



CONFERENCE PROGRAM

2026 IMEKO TC26 INTERNATIONAL CONFERENCE ON
**METROLOGY FOR ARCHAEOLOGY
AND CULTURAL HERITAGE**

BARI, ITALY / OCTOBER 14-16, 2026



METRO

ARCHAEO

BARI
2026

TABLE OF CONTENTS

- MetroArchaeo 2026 Committee 2
- MetroArchaeo 2026 Keynote Speakers 6
- MetroArcheo 2026 Conference Venue..... 12
- MetroArcheo 2026 Social Events..... 13
- MetroArchaeo 2026 Patronages 14
- MetroArchaeo 2026 Sponsors..... 15
- Program Schedule - Wednesday, October 14..... 16
- Program Schedule - Thursday, October 15..... 17
- Program Schedule - Friday, October 16..... 18
- Technical Program - Wednesday, October 14 19
- Technical Program - Thursday, October 15 25
- Technical Program - Friday, October 16 32

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MetroArchaeo 2026 Keynote Speakers

Plenary Session - Wednesday October 14 - H 10:30



The Role of Accelerator-Based Techniques for Cultural Heritage

Lucio Calcagnile

Department and Mathematics and Physics "Ennio De Giorgi"

CEDAD-Center of Applied Physics, Dating and Diagnostics

University of Salento, Italy

ABSTRACT

The CEDAD-Center of Applied Physics, Dating and Diagnostics was established at the University of Salento in 1999 in the frame of a large scale research project funded by the Italian Ministry of Research and Education. It is the first Center in Italy for research and service by using radiocarbon dating with an accelerator.

The main facility of CEDAD is a 3 MV Tandatron accelerator equipped 2 Accelerator Mass Spectrometry (AMS) beamlines for radioactive isotope measurements and 4 Ion Beam Analysis beamlines for materials characterization. Sin 2003 a dedicated ^{14}C dating AMS beamline is in operation for applications in many research areas including Cultural Heritage, Environment, Forensic Science and Life Sciences. At the beginning of 2026 a second new generation, compact accelerator for AMS applications has been put in operation.

During the talk the role and the advantages of accelerator-based techniques for Cultural Heritage and, in particular, Archaeology will be illustrated. An overview of studies carried out at CEDAD in the last 25 years will be presented some of them contributed to completely change consolidated beliefs or wrong attributions based on stylistic methods. Studies on archaeological sites on the Mediterranean, on the radiocarbon dating of the She-wolf and Riace Bronzes by using and integrated approach of the AMS-IBA techniques will be shown.

SPEAKER BIOGRAPHY

Lucio Calcagnile is Full Professor of Applied Physics in Italy at the Department of Mathematics and Physics of the University of Salento since 2005. He is the founder and director of CEDAD-Center of Applied Physics, DAting and Diagnostics of the University of Salento, the first Italian center for research and service for radiocarbon dating by Accelerator Mass Spectrometry. He

was at AMOLF Institute for Atomic and Molecular Physics in Amsterdam, at the Tandetron Laboratory-CNRS Gif sur Yvette, France, the AGLAE Laboratory at the Louvre Museum, in Paris and at the Leibniz Labor for Isotope Analyses, University of Kiel, Germany. He is leader of the Applied Physics Group at the University of Salento. He was Deputy Director of the Department of Mathematics and Physics, University of Salento where he is member of the Scientific Committee of the School of Excellence ISUFI (Higher Institute for Interdisciplinary Training).

His research interests include materials engineering and characterization of new materials by ion beam analysis techniques, ion and laser interaction with matter, accelerator mass spectrometry, stable and radioactive isotope analyses for applications to Cultural Heritage and Environmental Sciences.

He was co-chairman of the AMS-11 The Eleventh International Conference on Accelerator Mass Spectrometry held in Rome in 2008 and of the 4th International Radiocarbon in the Environment Conference in Lecce and many other international conferences and workshops on Cultural Heritage. He is member of the International Advisory Committee of the AMS Conference, C14 and Archaeology, Environment and Radiocarbon Conferences.

He is coauthor of more than 250 scientific papers on international journals and he was responsible of many national and international research projects on Cultural Heritage, Materials and Environmental Sciences. He gave more than 60 invited talks and lectures in Italy and abroad.

Plenary Session - Thursday October 15 - H 11:00



Preserving the intangible: how room acoustics shaped our culture and what we can do to save it for posterity

Francesco Martellotta

*Politecnico di Bari - Department of Architecture,
Construction and Design, Italy*

ABSTRACT

Sound has contributed to shaping the human mind and, through the way it resonates and interacts with spaces, has fostered communication, inspired awe, evoked supernatural presences, and provided optimal conditions for the performative arts. In doing so, it has also shaped the way we interact with one another and perceive ourselves as a community. In this context, room acoustics offers a range of methods and tools to carefully characterize the sonic behavior of spaces and to describe it through numerical parameters and descriptors rooted in human sound perception. The availability of such descriptors, combined with detailed knowledge of geometry, materials, and surfaces, has contributed to the restoration of important buildings destroyed by fire (such as La Fenice Theatre and Notre Dame de Paris), allowing their interiors to be reconstructed in a manner respectful of their intangible acoustic heritage. Beyond objective descriptors, recent years have seen the development of new measurement methodologies that make it possible to capture the room response in full detail through so-called impulse responses. Thanks to the widespread use of microphone arrays, these now allow for a comprehensive description of the temporal and spatial structure of sound propagation within a space. This information, when combined with virtual reality techniques, not only enables the preservation of the acoustic heritage of buildings, but also makes it accessible to people who are unable to visit them in person. Finally, studies of the acoustics of existing buildings can provide insights into the sonic reconstruction of structures that no longer exist, as demonstrated by the increasingly popular field of archaeoacoustics. However, despite appearing straightforward, this process requires expertise and careful selection of input data in order to produce reliable results.

SPEAKER BIOGRAPHY

Francesco Martellotta is Full Professor of Building Physics at the Polytechnic University of Bari, Italy. His research focuses on building and room acoustics, particularly the acoustics of worship

spaces, theatres, and cultural heritage buildings. In the last years he has been studying also innovative waste-based materials for acoustic and thermal insulation, as well as acoustic metamaterials. He has coordinated numerous national and international research projects and published extensively on architectural acoustics, sustainable materials, and indoor environmental quality. He is author/co-author of about 70 peer reviewed papers, four books, and several book chapters, and since 2020 he is included in the Stanford University “World's Top 2% Scientists”. He is active in professional associations such as the Italian Acoustical Association (AIA), where he currently holds the role of General Secretary, and Acoustical Society of America where he serves as Associate Editor of the Journal of the Acoustical Society of America since 2016.

Plenary Session - Friday October 16 - H 11:30



From temperature fields to residual structural capacity: a metrology-driven approach to the assessment and strengthening of heritage masonry

Salvador Ivorra

Universidad de Alicante, Spain

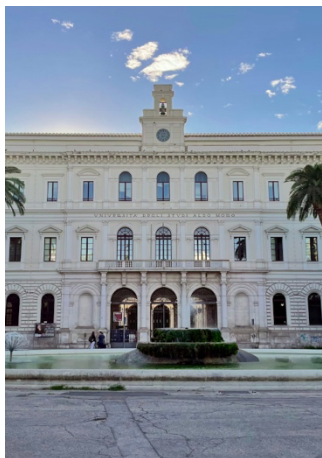
ABSTRACT

Historic masonry represents a substantial part of the architectural and cultural heritage of many regions, yet its structural assessment remains particularly challenging because of material heterogeneity, limited tensile capacity, previous damage and the uncertainty associated with extreme actions such as earthquakes and fire. In this context, strengthening interventions should not be evaluated only in terms of nominal material strength, but through measurable evidence linking damage, interfaces and residual structural capacity. This presentation proposes a metrology-driven approach to the assessment and strengthening of heritage masonry, drawing on a sequence of experimental studies developed from material characterization to full-scale structural testing. Particular attention is devoted to Textile Reinforced Mortars (TRM), whose performance has been investigated under in-plane cyclic loading and after high-temperature and real-fire exposure. The integration of load and displacement measurements, thermal monitoring, Digital Image Correlation and post-damage inspection makes it possible to quantify crack development, stiffness degradation, ductility, energy dissipation and residual strength, while distinguishing the response of the reinforcement from that of the masonry substrate and their interface. The presentation will discuss how fire exposure can significantly alter the structural response of masonry and how TRM may improve post-fire performance, while also showing that severe substrate damage can limit the effectiveness of otherwise undamaged reinforcement. This evidence highlights the need to move from material-based qualification toward system-level assessment. The same experimental philosophy is then extended to emerging strengthening solutions, including Ultra-High-Performance Concrete (UHPC), natural-fibre TRM systems and ongoing applications to rammed-earth structures. Ultimately, the contribution positions metrology as the link between diagnosis and intervention: reliable strengthening of heritage structures requires measurements capable of identifying damage mechanisms, quantifying residual capacity and validating compatible, efficient and resilient conservation strategies.

