

IMEKO TC4 International Conference on Metrology for Archaeology and Cultural Heritage 2022

Calabria, Italy
19 – 21 October 2022

ISBN: 978-1-7138-6798-2

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2022) by the International Measurement Confederation (IMEKO)
All rights reserved.

Printed with permission by Curran Associates, Inc. (2023)

For permission requests, please contact the International Measurement Confederation (IMEKO)
at the address below.

IMEKO Secretariat
Dalszinhaz utca 10, 1st floor, Office room No. 3
H-1061 Budapest (6th district)
Hungary

Phone/Fax: +36 1 353 1562

imeko@t-online.hu

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Preliminary Study for the Characterization of Roman Plasters from the Cetariae in Porto Palo (Sicily).....	1
<i>Genea Girimonte, Alessandra Pecci, Dario Bernal-Casasola, Daniele Malfitana, José J. Díaz, Antonio Mazzaglia, Paul Reynolds, Domenico Miriello</i>	
Roman Coins from the “Brettii and Enotri” Museum: A Non-Destructive Archaeometric Study by X-Ray Fluorescence Spectroscopy and X-Ray Microtomography.....	7
<i>Andrea Smeriglio, Maria Caterina Crocco, Raffaele Filosa, Vincenzo Formoso, Andrea Solano, Riccardo Cristoforo Barberi, Maria Cerzoso, Raffaele Giuseppe Agostino</i>	
Archaeometric Investigations on Roman Stamped Tiles and Bricks from the Cariati Territory (Calabria, Southern Italy).....	12
<i>Armando Taliano Grasso, Salvatore Medaglia, Raffaella De Luca, Sasha Carinola, Domenico Miriello</i>	
Raman and Micromorphological Characterization of Carbonates in Plaster-Like Materials from the Natufian Site of Eynan (Ain Mallaha), Israel.....	17
<i>Leila Es Sebar, Leonardo Iannucci, Sabrina Grassini, Emma Angelini, Rivka Rabinovich, Anne Bridault, Hamoudi Khalaily, François R. Valla, Yuval Goren</i>	
Chemical-Physical Analysis on the Stele from the Heated Stone Structures of S. Andrea in Travo (PC): Preliminary Results.....	23
<i>Vittoria Guglielmi, Valeria Comite, Claudia Asia Pini, Chiara Andrea Lombardi, Maria Bernabò Brea, Alain Beeching, Sara Pescio, Luca Trombino, Paola Fermo</i>	
Archaeometry of Basilicata Graffiti Ware: Provenance and Technology.....	28
<i>Ester Maria Annunziata, Grazia Lubraco, Barbara Bravo, Luca Medici</i>	
Opaque Glazed Ware from Satrianum Archeological Site (Basilicata, Southern Italy): Ceramic Bodies and Glaze/Decoration Technologies.....	33
<i>Ester Maria Annunziata, Barbara Bravo, Roald Tagle</i>	
Implementation of an Integrated Methodology to Assess Provenance of Ancient Ceramic Raw Materials.....	37
<i>Ester Maria Annunziata, Paola Di Leo, Francesca Sogliani, Graziella Bernardo, Claudia Belviso, Luigi Ciani, Marco Coletti</i>	
MicroCT Imaging of Long Bones: Archaeozoology and Domestication from a Digital Perspective.....	41
<i>Francesco Boschin, Federico Bernardini</i>	
Paleogeographic Reconstruction of the Tuscan Coastal Area Nearby Grotta Dei Santi (Monte Argentario, Italy) During the Neandertal Occupation.....	46
<i>Enrico Conti, Simona Arrighi, Niccolò Bigliuzzi, Francesco Boschin, Albachiara Brindisi, Kevin Brogi, Allegra Burgassi, Jacopo Crezzini, Clarissa Dominici, Lara Latragna, Tommaso Luzzetti, Giulia Marciani, Ivan Martini, Adriana Moroni, Sara Pitzianti, Stefano Ricci, Matteo Rossini, Alessandro Salvi, Sem Scaramucci, Vincenzo Spagnolo</i>	
Analytical Potential of 2D Shape Analysis to Study Epigravettian Lithic Assemblages.....	52
<i>Matteo Rossini, Armando Falcucci, Clarissa Dominici, Annamaria Ronchitelli, Antonin Tomasso, Francesco Boschin</i>	

