical Vapour Deposition (PVD), Plasma Enhanced Chemical Vapour Deposition (PECVD), synthetic microcrystalline or polyethylene-based waxes) will be developed and tested on artificially and naturally aged metal coupons. Finally, the most effective products that meet conservation standards will be tested on a selection of artefacts specifically subjected to the environmental conditions of the Mediterranean Basin (workpackage 3).

PROMET is certainly one of the most promising EU projects of these last years dedicated to the conservation of metal artefacts. In addition to the workpackages described above, the partners want to disseminate the outcomes of the project on a large scale through workshops, an international conference, a “good practice guide” and a website which will be updated throughout the project’s duration.

This project is also the occasion to exchange ideas and knowledge between countries that are strongly active in the field of metal conservation and others that have huge collections, but no expertise to conserve them.

The project started at the beginning of November 2004 although the kick-off meeting was at the end of November.

We will regularly inform you on the progressive results of the project.

**Contact:** Dr Vasilike Argyropoulos (TEI)

**Funding:** EU STREP INCO-MPC 1, 6<sup>th</sup> Framework programme

## General information

### Websites

- **Cost Action G8: Non-destructive analysis and testing of museum objects.** <http://srs.dl.ac.uk/arch/cost-g8>. Abstracts and booklets from previous workshops can be downloaded as well as announcements of future activities (Short Term Scientific Missions deadlines, training schools...).

- **Cost Action G7: Artwork conservation by laser**  
<http://alpha1.infim.ro/cost>

- **Working Group Metals ICOM Committee for Conservation**  
<http://icom-cc.icom.museum/WG/Metals/>

- **CAMEO**: website containing chemical, physical, visual, and analytical information on over 10,000 historic and contemporary materials used in the conservation, preservation, and production of artistic, architectural, and archaeological materials  
[http://www.mfa.org/\\_cameo/frontend/](http://www.mfa.org/_cameo/frontend/)

- **IR and Raman for cultural heritage**  
<http://www.irug.org/default.asp>

- **LabS-TECH network**  
<http://www.chm.unipg.it/chimngen/LabS-TECH.html>

- **ARTECH network**  
[http://server.icvbc.cnr.it/progetti\\_futuri/progetto\\_artech.htm](http://server.icvbc.cnr.it/progetti_futuri/progetto_artech.htm)

### Future seminars and conference

- **GMPCA** (Groupe des Méthodes Pluridisciplinaires Contribuant à l'Archéologie) seminar (19-22 April 2005, Saclay, France) organised by the Pierre Süe Laboratory, CEA Saclay will take place at INSTN, Saclay 91. For more information contact Mrs Anne Morel ([GMPCA2005@iscsa.cnrs.fr](mailto:GMPCA2005@iscsa.cnrs.fr)) and visit the following website : <http://www.ladir.cnrs.fr/GMPCA2005/>.

- **Metallurgy – a touchstone for cross-cultural interaction** (28-30 April 2005, London, UK), a conference organised by the British Museum to celebrate Paul Craddock's contribution to the study of metal through the ages. For more information contact [slaniece@thebritishmuseum.ac.uk](mailto:slaniece@thebritishmuseum.ac.uk).

- **ART'05** conference (15-19 May 2005, Lecce, Italy), 8<sup>th</sup> International Conference on “Non-Destructive Testing and Microanalysis for the Diagnostics and Conservation of the Cultural and Environmental Heritage” organised by the Italian Society for Non-Destructive Testing Monitoring Diagnostics (AIPnD), the Central Institute of Restoration (ICR) and the Dept of Materials Science of the University of Lecce. For more information visit the following website: <http://www.dsm.unile.it/art05>.

- **2<sup>nd</sup> Congress Latino-American on metal conservation** (25-28 July 2005, Rio de Janeiro, Brazil), organised by the Museum of Astronomy and Sciences (MAST) and the Latinoamerican Group of Metal Conservation (GLRM). For more information contact Marcus

Granato ([marcus@mast.br](mailto:marcus@mast.br)) or Johanna M. Theile ([jtheile@abello.dic.uchile.cl](mailto:jtheile@abello.dic.uchile.cl))  
- **14<sup>th</sup> Triennial Meeting of ICOM's Committee for Conservation, ICOM-CC** (10-16 September 2005, The Hague, Netherlands) organised by the ICN (Netherlands Institute for Cultural Heritage in collaboration with ICOM, ICOM-Netherlands; ICOM-CC, the Netherlands Museum Association (NWV), the Dutch association of professional Conservators and Restorers (VeRes) and the Congress and Study Centre (VNG). For more information visit the following website: <http://www.icom-cc2005.org>  
- **LACONA VI** (Lasers in the conservation of Artworks) (21-25 September 2005, Vienna, Austria), 6<sup>th</sup> International Congress on the Conservation of artworks by laser, organised by the Federal Office for Care and Protection of Monuments Austria-Bundesdenkmalamt and the Academy of Fine Arts Vienna. For more information visit the following website: [www.lacona6.at](http://www.lacona6.at).

### Abbreviations and acronyms

**C2RMF**: Centre de Recherche et de Restauration des Musées de France  
**HA/RAFA**: Hogeschool Antwerpen, Royal Academy of Fine Art  
**INSTN**: Institut National des Sciences et Techniques Nucléaires  
**IWT**: Instituut voor de aanmoediging van Innovatie door Wetenschap en Technologie in Vlaanderen (Institute for the encouragement of Innovation through Science and Technology in Flanders)  
**PECVD** : Plasma enhanced chemical vapour deposition  
**PVD**: Physical Vapour Deposition  
**TEI** : Technical Educational Institution, Athens  
**VITO**: Vlaamse Instelling voor Technologisch Onderzoek (Flemish Institute for Technological Research)

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