## FINAL SCIENTIFIC PROGRAM

### Wednesday, March 28, 2012

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<td>1:00 - 2:30 pm</td>
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<td><strong>Registration at CaixaForum Barcelona</strong></td>
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<td><em>(Address: Av. de Francesc Ferrer i Guàrdia, 6 - 08038 - Barcelona)</em></td>
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<td>2:30 - 3:00 pm</td>
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<td><strong>Welcome Addresses</strong></td>
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<td><strong>F. García:</strong> Coordinator of IRUG10 and Professor at The Department of Analytical Chemistry, University of Barcelona</td>
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<td><strong>Beth Price:</strong> IRUG Board of Directors</td>
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<td><strong>Jordi Alberch Vié:</strong> Vice-Chancellor for Research, University of Barcelona</td>
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<td><strong>Joan Pluma Vilanova:</strong> General Director of Cultural Heritage, Government of Catalonia</td>
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<td>3:00 - 3:30 pm</td>
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<td><strong>Invited lecture</strong></td>
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<td>Portable FTIR as a Tool to Monitor Conservation Treatments on Stone Surface: Advantages and Challenges</td>
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<td><strong>Monica Galeotti,</strong> Opificio delle Pietre Dure, Florence</td>
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<td><strong>Session 1</strong></td>
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<td><strong>Raman and FTIR Spectroscopy in Art and Archaeology</strong></td>
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<td>Chair: Marcello Picollo, Marta S. Maier</td>
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<td>3:30 - 3:50 pm</td>
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<td><strong>The Use of Vibrational Spectroscopy in Stone Conservation</strong></td>
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<td><strong>David Thickett,</strong> Caroline Roberts, Boris Pretzel</td>
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<td>3:50 - 4:10 pm</td>
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<td><strong>FTIR and THM-Py-GC/MS Investigation of Archaeological Amber Objects from the JPGM</strong></td>
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<td><strong>Herant Khanjian,</strong> Michael Schilling, Jeff Maish</td>
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<td><strong>Raman Microspectroscopy for the Analysis of Archaeological Heritage of the Iberians</strong></td>
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<td><strong>José A. Tuñón López,</strong> Alberto Sánchez Vizcaíno, Manuel Montejo Gámez, David J. Parras Guijarro</td>
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<td>5:00 - 5:20 pm</td>
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<td><strong>Identification of Pigment-based Photographic Processes: A Technical Study of Pictorialist Works by Steichen, Kühn, Demachy, and Le Begue</strong></td>
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<td><strong>Anna Vila,</strong> Silvia A Centeno, Lisa Barro, Nora W Kennedy</td>
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<td>6:00 – 8:00 pm</td>
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**Visit to Picasso Museum**
Thursday, March 29, 2012

Session 2
Raman and FTIR Spectroscopy for the Study of Painting Materials
Chair: Beth Price, Oscar Chiantore

9:00 - 9:20 am 44 A Vibrational Study of Chrome Yellow Pigments (PbCrO4, PbCr1-xSxO4) and Their Detection on Paintings by Vincent van Gogh and Contemporaries
Letizia Monico, Brunetto G. Brunetti, Koen Janssens, Costanza Miliani

9:20 - 9:40 am 37 Revealing the Painting Technique of Giotto di Bondone by SR-ATR-FTIR: The Mural Paintings in the Bardi and Peruzzi Chapels (Santa Croce, Florence, Italy)
Anna Lluveras-Tenorio, Alessia Andreotti, Ilaria Bonaduce, Marine Cotte, Cecilia Frosinini, Maria Perla Colombini

9:40 - 10:00 am 29 Sychrotron-based Mapping FTIR Spectroscopy in the Evaluation of Painting Cross-sections
Catherine Schmidt Patterson, Alan Phenix, Herant Khanjian, Karen Trentelman, Jennifer Mass, Michael Nasse, Carol Hirschmugl

10:00 - 10:20 am 24 The Application of ATR-FTIR Spectroscopic Imaging to the Analysis of Red Lake Pigments in Paint Cross-sections
Rachel Morrison, Satoko Tanimoto, Marika Spring, Catherine Higgitt, David Peggie, Sergei Kazarian

10:20 - 10:40 am 71 Andean Colonial Art: Identification of Atacamite in a XVI Century Polychrome Sculpture
Eugenia Tomasini, Carlos Rúa, Gabriela Siracusano, Marta Maier