Ivory Identification in the Archaeological Contexts: A Case Study Using the 3D Digital Microscopy	57
<i>Jacopo Crezzini, Massimo Tarantini, Maria Chiara Bettini</i>	
Biodeterioration in Historic Buildings. Indoor Environmental Conditions and Risk of Fungal Growth.....	62
<i>Cristina Carpino, Evangelia Loukou, Birgitte Andersen, Jessica Settino, Natale Arcuri</i>	
Comparison Process of Air Quality Measurement Systems Applied to the Context of Cultural Heritage	68
<i>Nicoletta Lotrecchiano, Maria Ricciardi, Concetta Pironti, Andrea Bergomi, Valeria Comite, Vittoria Guglielmi, Paola Fermo, Daniele Sofia, Oriana Motta, Antonio Proto</i>	
Evaluation of Indoor Environmental Conditions in the Sanctuary of the Beata Vergine Dei Miracoli	74
<i>Andrea Bergomi, Valeria Comite, Vittoria Guglielmi, Mattia Borelli, Roberto Bonomi, Carola Ciprandi, Carlo Mariani, Antonio Faggiano, Maria Ricciardi, Antonio Proto, Paola Fermo</i>	
Preliminary Approach to Protect Street Art from Environmental Agents and Gaseous Pollutants.....	80
<i>Laura Pagnin, Francesca Caterina Izzo, Sara Goidanich, Lucia Toniolo</i>	
Pigments Through the Ages: Examples from Archaeological Contexts of Campania Region (southern Italy)	84
<i>Sabrina Pagano, Chiara Germinario, Immacolatachiara Di Santi, Mariano Mercurio, Celestino Grifa</i>	
Innovative Diagnostics Through Hypercolorimetric Multispectral Imaging and Pulse Compression Thermography to Support the Restoration of a 16th Wall Painting in Palazzo Gallo (Bagnaia, Italy).....	90
<i>Riccardo Vettrai, Valeria Valentini, Paola Pogliani, Marco Ricci, Stefano Laureti, Serena Calvelli, Giovanni Messina, Luca Lanteri, Claudia Pelosi</i>	
Hydraulic Preservation of Archaeological Hypogeum Based on Digital Survey Techniques	96
<i>Valeria Pennisi, Graziana D'Agostino, Marianna Figuera, Gloria Russo, Mariateresa Galizia, Pietro M. Militello, Rosaria E. Musumeci</i>	
The Mineral and Geological Historical Collections of the University of Messina (Italy).....	101
<i>Roberta Somma, Monica Interdonato, Giuseppe Paladini, Francesco Caridi, Sebastiano Ettore Spoto, Valentina Venuti, Maria Rosaria Renna</i>	
Provenance Studies Applied to Building Stones of a Bronze Age Tholos Tomb (Messina, Italy)	106
<i>Roberta Somma</i>	
Non-Invasive Characterization of Bernardino Luini's Color Palette: A Spectroscopic Campaign on the Frescos of Santuario Della Beata Vergine Dei Miracoli in Saronno (Italy).....	111
<i>Giacomo Fiocco, Michela Albano, Curzio Merlo, Tommaso Rovetta, Chaehoon Lee, Francesca Volpi, Andrea Bergomi, Claudia Asia Pini, Chiara Andrea Lombardi, Carlo Mariani, Valeria Comite, Paola Fermo, Marco Malagodi, Vittoria Guglielmi</i>	
New Insight About the Mural Painting Branches of Roman Baths in Reggio Calabria	116
<i>Francesco Armetta, Dario Giuffrida, Barbara Fazzari, Carmelo Malacrino, Anna Arcudi, Maria Luisa Saladino, Rosina Celeste Ponterio</i>	
Protection and Promotion of the Palaeontological Heritage: The Virtuous Case of Cessaniti (Vibo Valentia, Italy)	121
<i>Antonella Cinzia Marra, Fabrizio Sudano, Adriano Guido</i>	

