



Strasbourg (France)

E-MRS 2005 Spring Meeting  
May 31 – June 3, 2005

## **SYMPOSIUM Q**

### **Materials science and cultural heritage**

Symposium Organizers :

**Yannis Chryssoulakis**, Ormylia, Greece

**Marie-Claude Corbeil**, Canadian Conservation Institute, Canada

**Michel Menu**, C2RMF, Louvre, Paris, France

**Giuseppina Padeletti**, CNR – ISMN, Monterotondo (Roma), Italy

**Michael Stuke**, MPI, Goettingen, Germany

Papers to be published in Applied Physics A

# E-MRS 2005 Spring Meeting

## SYMPOSIUM Q

Tuesday, May 31, 2005  
Mardi 31 mai 2005

Morning  
Matin

9:00

**WELCOME**  
by the Symposium Organizers

### Session I : Metals

Session chair : **M. Stuke**

**Q-I.01** 9:20 -Invited- LARGE SCALE INVESTIGATION OF CORROSION MECHANISMS OF BRONZE ARCHEOLOGICAL ARTEFACTS FROM MEDITERRANEAN BASIN  
G.M. Ingo, T. De Caro, ISMN-CNR, CP 10, 00016 Monterotondo Stazione, Rome, Italy, A. Çilingiroglu, Ege University, Bornova-Izmir, Turkey, **E. Angelini**, Politecnico di Torino, Torino, Italy, P. Vassiliou, National Technical University of Athens, Greece, M. Gener, CENIM-CSIC, Avda. Gregorio del Amo n° 8, 28040 Madrid, Spain, V. Gouda, NRC, El-Tahir Street Dokki 12622, Cairo, Egypt, W. El-Saddik, The Egyptian Museum, Maydan El Tahir Square, Cairo, Egypt, Z. Al-Saad, Yarmouk University, PO Box 566 University Street, 211-63 Irbid, Jordan, S. Khosroff, Institute National du Patrimoine, 2000 Le Bardo, Tunisia, L. Bousselmi, INRS, B.P. 95, 2050 Hammam Lif (Tunisia), O.M. Al-Jarrah, Jordan University of Science and Technology, PO Box 3030, Irbid 22110, Jordan, Z. Madjoub, Université Djillali Liabes, BP 89, 22000 Sidi-Bel-Abbes, Algeria

**Q-I.02** 10:00 CHARACTERISATION OF SILVER AND GOLD GILT SILVER WIRES FROM FIVE "KISWA", EMROIDERED SILK KAABA COVERS PRESENTLY EXHIBITED AT THE TOPKAPI PALACE MUSEUM, DATED BETWEEN 16TH AND 19TH CENTURIES  
Ali Fuat Çakir(a), Gülsu Simsek(a) and Hülya Tezcan(b), (a)Istanbul Technical University, Department of Metallurgy and Materials Engineering, Istanbul, Turkey, (b)Curator of Textiles, Topkapi Palace Museum, Istanbul, Turkey

**Q-I.03** 10:20 UNCOMMON CORROSION PHENOMENA OF ARCHAEOLOGICAL BRONZE ALLOYS  
T. de Caro, G.M. Ingo, ISMN-CNR, CP 10, 00016 Monterotondo Stazione, Rome, Italy

10:40

**BREAK**

### Session II : Organic materials

Session chair : **M.R. Schilling**

**Q-II.01** 11:00 JAPANESE LACQUER: AN INTEGRATED RESEARCH & COLLABORATIVE CONSERVATION PROJECT  
Brenda Keneghan, Conservation Department, Victoria & Albert Museum, London SW7 2RL, U.K., Ricky Wildman, School of Mechanical and Manufacturing Engineering, Loughborough University, Loughborough, Leicestershire LE11 3TU, U.K.