10:40 - 11:10 am COFFEE BREAK / POSTER SESSION 2

11:10 - 11:30 am 64 Assessment of Lipid Content in Tempera Binding Media by FT-IR Spectroscopy
Jacek Bagniuk, Joanna Łojewska

11:30 - 11:50 am 02 Mixed Media Paintings on Plywood by Jack Chambers: Application of Fourier Transform Infrared Spectroscopy (FTIR), Raman Spectroscopy and Gas Chromatography-Mass Spectrometry (GC-MS)
Kate Helwig, Jennifer Poulin, Marie-Eve Thibeault

Session 3
Raman and FTIR Spectroscopy for Characterization of Manuscripts
Chair: Manfred Schreiner, Silvia Centeno

11:50 - 12:10 am 82 Analysis of Sediments on the Writings of Manuscripts Containing Iron Gall Inks
Nuria Ferrer, M. Carme Sistach
Preparation of the Jewish Antique Parchments
Ira Rabin, Marina Bicchieri, Armida Sodo, Roman Schütz, Gisela Weinberg, Emanuel Kindzorra, Anka Kohl

Non-invasive and Micro-invasive Raman, XRD and XRF Analysis of a Fifteenth Century Armenian Manuscript
Lynn B. Brostoff, Yasmeen Khan, Giacomo Chiari

LUNCH / Visit to CaixaForum (1th group)

Exhibitions: Delacroix / Goya

Session 4
Instrumentals Development
Chair: Marcello Picollo, David Thickett

Development and Application of Portable Hyperspectral Imaging Cameras for the Identification and Mapping of Organic Artists’ Materials Such As Paint Binders and Textile Fibers
John K. Delaney, Paola Ricciardi, Murray Loew, Suzanne Quillen Lomax

Application of Polymorphic Scanner 2D in Non-invasive Investigations of Writing Materials
Barbara I. Łydżba-Kopczyńska, Mariusz Mrzygłód, Jacek Reiner, Grzegorz Rusek

Seeing Through Walls: Sub-surface Imaging at Çatalhöyük
Gillian C. Walker, J. Bianca Jackson, Wendy Matthews, John W. Bowen, Julien Labaune, Gerard Mourou, John F. Whitaker, Michel Menu, Ian Hodder

COFFEE BREAK / POSTER SESSION 3

Session 5
New Instruments
Chair: Jose F. García

New Developments in Infrared Imaging
John Wilson, Agilent Technologies

Contactless non invasive in situ FT-IR analysis
Diego Sali, Bruker Italia Srl
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| 9:00 – 9:20 am       | 25   | **Non-invasive Analysis of Artworks**  
Chair: Herant Khanjian, Anna Vila  
**Mid-IR FORS and Chemometric: Capabilities and Limitations in the Characterization of Artistic Materials**  
Clarimma Sessa, Héctor Bagán, Romà Tauler, Alfonso Rodriguez, Jose F. García |
| 9:20 – 9:40 am       | 88   | **Infrared Total Reflection Measurements in an Enlarged MIR-NIR Spectral Range: Pigments Characterization**  
Oscar Chiantore, Marco Nervo, Anna Piccirillo, Tommaso Poli, Chiara Riedo |
| 9:40 – 10:00 am      | 23   | **Non-destructive Identification of 19th Century Watercolor Pigments by Use of Complementary Reflection-FTIR-, Reflection-UV/Vis- and XRF-Spectroscopy**  
Wilfried Vetter, Manfred Schreiner |
| 10:00 – 10:20 am     | 01   | **In Situ and Laboratory Micro-Raman Spectroscopic Studies of Prehistoric Paintings from the Iberian Peninsula**  
Antonio Hernanz, Jose M. Gavira-Vallejo, Juan F. Ruiz-López, Ramiro Alloza-Izquierdo, Ramón Viñas-Vallverdú, Albert Rubio Mora, Vicente Baldellou-Martínez |
| 10:20 – 10:40 am     | 47   | **The Identification of Plastics in Modern and Contemporary Art Objects Using Fibre Optics Raman Spectroscopy**  
Suzan de Groot, Thea B. van Oosten, Baudien te Neijenhuis |
| 10:40 – 11:00 am     | 27   | **The Use of FTIR Microscopy and Non-invasive Portable ATR-FTIR to Characterize the Diverse Synthetic Materials Used by Los Angeles Artists in the 1960s and 70s**  
Rachel Rivenc, Emma Richardson, Tom Learner |

