

CONFERENCE PROGRAM

Monday, 27 April 2009

8:30-9:20		Registration
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9:20-10:30		INNOVATIVE TECHNIQUES & METHODOLOGIES I <i>Session chairs: A.G.Karydas, D. Anglos</i>
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9:20		Welcome address
9:30	O1 Invited	The construction of the big monuments in Ancient Egypt: New insight from elemental and structural analysis <u>G. Demortier</u>
10:00	O2 Invited	What can confocal x-ray microscopy do for investigations of art and cultural heritage? <u>B. Kanngießler</u>
10:30		Coffee break
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11:00-12:50		INNOVATIVE TECHNIQUES & METHODOLOGIES II <i>Session chair: C. Fotakis</i>
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11:00	O3 Invited	Raman Microscopy, pigments and interfaces with arts and archaeology <u>R.J.H. Clark</u>
11:30	O4	The technological study of renaissance bronzes with the help of neutron imaging techniques <u>R. Van Langh</u> , E. Lehmann, A. Kaestner, S. Hartmann and F. Scholten
11:50	O5	X-ray tomographic microscopy compared to ion polished paint cross section of 19th century paints with and without metal soap aggregates <u>J. J. Boon</u> , E. S .B. Ferreira, J. Van der Horst, M. Stampanoni and F. Marone
12:10	O6	Analytical techniques for understanding the execution procedures used to craft large bronze masterpieces along the centuries <u>S. Siano</u>
12:30	O7	Painting techniques and state of conservation of wall paintings in St. Nicolas church at Zagori-Greece <u>S. C. Boyatzis</u> , A. Terlix, G. Pavlopoulos, A. Karabotsos, E. Tziamourani, N. Minos and E. Ioakimoglou
12:50		Lunch break

Monday, 27 April 2009

14:00-15:30

INNOVATIVE TECHNIQUES & METHODOLOGIES III

Session chair : R. V. Grieken

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- 14:00 O8 **On site analysis of artifacts excavated from Egypt by using newly developed portable diffractometer and fluorescence spectrometer**
Invited I. Nakai, Y. Abe, K. Takahashi, N. Kawai and S. Yoshimura
- 14:30 O9 **Fluorescence and vibrational spectroscopy for the analysis of the ageing of selected natural varnishes**
A. Nevin, D. Comelli, I. Osticioli, G. Valentini, L. Toniolo and R. Cubeddu
- 14:50 O10 **NMR spectroscopy in cultural heritage materials analysis**
A. Spyros
- 15:10 O11 **Unlocking documentary antiquities with AXSIA multi-spectral imaging**
R.T. Macfarlane, P. Rossi, A.J. Antolak, P. Kotula, B.L. Doyle and S.M. Bay
- 15:30 Coffe break
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15:30-16:50

CONFOCAL X-RAY MICROANALYSIS AND IMAGING

Session chair: Z. Smit

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- 15:30 O12 **Non-destructive, depth resolved investigation of historical glass objects by 3D micro X-ray fluorescence analysis – X-ray tube and synchrotron radiation measurements**
I. Mantouvalou, K. Lange, T. Wolff, M. Pagels, L. Lühl, O. Hahn and B. Kanngießer
- 16:10 O13 **3D imaging with a confocal μ -PIXE arrangement**
N. Grlj, M. Žitnik, P. Pelicon, D. Sokaras, A. G. Karydas and B. Kanngießer
- 16:30 O14 **3D micro-XRF analysis of Ancient Attic black glazed ceramics**
D. Sokaras, E. Aloupi, A.G. Karydas, V. Kantarelou, I. Mantouvalou, B. Hesse, L. Lühl and B. Kanngießer

16:50-17:30

VENDORS SESSION (BRUKER-AXS, FORTH PHOTONICS)

Session chairs: A.G.Karydas, D. Anglos

17:30-19:00

POSTER SESSION I

Session chairs: I. Rabin, Z. Kis

19:00-21:00

Welcome Reception

Tuesday, 28 April 2009

9:00-10:30 **OPTICS AND LASERS** *Session chair: I. Schechter*

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- 9:00 O15 **Identification and topography of pigments and varnishes by different optical techniques**
Invited M. Elias
- 9:30 O16 **Filamentation driven terahertz time-domain-spectroscopy for the analysis of cultural heritage related materials**
J.-M. Manceau, C. Fotakis and S. Tzortzakis
- 9:50 O17 **Insights into the use of red lakes in wall paintings by Masolino from in situ analysis and examination of microsamples**
D. Comelli, A. Gallone, A. Nevin, I. Osticioli, G. Valentini, L. Toniolo, A. Longoni, R. Albert and R. Cubeddu
- 10:10 O18 **Compositional depth-profiles of excavated marble patinas and possible use in authenticity investigations**
K. Polikreti and C. Christofides
- 10:30 Coffee break
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11:00-12:50 **NEUTRONS** *Session chair: V. Argyropoulos*

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- 11:00 O19 **Non-destructive neutron analysis techniques at ISIS**
Invited W. Kockelmann and E. Godfrey
- 11:30 O20 **Neutron diffraction measurements for the characterization of four Japanese artworks of Tokugawa age**
F. Grazzi, L. Bartoli, F. Civita and M. Zoppi
- 11:50 O21 **Investigation of the content of ancient Tibetan metallic Buddha statues by means of neutron imaging methods**
E. H. Lehmann , S. Hartmann, M. Salque and M. O. Speidel
- 12:10 O22 **Spatial element distribution from prompt gamma activation imaging**
Z. Kis, L. Szentmiklósi, T. Belgya, Zs. Kasztovszky and The Ancient Charm Collaboration
- 12:30 O23 **Multifunctional encoding system for assesment of movable cultural heritage**
V. Tornari, E. Bernikola, K. Hatziyannakis, W. Osten, R.M. Grooves, M. Georges, T. Cedric, G.M. Hustinx, J. Rochet, E. Kouloumpi, M. Doulgeridis, T. Green and S. Hackney
- 12:50 Lunch break