**Q-II.02** 11:20 PERMANENCE AND DURABILITY OF DIGITAL PRINTS ON PAPER  
Marjeta Cernic, Leopold Scheicher, Jozica Dolenc, Pulp and Paper Institute Ljubljana, Bogisiceva 8, POB 1728, 1000 Ljubljana, Slovenia

**Q-II.03** 11:40 FTIR IN SITU TRANSMISSION STUDIES ON THE KINETICS OF PAPER DEGRADATION VIA HYDROLYTIC AND OXIDATIVE REACTION PATHS  
J. Lojewska(a), H. Lubanska(b), T. Lojewski(a), (a)Faculty of Chemistry, Jagiellonian University, Ingardena 3, 30-060 Kraków, Poland, (b)Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Niezapominajek 8, 30-239 Kraków, Poland

12:00

**LUNCH**

Tuesday, May 31, 2005

Mardi 31 mai 2005

Afternoon

Après-midi

**Session III : Instrumental and conservation methods**

**Session chair : E. Angelini**

- Q-III.01** 13:30 -Invited- STUDY AND CONSERVATION OF ARTWORKS BY EUROPEAN TRANSNATIONAL ACCESS TO ADVANCED FACILITIES  
**B. Brunetti**, INSTM and SMAArt, Dipartimento di Chimica dell Università di Perugia, Via Elce di Sotto 8, 06123 Perugia, Italy
- Q-III.02** 14:10 LASER SPECTRAL ANALYSIS OF SURFACE LAYERS AS APPLIED TO AUTHENTICATION OF PAINTINGS  
E.V. Klyachkovskaya, V.A. Rozantsev, S.V. Gaponenko, E.A. Ershov-Pavlov, Institute of Molecular and Atomic Physics, National Academy of Sciences of Belarus, 70, F. Skaryna Avenue, 220072 Minsk, Belarus and N.M. Kozhukh National Art Museum of Belarus, 20, Lenin Street, 220030 Minsk, Belarus
- Q-III.03** 14:30 FEMTOSECOND LASER FILAMENTS ENABLE REMOTE LIBS ANALYSIS WITH POTENTIAL APPLICATIONS IN THE MONITORING OF SCULPTURE AND MONUMENTS  
D. Angelos(a), D. Gray(a) and S. Tzortzakis(b), (a)Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas (IESL-FORTH), 711 10 Heraklion, Crete, Greece, (b)Laboratoire pour l'Utilisation des Lasers Intenses (LULI), Ecole Polytechnique, 91128 Palaiseau, France
- Q-III.04** 14:50 SPECTROSCOPIC ANALYSIS USING A HYBRID LIBS-RAMAN SYSTEM  
A. Giakoumaki and D. Angelos, Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas (IESL-FORTH), P.O. Box 1527, 711 10 Heraklion, Crete, Greece
- Q-III.05** 15:10 AN INTEGRATED HIGH RESOLUTION AMS RADIOCARBON DATING AND ION BEAM ANALYSIS APPROACH FOR THE STUDY OF ARCHAEOLOGICAL CONTEXTS  
G. Quarta, K. Butalag, G. Demortier, M. D'Elia, L. Maruccio, L. Calcagnile, Centro di Datazione e Diagnostica, Department of Engineering of Innovation, University of Lecce, 73100 Lecce, Italy
- Q-III.06** 15:30 CONSERVATION OF ACID WATERLOGGED SHIPWRECKS: NANOTECHNOLOGIES FOR DEACIDIFICATION  
Rodorigo Giorgi, David Chelazzi, Piero Baglioni, CSGI c/o Department of Chemistry, University of Florence, via della Lastruccia 3, 50019 Sesto Fiorentino (Florence), Italy
- Q-III.07** 15:50 IN SITU NON-DESTRUCTIVE IDENTIFICATION OF SURFACE MARBLE ALTERATIONS BY FIBER OPTIC MID-FTIR REFLECTANCE SPECTROSCOPY  
C. Ricci(a), C. Miliani(b), L. Cartechini(b), A. Sgamellotti(b), and B.G. Brunetti(a), (a)INSTM and Centro SMAArt, Dipartimento di Chimica, Università di Perugia, 06123 Perugia, Italy, (b)CNR-ISTM, Sezione di Perugia, c/o Dipartimento di Chimica, Università di Perugia, 06123 Perugia, Italy
- 16:10 **BREAK**
- 16:30-18:30 **POSTER SESSION**