**Session 7**  
**Degradation analysis by Vibrational Spectroscopy**  
Chair: Boris Pretzel, Stefan Simon

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| 11:30 – 11:50 am     | 53   | **Degradation Phenomena of Polymeric Design Objects: A FTIR and Fluorescence Spectroscopic Study**  
Lucia Toniolo, Francesca Toja, Austin Nevin, Daniela Comelli, Daniela Saviello |
| 11:50 – 12:10 am     | 67   | **Following the Degradation of Magnetic Tapes' Materials with ATR-FTIR**  
Elena Gómez Sánchez, Simon Kunz, Katrin Abromeit, Stefan Simon |

**COFFEE BREAK / POSTER SESSION 4**
12:10 – 12:30 am  21  Rapid Identification of ‘Sticky Shed Syndrome’ in Magnetic Tape Using ATR-FTIR and Multivariate Statistics  
Eric Breitung, Samantha Skelton, Stephen Morgan

12:30 - 12:50 am  91  Spectroscopic Techniques for Damage Assessment of Organic-based Heritage Materials  
Marianne Odlyha, Laurent Bozec, Octaviana Marcinas, Maria Perla Colombini, Ilaria Bonaduce, Francesca Di Girolamo, René Larsen, Kathleen Mühlen Axelsson, Dorte Vestergaard Poulsen, Mikkel Scharff, Peter Vandenabeele, Antje Potthast, Kyujin Ahn, Terje Grønhoft, Elin Dahlín

12:50 - 13:10 am  09  Non-invasive Investigation of Colour Layers and Monitoring of the Chemical Cleaning of Two Paintings by Vittore Carpaccio  
Polonca Ropret, Barbka Gosar Hirci, Costanza Miliani, Francesca Rosi, Paola Rocchi, Laura Cartechini, Klara Retko, Lea Legan

13:10 - 13:30 am  26  Infrared and Raman Spectroscopy of Biodegraded Historical Textiles Made of Cotton  
Katja Kavkler, Andrej Demšar

13:30 - 13:50 am  100  Non-invasive Investigation on the Formation of Metal Carboxylates by Reflection Infrared Spectroscopy  
Costanza Miliani, Francesca Rosi, Manuela Vagnini, Brunetto G. Brunetti

13:50 – 3:20 pm  LUNCH / Visit to CaixaForum (2nd group)  
Exhibitions: Delacroix / Goya

3:20 - 3:40 pm  36  Infrared Reflection Absorption Spectroscopy (IRRAS) and Raman Spectroscopy to Study Early Stages of Atmospheric Corrosion of Silver  
Rita Wiesinger, Irene Martina, Manfred Schreiner

3:40 - 4:00 pm  45  Evolution of Surface Chemistry and Colour in Photo-irradiated Wood  
Claudia Pelosi, Giorgia Agresti, Luca Calienno, Angela Lo Monaco, Rodolfo Picchio

4:00 - 4:20 pm  50  The Use of FT-IR and 2D IR Correlation Spectroscopy for the Evaluation of Tilia Cordata Wood Decay  
Carmen-Mihaela Popescu, Maria-Cristina Popescu, Bogdan C. Simionescu

4:20 – 4:40 pm  51  The Evaluation of Degradation Degree of Naturally Aged Wood by FT-IR and 2D IR Correlation Spectroscopy  
Carmen-Mihaela Popescu, Bogdan C. Simionescu

4:40 – 4:50 pm  106  The IRUG Raman Spectral Web Database Application: A Preview  
Beth A. Price, Suzanne Quillen Lomax, Boris Pretzel, Charles Davis, Andrew Lins, Gabriel Richards, Steve Rice
4:50 - 5:20 pm  
**FINAL REMARKS ON IRUG CONFERENCE**  
**Jose F. García:** Conference Coordinator  
**Marcello Picollo:** IRUG Regional Chair

Visit to “Museu Nacional d'art de Catalunya”, Barcelona  

Conference Dinner

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Saturday, March 31, 2012  

Trip to Figueres / Visit to Gala-Salvador Dali Foundation

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**POSTER SESSION 1 / 2 - March 28 and 29, 2012**