SPEAKER BIOGRAPHY

Salvador Ivorra is Full Professor of Structural Engineering at the University of Alicante, where he leads the Structural Testing, Simulation and Modelling Research Group (GRESMES) and currently serves as Vice-Rector for Infrastructure, Sustainability and Occupational Safety. His research focuses on the experimental and numerical assessment of structures, structural dynamics, monitoring, strengthening techniques and the conservation of historic constructions, with particular attention to masonry structures and their response to extreme actions. He received his PhD in Industrial Engineering from the Universitat Politècnica de València in 2002, with a doctoral thesis on the dynamic actions induced by swinging bells on masonry bell towers. Since then, a significant part of his work has addressed the structural behaviour of architectural heritage through experimental testing, vibration-based assessment, structural monitoring and numerical modelling. In recent years, his research has focused on innovative strengthening systems for masonry, including Textile Reinforced Mortars (TRM), full-scale cyclic testing, Digital Image Correlation and the residual structural performance of strengthened walls after high-temperature and real-fire exposure. This research has expanded to Ultra-High-Performance Concrete (UHPC), natural-fibre TRM systems and the strengthening of earthen and rammed-earth heritage structures. Ivorra has authored more than 85 scientific journal papers, supervised 20 doctoral theses and participated in numerous competitive research projects and technology-transfer contracts. His work combines metrology, experimental mechanics and structural engineering to support evidence-based and resilient conservation strategies for existing and historic structures.

MetroArcheo 2026 Conference Venue

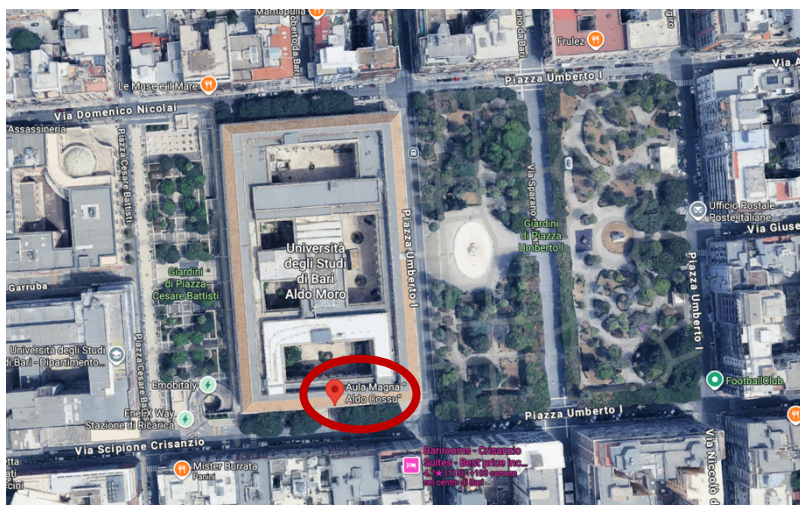


IMEKO MetroArcheo 2026 will be held at the **University of Bari - Palazzo Ateneo**.

Palazzo Ateneo is the historic main building of the University of Bari Aldo Moro and one of the city's best-known academic landmarks. Facing Piazza Umberto I, it reflects early twentieth-century institutional architecture and hosts some of the University's most representative spaces for teaching and ceremonial events. Historical accounts focus on the long planning and construction process that led to the creation of this major educational building, while documented in the public sources we rely on. Today, as the symbolic home of the University in the city centre, it offers a prestigious setting for conference activities and provides easy access to Bari's main services, transport links, and cultural attractions.

ADDRESS

Palazzo Ateneo has several entrances. **To access the "Aldo Cossu" Aula Magna, we recommend using the entrance at Via Scipione Crisanzio 1.**



MetroArcheo 2026 Social Events

WELCOME PARTY / LIVE PERFORMANCE

Wednesday October 14 - H 19:30

At the end of the conference sessions, a guided sightseeing tour of Bari's historic centre, conducted in English, will be organized. The tour will conclude at the Superintendence of Archaeology, Fine Arts and Landscape, the venue of the Welcome Party.

The **MetroArcheo 2026 Welcome Party** will be held at the **Superintendence of Archaeology, Fine Arts and Landscape for the Metropolitan City of Bari**, located at Via Pier l'Eremita, 25/B - 70122 Bari (BA).

The evening will be accompanied by a **live performance by the Wind Quintet "OMNISONUS"**. Conceived and led by its artistic director, Maestro Francesco Scoditti, OMNISONUS is an instrumental ensemble with a flexible, modular structure that allows it to perform in different formations, ranging from a trio to a chamber orchestra. The ensemble is primarily dedicated to the research and performance of folk music, as well as a wide repertoire of transcriptions spanning classical and contemporary music, with a particular focus on film scores. Its performances bring together wind ensemble music, folk traditions, cinema music, and great Italian music. In July 2003, the ensemble performed a series of concerts on the island of Corfu alongside the renowned mezzo-soprano Roza Poulimenou.

ADDRESS

Superintendence of Archaeology, Fine Arts and Landscape for the Metropolitan City of Bari
Via Pier l'Eremita, 25/B - Bari

GALA DINNER

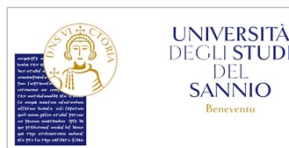
Thursday October 15 - H 20:00

The MetroArcheo 2026 **Gala Dinner** will be held at **"Sala Zonno" Restaurant** on **Thursday, October 15 - 20:00**.

ADDRESS

Ristorante Sala Zonno
Molo San Nicola, 3 - Bari

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Tecnologie per le Scienze della Terra e del Mare



Program Schedule - Wednesday, October 14

WEDNESDAY, OCTOBER 14			
10:00 - 10:30	Aula magna "Aldo Cossu" OPENING CEREMONY - WELCOME ADDRESSES		
10:30 - 11:20	Aula magna "Aldo Cossu" - Keynote Lecture - Lucio Calcagnile The Role of Accelerator-Based Techniques for Cultural Heritage		
11:20 - 11:40	COFFEE BREAK		
	Aula Magna "Aldo Cossu"	Sala "Don Tonino Bello"	Sala Convegni - Biblioteca
11:40 - 13:00	S1.1 - Special Session #01: Multiscale and multitemporal high resolution remote sensing and non-destructive testing for archaeology and monumental heritage: From research to preservation - PART I	S1.2 - Special Session #18: Artificial Intelligence in Archaeological Research: Methods, Applications, and Epistemological Challenges	S1.3 - General Session - PART I
13:00 - 14:00	LUNCH		
14:00 - 15:40	S2.1 - Special Session #01: Multiscale and multitemporal high resolution remote sensing and non-destructive testing for archaeology and monumental heritage: From research to preservation - PART II	S2.2 - Special Session #11: Non-Invasive Systems and Techniques for "On-Site" Monitoring and Diagnosis	S2.3 - Special Session #07: Virtual environments for Cultural Heritage: tools, new technologies and future perspectives - PART I
15:40 - 16:00	COFFEE BREAK		
16:00 - 17:40	S3.1 - Special Session #15: Bridging the Gap – Interdisciplinary Sciences in Cultural Heritage	S3.2 - Workshop - Microfading Testing (MFT): From Measurement to Preventive Conservation	S3.3 - Special Session #07: Virtual environments for Cultural Heritage: tools, new technologies and future perspectives - PART II
17:40	GUIDED TOUR OF BARI		
19:30	WELCOME PARTY / LIVE PERFORMANCE Superintendence of Archaeology, Fine Arts and Landscape		