**POSTER SESSION**  
Tuesday, May 31, 2005  
16:30 – 18:30

Wednesday, June 1, 2005  
14:00 – 16:00

**Metals**

- P/Q.01** INTEGRATED APPROACH TO THE CHARACTERIZATION OF ARTIFACTS OF THE BRASILIAN COLONIAL PERIOD  
Emma Angelini, Sabrina Grassini, Politecnico di Torino, Dipartimento di Scienza dei Materiali ed Ingegneria Chimica, Torino, Italy, Giullermo Solorzano, Guadalupe do Nascimento Campos, Depto. de Ciência de Materiais e Metalurgia, PUC-Rio, Rio de Janeiro, Brasil
- P/Q.02** BRONZE ROMAN MIRRORS : THE SECRET OF BRIGHTNESS  
G.M. Ingo(a), E. Angelini(b), T. de Caro(a), P. Plescia(a), and C. Riccucci(a), (a)ISMN-CNR, CP 10, 00016 Monterotondo Stazione, Rome, Italy, (b)Politecnico of Turin, Italy
- P/Q.03** PRODUCTION OF REFERENCE “ANCIENT” Cu-BASED ALLOYS AND THEIR ACCELERATED DEGRADATION METHODS  
T. de Caro(a), G.M. Ingo(a), M.P. Casaletto(a), A. Çilingiroglu(b), P. Vassiliou(c), C. Samara(c), E. Angelini(d) and C. Riccucci(a), (a)ISMN-CNR, CP 10, 00016 Monterotondo Stazione, Rome (Italy), (b)Ege University, Bornova-Izmir, Turkey, (c)National Technical University of Athens, Greece, (d)Politecnico di Torino, Torino, Italy
- P/Q.04** COMBINED USE OF SEM-EDS, XPS, XRD AND OM FOR THE CHARACTERIZATION OF THE CORROSION PRODUCTS OF SILVER ROMAN COINS  
G.M. Ingo(a), S. Balbi de Caro(b), T. de Caro(a) and C. Riccucci(a), (a)ISMN-CNR, CP 10, 00016 Monterotondo Stazione, Rome, Italy, (b)Soprintendenza per i Beni Archeologici dell'Abruzzo, Chieti, Italy
- P/Q.05** MICROCHEMICAL INVESTIGATION OF GREEK AND ROMAN SILVER AND GOLD PLATED COINS : COATING TECHNIQUES AND CORROSION MECHANISMS  
T. de Caro(a), G.M. Ingo(a), S. Balbi de Caro(b), I. Fragalà(c), G. Bultrini(c) and C. Riccucci(a), (a)ISMN-CNR, CP 10, 00016 Monterotondo Stazione, Rome, Italy, (b)Soprintendenza per i Beni Archeologici dell'Abruzzo, Chieti, Italy, (c)Università di Catania, Italy
- P/Q.06** NON-DESTRUCTIVE CHARACTERIZATION OF ALLOY COMPOSITION AND TEXTURAL PROPERTIES OF ETRUSCAN BRONZES: A METHODOLOGICAL STUDY  
L. Cartechini and P. Rocchi, Istituto di Scienze e Tecnologie Molecolari – CNR, Sezione di Perugia, Italy, R. Rinaldi, Dipartimento di Scienze della Terra, Università di Perugia, Italy, W. Kockelmann, Rutherford Appleton Laboratory, ISIS Facility, Chilton, Didcot, U.K., S. Bonamore, Museo Archeologico Nazionale, Perugia, Italy, I. Borgia, B. Brunetti and A. Sgamellotti, Dipartimento di Chimica, Università di Perugia, Italy
- P/Q.07** CONSTANTINE EMPIRE COINS: STUDY OF PLATING TECHNIQUES  
Claudia Altavilla, Enrico Ciliberto and Valentina Mita, Dipartimento di Scienze Chimiche Università di Catania, viale A.Doria 6, 95125 Catania, Italy, Salvatore Garraffo, Istituto per le Tecnologie Applicate ai Beni Culturali del Consiglio Nazionale delle Ricerche (ITABC-CNR), Area della Ricerca Roma 1 – Montelibretti, Via Salaria Km. 29,300 - C.P. 10, 00016 Monterotondo St. Roma, Italy
- P/Q.08** ON THE COMPARATIVE STUDY OF THREE SILVER COINS OF THE IIIID CENTURY B.C. MINTED IN KORKYRA, DYRRACHION AND BY THE ILLYRIAN KING MONOUNIOS  
T. Dilo(a), N. Civici(b), F. Stamat(c), Sh. Gjonecaj(d), I. Prifti(a), O.Bilani(a), N. Pistofidis(e), G. Vourlias(e), E. Pavlidou(e), G. Stergioudis(e), E.K. Polychroniadis(e), (a)Department of Physics, FNSc, University of Tirana, Tirana, Albania (b)Department of Spectroscopy, Institute of Nuclear Physics, Tirana, Albania. (c)Laboratory of Restoration and Archaeometry, Institute of Popular Culture, Tirana, Albania, (d)Department of Antiquity, Institute of Archaeology, Tirana, Albania (e) Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece

**Organic materials**

- P/Q.09** IDENTIFICATION STUDIES OF PREHISTORIC WATERLOGGED WOOD  
Romina Belli, Serena Iachemet, Antonio Miotello, Laura Toniutti, Dipartimento di Fisica, Università di Trento, I-38050 Povo (TN) Italy
- P/Q.10** MODERN POLYESTER COMPOSITE MATERIALS IN CONTEMPORARY ART  
U. Knuutinen and S. Räsänen, EVTEK Institute of Art and Design, Conservation Department, Lummetie 2, 01300 Vantaa, Finland, P. Kyllönen, Oulu City Art Museum, Kasarmintie 7, Pl 4490015 Oulun kaupunki, Finland
- P/Q.11** Py/GC/MS TECHNIQUE APPLIED TO THE STUDY OF IRON GALL INKS  
Yeghis Keheyan, CNR, Istituto per lo Studio dei Materiali Nanostrutturati, ISMN, Dipartimento di Chimica, Roma1, Piazzale Aldo Moro 5, 00185 Roma, Italy

## Instrumental and conservation methods

- P/Q.12** POTENTIALITIES OF PORTABLE INSTRUMENTS FOR THE CHARACTERIZATION OF TANGIBLE METALLIC CULTURAL HERITAGE  
Emma Angelini, Politecnico di Torino, Dipartimento di Scienza dei Materiali ed Ingegneria Chimica, Torino, Italy, Gabriel Maria Ingo, Paolo Plescia, CNR-ISMN, CP10 Monterotondo, Roma, Italy, Andrea Bianco, Assing Spa, Monterotondo, Roma, Italy
- P/Q.13** LASER CLEANING OF TEXTILES  
Romina Belli, Antonio Miotello, Paolo Mosaner and Laura Toniutti, Università di Trento, Dipartimento di Fisica, 38050 Povo (TN), Italy
- P/Q.14** EVALUATION OF THE PROTECTIVE EFFICACY OF SYNTHETIC ORGANIC COATINGS APPLIED ON STONE MONUMENTS  
Andreas Tsakalof(a), Panagiotis Manoudis(b,c), Ioannis Karapanagiotis(c), Ioannis Chryssoulakis(c,d) and Costas Panayiotou(b), (a)University of Thessaly, Medical Department, Larisa 41222, Greece, (b)Aristotle University of Thessaloniki, Department of Chemical Engineering, 54124 Thessaloniki, Greece, (c)Sacred Convent of the Annunciation, ORMYLIA Art Diagnosis Centre, Ormylia, Halkidiki 63071, Greece, (d)National Technical University of Athens, Department of Chemical Engineering, 15773 Athens, Greece
- P/Q.15** LASER CLEANING ON ANCIENT PARCHMENT  
G. di Blasio, M. Zoncheddu, L. Vicari, COHERENTIA / INFM- Napoli, Italy, Dipartimento di Scienze Fisiche / Università di Napoli "Federico II"- Napoli, Italy, P. Zanolà, E. Bontempi, L.E. Depero, Laboratorio di Chimica per le Tecnologie, Università di Brescia, Via Branze 38, 25123 Brescia, Italy
- P/Q.16** SURFACE LASER TREATMENT OF ANCIENT CALCITE: THE CASE OF THE GRAVE IN TORRICELLI (NAPLES)  
D. Benedetti, E. Bontempi, L.E. Depero, Laboratorio di Chimica per le Tecnologie, Università di Brescia, Via Branze 38, 25123 Brescia, Italy, M. Zoncheddu, G.di Blasio, L. Vicari, INFM and Università di Napoli Federico II, 80125 Napoli, Italy, C. Piccioli, Ufficio Restauro della Sovrintendenza Archeologica di Napoli e Caserta, Italy
- P/Q.17** RESTRAIN OF BIOLOGICAL ACTIVITY OF ULOCLADIUM SP SPORES IN ARTIFACTS WITH 157 NM LASER  
E. Sarantopoulou, Z. Kollia, A.C. Cefalas, National Hellenic Research Foundation, TPCI, 48 Vassileou Constantinou Avenue, Athens 11635, Hellas I. Gomoiu, Institute of Biology, Romanian Academy, Romania
- P/Q.18** STUDY ON IMPACT OF LASER IRRADIATION OF THE ARTIFICIALLY PATINATED BRONZE  
Marina Sokhan, David McPhail, Derek Pullen, Materials Dept, Imperial College, Imperial College London, Prince Consort Rd, London SW7 2BP, U.K., Tate Gallery, Millbank London Sw1P 4RG, U.K.
- P/Q.19** USE OF MID-INFRARED FIBER-OPTIC REFLECTANCE SPECTROSCOPY TO DETERMINE EFFICACY OF MICRO-EMULSION CLEANING AGENTS IN FRESCO CONSERVATION  
L. Dei, E. Carretti, B. Rosenzweig, University of Florence, Via della Lastruccia 3, 50019 Sesto Fiorentino, Italy, M. Picollo, Institute for Applied Physics "Nello Carrara" CNR, Via Panciatichi 64, 50127 Firenze, Italy