Multi-Technique Characterization of Colored Gem Tourmalines	127
<i>Roberta Somma, Giuseppe Paladini, Sebastiano Ettore Spoto, Francesco Caridi, Vincenza Crupi, Monica Interdonato, Valentina Venuti</i>	
Scenario Analysis of Debris Flows Threatening the UNESCO Archaeological Site of Villa Romana Del Casale (Sicily).....	132
<i>Mariano Sanfilippo, Rosaria E. Musumeci, Domenico Patanè, Vincenzo Sapienza, Enrico Foti</i>	
The Risk Mapping Tool for Cultural Heritage Protection in Europe and Mediterranean Basin.....	137
<i>Alessandro Sardella, Stefano Natali, Carlo Del Grande, Riccardo Cacciotti, Alessandra Bonazza</i>	
The Flint Path. Characterisation of Raw Materials to Reconstruct the Routes and Relationships Between Groups of the Apulian Neolithic (Southern Italy).....	143
<i>Sandra Sivilli, Paul Fernandes</i>	
Quartz and Quartzite Lithic Raw Material Studies: Problems and Challenges	149
<i>Ana Abrunhosa, Manuel Santonja, Alfredo Pérez-González, Joaquín Panera, Eduardo Méndez-Quintas, Susana Rubio-Jara, Thierry Aubry, Maria dos Anjos Ribeiro, Luca A. Dimuccio</i>	
MOBILITHICS: Fingerprinting the Exploitation of Lithic Resources Among Homo Sapiens and the Last Homo Neanderthalensis	154
<i>Maria Soto, Juan Ignacio Morales, Hassan Aouraghe, María Gema Chacón, Robert Sala Ramos</i>	
To Be Or Not to Be? that is Not the Question. Variability Description of Lithic Assemblage	159
<i>Morgane de Parthenay, Cédric Sarrazin</i>	
Least Cost Paths Analysis to Reconstruct Mobility Patterns and Procurement Strategies for Lithic Resources in Corsica and Sardinia	164
<i>Sara Corona, María Soto, Carlo Lugliè</i>	
Characterization of Lithic Raw Materials from the Middle Paleolithic Site of Cova deTeixoneres (NE Iberian Peninsula): Project Approach and First Results.....	169
<i>Alicia Muñoz del Pozo, Bruno Gómez de Soler</i>	
Medieval Cultural Heritage, from 3D Survey to Data Management: The Castle of Canossa.....	174
<i>Michele Russo, Federico Panarotto, Giulia Flenghi, Elvira Rossi, Alberto Pellegrinelli</i>	
Intensive Archaeological Survey at Piscina Torta: Use of a Low-Cost RTK Portable Kit to Materialise a UTM Grid on the Ground	180
<i>Luca Alessandri, Valerio Baiocchi, Felicia Monti</i>	
Building 3D City Model from Painting: The Case Study of Old Town of Taranto, Italy	185
<i>Massimiliano Pepe, Domenica Costantino, Giuseppe Barnaba, Vincenzo Saverio Alfio, Gabriele Vozza</i>	
The Integration of a New Sensor and Geomatic Techniques for Monitoring the Roman Bridge S. Angelo on the Savuto River (Scigliano, Italy).....	190
<i>Serena Artese, Michele Perrelli, Fabrizio Rizzuti, Francesca Artese, Giuseppe Artese</i>	
Visualization of Military Heritage in the Current Landscape by Comparing LIDAR Features.....	195
<i>Joel Aldrighettoni, Barbara Marana, Maria Grazia D'Urso</i>	