Program Schedule - Thursday, October 15

THURSDAY, OCTOBER 15			
	Aula Magna "Aldo Cossu"	Sala "Don Tonino Bello"	Sala Convegni - Biblioteca
09:00 - 10:40	S4.1 - Special Session #12: Innovations in Architectural and Archeological Heritage Preservation and Restoration - PART I	S4.2 - Special Session #13: Geomatics for Archaeology and Cultural Heritage: multi-source and multi-scale data integration and processing in research and applications	S4.2 - Special Session #02: Non-destructive imaging and interferometric techniques for cultural heritage diagnostics and metrology
10:40 - 11:00	COFFEE BREAK / POSTER SESSION		
11:00 - 11:50	Aula magna "Aldo Cossu" - Keynote Lecture - Francesco Martellotta Preserving the intangible: how room acoustics shaped our culture and what we can do to save it for posterity		
	Aula Magna "Aldo Cossu"	Sala "Don Tonino Bello"	Sala Convegni - Biblioteca
11:50 - 13:10	S5.1 - Special Session #12: Innovations in Architectural and Archeological Heritage Preservation and Restoration - PART II	S5.2 - Special Session #17: Non-Invasive Diagnostic Techniques for the Study and Conservation of Cultural Heritage	S5.3 - Special Session #04: Integrated Methods, Theories And Applications For Structural Health Monitoring And Assessment Of Ancient Constructions - PART I
13:10 - 14:30	LUNCH		
	Aula Magna "Aldo Cossu"	Sala "Don Tonino Bello"	Sala Convegni - Biblioteca
14:30 - 15:30	S6.1 - DEMO SESSION - CODEVINTEC - Special Session #01: Multiscale and multitemporal high resolution remote sensing and non-destructive testing for archaeology and monumental heritage: From research to preservation - PART III	S6.2 - General Session	S6.3 - Special Session #04: Integrated Methods, Theories And Applications For Structural Health Monitoring And Assessment Of Ancient Constructions - PART II
15:30 - 16:00	COFFEE BREAK / POSTER SESSION		
	Aula Magna "Aldo Cossu"	Sala Convegni - Biblioteca	
16:00 - 17:40	S7.1 - Special Session #05: Vibroacoustic metrological characterization for archaeology and cultural heritage	S7.2 - Special Session #08: Damage and Radiological Risk Assessment: Diagnosis and Monitoring for the Restoration, Preventive Conservation, Usability and Maintenance of Cultural Heritage	
20:00	GALA DINNER Sala Zonno Restaurant		

Program Schedule - Friday, October 16

FRIDAY, OCTOBER 16			
	Aula Magna "Aldo Cossu"	Sala "Don Tonino Bello"	Sala Convegni - Biblioteca
09:30 - 11:10	S8.1 - Special Session #19: From shape to sound: Measuring, Preserving, and Reactivating Sound and Media Heritage	S8.2 - Special Session #14: Archaeometric And Digital Tools For The Investigation And The Description Of Etruscan Sites And Their Finds - PART I	S8.3 - Special Session #16: Diagnostic, restoration and conservation of library cultural heritage and archival materials by multidisciplinary approaches
11:10 - 11:30	COFFEE BREAK		
11:30 - 12:20	Aula magna "Aldo Cossu" - Keynote Lecture - Salvador Ivorra From temperature fields to residual structural capacity: a metrology-driven approach to the assessment and strengthening of heritage masonry		
12:20 - 13:00	POSTER SESSION		
13:00 - 14:00	LUNCH		
	Aula Magna "Aldo Cossu"	Sala Convegni - Biblioteca	
14:00 - 15:00	S9.1 - General Session - PART II	S9.2 - Special Session #14: Archaeometric And Digital Tools For The Investigation And The Description Of Etruscan Sites And Their Finds - PART II	
15:00 - 15:30	Aula magna "Aldo Cossu" - CLOSING AND AWARD CEREMONY		

Technical Program - Wednesday, October 14

09:00 - 17:00	University of Bari - Palazzo Ateneo REGISTRATIONS
10:00 - 10:30	Aula Magna "Aldo Cossu" OPENING CEREMONY - WELCOME ADDRESSES
10:30 - 11:20	Aula Magna "Aldo Cossu" PLENARY SESSION - KEYNOTE SPEAKER Chair: Gianluca Quarta, <i>University of Salento, Italy</i>

The Role of Accelerator-Based Techniques for Cultural Heritage

Lucio Calcagnile, *University of Salento, Italy*

11:20 - 11:40	University of Bari - Palazzo Ateneo COFFEE BREAK
11:40 - 13:00	Aula Magna "Aldo Cossu" Session 1.1 - Multiscale and multitemporal high resolution remote sensing and non-destructive testing for archaeology and monumental heritage: From research to preservation - PART I Chairs: Giovanni Leucci, <i>ISPC - National Research Council, Italy</i> Lara De Giorgi, <i>ISPC - National Research Council, Italy</i> Dora Francesca Barbolla, <i>ISPC - National Research Council, Italy</i> Michele Punzo, <i>ISPC - National Research Council, Italy</i>
11:40	Multi-method archaeological prospection in the centre of Teotihuacan (Mexico) Alessandra Pecci, Luis Barba, Agustín Ortiz, Jorge Blancas, Domenico Miriello, Genea Girimonte, Natalia Moragas
12:00	GPR survey at the Church of "Santa Maria a Mare" in Maiori (Salerno, Italy) Dora Francesca Barbolla, Michele Punzo, Daniela Tarallo, Pasquale Daponte

- 12:20 Integrated Geomorphological and Geophysical Investigations at the Poetry Cave Prehistoric Archaeological Site (Roca, Southern Italy): new data from the RESONANCE project**
Giovanni Leucci, Lara De Giorgi, Vincenzo Di Fiore, Daniela Tarallo, Michele Punzo, Dora Francesca Barbolla, Ivan Ferrari, Francesco Giuri, Maurizio Lazzari
- 12:40 Non Invasive Diagnostics at the Necropolis of Porta Nocera in Pompeii**
Lara De Giorgi, Dora Francesca Barbolla, Ivan Ferrari, Francesco Giuri, Giovanni Leucci

11:40 - 13:00 Aula "Don Tonino Bello"
Session 1.2 - Artificial Intelligence in Archaeological Research: Methods, Applications, and Epistemological Challenges
Chair: Valerio Baiocchi, *Sapienza University of Rome, Italy*

- 11:40 Assessment of Urban Expansion Around the Nazca City in the Nazca Lines and Geoglyphs Archaeological Area Using Semi-supervised Deep Learning**
Francisco James León Trujillo, Javier Alonso Jaimes Cucho, Gabriel Nina Condori, Abdul Yalli Alarcón, Miguel Chicchon
- 12:00 Classifying Differentially Preserved Ceramic Profiles: A Semi-Automated Typology of Briquetage Sherds from Piscina Torta**
Alessandri Luca, Valerio Baiocchi
- 12:20 From Totora Reeds to Territory: Deep Learning-Based Segmentation and Expansion Analysis of the Uros Floating Islands, Lake Titicaca**
Francisco Leon, Cesar Peralta, Gabriel Nina, Javier Jaimes, Miguel Chicchon
- 12:40 From Where to Why? SHAP Values and the Limits of Explainability in Settlement Pattern Analysis**
Alessandri Luca, Valerio Baiocchi

11:40 - 12:40 Sala Convegni - Biblioteca (Library)
Session 1.3 - General Session - PART I
Chairs: Pasquale Daponte, *University of Sannio, Italy*
Laura Fabbiano, *Politecnico di Bari, Italy*

- 11:40 An overview on the impact of climate change on peruvian civilization paleodiets during the preincaic period**
Annalisa Valente, Francesca Colosi, Maurizio Lazzari
- 12:00 Integrating archaeology and archaeometry in the study of health and therapeutic practices: evidence from the medieval town of Cencelle (Viterbo, VT)**
Giulia Cati, Andrea Carpentieri, Marco Morelli, Giorgia Annoscia
- 12:20 Bioconsolidation of Wall Painting Support Materials in Side Boyalıin Cave Church (Antalya, Türkiye)**
Bilgesu Şen