## Paintings

- P/Q.20** BLACKENING PROCESS OF A XV CENTURY ITALIAN PAINTING: A XAFS STUDY  
I. Borgia, L. Cartechini, A. Sgamellotti, B.G. Brunetti, Dipartimento di Chimica, Università di Perugia, Via Elce di Sotto 8, 06123 Perugia, Italy, D. Puzzovio, P. Mazzoldi, S. Padovani, INFM, Dipartimento di Fisica, Università di Padova, Via Marzolo 8, 35131 Padova, Italy, F. D'Acapito, C. Maurizio INFM, ESRF, GILDA-CRG, B.P. 220, 38043 Grenoble, France

## Stone, glass, ceramics

- P/Q.21** MINERO-PETROGRAPHIC, THERMAL AND MICROCHEMICAL INVESTIGATION OF HISTORICAL MORTARS USED IN CATANIA (SICILY) DURING THE XVII CENTURY AD  
G. Bultrini, I. Fragalà, Dipartimento Scienze Chimiche, Università di Catania, v.le A.Doria 6, 95125 Catania, Italy, G.M. Ingo, Istituto per lo Studio dei Materiali Nanostrutturati del Consiglio Nazionale delle Ricerche, CP 10, Monterotondo Stazione, 00016 Rome, Italy
- P/Q.22** GLANCING-INCIDENCE X-RAY DIFFRACTION STUDY OF Ag AND Cu NANOPARTICLES IN GOLD AND RED LUSTRE DECORATION OF ITALIAN RENAISSANCE POTTERY  
E. Bontempi and L.E. Depero, Laboratorio di Chimica per le Tecnologie, Dipartimento di Ingegneria Meccanica, Università di Brescia, Via Branze 38, 25123 Brescia, Italy, L. Cartechini, Istituto di Scienze e Tecnologie Molecolari - CNR, Sezione di Perugia, c/o Dipartimento di Chimica, Università di Perugia, via Elce di Sotto 8, 06123 Perugia, Italy, F. Presciutti, B.G. Brunetti, and A. Sgamellotti, INSTM and Centro SMAArt, Dipartimento di Chimica, Università di Perugia, via Elce di Sotto 8, 06123 Perugia, Italy
- P/Q.23** CHARACTERISATION AND REPRODUCTION OF YELLOW PIGMENTS USED IN CENTRAL ITALY FOR DECORATING CERAMICS DURING RENAISSANCE  
G. Bultrini, I. Fragalà, Dipartimento Scienze Chimiche, Università di Catania, v.le Doria 6, 95125 Catania, Italy, G.M. Ingo, Istituto per lo Studio dei Materiali Nanostrutturati del Consiglio Nazionale delle Ricerche, CP 10, Monterotondo Stazione, 00016 Rome, Italy