Tuesday, 28 April 2009

14:00-15:30

SYNCHROTRON RADIATION

Session chair: J.J. Boon

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- 14:00 O24 **Combined use of x-ray milli- and microprobes for non-destructive analysis of large cultural heritage artefacts**
Invited K. Janssens, J. Dik, G. Van Der Snickt, M. Alfeld and K. Rickers
- 14:30 O25 **Material studies on the Dead Sea scrolls**
I. Rabin, O. Hahn, T. Wolff, A. Masic, and G. Weinberg
- 14:50 O26 **A diffusion study of medieval ferrous products using trace elements microanalyses: the case of Italian armours**
S. Leroy, P. Dillmann, B. Gratuze, R. Simon, L. Bertrand, A. Williams and P. Fluzin
- 15:10 O27 **Investigation of celtic ceramic sherds with a laboratory 3D micro x-ray fluorescence spectrometer**
C. Seim, L. Lühl, S. Steiner and B. Kanngießer
- 15:30 Coffee Break
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15:50-16:30

DIAGNOSTIC TECHNIQUES IN CONSERVATION

Session chair: H. Breccoulaki

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- 15:50 O28 **The monitoring of indoor museum environments and the impact of their conservation of their corrosivity on complex organic materials**
M. Odlyha, S. Jakiela, C. Theodorakopoulos, J.M. Slater, R. Campana, S. Kutsarova, C.J. Bergsten, A. Cavicchioli, D.L.A. de Faria, A. Niklasson, J.-E. Svensson, T. Grontoft, E. Dahlin and M. Scharff
- 16:10 O29 **The use of Near Infrared spectroscopy to characterize the state of historic silks**
P. Garside, J. Kim and P. Wyeth
- 16:30 O30 **Preliminary study on the wood from an ancient roman rostrum**
E. Caponetti, F. Caruso, C. Di Stefano, M. L. Saladino, A. Spinella, P. Tisseyre and S. Tusa
- 16:50 O31 **EDXRF and FTIR combined studies of archaeological artworks in Crete**
N. Maravelaki and N. Kallithrakas-Kontos
- 17:30 Tour to Acropolis

Wednesday, 29 April 2009

9:00-10:30

MOBILE SPECTROSCOPY I

Session chair: S. Siano

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- 9:00 O32 **The IAEA activities related to applications of nuclear analytical techniques for characterization and protection of cultural heritage objects**
Invited A. Markowicz, D. Wegrzynek and E. Chinea-Cano
- 9:30 O33 **Quantitative X-ray fluorescence analyse of an Egyptian faience pendant and comparison with PIXE**
L. De Viguerie, A. Duran, A. Bouquillon, V. A. Sole, J. Castaing and P. Walter
- 9:50 O34 **Novel extensions of pulsed Raman and laser induced breakdown spectroscopy (LIBS) in art conservation**
I. Osticioli, N.F.C. Mendes, S. Porcinai, A. Cagnini and E. M. Castellucci
- 10:10 O35 **A novel portable XRF spectrometer: first application to a gilded bronze from the Florence baptistery**
A. Migliori, P. Bonanni, N. Grassi and P.A. Mando
- 10:30 Coffee break
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11:00-12:50

ORGANIC MATERIALS

Session chair: C. Milliani

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- 11:00 O36 **Macromolecules in art and archaeology**
M.P. Colombini
- 11:30 O37 **From egg tempera to oil on canvas: Analytical study of the evolution of the Post-Byzantine techniques**
E. Kouloumpi, G. Lawson and V. Pavlidis
- 11:50 O38 **Coloured glazes on silver leaf: Identification of the protein media used in the grounds and coatings**
C. Tokarski, M. Richter, S. Schafer, N. Garnier and C. Roland
- 12:10 O39 **Parchment characterization and deterioration assessment using optical methods**
B. Dolgin, Y. Chen, V. Bulatov and I. Schechter
- 12:30 O40 **Comparison of extraction methods for the analysis of natural dyes in historical textiles by HPLC**
I. Karapanagiotis, L. Valianou and C. Chrysoulakis
- 12:50 Lunch break

Wednesday, 29 April 2009

14:00-15:30 **MOBILE SPECTROSCOPY II**
Session chair: A. Nevin

14:00 O41 **The new version of the portable XRD system of the LANDIS laboratory and its application for the non-destructive characterization of ancient pigments**
Invited F.P. Romano, G. Pappalardo, L. Pappalardo, F. Rizzo and G. Gatto Rotondo

14:30 O42 **A portable, vacuum-chamber equipped XRF-instrument, designed for the sophisticated needs of the KHM, Vienna**
K. Uhlir, G. Buzanich, M. Griesser, C. Strel, P. Wobrauschek, D. Wegrzynek, A. Markowicz and E. China-Cano

14:50 O43 **A combined use of FORS, XRF and Raman spectroscopy in the study of mural paintings in the Aosta valley (Italy)**
L. Appolonia, D. Vaudan, V. Chatel, M. Aceto and P. Mirti

15:10 O44 **Micro-XRF and LIBS analysis of gilded bronze figurines at the national archaeological museum of Damascus**
V. Kantarelou, A. G. Karydas, D. Sokaras, A. Giakoumaki, D. Anglos, L. Mahfoud, A. Kurdab, M. Azar, A. Almansour and J. Alshehne

