

TECHNART 2025

International Conference on Analytical Techniques for Heritage Studies and Conservation

Perugia, 6th - 9th May, 2025



Program



Day 1 - Monday, May 5th, 2025

14:30 - 18:30

**Arrival
and
Registration**

Day 2 - Tuesday, May 6th, 2025

08:30 09:00

Registration

09:00 09:30

Opening Ceremony

Plenary 1 | Town Hall

Chair: Costanza Miliani, ISPC-CNR, IT

09:30 10:00

Livio De Luca, CNRS, France

A Cathedral of Digital Data and Multidisciplinary Knowledge in Heritage Science

Room 1 - Town Hall

Pigments and Dyes I

Chair: Costanza Miliani, ISPC-CNR, IT

10:00 10:20

Victor Gonzalez, CNRS, France

Structure-Color Relationships in Cobalt-Based Inorganic Purple Pigments Used in the 20th Century

10:20 10:40

Koen Janssens, University of Antwerp, Belgium
Vermeer's Allegory of Paintings VS. Allegory of Faith - A Comparison Based on MA-XRF, MA-XRPD and RIS

10:40 11:00

Victoria Kemp, University of Oxford - Ashmolean Museum, United Kingdom

"Blue Colour is Everlastingly Appointed by the Deity to be a Source of Delight": Examination of the Nineteenth Century 'Blue Pigment Boom' in the John Ruskin Teaching Collection, Oxford

Room 2 - Trumpet 1

Technical Art History I

Chair: Brenda Doherty, SCITEC-CNR, IT

10:00 10:20

Jennifer Huidobro, University of the Basque Country, Spain

Preliminary Insights Into the Decay of Mortars in the Archaeological Park of Herculaneum

10:20 10:40

Gianluca Pastorelli, National Gallery of Denmark, Denmark
Characterising the Painting Materials and Methods of Vilhelm Hammershøi: a Combined Technical and Art Historical Investigation

10:40 11:00

Steven De Meyer, University of Antwerp - KIK-IRPA, Belgium

Van Eyck or Not Van Eyck: Detecting Overpaint During the Restoration of The Ghent Altarpiece using MA-XRPD

Room 3 - Trumpet 2

Computational Methods I

Chair: Francesca Rosi, SCITEC-CNR, IT

10:00 10:20

Matteo Greco, ISPC-CNR, Italy
Mobile Diagnostic Data Manager: a Collaborative Environment for the Heritage Science Community

10:20 10:40

Andreas Beckert, University of Hamburg, Germany
Efficient Surface Extraction and Interactive Visualization of High-Resolution Computed Tomography Data of Enclosed Cuneiform Tablets

10:40 11:00

Nicodemo Abate, ISPC-CNR, Italy
Machine Learning-Based Open-Source Workflow for Processing UAS LiDAR Data in Archaeological Contexts Under Vegetation: the Case Study of Kastri, Epirus

11:00 11:30

Coffee Break

Room 1 - Town Hall

Analytical Methods I

Chair: John Delaney, National Gallery of Art, US

11:30 12:00

Laurence De Viguier, CNRS - Sorbonne Université, France

Cutting-Edge Analytical Methods for Understanding the Structure and Aging of Emulsion Paints

12:00 12:20

Riccardo Punis, University of Padova, Italy
Exploring the Early Stages of Verdigris-Linseed Oil Pictorial Mixtures by EPR Spectroscopy

12:20 12:40

Charlotte Nora Stahmann, University of Oslo, Norway
Visualising Organic Binding Medium Networks in Porous Paint Layers and Paint Reconstructions

Room 2 - Trumpet 1

Technical Art History II

Chair: David Buti, ISPC-CNR, IT

11:30 11:50

Francesca Volpi, Centro di Eccellenza DTC Lazio - INFN Frascati, Italy
Portable Macro Scanning ER-FTIR Spectroscopy for Non-Invasive Conservation of Paintings

11:50 12:10

Marcia Rizzutto, University of São Paulo, Brasil
Mira Schendel: Studies of Technical Production and the Artistic Material by Multi-Bands and Spectroscopy

12:10 12:30

Diletta Paghi, University of Florence, Italy
Characterizing the Glazes and Colours of Tin-Glazed Ceramics: a Compositional and Provenance Study of Maiolica from Montelupo Fiorentino (14th-18th Century AD)

12:30 12:40

BRUKER

12:40 14:30

Lunch Break

Room 3 - Trumpet 2

Pigments and Dyes II

Chair: Marten van Bommel, University of Amsterdam, NL

11:30 11:50

Iryn Bijker, University of Antwerp, Belgium
From Factory to Canvas: The Evolution, Identification and Artistic Use of Industrial-Age Lead White Pigments