13:00 - 14:00	University of Bari - Palazzo Ateneo LUNCH
14:00 - 15:40	<i>Aula Magna "Aldo Cossu"</i> Session 2.1 - Multiscale and multitemporal high resolution remote sensing and non-destructive testing for archaeology and monumental heritage: From research to preservation - PART II Chairs: Giovanni Leucci, <i>ISPC - National Research Council, Italy</i> Lara De Giorgi, <i>ISPC - National Research Council, Italy</i> Dora Francesca Barbolla, <i>ISPC - National Research Council, Italy</i> Michele Punzo, <i>ISPC - National Research Council, Italy</i>
14:00	Why Did the Nuraghe Collapse? New insights from integration of Archaeology and Geophysics Gaetano Ranieri, Alberto Godio, Luca Piroddi, Antonio Trogu, Albert Casas
14:20	Tracking walls failures of the Uggiano castle: a decade scarp retreat and new collapses Antonio Minervino Amodio, Alessia Frisetti, Giuseppe Corrado, Nicodemo Abate, Dario Gioia
14:40	Integrated 3D Survey of the Cathedral of Crotona Using Ground-Based and Aerial Photogrammetric High-Resolution Technologies Marco Di Lieto, Gregory De Martino, Stefania Argenti, Alfredo Ruga, Alfredo Falconieri, Gerardo Romano, Luigi Capozzoli
15:00	Landscape, Geology and Settlement Patterns in Eastern Sardinia: A GIS Analysis of Archaeological Site Distribution Marco Sfacteria, Dario Gioia, Valentina Casella, Enrico Dirminti, Giuseppe Corrado, Marco Miano, Antonio Minervino Amodio, Marco Mulargia
15:20	Interconnecting landscapes, itineraries and topography: geoarchaeological analyses along the Thessalonike – Philippis stretch of Via Egnatia in Greece Chiara Manieri, Emiri Farinetti, Maurizio Lazzari
14:00 - 15:00	<i>Aula "Don Tonino Bello"</i> Session 2.2 - Non-Invasive Systems and Techniques for "On-Site" Monitoring and Diagnosis Chair: Livio D'Alvia, <i>Sapienza University of Rome, Italy</i>
14:00	Split Ring Resonator-Based Microwave Probe for Non-Destructive Moisture Detection in Cultural Heritage Materials Marialourdes Ingrosso, Livio D'Alvia, Emanuele Rizzuto, Zaccaria Del Prete
14:20	Non-invasive methodological approach for provenance bone painting analysis in the funerary cavities of Montorio, Burgos

Giorgio Senesi, Olga De Pascale, Bruno Marangoni, Ana Isabel Ortega Martínez, Ana Álvaro Gallo, Carlos Saiz, Ana B. Marín-Arroyo, Maria Luisa Cervera Sanz, Eva Soriano Vega, Gianni Gallelo

- 14:40 Impact of Natural and Anthropogenic Factors on Architectural Heritage. Case Study: The Andesite Altar at Sarmizegetusa Regia**
Zgăvârdean Sorin, Neamtu Calin, Mateescu Razvan

14:00 - 15:40 *Sala Convegni - Biblioteca (Library)*
Session 2.3 - Virtual environments for Cultural Heritage: tools, new technologies and future perspectives - PART I
Chair: Francesco Colace, *University of Salerno, Italy*

- 14:00 A Closed-Loop Control Framework for Visitor Engagement in Adaptive Museum Environments**

Chiara Foglietta, Valeria Bonagura, Stefano Panzieri

- 14:20 The Use of Generative AI in the Philological Reconstruction of Historical Architectural Gaps**

Laura Maiuri, Marco Lombardi, Carmine Valentino, Pietro Giuseppe Strollo, Marco Limongiello, Gianluca Ronga

- 14:40 Belella Polo and the Secret of Kokachin: Design of a serious game for the valorization of museum heritage and intercultural education**

Attilio Della Greca, Ilaria Amaro, Alexia Pavan, Maria Rosaria Marchionibus, Paola Barra

- 15:00 A Compass-Driven Mobile Application for On-Site and Remote 360° Immersive Visualization of the Lost Mínguez Pier, Torre Vieja (Alicante, Spain)**

Daniel Tejerina, Jaime Molina, Manuel Soler, Marco Aurelio Esquembre, José Ramón Ortega, Alejandro Martín, Carolina Frías, Javier Muñoz

- 15:20 Beyond the School Trip: Virtual Reality and WebQuest for Cultural Heritage Education**

Angela D'Angelo

15:40 - 16:00 *University of Bari - Palazzo Ateneo*
COFFEE BREAK

16:00 - 17:20	Aula Magna "Aldo Cossu" Session 3.1 - Bridging the Gap – Interdisciplinary Sciences in Cultural Heritage Chair: Gioacchino Tempesta, <i>University of Bari, Italy</i>
16:00	Rhegion's Mudbrick Fortification: Archaeometric and Architectural Analysis of a Late Archaic Defence (Calabria, 6th-5th century BCE) Luca Filoni
16:20	Dyes characterization in daguerreotypes: a multi-technique approach Monia Vadrucchi, Francesco D'Amico, Chiaramaria Stani, Lisa Vaccari, Agnese De Carlo, Martina Conti, Elena Correr, Melissa Gianferrari, Sara Zucchi
16:40	Neutron imaging for the durability study of carbon-fibre-reinforced AAMs for cultural heritage applications Sabrina Elettra Zafarana, Filomena Salvemini, Maria Cristina Caggiani, Paolo Mazzoleni, Germana Barone
17:00	Integrated Non-Invasive Archaeometric Investigation of the Trani Cathedral Historiated Floor Mosaic (12th Century, Apulia, Italy) Gioacchino Tempesta, Elisabetta Gadaleta, Pasquale Acquafredda, Manuela De Giorgi, Elisabetta Neri, Anita Guarnieri, Gaia Caula
16:00 - 17:40	Aula "Don Tonino Bello" Session 3.2 - Workshop - Microfading Testing (MFT): From Measurement to Preventive Conservation

Light-induced degradation is one of the major causes of irreversible damage to cultural heritage objects. Reliable assessment of light sensitivity is therefore essential for developing evidence-based preventive conservation strategies, including exhibition policies, lighting conditions, loan decisions, and storage recommendations. Microfading Testing (MFT) has become the leading non-destructive technique for evaluating the lightfastness of historical materials directly on original objects.

This hands-on workshop introduces participants to the principles and practical application of MFT in museums, libraries, archives, and conservation laboratories. After a concise overview of photochemical degradation and the role of MFT in heritage science, participants will become familiar with the instrument, calibration procedures, measurement planning, and good practice for testing valuable objects.

The workshop is centred on live demonstrations and participant involvement. Attendees will observe and perform MFT measurements, monitor colour and spectral changes in real time, and learn how to interpret measurement results using colour-difference metrics and reference materials. Particular attention will be given to translating MFT data into practical conservation decisions, demonstrating how lightfastness measurements can support realistic and scientifically justified preventive conservation plans.

The session is intended for conservators, conservation scientists, collection managers, and heritage professionals seeking practical experience with one of the most important analytical tools currently available for light sensitivity assessment of cultural heritage materials.

16:00 - 17:40	<i>Sala Convegni - Biblioteca (Library)</i> Session 3.3 - Virtual environments for Cultural Heritage: tools, new technologies and future perspectives - PART II Chairs: Francesco Colace, <i>University of Salerno, Italy</i>
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| 16:00 | Narrating the abandonment: the documentary as a bridge between scientific research, local memory, heritage valorization, and risk awareness
Fabrizio Terenzio Gizzi, Maria Rosaria Potenza, Annarita Sannazzaro, Marilisa Biscione, Laviero Pepe, Nicola Masini, Michele Scioscia, Mario Bentivenga |
| 16:20 | Beyond Immersion: A Conversational Interaction Framework for Visitor Interpretive Engagement in XR Cultural Heritage Experiences
Bowen Guan, Yilei Guo |
| 16:40 | Smartphone-Based 3D Gaussian Splatting of a Monumental Royal Interior: A Frame-Density Study at Palazzo Reale di Torino
Simone Pio Barbagallo, Alice Cutullè, Dario Allegra, Anna Maria Gueli, Filippo Stanco |
| 17:00 | NLP for Cultural Heritage: from Rule-Based Approaches to LLMs and Computer-Vision
Stefano Silvestri, Ludovica Fiorentino, Raffaele Guarasci |
| 17:20 | From Fragment to Context: Digital Recontextualization of Displaced Cultural Heritage
Francesco Cozzolino, Emanuela Lanzara |

17:40	GUIDED TOUR OF BARI
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At the end of the conference sessions, a guided sightseeing tour of Bari's historic centre, conducted in English, will be organized. The tour will conclude at the Superintendence of Archaeology, Fine Arts and Landscape, the **venue of the Welcome Party**.