**P/Q.24** STUDY OF BLUE COLOR IN ANCIENT MOSAIC TESSERAE BY MEANS OF LUMINESCENCE AND REFLECTANCE MEASUREMENTS

A. Galli(a), M. Martini(a), C. Montanari(a), G. Poldi(b), E. Sibillia(a), (a) INFN and Dipartimento di scienza dei materiali, Università di Milano Bicocca, Via R. Cozzi 53, 20125 Milano Italy, (b)Istituto di fisica generale applicata, Università di Milano, Via Celoria 16, 20133 Milano Italy

**P/Q.25** PHOTOLUMINESCENCE EMISSIONS OF CERAMICS: A MARKER OF PRODUCTION TECHNOLOGY

A. Galli, M. Martini, C. Montanari, E. Sibillia, INFN and Dipartimento di scienza dei materiali, Università di Milano Bicocca, Via R. Cozzi 53, 20125 Milano, Italy

**Wednesday, June 1, 2005**  
Mercredi 1er juin 2005

**Afternoon**  
Après-midi

14:00-16:00      **POSTER SESSION (continued)**

16:00              **BREAK**

**Session IV : Cultural heritage materials (joint session with symposium O)**  
**Session chair : M. Menu**

- Q-IV.01** 16:20 -Invited-      **APPLICATIONS OF SYNCHROTRON RADIOATION TO ARCHAEOOMETRY**  
**Mario Vendrell**, Dept. Crystallography and Mineralogy, University of Barcelona, Spain
- Q-IV.02** 17:00                      **COPPER NANO-CLUSTERS IN ANCIENT OPAQUE GLASS FROM POMPEII AND SICILY: A XAS STUDY**  
R. Arletti, G. Vezzalini, Earth Science Department, L.go S. Eufemia 19 41100 Modena, Italy, and **S. Quartieri**, G. Sabatino, M. Triscari, Earth Science Department, Salita Sperone 31, 98166 Messina S. Agata, Italy and **M.C. Dalconi**, Earth Science Department, Corso Ercole I° d'Este, 44100, Ferrara, Italy
- Q-IV.03** 17:20                      **MODELLING THE SIZE OF RED-COLOURING COPPER NANOCCLUSERS IN ARCHAEOLOGIC GLASS BEADS**  
**M.O. Figueiredo**, J.P. Veiga, CENIMAT, Fac. Sci. Technol., New Univ. Lisbon, 2829-516 Caparica, and J.P. Mirão, Geophysics C., Évora Univ., 7002-554 Évora, Portugal
- Q-IV.04** 17:40                      **CHEMICAL ANALYSIS OF ANCIENT PHARMACEUTICAL PRACTICES**  
**M. Cotte**, B. Fayard, J. Susini, ESRF, BP 220, 38043 Grenoble Cedex, France; P. Dumas, Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin, BP 48, 91192 Gif-sur-Yvette Cedex, France; Ph. Walter, (C2RMF), UMR 171 CNRS, Palais du Louvre, Porte des Lions, 14 quai F. Mitterrand, 75001 Paris, France
- 19:00                      **AWARD CEREMONY**  
The symposium organizers and the candidates to the graduate student award are requested to attend.