11:50 12:10

Sarah Grabowski, The Getty Conservation Institute, United States
Re-Imagining Byzantine Lead-Tin Yellow: Experimental Investigation Into Early Production

12:10 12:30

Kai Terashima, Tokyo University of the Arts, Japan
Investigation on the Use of Smalt in 17th-18th-Century Japanese Illustrations Using MA-XRF and RIS-VNIR

Plenary 2 | Town Hall

Chair: Koen Janssens, University of Antwerp, BE

14:30 15:00

Kathryn Dooley, National Gallery of Art, United States

Mapping Artists' Materials and Visualizing Painting Techniques Using Reflectance and Molecular Fluorescence Imaging Spectroscopies

Room 1 - Town Hall

Room 2 - Trumpet 1

Room 3 - Trumpet 2

E-RIHS

Analytical Methods II

Degradation I

Chair: Costanza Miliani, ISPC-CNR, IT

Chair: Matthias Alfeld, University of Technology,

Chair: Patrizia Tomasin, ICMATE-CNR, IT

15:00 15:20

15:00 15:20

15:00 15:30

David Buti, ISPC-CNR, Italy
When MOLAB Meets ARCHLAB: A Technical Art History Perspective on the Polyptych of St. Anthony by Piero Della Francesca

Elisabetta Martinelli, Politecnico di Milano, Italy
Hyperspectral Imaging at Multiple Spatial Scales: a New Tool for Understanding Complex Artworks

Irene Bargagli, SCITEC-CNR, Italy
Unveiling the Fate of Cellulose Acetate in Cultural Heritage: A New Perspective

15:20 15:40

15:20 15:40

15:30 15:50

Annalaura Casanova Muncichia, ISPC-CNR, Italy
Investigating Egyptian Blue in Etruscan Funerary Art: Insights from the Monterozzi Necropolis

John Delaney, National Gallery of Art, United States
High-Performance Hyperspectral Cameras for Visible and Near Infrared Reflectance and Molecular Fluorescence Imaging Spectroscopy of Paintings and Works of Art on Paper

Anna Piccolo, University of Padova, Italy
A Systematic Study on the Role of Environmental Factors in the Degradation of Celluloid: from Micro- to Macro- Scale Investigations

15:40 16:00

15:40 16:00

15:50 16:10

Michela Botticelli, ISPC-CNR, Italy
Copper Arsenate Greens in Ancient Art: Advanced Mobile and Lab-Based X-RAY Methods for Re-Defining the Palette of Macedonian Funerary Painting

Nicola Masini, ISPC-CNR, Italy
Sustainable Approaches to Preserving Urban Art Using UAV-Based Hyperspectral Techniques

Sabrina Samela, Politecnico di Milano, Italy
Shedding Light on Plastics: Exploring Degradation Through Fluorescence-Based Techniques

16:00 16:20

16:00 16:20

16:10 16:30

Annelies Rios Casier, University of Antwerp, Belgium
Investigating James Ensor's Enigmatic Grey Surface Coatings and Their Implications for Art Conservation

Mathieu Thoury, CNRS IPANEMA, France
Enhancing Chemical Contrast in 20th Century Paintings Using a Versatile Luminescence Imager for Art History and Conservation Perspectives

Špela Pok, University of Ljubljana, Slovenia
Acidic Emissions from PVC: A Problem for Heritage Collections?

16:20 16:40

16:20 16:40

16:30 16:50

Mònica López-Prat, ISPC-CNR, Italy
Towards a Diagnostic Protocol for the Study of Monumental Terracuda Sculpture

Lucilla Pronti, Laboratori Nazionali di Frascati - INFN, Italy
Integrated Scanning System for Molecular and Elemental Analysis of Paintings: Preliminary Results on an Unknown Futurist Painting

Tjaša Rijavec, University of Ljubljana, Slovenia
PVCare Project – Preventive Conservation Strategies for Poly(Vinyl Chloride) Objects: Review of Outcomes

16:40 17:00

16:40 17:00

16:50 17:10

Lowie Vercauysse, University of Antwerp, Belgium
Materials and Techniques of Flemish Caravaggisti: A Technical Analysis of Melchior de la Mars' Saint Sebastian

Giulia Gorla, University of the Basque Country, Spain
The Struggle Against the Goliath of 3D Hyperspectral Mapping: David at 360°

Margherita Gnemmi, La Sapienza University of Rome, Italy
Early Degradation Mechanisms Identified at the Interface Between Acrylic Grounds and Oil Paints by Multiband Imaging, HR-FESEM-EDX, ATR-FTIR, GC-MS and Tensile Testing