15:30 Coffee Break

15:50-17:10 **COMBINED ND TECHNIQUES**
Session chair: P. Mirti

15:50 O45 **Reliability of optical microscopy, X-Ray diffraction and X-Ray fluorescence for studying tesserae from mosaics**
V. Perdikatsis, Ch. Apostolaki, V. Kantarelou

16:10 O46 **Using Micro-XRF and Raman Spectroscopy for non-invasive analysis of Artworks: techniques and applications**
E. Lancelot

16:30 O47 **Multitechnique characterization of lapis lazuli for provenance study by means of Ionoluminescence**
A. Lo Giudice, M. Albonico, S. Calusi, E. Colombo, E. Conz, L. Giuntini, M. Massi, P. Olivero, G. Pratesi, A. Re and E. Vittone

16:50 O48 **The use of a diamond cell for the FTIR characterization of binding and pigments in contemporary paintings**
Z.E. Papliaka and E.A. Varella

17:10-18:30 **POSTER SESSION II**
Session chairs: M. Castillejo, C. Tokarski

21:00 Gala Dinner

Thursday, 30 April 2009

9:00-13:30 **SENSING AND SPECTROSCOPY**

Session chair: K. Polikreti

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- 9:00 O49 Invited **Non destructive identification of art objects using multispectral images and spectra combined with acoustic microscopy**
G. Karagiannis
- 9:30 O50 **Principal component analysis of reflectance medium infrared spectra for the non-invasive identification of organic materials in wall paintings**
A. Daveri, F. Rosi, C. Miliani, G. Verri, P. Benedetti, B. Brunetti and F. Pique
- 9:50 O51 **Second and third harmonic generation measurements of glues used for lining of painted artworks**
G. Filippidis, K. Melessanaki and C. Fotakis
- 10:10 O52 **Micro-fading spectrometry: investigating the wavelength specificity of fading**
A. Lerwill, A. Brookes, J. H. Townsend, H. Liang, J. Thomas and S. Hackney
- 10:30 Coffee break
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11:00-12:40 **ION-BEAM ANALYSIS AND COMPLEMENTARY TECHNIQUES**

Session chair: G. Pappalardo

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- 11:00 O53 **Analysis of Venetian-type glass from Lezha, Albania**
Ž. Šmit, F. Stamatii, N. Civici, A. Vevecka, M. Kos and D. Jezeršek
- 11:20 O54 **Elemental analysis of ancient glass beads by means of combined ion-beam and synchrotron-based analytical tools**
D. Sokaras, A. G. Karydas, A. Oikonomou, N. Zacharias, K. Beltsios, V. Kantarelou, L. Lühl, B. Hesse, I. Mantouvalou and B. Kanngießler
- 11:40 O55 **Croatian Apoxiomenos – metal composition and lead provenance study**
D. Mudronja, M. Jakšić, S. Fazinić, I. Božičević, V. Desnica, Ž. Pastuović, D. Krstić, J. Woodhead and Z.A. Stos-Gale
- 12:00 O56 **The hoard of Beçin - non-destructive analysis of the silver coins**
M. Rodrigues, M. Schreiner, M. Melcher, M. Guerra, J. Salomon, M. Radtke, M. Alram and N. Schindel
- 12.20 O57 **Non-destructive determination of the silver content in Roman coins dated to 308-311 A.D. by combined use of the PIXE-alpha, XRF and DPAA techniques**
F. Rizzo, G.P. Cirrone, G. Cuttone, A. Esposito, S. Garraffo, G. Pappalardo, L. Pappalardo, F.P. Romano and S. Russo
- 12:40 Lunch break

Thursday, 30 April 2009

14:00-15:30 **X-RAY MICROANALYSIS AND COMPLEMENTARY TECHNIQUES**
Session chair: E. Aloupi

- 14:00 O58 **μ -EDXRF and XRD on lead-based glazes**
Invited M.L. Carvalho, A. Guilherme and J. Coroado
- 14:30 O59 **Important considerations on applying X-Ray microanalysis techniques for damage assessment of outdoor copper based monuments**
V. Argyropoulos, A. Vossou, K. Polikreti, D. Charalambous, I. Sianoudis, A.G. Karydas, V. Perdikatsis, S. Bittner and M. Mach
- 14:50 O60 **EDXF imaging of Pb depth penetration in glazed ceramics using a micropattern gas detector**
A.L.M. Silva, J.F.C.A. Veloso, C.A.B. Oliveira, A.L. Gouvêa, J.M.F. dos Santos and M.L. Carvalho
- 15:10 O61 **Indonesian painting: Characterization of modern Balinese painting by Raman microscopy**
M. R.. Marcelino, S. Lopes and V.S.F. Muralha
- 15:30 O62 **Use of X-Ray-based microanalytical methods for explanation of origin and corrosion of copper-based pigments**
S. Svarcova, D. Hradil, J. Hradilova, E. Kotylanova and P. Bezdicka

POSTER SESSION I
Monday 17:30-19:00

Optics and Lasers

- P1 THE ITALIAN PAINTING OF THE 17TH CENTURY CONTRIBUTIONS OF A NON-DESTRUCTIVE INVESTIGATION**
C. FRANCESCHI, E. FRANCESCHI and S. VASSALLO
- P2 SEC/MALLS TECHNIQUE IN PAPER DEGRADATION STUDIES**
T. ŁOJEWSKI and K. ZIĘBA
- P3 ASSESSING EARLY PHOTOSYNTHETIC GROWTH ON MONUMENTS BY IN VIVO CHLOROPHYLL FLUORESCENCE**
A.Z. MILLER, A. DIONÍSIO, M.F. MACEDO and C. SAIZ-JIMENEZ
- P4 CHARACTERIZATION OF DAMAGES INDUCED BY LIBS ANALYSIS ON ARCHAEOLOGICAL OBJECTS USING OPTICAL PROFILOMETRY**
G. NICOLAS, T. CTVRTNICKOVA and M.P. MATEO
- P5 A NEW SPECTRAL IMAGING APPROACH FOR THE IN-SITU ASSESSMENT OF THE CLEANING INTERVENTION ON STONEWORK**
A. LOUKAITI, V. PAPADAKIS and P. POULI
- P6 NON-DESTRUCTIVE DEPTH-PROFILING OF PHOTO-AGED DAMMAR VARNISH USING SPECTROSCOPIC ELLIPSOMETRY**
K. POLIKRETI and C. CHRISTOFIDES