Database of Cultural Materials / Degradation Analysis by Vibrational Spectroscopy / Instrumental Development on IR and Raman Spectroscopy / Non-Invasive Analysis of Works of Art and Archaeology

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<td>Study of Greying Phenomena on Buddhist Mural Paintings - Cave 8, Kizil, Xinjiang, China</td>
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<td>Ellen Egel, Stefan Simon, Volker Wachtendorf, Guido Grundmeier</td>
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<td>Metal Soaps Formation in the Presence of Natural Resins</td>
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<td>Anna Piccirillo, Tommaso Poli, Claudia Conti, Oscar Chiantore, Annamaria Giovagnoli</td>
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<td>Which Light Source for Cultural Heritage?</td>
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<td>Andrea Macchia, Stella Nunziante Cesaro, Massimiliano Rocchia, Giorgia Roscioli, Luigi Campanella</td>
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Problem of Early Plastics Degradation: Study of the Aspects of Celluloid Degradation by Means of Infrared Spectroscopy

Alena Otmarova

Study of Gamma Irradiated Oil Painting Samples by FT-IR, FT-Raman and Reflectance Spectroscopy

Maria-Mihaela Manea, Constantin-Daniel Negut, Ioana-Rodica Stanculescu, Marian Virgolic, Cristina Mandravel, Corneliu-Catalin Ponta

Evaluating Silk Degradation in Cultural Heritage Objects by Infrared and Raman Spectroscopy

Monika A. Koperska, Joanna Łojewska

FTIR of Deteriorating Glass on Ndebele Beaded Aprons

Jennifer Giaccai, Maria Fusco

Assessment of Lightfastness Declarations of Commercial Acrylic Paints

Valentina Pintus, Shuya Wei, Manfred Schreiner

Infrared Reflection Absorption Spectroscopy (IRRAS) for the Study of Glass Corrosion

Monica De Bardi, Rita Wiesinger, Manfred Schreiner

Micro-Raman Characterization of Silver Corrosion Products Occurring in the Early Stages of Atmospheric Corrosion

Irene Martina, Rita Wiesinger, Dubravka Jembrih-Simbürger, Manfred Schreiner

Potential and Limits of Single-point FTIR-spectroscopy in Conservation Science

Christoph Herm

Hydrofluoric Acid Pretreatment of Matte Artists’ Paints for Binding Medium Analysis by FTIR Microspectroscopy

Gregory Dale Smith, Lisa Altherr, Kwame Newton

Pigments Study by Non-destructive Micro-Raman Spectroscopy on a New Version of the Madonna of Foligno by Rafael de Urbino

Luis Rodrigo Rodriguez-Simon, Maria Rosa Lopez-Ramirez, Natalia Navas, Eloisa Manzano

FTIR Spectroscopy for Measuring of Penetration Depth of Consolidants and the Comparing with Colour Reactions - Method of Iodine Vapours

Monika Slavíková, Alena Otmarová, Petr Kotlík

Spectroscopic Analysis of an Aztec Deerskin Picture Map

Ted Stanley
FT-IR and FT-Raman Spectroscopic Analysis of Three Paintings Attributed to Nicolae Grigorescu: An Authentication Chance for Roumanian Paintings

Maria-Mihaela Manea, Marian Virgolici, Constantin-Daniel Negut, Ioana-Rodica Stanculescu, Cristina Mandravel, Corneliu-Catalin Ponta

Non-invasive FT-IR Analysis of Polymeric Materials

Marcello Picollo, Veronica Marchiafava, Giovanni Bartolozzi, Costanza Cucci, Monica Galeotti, Benedetto Pizzo

An FTIR-based Exploration of Surfactants’ Phase-Separation in Murals Painted with Waterborne Emulsion Paints

Marta Melchiorre Di Crescenzo, Elisabetta Zendri, Francesca Rosi, Costanza Miliani

Characterization of the Stone Materials from a XVII Century Tabernacle Monstrance by Raman Spectroscopy

A. Carmelo Prieto, Manuel Avella, Oscar Martinez, Selma Neto, Jose Luis Alonso, MM. Rufo, Mercedes Barrera, Cristina Escudero.