17:10 18:30

Coffee Break/Poster Session 1

ODD NUMBERS

18:30 20:00

Free Time

20:00 22:00

Welcome Dinner

Day 3 - Wednesday, May 7th, 2025

Plenary 3 | Town Hall

Chair: Marine Cotte, ESRF, France

09:00 09:30

Katrien Keune, Rijksmuseum - University of Amsterdam, The Netherlands

Deploying High and Low-End Analytical Techniques for a Sustainable Museum Practice

Room 1 - Town Hall

Room 2 - Trumpet 1

Room 3 - Trumpet 2

Degradation II

Pigments and Dyes III

Conservation I

Chair: Koen Janssens, University of Antwerp, BE

Chair: Victor Gonzalez, ENS Paris-Saclay, CNRS, PPSM, FR

Chair: Antonio Sgamellotti, Acc. Naz.le dei Lincei, University of Perugia, IT

09:30 09:50

09:30 09:50

09:30 09:50

Ermanno Avranovich Clerici, University of Antwerp, Belgium
Towards In-Operando Investigations of Pigment Degradation Processes

Chiara Andrea Lombardi, La Sapienza University of Rome, Italy
A Multi-Analytical Approach for the Characterisation of Ancient Pigments Found in Malacofaunal Containers

Aldo Winkler, Istituto Nazionale di Geofisica e Vulcanologia, Italy
Magnetic and Chemical Biomonitoring of Airborne Particulate Matter for the Preventive Conservation of Cultural Heritage

09:50 10:10

09:50 10:10

09:50 10:10

Daniel J. Jimenez Desmond, University of Vigo, Spain
Shedding Light Into the Use of Verdigris Pigment in Wall Paintings: Influence of the Pictorial Technique

Ming Guan, The Palace Museum, China
New Insights on the Dye Analysis of Unearthed Silks

Patrizia Moretti, University of Applied Sciences and Arts of Southern Switzerland, Switzerland
Darkening of Lead White in Wall Paintings: A New Method to Stabilize the Recovered Color

10:10 10:30

10:10 10:30

10:10 10:30

Sara Carboni Marri, University of Perugia, Italy
Extrinsic and Intrinsic Factors Affecting the Alteration of Emerald Green in 19th–20th Century Oil Paintings: the Role of Paint Composition and Environmental Conditions

Jacopo Orsilli, University of Milano-Bicocca, Italy
CdS1-xSex Pigments: Multidisciplinary Study on the Materials of the XIX-XX c. Painters

Eva Hartlieb, Institute of Engineering and Computational Mechanics - University of Stuttgart, Germany
Investigation and Prediction of Damage Propagation in Painting-Like Specimens Using S-N Curves

10:30 10:50

10:30 10:50

10:30 10:50

Clément Montebault, ESRF, France
Degradation Processes of Ancient Egyptian Pigments

Inez van der Werf, Cultural Heritage Agency of the Netherlands, The Netherlands
Cadmium Yellow in Mondrian's Neoplastic Paintings

Paulina Guzmán G. Lascurain, Politecnico di Milano, Italy
Micro-Scratch Test for the Study of Different Cultural Heritage Materials

10:50 11:30

Coffee Break

Room 1 - Town Hall

Room 2 - Trumpet 1

Room 3 - Trumpet 2

Conservation II

Computational Methods II

Degradation III

Chair: Katrien Keune, Rijksmuseum, NL

Chair: Francesco Paolo Romano, ISPC-CNR, IT

Chair: Eugenia Geddes da Filicaia, The National Gallery, UK

11:30 12:00

11:30 11:50

11:30 12:00

Silvia Prati, University of Bologna, Italy
Non Woven Materials Coupled With Green Solvents as New Sustainable Cleaning Method

Matthias Alfeld, TU Delft, The Netherlands
Missing Neither Tree Nor Forest: Analyzing Fused Reflectance Imaging Data from Multiple Paintings

Teresa Scovacicchi, University of Antwerp, Belgium
Multi-Analytical Protocol for Studying Geranium Lake in Model Sample Cross-Sections

12:00 12:20

11:50 12:10

12:00 12:20

Martina Romani, University of the Basque Country, Spain
New Green Cellulose-Based Nanostructured Hydrogels for Selective Cleaning of Copper Patinas on Bronze Artworks

Claudia Scatigno, Enrico Fermi Historical Physics Museum and Study and Research Centre, Italy
Spectroscopic Benchmarks by Machine Learning as Discriminant Analysis for Unconventional Italian Pictorialism Photography

Maarten van Bommel, University of Amsterdam, The Netherlands
New Advancements in Fully Automated Light Induced Degradation Coupled Online with Liquid Chromatography