Neutrons

- P7 POTSDERDS FROM THE INNER MONGOLIA**
R. GILLES, Y.M. SIOURIS, W. KOCKELMANN, M. HOELZEL, D. VISSER and M. BRUNELLI
- P8 ARCHAEOOMETRY RESEARCH OF LITHIC RAW MATERIALS FOR EARLY NEOLITHIC PREHISTORIC COMMUNITIES WITH PGAA**
ZS. KASZTOVSZKY, K. T. BIRÓ, A. MARKÓ, T. TEZAK-GREGL, M. BURIC and R. SOSIC
- P9 RADIOGRAPHY DRIVEN PGAI AND NEUTRON DIFFRACTION MEASUREMENTS ON TEST OBJECTS DESIGNED FOR THE 'ANCIENT CHARM' PROJECT**
Z. KIS, L. SZENTMIKLÓSI, T. BELGYA, ZS. KASZTOVSZKY, W. KOCKELMANN, G. FESTA, A. KIRFEL, P. KUDEJOVA, R. SCHULZE, K. T. BIRÓ, K. DÚZS, ZS. HAJNAL and D. VISSER
- P10 TOF-ND AND LIPS COMBINED STUDIES OF ANCIENT BRONZE FIGURINES**
S. SIANO, J. AGRESTI, L. BARTOLI, A.A. MENCAGLIA, A. RASTRELLI

and M. MICCIO

P11 NON-DESTRUCTIVE CHARACTERISATION OF SILVER/COPPER COINS USING TOF NEUTRON DIFFRACTION
I. M. SIOURIS, W. KOCKELMANN and V. POULIOS

P12 METHODOLOGY FOR LARGE SAMPLE NEUTRON ACTIVATION ANALYSIS OF CULTURAL HERITAGE OBJECTS
F. TZIKA, T. VASILOPOULOU and I.E. STAMATELATOS

Synchrotron Radiation

P13 STUDY OF METALLIC COMPONENTS OF HISTORICAL ORGAN PIPES THROUGH SYNCHROTRON RADIATION X-RAY MICROFLUORESCENCE IMAGES AND GRAZING INCIDENCE X-RAY DIFFRACTION
L.K HERRERA, A. JUSTO, A. MUÑOZ and G. MARTINEZ-CRIADO

P14 STUDY OF JOSEFA D'OBIDOS AND BALTAZAR GOMES FIGUEIRA PAINTINGS BY FTIR AND IN-SITU AND SYNCHROTRON XRF: ASSIGNING AUTORSHIP?
A. GUILHERME, S. PESSANHA, M.L. CARVALHO, S. VALADAS, T. FERREIRA, C.T. COSTA, A. CANDEIAS, J. CAETANO, R. SIMON and J. MIRÃO

P15 COMPOSITION OF ROMAN MURAL PAINTINGS FROM SOUTHERN PORTUGAL: SOURCES, COLOUR AND CONSERVATION
A. CANDEIAS, A. GUILHERME, S. PESSANHA, M.L. CARVALHO and J. MIRÃO

P16 EVALUATION OF CONSOLIDATION TREATMENTS ON WATERLOGGED ARCHAEOLOGICAL WOOD BY MEANS OF SYNCHROTRON LIGHT X-RAY MICROTOMOGRAPHY
S. BUGANI, S. CAGNO, P. CLOETENS, M.P. COLOMBINI, G. GIACHI, K. JANSSENS, J.J. ŁUCEJKO, F. MODUGNO and L. MORSELLI

Diagnostic Techniques in Conservation

P17 LASER CLEANING OF AGED SHELLAC FROM WOOD
M. ALIGIZAKI, A. POURNOU, K. MELESSANAKI

P18 AN EVALUATION OF REFLECTANCE-ABSORPTION INFRA RED SPECTROSCOPY FOR IN SITU INVESTIGATION OF ORGANIC COATINGS ON CORRODED METALS
S. C. BOYATZIS, V. ARGYROPOULOS, A. SIATOU, K. POLIKRETI, D. CHARALAMBOUS and A.M. DOUVAS

P19 CHARACTERISATION OF FOXING STAINS IN XVI-XIX CENTURY DRAWINGS USING μ -EDXRF

M. MANSO, S. PESSANHA, A. GUILHERME, M. AFONSO, A. C. ROCHA,
A. BAPTISTA, F. FIGUEIRA and M.L. CARVALHO

**P20 ANALYTICAL CHARACTERIZATION OF POLYMERS USED IN
CONSERVATION BY ATR-FTIR SPECTROSCOPY**

R. CHERCOLES, M. SAN ANDRÉS, J.M. DE LA ROJA and M. GÓMEZ

**P21 ASSESSMENT OF GASEOUS AND PARTICULATE MATTER
POLLUTANTS IN A BRAZILIAN MUSEUM**

R.H.M. GODOI, B.H.B. CARNEIRO, A.F.L. GODOI, V.P. CAMPOS, T.M.
TAVARES, H. EVANGELISTA, Y. MAKAROVSKA, V. KONTOZOVA-
DEUTSCH, S. POTGIETER-VERMAAK, S. DESCHERMAYER and
R. VAN GRIEKEN