A Pochoir Colored Facsimile Analyzed by Raman Microscopy

Thiago S. Puglieri, Dalva L. A de Faria,

Raman Spectroscopy of Nineteenth Century Synthetic Textile Dyes

Rosemary M. Baker

MIR-NIR Imaging Identification of Pigments

Oscar Chiantore, Paola Croveri, Anna Piccirillo, Tommaso Poli

The Degradation and Color Stability of the Color Motion Pictures: The Case of Study

Alena Otmarova, Michal Ďurovič

The Use of Portable FTIR Spectrometers for Conservation Applications and Collections Surveys

Jennifer Giaccai, Kate Moomaw, Jia-sun Tsang, HaeMin Park, Allison Martin

Reflection micro-FTIR and Raman Spectroscopic Studies of 19th Century Romanian Manuscripts

Marta Ursescu, Adeline-Camelia Ciocan, Laura Ursu, Ion Sandu
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A Closer Look at Brazilwood and Its Lake Pigments
Tatiana Vitorino, Vanessa Otero, Maria João Melo, Leslie Carlyle

Characterization of Polymorphic Modifications of Copper Phthalocyanine (CuPc) Used As Artistic Pigments by XRD, µ-FTIR and µ-Raman
Catherine Defeyt, Peter Vandenabeele, Bernard Gilbert, L. Wijnberg, David Strivay Jolien Van Pevenage, Louise Wijnberg

Raman Identification of Dolomite and Calcite in the Grounds of Russian Painters of XVIII Century
Victor Soloviev, Boris Zhadanov

Characterization of Synthetic Organic Pigments by Raman Spectroscopy and LDI/MS
Joseph F. Lomax, Amadeo de Luca Westrade, Suzanne Quillen Lomax

Conservation of Ceroplastic Damaged by Unsuitable Climatic Conditions
Klára Drábková, Jitka Neoralová

Spectroscopic Analysis of Wall Paintings from the Tomb of Thutemheb (TT194), El-Qurna Necropolis (Luxor, Egypt)
Hussein Hassan, Marey Mahmoud

ATR-FTIR and UV-Vis Study of Vegetable Tanning Materials Extracted from 19th Century Upholstery Morocco Leathers
Lina Falcão, Maria Eduarda M. Araújo

Micro-Raman Mapping of Polyenic Pigments in Marine Shells and Corals
Silvia Mantovan, Laura Bergamonti, Danilo Bersani, Pier Paolo Lottici

Mural Paintings in Cappadocia (Turkey): Characterization of the Constitutive Materials and Chronological Overview
Giorgia Agresti, Maria Andaloro, Pietro Baraldi, Claudia Pelosi, Paola Pogliani, Ulderico Santamaria

Copper Resinate: Contribution from Raman Spectroscopy
Irene Aliatis, Chiara Colombo, Claudia Conti, Tommaso Poli, Elena Possenti, Marco Realini, Giuseppe Zerbi
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A Fast FTIR Analysis for the Identification of Natural Asphalts and Bitumen
Alessandra Broggi, Maria Paola Bracciale, Maria Laura Santarelli

Spectroscopic Techniques Applied to the Characterization of the Palette of 16th Century Wall Paintings from Galicia (NW Spain)
Lucía Pereira Pardo, Beatriz Prieto Lamas and Benita Silva Hermo

A SERS Study of Canvas Painting Supports
Oana-Mara Gui, Simona Cinta-Pînzaru
Local Organizing Committee

José F. García *(Coordinator)
Anna Vila**
Àngels Miquel*
Eva Marín *
Clairimma Sessa*
Alex Tarancón *
Héctor Bagán*
Luz Santiago*
Jordi Pons (Web support)

* Department of Analytical Chemistry, University of Barcelona.
** Department of Scientific Research, The Metropolitan Museum of Art, New York.

Logo designed by Arch. Carmine Sessa

Board of IRUG

Herant Khanjian, Getty Conservation Institute, Los Angeles, US
Suzanne Quillen Lomax, National Gallery of Art, Washington, DC, US
Marta Maier, Faculty of Exact and Natural Sciences, University of Buenos Aires, Argentina.
Richard Newman, Museum of Fine Arts, Boston, MA, US
Marcello Picollo, Institute for Applied Physics “Nello Carrara”, CNR, Florence, IT
Boris Pretzel, Victoria & Albert Museum, London, UK
Manfred Schreiner, Academy of Fine Arts, Vienna, AT
David Thickett, English Heritage, London, UK
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