Wooden Music Instrument Vibro-Acoustic Fingerprint: The Case of a Contemporary Violin.....	201
<i>Marco Casazza, Fabrizio Barone, Elvio Bonisoli, Luca Dimauro, Simone Venturini, Marco Carlo Masoero, Louena Shtrepi</i>	
Degradation Study of Pigments Through Transient Absorption and Colorimetry.....	207
<i>Francesca Assunta Pisu, Pier Carlo Ricci, Carlo Maria Carbonaro, Daniele Chiriu</i>	
Standalone Detector for Vibroacoustic Heritage Monitoring	213
<i>Fabrizio Barone, Marco Casazza, Rocco Romano</i>	
Rare Japanese Fabrics of the Ragusa-Kiyohara Collection. a Spectroscopic Characterization.....	218
<i>Paola Marzullo, Lucia Nucci, Elena Piacenza, Federica Arcidiacono, Delia Francesca Chillura Martino</i>	
Hyperspectral Imaging and Raman Analyses of the Red Decoration of the St. Mauro Altar in St. Salvatore's Church (Pavia)	224
<i>Vittoria Guglielmi, Valeria Comite, Claudia Asia Pini, Andrea Bergomi, Mario Colella, Chiara Andrea Lombardi, Marta Provera, Fabrizio Preda, Paola Fermo</i>	
Deep Eutectic Solvents (DESs): First Results Obtained from Their Application as Biocides in the Field of Cultural Heritage.....	229
<i>Andrea Macchia, Romina Strangis, Sara De Angelis, Marica Cersosimo, Antonella Docci, Michela Ricca, Bartolo Gabriele, Raffaella Mancuso, Mauro Francesco La Russa</i>	
Assessment of Consolidation Treatments: micro-CT as a Potential Tool for Material's Penetration Detection	234
<i>Paola Buscaglia, Andrea Baldi, Sabrina Grassini, Sara Croci, Paola Croveri, Luisa Cervini, Corrado Cremonini, Alessandro Re, Alessandro Lo Giudice</i>	
Experimentation on the Removal of Paraloid B72R from the Wooden Surface of Egyptian Artefacts from the National Archaeological Museum in Naples.....	240
<i>Annarita Altobelli, Paola Cennamo, Giorgio Trojsi, Maria Rosaria Barone Lumaga, Andrea Carpentieri, Giancarlo Fatigati</i>	
Fuel Contamination Problems in Roman Woodfired Glass Furnaces: Carbon Determination in Roman Glass by Deuteron Activation Technique	246
<i>Chaturvedula S. Sastri, Thierry Sauvage</i>	
A Multipurpose Amphibious Rover (MAR) as Platform in Archaeological Field.....	251
<i>Manuel Greco, Fabio Leccese, Sabino Giarnetti, Eduardo De Francesco</i>	
Ground Remote Sensing Surveys to Investigate Mounds Tombs from Etruscan Period. the Case of Monte Abatone Necropolis (Cerveteri, Italy)	256
<i>Salvatore Piro, Maurizio Porcu, Daniele Verrecchia</i>	
Preliminary Results from Remote Sensing Surveying at the Abbattija tad-Dejr Catacombs (Rabat, Malta)	261
<i>Davide Tanasi, David Cardona, S Hassam, K Kingsland, Paolino Trapani, Dario Calderone, Lara De Giorgi, Giovanni Leucci</i>	
LiDAR Based Investigation of Subtle Microtopographical Proxy Indicators: The Case of Seluci Castle (Lauria, Basilicata)	267
<i>Valentino Vitale, Nicodemo Abate, Antonio Minervino Amodio, Daniele Ferdani, Nicola Masini</i>	