**P22 STUDY OF THE MORPHOLOGY OF IRON GALL INKS USED IN THE
COPY-PRESS PROCEDURE**

A. KAMINARI, A. ALEXOPOULOU and E.M. BUCKLEY-DHOOT

**P23 CHARACTERISATION OF PARTICULATE MATTER IN MUSEUM
ENVIRONMENTS BY SPECTROSCOPIC AND IMAGE ANALYSIS
TECHNIQUES**

I. KARATASIOS, M. KLIAFA and M. DOULGERIDIS

**P24 RAMAN SPECTROSCOPY AFTER ACCELERATED AGEING TESTS TO
ASSESS THE ORIGIN OF SOME DECAYED PRODUCTS FOUND IN
REAL HISTORICAL BRICKS AFFECTED BY URBAN POLLUTED
ATMOSPHERES**

M. MAGUREGUI, A. SARMIENTO, R. ESCRIBANO, I. MARTÍNEZ-ARKARAZO,
K. CASTRO and J.M. MADARIAGA

**P25 MICRO-DESTRUCTIVE TOOL FOR DAMAGE ASSESSMENT OF
FIBRE DEGRADATION IN 15-17th c. HISTORIC TAPESTRIES**

I. VANDEN BERGHE

**P26 PLASMA REDUCTION OF BRONZE CORROSION LAYERS FORMED
UNDER ACCELERATED AGEING CONDITIONS**

J. NOVAKOVIC, O. PAPADOPOULOU, P. VASSILIOU, E. FILIPPAKIS and
Y. BASSIAKOS

**P27 SPECTROSCOPIC AND THERMOANALYTICAL STUDY OF WOODEN
SAMPLES DISINFECTED AND CONSOLIDATED BY IRRADIATION**

I. STĂNCULESCU, M. M. MANEA, M. VIRGOLICI, R. SUVAILA,
M. CUTRUBINIS, D. C. NEGUT and C. C. PONTA

**P28 THE USE OF MODEL PROBES FOR ASSESSING IN DEPTH
MODIFICATIONS INDUCED DURING THE LASER CLEANING OF
MODERN PAINTINGS**

P. VOUNISIOU, A. SELIMIS, K. MELESSANAKI, P. POULI, G. FILIPPIDIS,
C. BELTSIOS, S. GEORGIOU and C. FOTAKIS

- P29 DETERMINING OF AGE OF WALL PAINTS – FRESCOS BY MEASURING OF H2O CONTENTS**
V. M. ZORIC, M. PANTIC, L. MASKOVIC and V. SAJFERT, J. ZORIC

Mobile Spectroscopy

- P30 DEVICING AND APPLICATION OF A PORTABLE LIBS SYSTEM FOR CHARACTERIZATION OF COPPER ALLOYS**
J. AGRESTI, A.A. MENCAGLIA and S. SIANO
- P31 EDXRF ANALYSIS OF A BAROQUE POLYCHROME WOODEN SCULPTURE**
C. CALZA, R. P. FREITAS, B. J. F. RIBEIRO and R. T. LOPES
- P32 XRF CHARACTERISATION OF THE VARNISHES OF ANCIENT STRINGED INSTRUMENTS**
E. CAPONETTI, F. CARUSO, D. F. CHILLURA MARTINO, C. DI STEFANO and M. L. SALADINO
- P33 PIGMENT CHARACTERIZATION OF 16TH CENTURY JAPANESE NANBAM FOLDING SCREENS**
S. PESSANHA, A. GUILHERME, C.B. SOUSA and M. L. CARVALHO
- P34 NON-INVASIVE ANALYSIS OF METAL ARTIFACTS FROM THE HISTORICAL MUSEUM OF CRETE: AN APPLICATION OF THE LMNTI LIBS INSTRUMENT**
S. CHLOUVERAKI, K. ZERVAKI and D. ANGLOS
- P35 ILLUMINATED MANUSCRIPT CHARACTERIZATION BY LABORATORY-MADE PORTABLE XRD AND MICRO-XRD SYSTEMS**
A. DURAN, J.L. PEREZ-RODRIGUEZ, T. ESPEJO, M.L. FRANQUELO, J. CASTAING and P. WALTER
- P36 EDXRF QUANTITATIVE ANALYSIS OF CHROMOPHORE CHEMICAL ELEMENTS IN CURUNDUM SAMPLES**
L. BONIZZONI, A. GALLI, G. SPINOLO and V.PALANZA
- P37 A NEW PORTABLE LIBS SYSTEM (LMNTII) IN THE ANALYSIS OF CULTURAL HERITAGE OBJECTS**
A. GIAKOUMAKI, P. SIOZOS, K. HATZIYANNAKIS, A. PETRAKIS and D. ANGLOS
- P38 ANALYSIS OF EARLY 20TH CENTURY PIGMENTS IN R. HEINTZ PAINTING USING PORTABLE ANALYSIS SYSTEMS**
C. DEFEYT, H. CALVO DEL CASTILLO, A. DENECKERE, F.-P. HOCQUET, T. DUPUIS, N. DEPRez, P. VANDENABEELE and D. STRIVAY
- P39 RADIOISOTOPE VS. MINI-X TUBE EXCITATION IN AN AMPTEK X-12 PORTABLE XRF SPECTROMETER: A COMPARATIVE STUDY**
A. KOCSONYA, I. KOVÁCS and Z. SZŐKEFALVI-NAGY