12:20 12:40

12:10 12:30

12:20 12:40

Daniele Ciofini, IFAC-CNR, Italy
Non-Invasive Assessment of Laser Ablation Effects in Varnished Oil Paint Films Using 213, 266, or 2940 nm

Giorgia Sciotto, University of Bologna, Italy
Beyond the Surface: Advanced Chemometric Approaches for Multimodal Spectral Imaging Data in Heritage Science

Pauline Claisse, Archéosciences Bordeaux, France
The Elusive Orchil: Degradation and Detection Insights

12:30 12:40

BRUKER

12:40 14:30

Lunch Break

Plenary 4 | Town Hall

Chair: John Delaney, National Gallery of Art, US

14:30 15:00

Geert van der Snickt, University of Antwerp, Belgium

Combining X-Ray Based Imaging to Understand the Past, Present, and Future of Heritage Objects

| Room 1 - Town Hall | Room 2 - Trumpet 1 | Room 3 - Trumpet 2 |
|---|--|--|
| CHANGES | MOXY | Degradation IV |
| Chair: Francesco Paolo Romano, ISPC-CNR, IT | Chair: Geert van der Snickt, University of | Chair: Francesca Modugno, University of Pisa, |
| 15:00 15:20 | 15:00 15:20 | 15:00 15:20 |
| Leila Birolo , University of Naples Federico II, Italy <i>Ancient Proteins: Current Challenges in Identification and Characterization</i> | Tomas Markevicius , University of Amsterdam, The Netherlands <i>Investigation of Atmospheric Atomic Oxygen in Non-Equilibrium Helium Plasma for Non-Contact Cleaning of Fire-Born Soot from Porous Water- and Mechanically Sensitive Gypsum Plaster Surfaces</i> | Chiara Vettorazzo , University of Antwerp, Belgium <i>Investigating Metal Salts Weighted Silks in Collections</i> |
| 15:20 15:40 | 15:20 15:40 | 15:20 15:40 |
| Valentina Camagni , University of Bologna, Italy <i>Fingerprints from the Past: a New Biosensing Approach for the Analysis of Archaeological Enamel Samples</i> | Sofie Jensen , SMK - National Gallery of Denmark, Denmark <i>Reversible Low-Temperature Hydration State Transition and Whitening of Gypsum Plaster Induced by Atmospheric Atomic Oxygen in Non-Equilibrium Helium Plasma</i> | Alina Krotova , University of Antwerp, Belgium <i>SR- μXRPD Investigation of Artificially and Naturally Aged Weighted Silk Fibres</i> |
| 15:40 16:00 | 15:40 16:00 | 15:40 16:00 |
| Eva Luna Ravan , ISPC-CNR - La Sapienza University of Rome, Italy <i>Investigating Sulfur Crystal Formation in Arsenic Sulfide Pigments by Using Advanced Mobile X-Rays Methods</i> | Nan Yang , University of Antwerp, Belgium <i>The Reproduction of Fire-Born Soot for Comparative Cleaning Tests on Heritage Objects: Towards a Reproducible Methodology for Mock-Up Preparation</i> | Ludovico Geminiani , University of Insubria, Italy <i>Evaluating The Light-Induced Damage of Dyed Silk Textiles</i> |
| 16:00 16:20 | 16:00 16:20 | 16:00 16:20 |
| Mario Pezzella , IAC-CNR, Italy <i>Predicting Cadmium Pigments Degradation in Cultural Heritage: A Comprehensive Mathematical and Computational Framework</i> | Catarina Rocha Pires , University of Amsterdam, The Netherlands <i>Comparing Novel Non-Contact and Dry Methods for Surface Dirt Removal from Mechanically Fragile and Solvent Sensitive Paintings</i> | Emmanuele Cillo , University of Perugia, Italy <i>The Autumn of Myriad Green Leaves: a Multi Analytical Study on the Photo-Degradation of a Precious Kimono</i> |
| 16:20 16:40 | 16:20 16:40 | 16:20 16:40 |
| Emma Vannini , INO-CNR, Italy <i>From Visible to Mid-Wave Infrared: Non-Invasive Analysis to Unveil Defects and Hidden Decoration in Mural Paintings Through Correlation Maps</i> | Kirill Shumikhin , La Sapienza University of Rome, Italy <i>Comparing the Effects of Atomic Oxygen and Laser Surface Treatment on Oil Paint Binder</i> | Catarina Monteiro Pinto , SCITEC-CNR, Italy <i>Tracing Fading Colours: Analytical Insights Into a Historic Calico-Printed Cotton Dress</i> |
| 16:40 17:00 | 16:40 17:00 | 16:40 17:00 |
| Brunella Cipolletta , University of Naples Federico II, Italy <i>From Leather Wastes to Collagen-Based Glues: Proteomic Characterization</i> | Cecilia Campi , University of Pisa, Italy <i>Understanding Silk Degradation as a Fundamental Step for Conservation and Cleaning Applications</i> | Ibrahim Elrefaey , University of Ljubljana, Slovenia <i>PH-Dependent Degradation of Silk Fabric: the Influence of PH on Changes in Colour and Molecular Weight</i> |
| 17:00 17:30 Coffee Break | | |
| Room 1 - Town Hall | Room 2 - Trumpet 1 | Room 3 - Trumpet 2 |
| Analytical Methods III | Technical Art History III | Conservation III |
| Chair: Kathryn Dooley, National Gallery of Art, US | Chair: Claudia Caliri, ISPC-CNR, IT | Chair: Silvia Prati, University of Bologna, IT |
| 17:30 17:50 | 17:30 17:50 | 17:30 17:50 |
| José Tapia Reguera , ISPC-CNR, Italy <i>Confocal and Angular-Resolved XRF: a Comparative Study of Mobile Techniques for the Non-Invasive Analysis of Layered Structures in Artworks</i> | Gavriela Logothetou , University of the Peloponnese, University of Barcelona, Greece/Spain <i>Multiscale Analysis of Bizen Ware (16th-17th c. CE): Unravelling the Impact of Iron Oxide Nanoparticles on the Archaeomagnetic Signal</i> | Nicolò Guarnieri , Politecnico di Milano, Italy <i>Colour Instability in Street Art: Mechanism and Innovative Protection Strategies</i> |
| 17:50 18:10 | 17:50 18:10 | 17:50 18:10 |
| Laure Cazals , Université Paris-Saclay, France <i>Coupling X-Ray and Numerical Methods Enables 3D Material Speciation in Paint Stratigraphy</i> | Martina Alunni Cardinali , University of Perugia, Italy <i>Brillouin and Raman micro-spectroscopy - a new tool for the evaluation of the mechanical and chemical properties of materials in cultural heritage preservation</i> | Andrea Campostrini , Ca' Foscari University of Venice, Italy <i>Advanced Hybrid Coatings with TiO2 and SiO2 for the Preservation of Architectural Heritage</i> |
| 18:10 18:30 | 18:10 18:30 | 18:10 18:30 |
| Samaneh Ehteram , CSMC Universität Hamburg - DESY, Germany <i>Beyond the Surface: Non-Destructive Revealing of Hidden Cuneiform Writings Using Portable Computed Tomography</i> | | Matteo Vercelli , La Sapienza University of Rome, Italy <i>Conserving Wooden Artefacts from Shipwrecks: A Nanoparticle-Based Approach</i> |