Towards the Creation of an Open Source HBIM Tool for Planning Diagnostic and Restoration Activities: The Example of the Troia Cathedral Rose Window.....	272
<i>Laura Morero, Francesca Visone, Nicodemo Abate, Valentino Vitale, Antonio Minervino Amodio, Mariano Prodomo, Dario Gioia, Manuela Scavone, Maria Sileo, Antonio Loperte, Nicola Masini</i>	
Petrographic and Chemical Characterization of the Archaeological Finds from Muricelle Site (Luzzi, CS - Italy).....	277
<i>Anna Maria De Francesco, Antonio La Marca, Carmelo Colelli, Donatella Barca</i>	
Natural and Artificial Stone Materials from the Medieval Castle of Condojanni (Sant'Ilario Dello Jonio, Calabria, Italy)	282
<i>Raffaella De Luca, Andrea Bloise, Vincenzo de Nittis, Adriano Guido, Domenico Miriello</i>	
Development of an Analytical Methodology Based on Stable Isotope Ratios for Air Quality Assessment in Cultural Heritage	287
<i>Concetta Pironti, Maria Ricciardi, Antonio Faggiano, Ylenia Miele, Nadia Marchettini, Antonio Proto, Oriana Motta</i>	
Climatic Chamber Tests to Evaluate the Catalytic Action of Heavy Metals in the Sulphation Process	293
<i>Valeria Comite, Andrea Bergomi, Cristina Della Pina, Carlo Castellano, Mattia Borelli, Chiara Andrea Lombardi, Matteo Formenti, Mauro Francesco La Russa, Cecilia Cavaterra, Paola Fermo</i>	
Monitoring of the Concentration of Particulate Matter, Volatile Organic Compounds and Nitrogen Dioxide in the Vesuvius National Park.....	299
<i>Antonio Faggiano, Maria Ricciardi, Concetta Pironti, Alessandro Miranda, Antonino Fiorentino, Oriana Motta, Antonio Proto</i>	
Evaluation of the Concentration of Harmful Air Pollutants in a Cultural Heritage Site by Passive Sampling.....	304
<i>Maria Ricciardi, Concetta Pironti, Antonio Faggiano, Andrea Bergomi, Valeria Comite, Paola Fermo, Vittoria Guglielmi, Carlo Mariani, Daniele Sofia, Oriana Motta, Antonio Proto</i>	
A Tribute to Prof. Renato Olivito's Career	310
<i>Giancarlo Bilotti, Domenico Bruno, Domenico Luca Carni, Rosamaria Codispoti, Pasquale Daponte, Francesco Demarco, Domenico Gaudio, Francesco Lamonaca, Gabriele Milani, Saverio Porzio, Carmelo Scuro, Lorenzo Surace, Alessandro Tedesco</i>	
Detection and Classification of Crack for Heritage Building.....	316
<i>Mohamad Issam Sayyaf, Domenico Luca Carni, Francesco Lamonaca</i>	
Seismic Vulnerability Assessment for Historical Masonry Aggregates.....	322
<i>Peixuan Wang, Gabriele Milani, Nicola Grillanda</i>	
Integration of Archaeological and Geophysical Surveys in Hierapolis of Phrygia (Turkey).....	328
<i>Giovanni Leucci, Tommaso Ismaelli, Giuseppe Scardozi</i>	
NDT for Evaluation of Volumetric Water Content in Wood Structures.....	333
<i>Lara De Giorgi, Dora Francesca Barbolla, Filippo Comisi, Chiara Torre, Giovanni Leucci</i>	
New Instrumentation for Aerial Gradiometric Survey	339
<i>Alberto Bucciero, Lara De Giorgi, Giovanni Leucci</i>	
Integrated Geophysical Surveys for the Knowledge of the Amphitheatre in Rudiae (Lecce, Italy).....	344
<i>Lara De Giorgi, Immacolata Ditaranto, Giovanni Leucci, Giuseppe Scardozi</i>	