- P40 MARAJOARA CERAMICS ANALYSIS BY EDXRF AND MULTIVARIATE STATISTICAL**
R.P. FREITAS, C. CALZA, T.A. LIMA, A. RABELLO and R.T. LOPES
- P41 X-RAY SPECTROMETRY INVESTIGATION OF TWO RAPHAEL'S PAINTINGS**
D. BIAGI MAINO, G. MAINO, and A. TARTARI
- P42 APPLICATION OF PORTABLE (HANDHELD) NITON XRF ANALYSER IN SOME ARCHAEOLOGY PROJECTS**
Z. MAY and M. TÓTH
- P43 ELEMENTAL ANALYSIS OF LEAD SEALS OF XII-XVIII CENTURIES BY X-RAY FLUORESCENCE**
C. I. A. SANTOS, A. GUILHERME, F. D. AMARO, J. M. F. SANTOS, M.L. CARVALHO, A. M. D'A. ROCHA GONSALVES
- P44 TRANSPORTABLE SYSTEM FOR MICRO X-RAY FLUORESCENCE SCANNING OF HISTORICAL MONUMENTS**
T. ČECHÁK, L. MUSÍLEK and T. TROJEK
- P45 X-RAY FLUORESCENCE ANALYSIS OF THE SILVER ALTAR IN THE OLD BRNO BASILICA OF THE ASSUMPTION OF OUR LADY AT MENDEL PLACE**
M. HLOŽEK and T. TROJEK
- P46 SCREENING AND ANALYSIS OF ARCHAEOLOGICAL SOILS BY LIBS**
M. TSAGARAKIS, D. ANGLOS, B. DERHAM and R. JONES
- P47 NEAR-FTIR SPECTROSCOPY FOR THE NON-INVASIVE IDENTIFICATION OF NATURAL POLYMERS IN EASEL PAINTINGS**
M. VAGNINI, C. MILIANI, L. CARTECHINI, P.ROCCHI, B.G. BRUNETTI and A. SGAMELLOTTI
- P48 X-RAY FLUORESCENCE ANALYSIS OF THE ANJOU BIBLE**
M. VAN BOS and L. WATTEEUW

Organic Material

- P49 APPLING PYROLYSIS – GAS CHROMATOGRAPHY/MASS SPECTROMETRY TO THE IDENTIFICATION OF ORIENTAL LACQUERS: STUDY OF TWO LACQUERED SHIELDS**
J. FRADE, I. RIBEIRO, J. GRAÇA, P. ABREU and J. RODRIGUES
- P50 STUDY OF A NAMBAN PAIR OF STIRRUPS: PY-GC/MS POTENTIAL TO DISTINGUISH ORIGINAL FROM RESTORATION**
J. FRADE, I. RIBEIRO, P. ABREU, J. RODRIGUES and J. GRAÇA

POSTER SESSION II
Wednesday 17:10-18:30

Organic material

- P51 IDENTIFICATION OF COLOURING MATTERS IN TEXTILES FROM THE MONASTERY OF SIMONOS PETRA (MOUNT ATHOS)**
I. KARAPANAGIOTIS and C. KARYDIS
- P52 AN ANALYTICAL STUDY OF INKS**
Y. KEHEYAN
- P53 ARCHAEOLOGICAL CHERTS' ORGANIC MATTER COMPOSITION ANALYSIS COMBINING GC/MS AND SPECTROSCOPY TECHNIQUES**
M. OLIVARES, A. TARRIÑO, X. MURELAGA, J.I. BACETA, K. CASTRO, J.M. MADARIAGA and N. ETXEBARRIA
- P54 CHEMICAL INVESTIGATION ON THE BLACK PIGMENTS IN THE CARVED DECORATION OF ALABASTER TOMBS (16TH AD) FROM ZARAGOZA (SPAIN)**
J. PÉREZ-ARANTEGUI, E. RIBECHINI, C. PARDOS and M.P. COLOMBINI
- P55 TRANSMISSION ELECTRON MICROSCOPY FOR DETECTION OF MELANIN GRANULES IN ARCHAEOLOGICAL WOOL FIBRES**
A. B. SCHARFF
- P56 CHARACTERIZATION OF TURIN POMEGRANATE FOUNTAIN'S COATINGS**
A. PICCIRILLO, F. TOJA, P. RIZZI and L. APPOLONIA
- P57 ANALYSIS OF ARCHAEOLOGICAL TRIACYLGLYCERIDS USING LIPIDOMIC TECHNIQUES: APPLICATION TO 5TH C. BC-4TH C. AD LAMPS**
N. GARNIER, C. ROLANDO and C. TOKARSKI
- P58 TD/CGC/MS AND FT-IR CHARACTERIZATION OF ARCHAEOLOGICAL AMBER ARTEFACTS FROM ROMANIAN COLLECTIONS (ROMAN AGE)**
M. VIRGOLICI, I. PETROVICIU, E. D. TEODOR, S. C. LITESCU, M. M. MANEA, A. MEDVEDOVICI and C. C. PONTA

Combined ND Techniques

- P59 ANALYSIS OF PIGMENTS AND ORGANIC MATERIALS FROM AN EGYPTIAN COFFIN (XXVI DYNASTY)**
L. BONIZZONI, S. BRUNI, V. GUGLIELMI and M. MILAZZO
- P60 PRACTICAL APPROACH TO THE IDENTIFICATION OF HISTORICAL SEMI-SYNTHETIC PLASTICS BY ATR-FTIR**