**CONFERENCE RECEPTION**

Thursday, June 2, 2005  
Jeudi 2 juin 2005

Morning  
Matin

**Session V : Stone, glass, ceramics I**  
**Session chair : G. Padeletti**

- Q-V.01** 9:00 -Invited- LUSTERS OF RENAISSANCE POTTERY: EXPERIMENTAL AND CALCULATED OPTICAL PROPERTIES USING INHOMOGENEOUS THEORIES  
**Serge Berthier**(a), Giuseppina Padeletti(b), Paola Fermo(b), Anne Bouquillon(c), Marc Aucouturier(c) Eric Charron(a), (a)Institut des Nanosciences de Paris, 140 rue de Lourmel, 75015 Paris, France, (b)Istituto per lo Studio dei Materiali Nanostrutturati-CNR, Via Salaria Km.29, 5 c.p. 10 Monterotondo Staz., 00016 Monterotondo(Roma), Italy, (c)Centre de Recherche et de Restauration des Musées de France, Palais du Louvre, Porte des Lions, 14 quai François Mitterrand, 75001 Paris, France
- Q-V.02** 9:40 -Invited- THE LONGEVITY OF OLD MORTARS  
**Ioanna Papayianni**, Aristotle University of Thessaloniki, Laboratory of Building Materials, Greece
- Q-V.03** 10:20 STUDY OF SULPHATION OF CANDOGLIA MARBLE BY MEANS OF MICRO X-RAY DIFFRACTION EXPERIMENTS  
R. Pedrazzani, I. Alessandri, E. Bontempi, L.E. Depero, Laboratorio di Chimica per le Tecnologie, Università di Brescia, Via Branze 38, 25123 Brescia, Italy, F. Cappitelli, Dipartimento di Scienze e Tecnologie Alimentari e Microbiologiche, Università di Milano, Via G. Celoria 2, 20133 Milano, Italy, E. Pantos, CCLRC, Daresbury Laboratory, Keckwick Lane, Warrington WA4 4AD, U.K., L. Toniolo, Istituto per la Conservazione e la Valorizzazione dei Beni Culturali, Sezione di Milano "Gino Bozza", Politecnico di Milano, P. zza Leonardo da Vinci 32, 20133 Milano, Italy
- 10:40 **BREAK**

**Session VI : Stone, glass, ceramics II**  
**Session chair : M. Vendrell**

- Q-VI.01** 11:00 LASER TECHNOLOGY APPLIED FOR THE ANALYSIS OF ROMAN POTTERY TERRA SIGILLATA  
G. Nicolás, M. Mateo, A.J. López, A. Ramil V. Piñón and A. Yáñez, Laboratorio de Aplicaciones Industriales del Láser, Universidad de A Coruña, C/ Mendizábal s/n, 15403 Ferrol, Spain
- Q-VI.02** 11:20 COPPER BLUE IN ANCIENT GLASS BEADS: A XANES STUDY  
J.P. Veiga and M.O. Figueiredo, CENIMAT, Fac. Sci. Technology, New Univ. Lisbon, 2829-516 Caparica, Portugal
- Q-VI.03** 11:40 UNDERSTANDING BRONZE AGE FAIENCE IN BRITAIN AND IRELAND  
Alison Sheridan, National Museums of Scotland, Chambers Street, Edinburgh, U.K., Kathy Eremin, Harvard University, Boston, USA and Andrew Shortland, Oxford University, 6 Keble Road, Oxford, U.K.
- Q-VI.04** 12:00 FIRST-TIME OBSERVATION OF MASTRO GIORGIO'S MASTERPIECES BY MEANS OF NON-DESTRUCTIVE TECHNIQUES  
G. Padeletti, ISMN-CNR, cp 10, 00016 Monterotondo Staz. Roma, Italy, P. Fermo, Dip. Chim. Inorg. Met. e An., Univ. of Milano, via Venezian 21, 20133 Milano, Italy, A. Bouquillon, S. Pages-Camagna and M. Aucouturier, C2RMF-CNRS, Palais du Louvre, 75001 Paris, France
- 12:20 **LUNCH**