Study the Conservation State of the Façade of the Basilica of Santa Croce (Lecce Italy) Using Ground Penetrating Radar	349
<i>Anna Rita Carrozzo, Filippo Comisi, Lara De Giorgi, Giovanni Leucci, Lucrezia Longhitano, Chiara Torre</i>	
GPR and ERT Surveys at the Castle of Melfi (Potenza, Italy)	354
<i>Ilaria Miccoli, Lara De Giorgi, Ivan Ferrari, Francesco Giuri, Giovanni Leucci, Giuseppe Scardozi</i>	
HBIM and Extended Matrix for the Archaeological Reconstruction of the Excavated Medieval Contexts: The Case of the Castle of Monteforte Irpino (AV)	359
<i>Nicodemo Abate, Mariano Prodomo, Alessia Frisetti, Nicola Masini</i>	
GIS for the Enhancement of the Farms in the Territory of Oria (Puglia, South Ern Italy)	364
<i>Maurizio Delli Santi</i>	
The Complex Bedrock Structure at the Manfredi Castle (Supersano, Lecce)	369
<i>Lara De Giorgi, Giovanni Leucci, Lucrezia Longhitano, Nicola Masini, Chiara Torre</i>	
Color Specification for Color Rendering	373
<i>Adriana Incardona, Dario Allegra, Giuseppe Furnari, Rosaria Galvagno, Serena Rapisarda, Filippo Stanco, Giuseppe Stella, Anna Maria Gueli</i>	
Luminescence Dating Method for Out-Of-Context Samples	377
<i>Giuseppe Stella, Alessia D'Anna, Agata Di Stefano, Rosaria Galvagno, Francesca La Perna, Andrea Matamoros, Graziana Mendosa, Giuseppe Politi, Anna Maria Gueli</i>	
Vibration Monitoring in the Monastero of Santa Caterina (Palermo, Italy)	383
<i>Carlo Trigona, Eliana Costa, Giuseppe Politi, Serena Rapisarda, Anna M. Gueli</i>	
An Ocean of Science: An Educational Laboratory Approach for the Protection and Preservation of the Marine Environment	389
<i>Michela Ricca, Maria Pia Albanese, Fabio Bruno, Loris Barbieri, Andrea Macchia, Mauro Francesco La Russa</i>	
Application of a Polymer-Based Photocatalytic Coating for the Protection of Limestone Stones Substrates: An Exposure Study	394
<i>Andrea Bergomi, Valeria Comite, Paola Fermo, Michela Ricca, Mattia Borelli, Cristina Maria Belfiore, Luciana Randazzo, Mauro Francesco La Russa</i>	
Multidisciplinary Analysis on a Marble Bas-Relief of Unknown Origin	400
<i>Maria Pia Albanese, Luciana Randazzo, Mauro Francesco La Russa, Armando Taliano Grasso, Maurizio Paoletti, Michela Ricca</i>	
Nano-TiO ₂ Coatings to Support the Preservation of the Stone Cultural Heritage	405
<i>Antonio Donato, Mauro Francesco La Russa, Aybuke Sultan Koca, Marco Aquino, Sergio Santoro, Efrem Curcio, Michela Ricca</i>	
Measurement of the Natural Radioactivity Content of Earth Pigments and Evaluation of Radiological Health Risks	410
<i>Francesco Caridi, Sebastiano Ettore Spoto, Giuseppe Paladini, Giuliana Faggio, Maurizio D'Agostino, Santina Marguccio, Alberto Belvedere, Vincenza Crupi, Domenico Majolino, Valentina Venuti</i>	

From Lapis Lazuli to Synthetic Ultramarines: A u-Raman Spectroscopy Investigation on the History and Development of the Most Perfect Color	415
<i>Sebastiano Ettore Spoto, Roberta Somma, Giuseppe Paladini, Francesco Caridi, Monica Interdonato, Domenico Majolino, Valentina Venuti</i>	
The Geodesic Base of Piombino: The Measurement of Italy Under an Historical Point of View	420
<i>Enrico Petritoli, Fabio Leccese</i>	
Pseudo-Noise Active Pulse Compression Thermography and Multispectral Imaging of the Raffaellino Del Colle Sacra Famiglia Con San Giovanni Battista During Painting Restoration.....	425
<i>Marco Ricci, Stefano Laureti, Claudia Pelosi, Giorgio Capriotti, Ginevra Curini, Giulia Lepore, Paola Pogliani, Paolo Roma, Maria Cristina Tomassetti, Luca Lanteri</i>	
Exploring Modern Shipwrecks Using Digital Technologies: The Case Study of the Christoforos Shipwreck.....	431
<i>Matteo Collina, Antonio Lagudi, Fabio Bruno, Vincenzo Cosentino, Raffaele Peluso, Anastatios Ktistis, Angelos Manglis</i>	
Experiences of TLS, Terrestrial and UAV Photogrammetry in Cultural Heritage Environment for Restoration and Maintenance Purposes of Royal Racconigi Castle, Italy	437
<i>Domenica Costantino, Gabriele Rossi, Massimiliano Pepe, Massimo Leserri</i>	
Non-Invasive Investigation and Digital Reconstruction of a Small Catacomb Complex in Rabat (Malta).....	443
<i>Luciano Galone, Sebastiano D'Amico, Emanuele Colica, Jonathan Borg, David Cardona</i>	
Valorizing Underground Cultural Heritage Through the Use of Virtual Reality	448
<i>Emanuele Colica, Sebastiano D'Amico, Luciano Galone, Valentina Venuti, Francesco Caridi, Giuseppe Paladini, Domenico Majolino, Ettore Sebastiano Spoto, Vincenza Crupi, Salvatore Foti, Raffaele Persico</i>	
Using Geomatics and Geophysics to Study Underground Anthropogenic Water Systems: The UAW Project.....	453
<i>Sebastiano D'Amico, Emanuele Colica, Luciano Galone, Salvatore Foti, Patrizia Capizzi, Raffaele Martorana</i>	
Considerations on the Preservation of Ancient Wall Paintings by Using the Infrared Thermography	458
<i>Laura Fabbiano, Alessandro De Marco, Gaetano Vacca, Rosario Morello</i>	
An Emissivity-Based Approach to Assess the Integrity State of Archaeological Discoveries by Thermography	464
<i>Rosario Morello, Andrea M. Gennaro, Laura Fabbiano</i>	
Dynamic Damage Identification of Masonry Lighthouse by Radar Interferometry Technique	470
<i>Domenico Camassa, Anna Castellano, Mariateresa Chiapperino, Aginaldo Fraddosio, Mario Daniele Piccioni</i>	
Novel 3D Distinct Element Limit Analysis Model for the Seismic Vulnerability Evaluation of Historical Masonry Pagodas of Major Importance in China	475
<i>Peixuan Wang, Gabriele Milani, Carmelo Scuro</i>	
Effect of the Elevated Temperatures on the Mechanical Behaviour of PBO-FRCM Systems	481
<i>Luciano Ombres, Pietro Mazzuca, Marielda Guglielmi</i>	
Masonry Arches Reinforced with CFRP: An Experimental and Numerical Investigation	487
<i>Giancarlo Bilotti, Domenico Bruno, Renato S. Olivito</i>	