S. G. FERNÁNDEZ-VILLA, J.M. DE LA ROJA and M. SAN ANDRÉS

- P61 NON-DESTRUCTIVE INVESTIGATION ON A 17-th CENTURY DOCTOR DIPLOMA**
M. GEBA, A. VLAD, D. V. MANEA and T. MALUTAN
- P62 CHINESE EXPORT ART: MULTI-ANALYTICAL NON-INVASIVE CHARACTERIZATION OF 18TH-CENTURY PAINTINGS ON PAPER**
N.F.C. MENDES, A. MIGLIORI, M. PICOLLO, E. POLIDORI, E. CASTELLUCCI, M. PICCOLO
- P63 CELAS: STUDY OF A 16TH CENTURY POLYPTIC PANEL BY COMPLEMENTARY ANALYTICAL TECHNIQUES**
A. I. PEREIRA, V. S. F. MURALHA, P. REDOL, S. SCHAFFER and M. J. MELO
- P64 AN X-RAY MICROANALYTICAL STUDY OF RED GLOSS FINE WARE PRODUCED IN ANCIENT CASSOPE**
C. PAPACHRISTODOULOU, K. GRAVANI, A. OIKONOMOU and K. IOANNIDES
- P65 THE RED PALETTE IN ROMAN VILLAGE OF IESSO (GUISSONA, CATALONIA-NE SPAIN): NON-DESTRUCTIVE X-RAY BASED ANALYSIS**
A. PITARCH, I. QUERALT, A. ALVAREZ and J.GUITART
- P66 USING NON-DESTRUCTIVE ANALYSIS OF PIGMENTS IN A STUDY OF AN 18TH CENTURY ICON**
N. VORNICU, C. BIBIRE, C. ONISCU, M. GEBA, A. IONIUC, R. DIACONESCU
- P67 X-RAY FLUORESCENCE SPECTROMETRY CHARACTERIZATION AND TL DATING OF ANCIENT POTTERY FROM BAN PONG MANOW PREHISTORIC SITE, CENTRAL THAILAND**
K. WON-IN, P. DARARUTANA, S. PONGKRAPAN, P. CHUENPEE and P. WATHANAKUL
- P68 ANALYTICAL STUDY OF AN EGYPTIAN AEGIS OF HATHOR**
H. WOUTERS, A. CRABBÉ AND C. DERRIKS

Sensing and Spectroscopy

- P69 DEVELOPING AN FTIR SPECTRA COLLECTION FOR INTERPRETING RESIDUES OF THE PREHISTORIC ACTIVITIES**
C. LEMORINI and S. NUNZIANTE CESARO
- P70 STUDIES ON NATURAL DYES: OPTICAL, MORPHOLOGICAL AND COMPOSITIONAL CHARACTERIZATIONS**
S. ACQUAVIVA, E. D'ANNA, M. L. DE GIORGI, A. DELLA PATRIA, P. BARALDI and G.E. DE BENEDETTO

- P71 IDENTIFICATION OF NATURAL WAXES IN POMPEII WALL PAINTINGS BY NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY**
E. KARTSONAKI, A. PERRAKI, U. KNUUTINEN and A. SPYROS
- P72 IDENTIFICATION OF CULTURAL HERITAGE INORGANIC RED PIGMENTS WITH ATR-FT-IR SPECTROSCOPY IN REGION OF 500-230 CM-1**
S. VAHUR, U. KNUUTINEN and I. LEITO
- P73 NANOLIMES EFFECTIVENESS ON CONSOLIDATION OF LIMESTONE FAVORED BY HIGH RELATIVE HUMIDITY**
P. LÓPEZ-ARCE, LS. GÓMEZ, L. PINHO DA SILVA, ME. FERNÁNDEZ-VALLE, M. ÁLVAREZ DE BUERGO and R. FORT
- P74 REMOTE SENSING AND DOCUMENTATION OF MOSAICS**
G. MAINO, S. MASSARI and M. ORLANDI
- P75 THERMAL STABILITY OF PARCHMENTS BY MHT: A RELIABLE METHOD FOR GRADING DETERIORATION OF ARCHIVAL FONDS**
E. BADEA, L. MIU, P. BUDRUGEAC, M. SACZUK and G. DELLA GATTA
- P76 CHANGES IN PAPER STRUCTURE DURING AGEING CAUSED BY FUNGI AS IT'S SEEN BY TIME-DOMAIN NMR**
L. GRUNIN, E. NIKOLSKAYA and U. GRUNIN
- P77 FURTHER APPLICATIONS OF FOURIER TRANSFORM INFRA-RED SPECTROSCOPY (ATR/FTIR) AND SCANNING PROBE MICROSCOPY TO PARCHMENT**
C. THEODORAKOPOULOS, M. ODLYHA, J. DE GROOT, L. BOZEC and M. HORTON
- P78 FOURIER TRANSFORM-RAMAN SPECTROSCOPIC STUDY OF A NEOLITHIC WATERLOGGED WOOD ASSEMBLAGE**
M. PETROU, H.G.M. EDWARDS, R.C. JANAWAY, G.B. THOMPSON and A.S. WILSON
- P79 AN INTEGRATE STUDY FOR MAPPING THE DAMPNESS DISTRIBUTION ON WALL PAINTINGS**
N. PROIETTI, D. CAPITANI, M. GOBBINO, L. SOROLDONI, U. CASELLATO, M. VALENTINI and E. ROSINA
- P80 1H NUCLEAR MAGNETIC RESONANCE AND ELECTRON MICROSCOPY STUDY OF THE HYDRATION PROCESS IN LIME-POZZOLAN MORTARS**
M. TZIOTZIOU, E. KARAKOSTA, I. KARATASIOS, G. PAPAVALASSIOU and V. KILIKOGLU
- P81 VIBRATIONAL AND ESR SPECTROSCOPY USED TO STUDY PAPER PERMANENCE**