Day 4 - Thursday, May 8th, 2025

Plenary 5 | Town Hall

Chair: Leila Birolo, University of Naples "Federico II", IT

09:00 09:30

Caroline Tokarski, University of Bordeaux, France

TBD

Room 1 - Town Hall

Organic Analysis I

Chair: Leila Birolo, University of Naples "Federico II", IT

09:30 09:50

Eugenia Geddes da Filicaia, University of Bristol, United Kingdom
Compound-Specific Stable Isotope Analysis as a Novel Technique for Source Determination of Proteins in Paintings

09:50 10:10

Fabiana Di Gianvincenzo, Rijksmuseum, The Netherlands
Assessing the Condition of Wax-Resin Lining of Canvas Paintings Using SPME-GC-MS and Py-GC-MS

10:10 10:30

Francesca Galluzzi, University of Bordeaux, France
A Highly Sensitive Mass Spectrometry Workflow for Characterizing Proteins and Sugars in Cultural Heritage Materials from a Single Sample

10:30 10:50

Paulina Krupska-Wolas, The National Museum in Krakow, Poland
A Novel Multi-Modal Strategy For Investigating Heritage Amber Objects

Room 2 - Trumpet 1

Degradation V

Chair: Nicola Schiavon, Hercules Laboratory, University of Évora, ES

09:30 09:50

Margarida Nunes, University of Évora, Portugal
Unveiling Codex 99: a Microscopic and Spectroscopic Investigation of Its Writing Inks

09:50 10:10

Matilde Kratter, La Sapienza University of Rome, Italy
Fungal Colonization and Conservation Challenges in Hypogeal Tombs: A Long-Term Microbiological Investigation

10:10 10:30

Laurenz Schröer, University of Ghent, Belgium
Imaging Biocolonization in Opaque Materials: A 3D Approach Using Adsorption and Spectral X-Ray Micro-CT