19:30	<i>Superintendence of Archaeology, Fine Arts and Landscape</i> Welcome Party / Live Performance
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The evening will be accompanied by a live performance by the Wind Quintet "OMNISONUS".

Technical Program - Thursday, October 15

08:30 - 17:00	<i>University of Bari - Palazzo Ateneo</i> REGISTRATIONS
09:00 - 10:40	<i>Aula Magna "Aldo Cossu"</i> Session 4.1 - Innovations in Architectural and Archeological Heritage Preservation and Restoration - PART I Chairs: Armando La Scala, <i>Polytechnic University of Bari, Italy</i> Dora Foti, <i>Polytechnic University of Bari, Italy</i> Maria Francesca Sabbà, <i>Polytechnic University of Bari, Italy</i>
09:00	From Neanderthal to Landscape: Protection Strategies and Digital Twin Approaches for the Lamalunga Cave System (Altamura - APULIA, Southern Italy) Francesca Romana Paolillo, Elena Dellu', Caterina Annese, Fabrizio Banfi, Diego Blanco, Stefano Urbini, Iacopo Nicolosi, Teresa Rinaldi, Andrea Quagliariello, Sandra Sivilli, Azurra Tenore, Ivana Fiore
09:20	Hybrid Deep & Machine Learning Clustering for InSAR-Based Cultural Heritage Monitoring Sandropio Scoccola, Tony Fierro, Antonio Sandoli
09:40	Assessing the Structural Influence of Historic Bells on the Belfry of the Santa Pola Fortress (Spain): Implications for Heritage Conservation Salvador Ivorra, Benjamin Torres, David Bru, Antonio Marco
10:00	A Data-Driven Multi-Parameter Monitoring Framework for Archaeological Heritage: Structural Health Monitoring and Preventive Conservation in the "Domus de Janas" UNESCO Property Giovanna Concu, Donatella Rita Fiorino, Andrea Frattolillo, Costantino Carlo Mastino, Daniel Meloni, Elisa Pilia, Giuseppe Tropeano
10:20	Structural control solutions for the seismic protection of architectural heritage Cristian Capodicasa, Valeria Cavanni, Linda Scussolini, Rosario Ceravolo

09:00 - 10:40

Aula "Don Tonino Bello"

Session 4.2 - Geomatics for Archaeology and Cultural Heritage: multi-source and multi-scale data integration and processing in research and applications

Chairs: Maria Grazia D'Urso, *University of Bergamo, Italy*
Gabriele Bitelli, *University of Bologna, Italy*

09:00

Machine learning and multispectral remote sensing for post-dictive analysis of archaeological remains: A case study from Alcantara Valley (Sicily)

Michele Mangiameli, Giuseppe Mussumeci, Livio Idà, Eleonora Pappalardo

09:20

Comparison and analysis of two mobile laser scanner. The survey of the Tempio di Venere (Caserta, Italy)

Francesco Tosti, Samuele Giuliani, Leonardo Paris, Carla Nardinocchi

09:40

On the geometric reconstruction of the industrial archaeological buildings from satellite imagery

Jose' Luis Tello Espinoza, Joel Aldrighettoni, Maria Grazia D'Urso

10:00

Integrated 3D Surveying of Complex Historical Architecture: Static and Dynamic LiDAR Comparison in a Geomatics Education Context

Anna Forte, Alessandro Lambertini, Seyedehnarges Seyedkazemiardabili, Gabriele Bitelli

10:20

Digital metrology for structural pathology and indirect virtual reintegration: The case of Torre Vecchia in Cirò Marina

Veronika Karadzhova

09:00 - 10:20

Sala Convegni - Biblioteca (Library)

Session 4.3 - Non-destructive imaging and interferometric techniques for cultural heritage diagnostics and metrology

Chairs: Melania Paturzo, *National Research Council, Italy*
Vito Pagliarulo, *National Research Council, Italy*

09:00

A Low-Cost Methodology for the Enhancement and Reconstruction of Corroded Ancient Coins Using Image Processing and Photogrammetry

Emma Angelini

09:20

Integrated diagnostic campaign on a Roman mural painting in the Aragonese Castle of Baia (Naples, Italy): A case study

Valentina Di Sarno, Mikhalis Andrianakis, Cecilia Auditore, Silvana Carannante, Ilaria Catapano, Antonina Chaban, Raffaella Fontana, Vito Pagliarulo, Melania Paturzo, Fabio Pagano, Chiara Saltarelli, Emma Vannini, Vivi Tornari, Alessandra Rocco

09:40

Structural analysis of an early 1900s violin by X-ray tomography coupled with shearography

Matteo Bettuzzi, Maria Pia Morigi, Diego Colmenero Mir, Carmen Cantalapiedra, Xi Shengnan, Chiara Saltarelli, Vito Pagliarulo, Melania Paturzo

10:00 Exploring Thermal Quasi-Reflectography (TQR) capabilities on paintings: A preliminary guide for data interpretation on target models
Nicole de Manincor, Dumitru Scutelnic, Claudia Daffara

10:40 - 11:00 *University of Bari - Palazzo Ateneo*
COFFEE BREAK / POSTER SESSION

The list of posters, including the number assigned to each poster, is available at the end of this booklet.

11:00 - 11:50 *Aula Magna "Aldo Cossu"*
PLENARY SESSION - KEYNOTE SPEAKER
Chair: Fabrizio Barone, *University of Salento, Italy*

Preserving the intangible: how room acoustics shaped our culture and what we can do to save it for posterity

Francesco Martellotta, *Politecnico di Bari, Italy*

11:50 - 13:10 *Aula Magna "Aldo Cossu"*
Session 5.1 - Innovations in Architectural and Archeological Heritage Preservation and Restoration - PART II
Chairs: Armando La Scala, *Polytechnic University of Bari, Italy*
Dora Foti, *Polytechnic University of Bari, Italy*
Maria Francesca Sabbà, *Polytechnic University of Bari, Italy*

- 11:50 Uncertainty propagation from operational modal analysis to mechanical property estimates in historical masonry towers**
Armando La Scala, Andrea Miano, Francesco Fabbrocino, Andrea Prota, Dora Foti
- 12:10 Structural assessment of a century concrete railway tunnel subjected to future urban development using in-situ characterization and Finite Element Modelling**
Salvador Ivorra, Carlos Diez, Luis Estevan, Benjamin Torres
- 12:30 Vernacular Construction Systems in the Portuguese EUROACE Region**
M.^a Teresa Pinheiro-Alves, João Soares
- 12:50 The Atemporality of As-Becoming: Continuative Layers of Heritage Inventoried through Digital Metamodeling**
Fernando Birello de Lima, Simone Helena Tanoue Vizioli, Alfonso Ippolito

11:50 - 13:10	<i>Aula "Don Tonino Bello"</i> Session 5.2 - Non-Invasive Diagnostic Techniques for the Study and Conservation of Cultural Heritage Chairs: Paola Fermo, <i>University of Milan, Italy</i> Valeria Comite, <i>University of Milan, Italy</i> Antonino Fiorentino, <i>University of Milan, Italy</i> Lorenzo Guardiano, <i>University of Milan, Italy</i>
11:50	Preliminary Non-Invasive Characterization of Pigments in the Busca Papyrus: Insights into Original Materials and Restoration Interventions Valeria Comite, Paola Fermo, Gianluca Carabelli, Antonino Fiorentino, Francesca Sabatini, Daniele Bolleri, Lorenzo Guardiano
12:10	Softwood and Hardwood Discrimination by Portable NMR under Controlled Relative Humidity Conditions Elisa Villani, Valeria Stagno, Silvia Capuani
12:30	Multi-modal 3D Digitization of an Egyptian Human Mummy from the National Museum of Transylvanian History Radu Comes, Calin Neamtu, Marian Jac, Fiona Tozlovanu, Claudiu Andrei Muresan, Eugenia Beu-Dachin
12:50	Integrated GPR and TLS Measurements for Structural Assessment of a NeoGothic Brick Church Kacper Durczak, Joanna Janicka, Wioleta Blaszcak-Bak
11:50 - 12:50	<i>Sala Convegni - Biblioteca (Library)</i> Session 5.3 - Integrated Methods, Theories and Applications for Structural Health Monitoring and Assessment of Ancient Constructions - PART I Chairs: Luca Bianchini Ciampoli, <i>Roma Tre University, Italy</i> Pietro Meriggi, <i>Roma Tre University, Italy</i> Natalia Pingaro, <i>European Centre for Training and Research in Earthquake Engineering</i>
11:50	Optimal Sensor Placement for structural health monitoring: comparison of methodologies on a multi-directional 3D FEM model. Giovanni Lo Re', Alessandra Fiore, Francesco Trentadue, Domenico De Tommasi
12:10	Integrated Non-Destructive Surveying Technologies for the Digital Reconstruction of Ponte Sisto in Rome Jhon Romer Diezmos Manalo, Valerio Gagliardi, Luca Bianchini Ciampoli, Antonio Napolitano, Alessandro Onofri, Andrea Benedetto
12:30	Stability Assessment of Unbonded Masonry Arches Using Rigid Body Dynamics Mohammad Pourfouladi, Natalia Pingaro, David Mencías Carrizosa, Gabriele Milani