I. STĂNCULESCU, M. M. MANEA, M. CUTRUBINIS, D. C. NEGUT, M. VIRGOLICI, E. BRATU and I. V. MOISE

Ion Beams and complementary techniques

- P82 NON-DESTRUCTIVE ANALYSIS AND IDENTIFICATION OF ANCIENT EGYPTIAN PIGMENTS**
S. ABD EL AAL, M. ALI, A. TUROS, A. KORMAN, A. STONART, F. MUNNIK, G. MAHGOUB and A. SIHAM
- P83 ON GOING STUDY OF TREATED AND NON-TREATED CORUNDUM SAMPLES**
H. CALVO DEL CASTILLO, G. CHENE, T. DUPUIS, F. MATHIS, A. DENECKERE, L. MOENS, P. VANDENABEELE, T. CALDERÓN, and D. STRIVAY
- P84 THE STUDY OF ARCHAEOLOGICALLY INTERESTING GLASSY AND METAL ARTEFACTS IN HAS-ATOMKI**
A. SIMON, T. K. BIRÓ, T. GESZTELYI, B. GRATUZE, I.B. KISS, I. RAJTA, G. SÁNTA5, Z. SZOBOSZLAI, I. UZONYI and Á. Z. KISS
- P85 COMPARATIVE STUDY OF OLD MORTARS FROM EVORA AND ELVAS CATHEDRALS (SOUTHERN PORTUGAL)**
P. ADRIANO, T. CRUZ, A. SANTOS SILVA, R. VEIGA, A. CANDEIAS and J. MIRÃO

X-Ray Micro-Analysis and complementary techniques

- P86 GILDING MATERIALS AND TECHNIQUES USED IN ERUDITE AND POPULAR PORTUGUESE POLICHROME BAROQUE WOODEN SCULPTURES**
C. BARATA, A. J. CRUZ, J. CARBALLO, J. COROADO and M.E. ARAÚJO
- P87 CHARACTERIZATION OF GOLD LEAF FROM A BAROQUE ALTARPIECE**
A. BIDARRA, J. COROADO and F. ROCHA
- P88 X-RAY CAPILLARY OPTICS: DEVELOPMENT STATUS**
A. BJEUMIKHOV, S. BJEUMIKHOVA, M. BRETSCHNEIDER, R. GUBZHOKOV, N. LEBEDEV and N. LIEBING
- P89 X-RAY CAPILLARY OPTICS: NEW APPLICATIONS**
A. BJEUMIKHOV, S. BJEUMIKHOVA, C. BERTHOLD, R. GUBZHOKOV, D. GROETZSCH, N. LANGHOFF and J. TILGNER
- P90 MULTILAYERS QUANTITATIVE X-RAY FLUORESCENCE ANALYSIS**
L. DE VIGUERIE, V.A. SOLE and P. WALTER
- P91 DETECTION OF DEGRADATION ORIGIN IN CARBONATE MATERIAL BY ISOTOPIC AND MINERALOGICAL TECHNIQUES**

E. DOTSIKA, A. PANTELIDOU, D. PSOMIADIS, N. ZISI, D. POUTOUKIS
and P. GKAMALETOS

**P92 DETERMINATION OF THE ORIGIN OF CARBONATE MATERIAL
FROM ANCIENT TESSERAE BY ISOTOPIC AND MINERALOGICAL
TECHNIQUES**

E. DOTSIKA, V. MALAMA, D. PSOMIADIS, N. ZISI, D. POUTOUKIS and
P. GKAMALETOS

**P93 MICROANALYTICAL INVESTIGATION OF PIGMENTS AND
PLASTERS OF WALL PAINTINGS FROM BYZANTINE CHURCHES IN
MANI (GREECE)**

A. HEIN, I. KARATASIOS and D. MOURELATOS

**P94 THE GARMENT OF A BYZANTINE EMPEROR FROM MOUNT
ATHOS: OBSERVATION & ANALYSIS USING SEM-EDS**

C. KARYDIS, A. SIATOU and A. KARABOTSOS

**P95 ANALYTICAL STUDY OF THE PAINTING 'EDUCATION OF CUPID'
ATTRIBUTED TO CORREGGIO: PRELIMINARY RESULTS**

O. KATSIBIRI, E. KOULOUMPI, A. P. MOUTSATSOU, A.-V. TERLIXI, E.
AGATHONIKOU, O. MENTZAFU and M. DOULGERIDIS

**P96 STUDY OF SLOTS AND GROOVES CORROSION PHENOMENA IN
HELLENISTIC GLASS BEADS**

P. LOUKOPOULOU and I. KARATASIOS

**P97 EVALUATION OF EFFECTIVENESS OF TANNED LEATHER
CLEANING WITH SEM-EDX AND FTIR SPECTROSCOPY**

S. C. BOYATZIS, M. KEHAGIA and K. MALEA

**P98 PIGMENTS CHARACTERISATION OF 14TH CENTURY WALL
PAINTINGS FROM BANJSKA MONASTERY IN SERBIA**

E.T. DELEGOU, J. TSAMASFYROU, N. VESIC, M. MERTZANI,
A. BAKOLAS, J. CHANDRINOS and A. MOROPOULOU

**P99 STUDYING AN UNCOMMON GILT LEATHER - THE CASE OF THE
CONVENT OF THE ORDER OF CHRIST OF TOMAR (PORTUGAL)**

S. VALADAS, A. CARDOSO, L. FALCÃO, J. PESTANA, N. PROENÇA,
M. GIL, A. CANDEIAS, J. MIRÃO, A. MESQUITA E CARMO and I. RIBEIRO

**P100 CHARACTERIZATION OF OLD-STYLED THAI GOLD MOSAIC GLASS
USING ELECTRON MICROSCOPY AND X-RAY MICROANALYSIS**

P. DARARUTANA, S. PONGKRAPAN and WATHANAKUL

**P101 DETERMINING OF ARTISTIC PAINT ORIGINALITY OF FAMOUS
SERBIAN ARTIST SAVA SUMANOVIC USING FT-IR, SEM/EDS AND
ICP-MS METHODS**

V. M. ZORIC and J. ZORIC