10:30 10:50

Selen Ezgi Celik, Utrecht University, The Netherlands
Multimodal Imaging of Biofilm Formation on Building Stones by Using Paracoccus Denitrificans

Room 3 - Trumpet 2

Technical Art History IV

Chair: Claudia Conti, ISPC-CNR, IT

09:30 09:50

Sophie Kirkpatrick, University of Antwerp, Belgium
Characterisation of the Tin Relief Decorations on the Van Eyck's Ghent Altarpiece as Part of the Third Phase of Restoration

09:50 10:10

Olivia Gómez, University of the Basque Country, Spain
In Situ Chemical Imaging Approach for the Conservation-Oriented Study of the Togado de Pompelo Bronze Statue

10:10 10:30

Guanghua Li, The Palace Museum, China
Preliminary Exploration and Case Studies of Non-Destructive Analysis Methods for Chinese Paintings

10:30 10:50

Catarina Miguel, HERCULES Lab - University of Évora, Portugal
An Archaeometric Study of Smalt Pigments in a Mid-Renaissance Illuminated Manuscript: Production, Characterization and Uses

10:50 11:30

Coffee Break

Room 1 - Town Hall

Analytical Methods IV

Chair: Letizia Monico, SCITEC-CNR, IT

11:30 12:00

Marine Cotte, ESRF, France
Cultural Heritage at the European Synchrotron: Improving Experience Far Beyond the Machine

12:00 12:20

Sebastian Schöder, Synchrotron SOLEIL, France
Current State and Future Prospects of the PUMA Beamline at the Synchrotron SOLEIL

12:20 12:40

Laurent Tranchant, Synchrotron SOLEIL, France
Monitoring Synchrotron Beam Induced Modifications in Fossil Teeth Using X-Ray Excited Optical Luminescence

Room 2 - Trumpet 1

Conservation IV

Chair: Marta Manso, Universidade NOVA, PT

11:30 11:50

Nicola Schiavon, HERCULES Lab - University of Évora, Portugal
A Comparative Study of Different Laser Technologies for the Removal of Biofilms from Limestone Surfaces from the Batalha Monastery (Portugal): Preliminary Results

11:50 12:10

Ilaria Pecorelli, University of Rome Tor Vergata, Italy
Expanding Laser Cleaning Approaches for the Removal of Calcium Oxalate Patinas from Easel Paintings: a Comparative Study Highlighting the Efficacy of the 248 nm KRF Excimer Laser

12:10 12:30

Marta Cremonesi, University of Antwerp, Belgium
Surface Cleaning Assessment: Methodological Comparison of Image Processing Techniques Via IMAGEJ

12:30 12:40

NIREOS

12:40 14:30

Lunch Break

Room 3 - Trumpet 2

Degradation VI

Chair: Ilaria Bonaduce, University of Pisa, IT

11:30 11:50

Giulia Caroti, University of Pisa, Italy
Investigating the Influence of Different (Semi)Drying Oil and Ultramarine Blue Combinations on Reaction Pathways in Oil Paint Curing

11:50 12:10

Ali Bagheri Bebhoud, Eindhoven University of Technology, The Netherlands
Bridging Chemistry and Mechanics: A Study of Oil Paint Aging Using IR Spectroscopy and Digital Image Correlation

12:10 12:30

Francisco Mederos-Henry, Royal Institute for Cultural Heritage, Belgium
Study on the Mechanism of Formation of Metal Oxalates in Historical Oil Paintings by Means of Model Systems: the Role of Environmental Conditions and Linseed Oil's Moieties

Plenary 6 | Town Hall

Chair: Francesco Paolo Romano, ISPC-CNR, IT

14:30 15:00

Simona Fantacci, SCITEC-CNR, Italy

Computational Modelling Meets Cultural Heritage: Materials Properties and Degradation

Room 1 - Town Hall

Room 2 - Trumpet 1

Room 3 - Trumpet 2

Computational Methods III

Analytical Methods V

Organic Analysis II

Chair: Simona Fantacci, SCITEC-CNR, IT

Chair: Mathieu Thoury, Université Paris Saclay, FR

Chair: Francesca Galluzzi, University of Bordeaux, FR

15:00 15:20

Ria Stephenson, University of New South Wales, Australia
Computational Insights into the Formation of Calcium Phosphate Coatings for Marble Conservation

15:00 15:20

Alessia Venturi, Nottingham Trent University - ISIS Neutron and Muon Source, United Kingdom
Neutrons for Painting Conservation: Addressing Varnish Blanching Through Scattering Techniques and Optical Methods