Thursday, June 2, 2005  
Jeudi 2 juin 2005

Afternoon  
Après-midi

**Session VII : Paint and paintings**  
**Session chair : M.-C. Corbeil**

- Q-VII.01** 13:30 -Invited- CHARACTERIZATION OF WATER-MIXABLE ARTISTS' OIL PAINTS  
**Michael R. Schilling**(a), Joy Keeney(a), Roberta Renz(a), Casey Greet(b), Jesús Jiménez(b), Charles N. Millner(b), V.C. Jenkins(b) and Tom Learner(c), (a)The Getty Conservation Institute, 1200 Getty Center Drive, Suite 700, Los Angeles CA 90049, USA, (b)California State Polytechnic University, 3801 West Temple Avenue, Pomona CA 91768, USA, (c)Tate Millbank, London SW1P 4RG, U.K.
- Q-VII.02** 14:10 -Invited- NEW INSIGHTS INTO PIGMENT PROCESSING IN ANCIENT EGYPT  
**Ph. Walter**, Centre de recherche et de restauration des musées de France – CNRS UMR 171, 14 quai François Mitterrand, 75001 Paris, France
- Q-VII.03** 14:50 INVESTIGATION ON WHITE PIGMENTS USED AS MAKE-UP DURING THE GRECO-ROMAN PERIOD  
E. Welcomme, Ph. Walter, E. Van Elslande, G. Tsoucaris, Centre de Recherche et de Restauration des Musées de France – CNRS UMR 171, 14, quai François Mitterrand, 75001 Paris, France
- Q-VII.04** 15:10 COPPER RESINATE: AN XPS STUDY OF DEGRADATION  
Claudia Altavilla and Enrico Ciliberto, Dipartimento di Scienze Chimiche Università di Catania, viale Andrea Doria 6, 95125 Catania, Italy
- Q-VII.05** 15:30 NMR SPECTROSCOPY: A NEW ANALYTICAL TOOL FOR THE STUDY OF PAINTED ARTWORKS  
Apostolos Spyros, NMR Laboratory, Department of Chemistry, University of Crete, Knossos Ave., 71409 Heraklion, Crete, Greece and Demetrios Anglos, Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas (IESL-FORTH), P.O. Box 1527, 71110 Heraklion, Crete, Greece
- Q-VII.06** 15:50 ONOUFRIOS, THE FAMOUS XVI<sup>th</sup> CENTURY ICONOGRAPHER, CREATOR OF THE "BERATI SCHOOL": STUDYING THE TECHNIQUE AND MATERIALS USED IN WALL PAINTINGS OF INSCRIBED CHURCHES  
E. Pavlidou(a), M. Arapi(b), T. Zorba(a), M. Anastasiou(a), N. Civici(c), F. Stamati(d), K.M. Paraskevopoulos (a), (a)Physics Dept. Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, (b)Institute of Monuments of Culture, Tirana, Albania, (c)Institute of Nuclear Physics, Tirana, Albania, (d)Institute of Popular Culture, Tirana, Albania
- 16:10 **BREAK**
- Q-VII.07** 16:30 TECHNIQUE AND PALETTE OF XIII<sup>th</sup> CENTURY PAINTING IN MONASTERY OF MILESEVA  
T. Zorba(a), E. Pavlidou(a), M. Stanojlovic(b), D. Bikiaris(c), K.M. Paraskevopoulos(a), V. Nikolic(b), P.M. Nikolic(d), (a)Physics Dept. Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, (b)Republic Institute for protection of cultural monuments, Belgrade, Serbia-Montenegro, (c)Dept. of Chemistry, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, (d)Institute of technical Science of SASA, Belgrade, Serbia-Montenegro
- Q-VII.08** 16:50 TRANSPARENT SURFACE COATINGS: MICRO-ANALYTICAL STUDIES ON GREEK POST-BYZANTINE ICONS  
Olga Katsibiri(a), Demetra Lazidou(b) and Jaap J. Boon(a), (a)Molecular Painting Research Group, FOM Institute for Atomic and Molecular Physics, Kruislaan 407, 1098 SJ Amsterdam, The Netherlands, (b)Museum of Byzantine Culture, 2 Stratou Avenue, 54013 Thessaloniki, Greece
- Q-VII.09** 17:10 QUANTITATIVE CHARACTERISATION OF PIGMENT MIXTURES IN PAINTINGS BY FIBRE-OPTICS DIFFUSE REFLECTANCE SPECTROSCOPY  
G. Dupuis and M. Menu, C2RMF, Palais du Louvre, Porte des Lions, 14 Quai François Mitterrand, 75001 Paris, France
- Q-VII.10** 17:30 RAPID IDENTIFICATION OF PAINT BINDING MEDIA USING LD-FTICR MASS SPECTROMETRY  
Yeghis Keheyian(a), Gayane Eliazyan(b), Armen Sahakyan(b), (a)Istituto per lo Studio dei Materiali Nanostrutturati, ISMN, Dipartimento di Chimica, Roma1-Piazzale Aldo Moro 5, 00185 Roma, Italy, (b)Institute of Ancient Manuscripts, Yerevan 375009, Armenia