Numerical Model for Damage Identification in Brittle Materials Monitored by Acoustic Emission Acquisition Systems	493
<i>Giuseppe Ali, Francesco Demarco, Pierpaolo Antonio Fusaro, Carmelo Scuro</i>	
Climate Change and Land Subsidence in the Frame of Venezia 2021 Project: The Deterioration of Architectural Stone Materials	498
<i>Gloria Zaccariello, Elena Tesser, Rebecca Piovesan, Giulia Gasperuzzo, Riccardo Simionato, Fabrizio Antonelli</i>	
Simulating Weather Degradation Through Heating of a Calcarenite from Volterra, Italy: Effects on the Stone and Its Consolidation	503
<i>Andrea Aquino, Stefano Pagnotta, Marco Lezzerini</i>	
Conventional and Advanced Techniques for Archaeological Diagnostic of Iron Artefacts	509
<i>Martina Bernabale, Flavio Cognigni, Lorenzo Nigro, Marco Rossi, Caterina De Vito</i>	
Synthesis of Geopolymers as Sustainable Materials for Applications in Cultural Heritage	515
<i>Natalia Rovella, Gianfranco Ulian, Daniele Moro, Giovanni Valdrè</i>	
Non Destructive Diagnosis at the Brancacci Chapel, Church of Santa Maria Del Carmine (Florence)	520
<i>Giovanni Leucci, Lara De Giorgi, Ivan Ferrari, Francesco Giuri, Lucrezia Longhitano, Alberto Felici, Cristiano Riminesi</i>	
Integrated Geophysical Survey to Evaluate the Conservation State of a Tomb in a Porta Nocera Necropolis	525
<i>Daniele Malfitana, Antonio Mazzaglia, Lara De Giorgi, Giovanni Leucci, Lucrezia Longhitano, Chiara Torre</i>	
Virtual Three-Dimensional Model of the Subsoil of the Church of St. Maria Maddalena d'Alga in Palermo, Using High-Resolution GPR Surveys	531
<i>Patrizia Capizzi, Raffaele Martorana, Mariella Marrone</i>	
GPR Survey at the Historical Centre of Nardò (Lecce, Italy)	536
<i>Lara De Giorgi, Ivan Ferrari, Francesco Giuri, Giovanni Leucci, Giuseppe Scardozzi, Chiara Torre</i>	
Evaluation of Intermediate Precision in Thermographic Measurements for Monitoring the Conservation State of Metallic Discoveries	540
<i>Rosario Morello, Claudio De Capua, Laura Fabbiano</i>	

Author Index