15:00 15:30

Rafaella Georgiou, University of Pisa, Italy
Insights Into the Organic Chemistry of Artists' Paints: Unveiling Chemical Heterogeneity at the Nanoscopic Level

15:20 15:40

Emir Dizman, Eindhoven University of Technology, The Netherlands
A Coupled Chemo-Mechanical Framework for Hydrolytic Degradation in Oil Paints

15:20 15:40

Francesco Cantini, IFAC-CNR, Italy
White Beam and Monochromatic Neutron Imaging for the Reconstruction of the Casting Process of Ancient Bronzes: An Overview of Results and Interpretation

15:30 15:50

Francesca Modugno, University of Pisa, Italy
Mass Spectrometry Techniques for Street Art Knowledge and Preservation in the Superstar Project "Sustainable Preservation Strategies for Street Art"

15:40 16:00

Zdenek Preisler, ISPC-CNR, Italy
Advances in Deep Learning for Multimodal XRF/XRD Analysis for Cultural Heritage

15:40 16:00

Elena Badea, University of Craiova, Romania
Controlled Environment Neutron Radiography of Moisture Sorption/Desorption in Gilt Leather. The Tough Life of Corami Wall Coverings from Chigi Palace, Italy

15:50 16:10

Caroline Bouvier, M4I - Maastricht University, The Netherlands
Combining Molecular Imaging Mass Spectrometry to Build an Informative Database for Heritage Materials

16:00 16:20

Luis de Almeida, TU Delft, The Netherlands
Accelerating MA-XRF Through Advanced Scanning Strategies

16:00 16:20

Giulia Marcucci, University of Milano-Bicocca, Italy
Beyond Conventional Neutron Radiography: Enhancing the Contrast in Cultural Heritage Imaging with Epithermal Neutrons

16:10 16:30

Johannes Tichy, Academy of Fine Arts Vienna, Austria
Omics Analysis Applied to Investigate Pink Biofilms Associated with Salt-Weathered Historic Buildings

16:20 16:40

Sara Capriotti, La Sapienza University of Rome, Italy
Explainable Deep Learning for Petrographic Fabric Classification of Levantine Pottery

16:20 16:40

Yohan Boulard, Sorbonne Université - CNRS, France
Investigating Parietal Art in the Chauvet Cave with UV Fluorescence: A Novel Approach for Very Long Working Distances

16:30 16:50

Janez Kosel, ZVKDS, Slovenia
DNA Aptamers as Molecular Tools for the Analysis of Food Residues in Burnt Ceramics from "Pungrt," IG, Slovenia, Dating to the Middle and Early Late Bronze Age

16:40 17:00

Giulia Festa, Enrico Fermi Historical Physics Museum and Study and Research Centre, Italy
Ancient Handwriting Attribution Via Spectroscopic Benchmarks and Machine Learning: 'Clavis Prophetarum' by Antonio Viera

16:40 17:00

Paola Monza, University of Sassari, Italy
Quantitative Analysis For Elemental Characterization Using Muonic Atom X-Ray Emission Spectroscopy (μ XES)

16:50 17:10

Giulia Germinario, ISPC-CNR, Italy
Natural Deep Eutectic Solvents Extraction Method for Pottery Residues: a Preliminary Study

17:10 18:30

Coffee Break/Poster Session 2

EVEN NUMBERS

18:30 20:00

Free Time

20:00 22:30

Gala Dinner

Day 5 - Friday, May 9th, 2025

Plenary 7 | Town Hall

Chair: Bruno Brunetti, University of Perugia, Institute of Chemical Sciences and Technologies, CNR, IT

09:00 09:30

Loïc Bertrand, Université Paris-Saclay, France

How Does a Microscope for Ancient Materials Differ from a Microscope for Non-Ancient Materials?

Room 1 - Town Hall

Analytical Methods VI

Chair: Marine Cotte, ESFR, FR

09:30 09:50

Claudia Conti, ISPC-CNR, Italy
Pushing Boundaries of Raman Spectroscopy Towards New Solutions for Heritage Science

Room 2 - Trumpet 1

Conservation V

Chair: Barbara Salvadori, ISPC-CNR, IT

09:30 09:50

Francesca Benedetti, La Sapienza University of Rome, Italy
Sustainable Bioconsolidation of Stone Heritage Using Carbonate-Producing Bacteria

Room 3 - Trumpet 2

Technical Art History V

Chair: Stefano Legnaioli, ICCOM-CNR, IT

09:30 09:50

Sofia Ceccarelli, ISPC-CNR, Italy
Reading the Past: Non-Invasive Infrared Analysis of Herculaneum Papyri