13:10 - 14:30 *University of Bari - Palazzo Ateneo*
LUNCH

14:30 - 15:30 *Aula Magna "Aldo Cossu"*
Session 6.1 - DEMO SESSION - CODEVINTEC - Multiscale and multitemporal high resolution remote sensing and non-destructive testing for archaeology and monumental heritage: From research to preservation - PART III

14:30 - 15:30 *Aula "Don Tonino Bello"*
Session 6.2 - General Session - PART II
Chairs: Francesco Lamonaca, *University of Calabria, Italy*
Luca Sevi, *Politecnico di Bari, Italy*

14:30 Predicting Archaeological Sites in the Eastern Gobi Desert Using Multimodal Machine Learning
Matthew Neissen, Sohee Park

14:50 From earth to heaven. A first account of the atlas of ancient obelisks
Marco Carpiceci, Fabio Lanfranchi, Andrea Angelini

15:10 Metrological compatibility as a tool for the analysis of ancient itinerary units
Claudio Narduzzi

14:30 - 15:30 *Sala Convegni - Biblioteca (Library)*
Session 6.3 - Integrated Methods, Theories and Applications for Structural Health Monitoring and Assessment of Ancient Constructions - PART II
Chairs: Luca Bianchini Ciampoli, *Roma Tre University, Italy*
Pietro Meriggi, *Roma Tre University, Italy*
Natalia Pingaro, *European Centre for Training and Research in Earthquake*

14:30 GAN-Based Synthetic Data Augmentation for Masonry Crack Segmentation in Cultural Heritage Buildings
Mattia Forlesi, Leonardo Ciabattini, Giacomo Leonardi, Marco Di Felice

14:50 Integrating H-BIM and Multi-Hazard Information for Museum Artwork Protection: The Museo Marino Marini Case Study
Pietro Meriggi, Luca Bianchini Ciampoli, Antonino Maria Marra, Mario De Stefano, Fabio Castelli, Chiara Arrighi

15:10 Enhancing Buried Road Detection through Attribute-Based GPR Data Processing
Luca Bianchini Ciampoli, Saeed Parnow, Fabio Tosti, Andrea Benedetto

15:30 - 16:00 *University of Bari - Palazzo Ateneo*
COFFEE BREAK / POSTER SESSION

The list of posters, including the number assigned to each poster, is available at the end of this booklet.

16:00 - 17:40 *Aula Magna "Aldo Cossu"*
Session 7.1 - Vibroacoustic metrological characterization for archaeology and cultural heritage
Chairs: Fabrizio Barone, *University of Salerno, Italy*
Marco Casazza, *University of Salerno, Italy*

16:00 **Traffic Noise Intrusion in Archaeological Sites: A Literature Review**
Domenico Rossi, Claudio Guarnaccia

16:20 **A metrological reassessment of Athanasius Kircher's whispering chambers: A vibro-acoustic reference model for early modern architectural sound spaces**
Elide Nastri, Paolo Todisco

16:40 **Architecture, Music and Metrology: A Transferable Inference Framework for Ancient Sacred Spaces**
Fabrizio Barone, Marco Casazza

17:00 **A metrological reference model for vibro-acoustic analysis of ancient Greek theatres**
Marco Casazza, Fabrizio Barone

17:20 **Geometric Construction and Structural Adaptation of the Ancient Roman Bridge over the Savuto River: A Metrological-Constructive Hypothesis**
Fabrizio Barone, Marco Casazza, Armando Di Maio

16:00 - 17:40 *Sala Convegni - Biblioteca (Library)*
Session 7.2 - Damage and Radiological Risk Assessment: Diagnosis and Monitoring for the Restoration, Preventive Conservation, Usability and Maintenance of Cultural Heritage
Chair: Simona Mancini, *Riga Technical University, Latvia*

16:00 **Damage and Radon Release. Design of an Experimental Set Up for the Diagnosis and Monitoring of Cultural Heritage**
Simona Mancini, Martins Vilnitis, Olga Dukic, Danijela Milosevic, Juris Burlakovs, Natasa Todorovic, Serpil Akozcian Pehlivanoglu, Michele Guida

16:20 **Assessment of Radon Exhalation from Accelerated Aged Ignimbrite Campana Stone Treated with Various Consolidating and Hydrophobic Products**
Lorenzo Pistorino, Francesco Caridi, Giuseppe Paladini, Michele Guida, Simona Mancini, Domenico Majolino, Valentina Venuti

- 16:40 The UNESCO World Heritage Site of the Historic Erbil Citadel: Monitoring of Indoor Dust for Conservation Practices and Protection of Public Health**
Asaad Ismail, Simona Mancini, Michele Guida
- 17:00 Natural radioactivity and radiation hazards in decorative building materials used in Türkiye**
Serpil Akozcan Pehlivanoglu, Simona Mancini, Michele Guida, Natasa Todorovic
- 17:20 Intercomparison of Active and Passive Methods for Radon Exhalation Rate Assessment in Natural Stones of the “Val di Noto”, Sicily, Southern Italy: A Case Study**
Lorenzo Pistorino, Francesco Caridi, Giuseppe Paladini, Michele Guida, Simona Mancini, Domenico Majolino, Valentina Venuti

20:00 *Restaurant “Sala Zonno” - Molo San Nicola, 3 - Bari*
GALA DINNER

Technical Program - Friday, October 16

09:00 - 14:00	University of Bari - Palazzo Ateneo REGISTRATIONS
09:30 - 11:10	Aula Magna "Aldo Cossu" Session 8.1 - From shape to sound: Measuring, Preserving, and Reactivating Sound and Media Heritage Chairs: Nicola Contuzzi, <i>Politecnico di Bari, Italy</i> Niccolò Pretto, <i>Free University of Bozen/Bolzano, Italy</i>
09:30	High-resolution 3D surveying of ancient music objects for sound digitization within the MUSE project Gabriele Bitelli, Anna Forte, Giovanna Casali, Donatella Restani
09:50	Development and Testing of 3D-Printed Mouthpieces for Brass Instruments Nicola Contuzzi
10:10	The Measurable Afterlife of Sound: Modelling Ancient Instruments and Reactivating Media Art Niccolò Pretto, Alessandro Fiordelmondo, Andrea Franceschini, Giulio Pitteri, Antonio Rodà, Sergio Canazza
10:30	From Sources to Voices: The K-OAr Framework for the Preservation, Documentation, and Reuse of Oral Archives Silvia Calamai, Monica Monachini, Niccolò Pretto, Sergio Canazza
10:50	Measuring the Intangible: A Metrological Framework for Audio Tape Preservation Niccolò Pretto, Matteo Spanio, Alessandro Russo, Sergio Canazza
09:30 - 11:10	Aula "Don Tonino Bello" Session 8.2 - Archaeometric and Digital Tools for the Investigation and the Description of Etruscan Sites and their Finds - PART I Chairs: Danilo Dini, <i>Sapienza University of Rome, Italy</i> Martina Bernabale, <i>Sapienza University of Rome, Italy</i>
09:30	Etruscan Blue, Etruscan Gold: Precious Materials, Sources of Supply and Contexts in the Crafts of the Cities of Etruria Laura Maria Michetti
09:50	Transport Amphorae from Pyrgi: Archaeological Contexts and Organic Residue Analysis Andrea Carpentieri, Marco Morelli, Gaia Silvestre, Manuela Bonadies