09:50 10:10

Alessandra Botteon, ISPC-CNR, Italy
Advances in Micro-Sors Applications in Heritage Science

09:50 10:10

Simone Murgia, University of Cagliari, Italy
Advancing Carbonate Rock Conservation: Accurate Phase Identification in a Novel Phosphonate-Based Consolidant

09:50 10:10

Francesca Tansella, University of Torino, Italy
X-Ray Imaging to Study Techniques of Artisanal Processing of Bronze Ornamental Elements Dating Back to the Iron Age

10:10 10:30

Candida Moffa, La Sapienza University of Rome, Italy
Recovering Hidden Layers Through a Terahertz Mapping Approach Based on Spectral Fingerprints

10:10 10:30

Alessia Marzanni, Free University of Bozen-Bolzano, Italy
Stress Resistance in Colored Biofilms at the Stone-Air Interface: Impacts on Heritage Conservation

10:10 10:30

Alex Rodzinka, Cranfield University, United Kingdom
Understanding Iranian Iron Sword Manufacture With Neutron Diffraction And μ X-Ray CT

10:30 10:50

Li Zhao, The Palace Museum, China
Development of a Portable Fiber Optic Excitation-Emission Matrix (FO-EEM) Fluorescence System for In-Situ Dye Analysis

10:30 10:50

Letizia Berti, La Sapienza University of Rome, Italy
Comparing Portable and Benchtop Approaches for Water Contact Angle Measurements on Biocolonized Heritage Surfaces

10:30 10:50

Mauro Missori, ICS-CNR, Italy
Advancing FORS: Remote Reflectance Spectroscopy and Quantitative Colourant Analysis

10:50 10:55

RENISHAW

11:00 11:30

Coffee Break

Room 1 - Town Hall

Conservation VI

Chair: Paola Letardi, IAS-CNR, IT

11:30 11:50

Dominique Scalarone, University of Torino, Italy
Monitoring the Aging of Sustainable Protective Anti-Corrosion Coatings by a Combined Spectroscopic-Chemometric Method

Room 2 - Trumpet 1

Degradation VII

Chair: Laura Cartechini SCITEC-CNR, IT

11:30 11:50

Francesc Albert Tortosa, Politechnic University of Catalunya, Spain
Lead-Calcium Apatite as an Alteration Product in Roman Wall Paintings

Room 3 - Trumpet 2

Technical Art History VI

Chair: Aldo Romani, University of Perugia, IT

11:30 11:50

Kilian Laclavetine, C2RMF, France
Study of the Manufacture of 15th Century Italian Tarot Cards With a Non-Invasive Methodology

11:50 12:10

Sara Goidanich, Politecnico di Milano, Italy
Challenges in Assessing Corrosion Impact of Novel Hydrophobic Protective Treatments for Copper Alloys

11:50 12:10

Roberta Zanini, IIT - Center for Cultural Heritage Technology, Italy
Photonic Crystal Naturally Built on Ancient Roman Glass

11:50 12:10

Chiara Ricci, Centro Conservazione e Restauro La Venaria Reale, Italy
Exploring Wooden Buddhist Sculpture from China: an Analytical Study of the Assembly and Decorative Techniques

12:10 12:30

Teresa Brancolini, La Sapienza University of Rome, Italy
Polymeric Coatings on Silver Surfaces: FTIR Reflectance Spectroscopy for Thickness Measurements

12:10 12:30

Edoardo Tartaglia, Italian Institute of Technology - Ca' Foscari University, Italy
LA-ICP-MS as Micro-Destructive Technique to Study Metal Corrosion in Burial Environment: Proof of Concept on Archaeological and Mock-Up Samples

12:10 12:30

Andrea Marchetti, University of Antwerp - Royal Museums of Art and History, Belgium
Layer by Layer: Multi-Analytical Characterization of Lacquer Coatings on Historical Carriages

12:40 13:00

Wrap up and Conclusions

13:00 13:30

Quinck Lunch/Dispersion

13:30 18:30

**Visit to
Galleria Nazionale dell'Umbria**

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| 2 | Romisaa Abdelrahman AGH University of Krakow, Poland | <i>Integrating X-ray Fluorescence and X-ray Computed Tomography for Comprehensive Analysis of Historical Ceramics from Cracow District</i> |
| 3 | Miriam Alberico La Sapienza University of Rome, Italy | <i>Mixed Iron Based Inks: Insights in the Role of Carbon and How it can Affect the Ink Degradation Mechanism</i> |
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| 6 | Matthias Alfeld TU Delft, The Netherlands | <i>SMART*LIGHT For Heritage Science: a New Inverse Compton X-Ray Source from the Netherlands</i> |
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