10:10 The Urban Development of Volsinii

Salvatore De Vincenzo

10:30 Conservation Issues of the Medieval Gubbio Town Walls: A Synthesis of Mortar Characterization and Mechanical Assessment Data

Giuseppina Padeletti, Joao Pedro Vega

10:50 Archaeo-Photovoltaics: Concept, Concept-Inspired Solutions and Concept Application to the Archaeological Area of Bolsena

Daniilo Dini

09:30 - 11:10

Sala Convegni - Biblioteca (Library)

Session 8.3 - Diagnostic, restoration and conservation of library cultural heritage and archival materials by multidisciplinary approaches

Chairs: Claudia Mazzuca, *University of Rome Tor Vergata, Italy*

Silvia Orlanducci, *University of Rome Tor Vergata, Italy*

09:30 GraphIA: Paper Artwork Damage Detection Model

Annamaria Alabiso, Sara Coccoli, Emanuele Fratocchi, Fulvio Mercuri, Luciana Migliore, Silvia Orlanducci, Martina Moroni

09:50 From Individual Artifacts to Collection-Based Conservation: An Integrated Workflow for the Assessment and Conservation Planning of Heterogeneous Archival Seal Collections

Andrea Busto

10:10 Constraints and Possibilities: Ink May Locally Make Ancient Parchment Unfavourable to Biodeteriogens

Annamaria Alabiso, Giovanni Birarda, Sultan B. Dabagov, Marco Maria D'Andrea, Federico Galdenzi, Chiara Gardenghi, Valeria Guglielmotti, Dariush Hampai, Claudia Mazzuca, Fulvio Mercuri, Noemi Orazi, Silvia Orlanducci, Greta Poncecchi, Alessandro Rubechini, Chiaramaria Stani, Ugo Zammit, Luciana Migliore

10:30 Chemical Stabilization of Machine-Made Wood Pulp Paper: A Study on the Long-Term Impacts of Different Strategies

Margherita Molteni, Simone Luciani, Leonardo Severini, Laura Micheli, Elena Palmieri, Francesco Maita, Luca Maiolo, Claudia Mazzuca, Silvia Sotgiu

10:50 Ecological Successions Are Responsible for the Biodeterioration of Compositionum: A Multidisciplinary Approach

Chiara Gardenghi, Annamaria Alabiso, Marco Maria D'Andrea, Sara Frasca, Valeria Guglielmotti, Claudia Mazzuca, Noemi Orazi, Beatrice Ercolani, Stefano Paoloni, Alessandro Rubechini, Luciana Migliore

11:10 - 11:30 *University of Bari - Palazzo Ateneo*
COFFEE BREAK

11:30 - 12:20 *Aula Magna "Aldo Cossu"*
PLENARY SESSION - KEYNOTE SPEAKER
Chair: Dora Foti, *Politecnico di Bari, Italy*

From temperature fields to residual structural capacity: a metrology-driven approach to the assessment and strengthening of heritage masonry

Salvador Ivorra, *Universidad de Alicante, Spain*

12:20 - 13:00 *University of Bari - Palazzo Ateneo*
POSTER SESSION

The list of posters, including the number assigned to each poster, is available at the end of this booklet.

13:00 - 14:00 *University of Bari - Palazzo Ateneo*
LUNCH

14:00 - 15:00 *Aula Magna "Aldo Cossu"*
Session 9.1 - General Session - PART I
Chairs: Fabio Leccese, *Roma Tre University, Italy*
Alexandra Morvayová, *Politecnico di Bari, Italy*

14:00 Metrology-Aware Cooperative Multi-Robot Positioning for Cultural-Heritage Navigation and Data Acquisition

Ihtisham Ul Haq, Francesco Lamonaca

14:20 Colour Palette and Blending Techniques in the Paintings of Józef Chełmoński: A Physicochemical Investigation of Selected Works from the National Museum in Krakow Collection

Anna Klisińska-Kopacz, Marta Matosz, Paulina Krupska-Wolas, Anna Ryguła, Aldona Kopyciak, Karolina Skóra, Tomasz Wilkosz, Michał Obarzanowski, Julio M Del Hoyo

14:40 The Odyssey of a Naval Steam Engine: From a Warship Propulsion System to an Educational Instrument of the School of Naval Architecture and Marine Engineering NTUA

Antonios Dimos, Zafeiria Dimou, Panayota Vassiliou, Kostas Spyrou

14:00 - 15:00	<i>Sala Convegni - Biblioteca (Library)</i> Session 9.2 - Archaeometric and Digital Tools for the Investigation and the Description of Etruscan Sites and their Finds - PART II Chairs: Danilo Dini, <i>Sapienza University of Rome, Italy</i> Martina Bernabale, <i>Sapienza University of Rome, Italy</i>
14:00	Umbria: Etruscan Necropolis of Hellenistic Age in Perugia: Urns with Farewell Scenes Luana Cenciaioli, Paola Comodi
14:20	Preliminary Survey of Painted Etruscan Ceramic Materials through Non-Invasive Spectroscopic Analysis Carlo Pagliaccia, Paolo Binaco, Aldo Romani, Laura Cartechini, Francesca Rosi
14:40	Archaeometric Characterization of Metal Artifacts from Southern Etruria (Caere): A Comparative Study between the Sanctuary of Pyrgi and the Necropolis of Caere Susanna Milana, Alessandro Conti, Laura Maria Michetti, Matteo Paciucci, Mohammad Sharbaf, Caterina De Vito
15:00 - 15:30	<i>Aula Magna "Aldo Cossu"</i> CLOSING AND AWARD CEREMONY

LIST OF POSTERS

- PS01 Metrological Comparison of Violin Spectral Fingerprints through Controlled Acoustic Measurements**
Marco Casazza, Elide Nastri, Fabrizio Barone
- PS02 Resonant Architecture: Vibroacoustic Functional Implications in the Temple of Athena at Paestum, Italy**
Fabrizio Barone, Marco Casazza
- PS03 Metrological Mapping of Spatial Acoustic Fingerprints in Historical Spaces through Controlled Audio Measurements**
Marco Casazza, Fabrizio Barone
- PS04 Vibroacoustic Analysis of the Temple of Neptune in Paestum, Italy: An Example of Coupled Structure-Ground System in Ancient Greek Architecture**
Fabrizio Barone, Marco Casazza, Armando Di Maio
- PS05 Surface and Bulk Effects on Iron Gall Ink within Parchment Subjected to X-Ray Irradiation**
Monia Vadrucchi, Claudia Mazzuca, Chiaramaria Stani, Francesco Maria Rizzo, Cristina Cicero
- PS06 Nanodiamond Composites as Multifunctional Additives for Stability, Protection, and Sustainability in Cellulose- and Collagen-Based Systems**
Valeria Guglielmotti, Silvia Orlanducci, Beatrice Ercolani, Claudia Mazzuca, Emanuela Tamburri, Elena Palmieri, Luciana Migliore, Annamaria Alabiso, Cristina Cicero, Fulvio Mercuri, Ugo Zammit, Noemi Orazi
- PS07 Metrological Comparison of Short-Term and Permanent Vibration Monitoring at the Pompeii Forum Baths**
Armando La Scala, Maria Francesca Sabbà, Laura Fabbiano, Nicola Ivan Giannoccaro, Dora Foti
- PS08 Experimental Assessment of TRM Reinforcement in Rammed Earth Walls: Influence of Surface Primer on Interfacial Bonding and Shear Performance**
Paula Tole, F. Javier Baeza, Luis Estevan, Salvador Ivorra
- PS09 Updating the Finite Element Model of a RC Bell Tower via Bayesian Inference and Vibration Test Results**
Dora Foti, Lorenzo Scoditti, Armando La Scala, Antonino Maria Marra, Mario De Stefano
- PS10 Assessment of Cracked Masonry Walls in a Historic Church Based on Low-Cost LiDAR Sensor and GPR Surveys**
Joanna Janicka, Wioleta Blaszcak-Bak, Czeslaw Suchocki

- PS11 MATWINS: Integrating Multi-Survey Data and Artificial Intelligence into Digital Twins for Cultural and Environmental Heritage**
Sebastiano D'Amico, Luciano Galone, Emanuele Colica, Ritienne Gauci, John Abela, Adam Gauci, Daniel Fenech
- PS12 Reconstructing Armenian Colour Inks: Preliminary Results from Recipe-Based Formulation Studies**
Hermine Grigoryan, Armen Sahakyan
- PS13 GIS-Based Conservation Diagnostics and Spatial Data Integration for the Management of Open-Air Ichnological Heritage: The Bari Dinosaur Tracksites Network (Southern Italy)**
Francesca Romana Paolillo, Caterina Annese, Elena Dellu'
- PS14 Improving the Geometric Accuracy of Handheld Laser Scanners for the Documentation of Cultural Heritage Objects**
Piotr Kędzioriski, Marcin Jagoda
- PS15 A Red-Light Optical Communication System for Underwater Audio Guidance Applications**
Mariagrazia Leccisi, Giorgia Satta, Fabio Leccese
- PS16 Low-Cost LED Spectrometer in Cultural Heritage Colorimetry**
Federico Fina, Paolo Bruschi, Simone Contardi, Fabio Leccese
- PS17 Low-Cost LiDAR for 3D Documentation and Degradation Assessment of Heritage City Walls**
Marcin Jagoda, Piotr Kędzioriski
- PS18 From Measurement to Heritage: A Methodological Model for the Preventive Conservation of 20th Century Electrical Instruments**
Emma Angelini
- PS19 Design and Development of a Modular Tracked Robotic Platform for 3D Scanning Applications**
Marian Jac, Otilia Pauliuc, Neamtu Calin
- PS20 A Space-Aware Mixed Reality Pipeline for In-situ Cultural Heritage Recontextualization**
Federico Martusciello, Calogero Carlino, Luca Francesco Macera, Henry Muccini
- PS21 Semantic Immersive Documentation of Minor Architectural Heritage: A Virtual Tour for the Stone Portals**
Francesco Colace, Constanza Fiorella Duarte Petti, Angelo Lorusso, Michele Pellegrino, Domenico Santaniello, Giusy Strollo
- PS22 Integrating AR into Cultural Heritage Practices: A Multidisciplinary Approach**
Constanza Fiorella Duarte Petti, Annachiara Guerra, Angela Passeggiato, Giusy Strollo, Alfredo Troiano, Valentino Carmine

- PS23 From Stratigraphy to Virtual Tour: A Digital Workflow for the Archaeological Site of Mersin-Yumuktepe**
Francesco Colace, Angelo Lorusso, Giulio Palumbi, Michele Pellegrino, Domenico Santaniello, Pietro Giuseppe Strollo
- PS24 A TDR-Based Diagnostic Approach for Moisture Mapping in Porous Cultural Heritage Materials**
Giuseppe Cannazza, Lara De Giorgi, Dora Francesca Barbolla, Giovanni Leucci, Andrea Cataldo, Antonio Masciullo
- PS25 GPR Investigations at the Crypt of St. Sebastian in Sternatia (Lecce – Southern Italy)**
Lara De Giorgi, Dora Francesca Barbolla, Ivan Ferrari, Francesco Giuri, Giovanni Leucci
- PS26 The Archaeological Site of Sagalassos (Turkey): 3D Resistivity Anomaly Probability Tomography**
Lara De Giorgi, Dora Francesca Barbolla, Ivan Ferrari, Francesco Giuri, Giovanni Leucci
- PS27 GIS for Monitoring the Architectural Heritage of the Province of Matera (Basilicata, Italy)**
Maurizio Delli Santi
- PS28 GPR Survey at the Aragonese Castle of Taranto (Italy)**
Lara De Giorgi, Dora Francesca Barbolla, Ivan Ferrari, Francesco Giuri, Giovanni Leucci
- PS29 Macro-Meso-Micro: Integrated ERT and GPR Investigation of the Hypogeal Heritage of Santa Luciella ai Librai (Naples, Italy)**
Michele Punzo, Dora Francesca Barbolla, Vincenzo Di Fiore, Michele Iavarone, Massimo Faella, Alfonsina Pagano, Daniela Tarallo
- PS30 Why Did the Nuraghe Collapse? New Insights from Integration of Archaeology and Geophysics**
Gaetano Ranieri, Alberto Godio, Luca Piroddi, Antonio Trogu, Albert Casas
- PS31 Effectiveness of Geophysical Methods for the Characterization of World Heritage Roman Walls: The Cases of Tarraco and Lucus Augusti**
Albert Casas Ponsatí, Ricardo Lázaro, Mahjoub Himi, Raul Lovera, Maria Vilas, Joan Mechon
- PS32 The Density and Water Content as Function of P and S Wave Velocity in the Calcarene Stones of Southern Apulia**
Lara De Giorgi, Dora Francesca Barbolla, Ivan Ferrari, Francesco Giuri, Giovanni Leucci
- PS33 The Cathedral of SS Annunziata in Castro (Lecce, Southern Italy): geophysical survey for structural diagnosis**
Lara De Giorgi, Dora Francesca Barbolla, Ivan Ferrari, Francesco Giuri, Giovanni Leucci
- PS34 GPR in the crypt of the Basilica of Saint Nicholas in Bari, Italy**
Lara De Giorgi, Dora Francesca Barbolla, Giovanni Leucci

- PS35 Integrated Magnetic and Electromagnetic Survey of the Pianabella Basilica Ruins (Ostia, Italy): Archaeological Insights and New Magnetometer Prototype Assessment**
Filippo Accomando, Andrea Barone, Nicola Francesco Catalano, Dario Daffara, Francesco Ferraiuolo, Pietro Tizzani, Raffaele Castaldo
- PS36 Non – destructive diagnostic study on the mosaic of the crypt of St. Nicholas (Bari, Italy)**
Lara De Giorgi, Dora Francesca Barbolla, Giovanni Leucci
- PS37 GPR at the Basilica of Our Lady in Copertino (Lecce, Southern Italy)**
Lara De Giorgi, Dora Francesca Barbolla, Ivan Ferrari, Francesco Giuri, Giovanni Leucci
- PS38 Digitization and Visualization Workflow for Historical Manuscripts: The Case Study of The Bologna Torah, Scroll 2**
Ashraquet Bastawrous, Anna Forte, Francesco Citti, Martina Caroli, Gabriele Bitelli
- PS39 A Multi-Sensor Approach to the Study of the Reculver Towers and Roman Fort (England): Geophysics, Remote Sensing and Digital Reconstruction**
Sebastiano D'Amico, Atiyeh Ardakanian, Ilaria Catapano, Emanuele Colica, David Daou, Delphina Darko, Luciano Galone, Atif Mohammed Ghani, Alba L'Astorina, Neil Linford, Moein Motavallizadeh Naeini, Omar Abdillahi Osman, Saeed Parnow, Malte Ressim, Tesfaye Tessema, Fabio Tosti
- PS40 Non-invasive and micro-invasive analyses of Pre-Hispanic rock paintings from Inca Cueva site (Northwestern Argentina)**
Lucas Gheco, Marcos Tascon, Matias Landino, Eugenia Ahets Etcheberry, Fabio Leccese, Emilia Halac, Humberto Mamani, Marcos Quesada, Diego Lamas, Fernando Marte
- PS41 Metrological Performance of Environmental and Pollution Sensors for Proactive Archaeological Conservation: A perspective Review**
Chiara Bencivenga, Emanuele Rizzuto, Eduardo Palermo, Zaccaria Del Prete, Livio D'Alvia
- PS42 Spatio-temporal monitoring of parchment 3D displacements induced by temperature variation**
Melania Paturzo, Chiara Saltarelli, Vito Pagliarulo, Massimo Rippa
- PS43 Digital technologies for Valorization, Engagement, and Accessibility of 'ghost towns'**
Fabrizio Terenzio Gizzi, Maria Rosaria Potenza, Sergio De Giuseppe, Marilisa Biscione, Laviero Pepe, Nicola Masini, Annarita Sannazzaro
- PS44 Microclimatic monitoring Integrated with Virtual Reality. Case study of the Crypt of St. Margherita in Melfi (Southern Italy)**
Maria Sileo, Domenico Conte, Giandamiano Fiore, Fabrizio Terenzio Gizzi, Antonella Marsico, Luca D'Andrea, Sivia Liaci, Nicola Masini

