

# 10<sup>th</sup> International Symposium on the Conservation of Monuments in the **Mediterranean Basin**

Natural and Anthropogenic Hazards  
and Sustainable Preservation



UNDER THE AUSPICES OF I.G.C.M.M.

**20 - 22 September 2017**

Athens, Greece

National Technical University of Athens - NTUA  
(Zografou Campus)

## Symposium Programme



National Technical University of Athens  
School of Chemical Engineering  
Department of Materials Science and Engineering



HELLENIC REPUBLIC  
REGION OF ATTICA



## ORGANIZATION

The 10<sup>th</sup> International Symposium on the Conservation of Monuments in the Mediterranean Basin was organized by:

- National Technical University of Athens (NTUA, School of Chemical Engineering, Department of Materials Science and Engineering)
- Region of Attica of the Hellenic Republic

Under the auspices of:

The International Group on the Conservation of Monuments in the Mediterranean Basin (I.G.C.M.M.)



## ORGANIZING COMMITTEE

Maria <b>KOUI</b> (Coordinator of the Organizing Committee)	School of Chemical Engineering, Department of Materials Science and Engineering, NTUA, GREECE
Charalampos <b>APOSTOLOPOULOS</b>	Department of Mechanical Engineering and Aeronautics, University of Patras, GREECE
Eleni <b>CHEILAKOU</b>	School of Chemical Engineering, Department of Materials Science and Engineering, NTUA, GREECE
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Aikaterini <b>KOSTANTI</b>	National Archaeological Museum of Athens, Ministry of Culture and Sports, GREECE
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Spyros <b>ZERVOS</b>	Department of Library Science and Information Systems, Technological Educational Institute of Athens, GREECE

## 1<sup>st</sup> Day

Wednesday, 20-9-2017

09.00 - 10.00	<b>Registration</b> (Main Hall)
10.00 - 10.45	<b>Opening Ceremony</b> (Main Conference Hall)
	<p><i>Welcome from Ioannis Golias, Rector of the National Technical University of Athens</i></p> <p><i>Welcome from Rena Dourou, Regional Governor of Attica</i></p> <p><i>Welcome from Ioannis Ziomas, Dean of the School of Chemical Engineering, NTUA</i></p> <p><i>Welcome from Maria Kouli, Coordinator of the Organizing &amp; Scientific Committee of the 10<sup>th</sup> MONUBASIN</i></p>
	<b>Opening Lectures</b> (Main Conference Hall)
10.45 - 11.15	<p><b>“Natural - Anthropogenic hazards and sustainable preservation”</b></p> <p><i>Prof. Fulvio Zezza, President of the Symposium and Coordinator of the International Group on the Conservation of Monuments in the Mediterranean Basin (I.G.C.M.M.)</i></p>
11.15 - 11.45	<p><b>“War is the father of all, Cause of genesis and obliteration of monuments”</b></p> <p><i>Dr. Dimosthenis Giraud, Emeritus Director of Anastylis of Ancient Monuments and Technical Projects, Ministry of Culture and Sports, Greece</i></p>
11.45 - 12.00	<b>Coffee Break</b>
	<b>Invited Lecture</b> (Main Conference Hall)
12.00 - 12.30	<p><b>“IR Thermography as a non-destructive tool for materials characterization and structural assessment of buildings and historic structures”</b></p> <p><i>Dr. Nicolas Avdelidis, University of Thessaly, Greece</i></p>

Parallel Sessions	
<b>12.30 - 14.00</b>	
<b>Thematic Area 1. TDRSP (Main Conference Hall)</b>	<b>Thematic Area 6. PCHM (Multimedia Auditorium)</b>
<p><i>Investigating the thermal properties of earth-based materials. The case of adobes, Malaktou E., Ioannou I., Philokyrou M.</i></p> <p><i>Long-term and sustainable approach to preserve ancient mosaic heritage: The case study of mosaic pavement located at the ‘Sanctuary of Pan’, Pnyka (Athens)., Ftikou E., Theodorakeas P., Cheilakou E., Kouli M.</i></p> <p><i>Why does the addition of nano-alumina improve the performance of acrylic coatings used in cultural heritage conservation?, Delagrammatikas M., Papadopoulou O., Vassiliou P.</i></p> <p><i>Development of mud-based grouts for the consolidation of earth-block masonry, Papayianni I., Pachta V.</i></p> <p><i>Restoration and consolidation of sections of the castle of Naupactos and the enhancement of the archaeological site, Katsouli E.</i></p>	<p><i>The New Museum of Nicopolis and the archaeological area of Nicopolis (Prefecture of Preveza), Saltagianni E.</i></p> <p><i>The preservation of rupestrian churches. Research and experiences in Italy, Serafini L., Di Giorgio A.</i></p> <p><i>Managing the Historic Settlements of the Peloponnese, Greece: A GIS Approach, Papadakis E.</i></p> <p><i>Restoring an ancient landmark-Theoretical and structural issues The case study of Sullas’ trophy in Orchomenos, Boeotia, Greece, Magnisali M., Themistoklis B.</i></p>
<b>14.00 - 15.00</b>	<b>Lunch</b>

Parallel Sessions	
<b>15.00 - 16.30</b>	
<b>Thematic Area 3. HSAM (Main Conference Hall)</b>	<b>Thematic Area 2. MCDA (Multimedia Auditorium)</b>
<p><i>New seismic micro-reinforcement applied to the conservation of a gothic stone monument in the abbatial church of St. Maria della Strada, Matrice, Italy, Cavezzali D., Catalano D.</i></p> <p><i>The Byzantine Fortress of Chlerinos (Florina) in NW Greece, Oikonomou A., Georgopoulos P.</i></p> <p><i>The Church of S. Giovanni Battista Decollato at Mensano (Siena): An assessment of the structural condition of the church, and an example of analysis of the construction phases of the Pisan Romanesque fabric. Initial research findings and an example of analysis of the construction phases of the church, Angeloni A., Paradiso M., Valente N.</i></p> <p><i>Preliminary Methodological Indications for the Restoration of Ancient Buildings: The Protocol Implemented in the So-Called Dépendence of the Villa of the Sette Bassi in Rome, Amici M.C., Ten A.</i></p>	<p><i>Non-invasive identification of the pigments and their application on Theophilos Hatzimihail’s easel paintings, Saint A.C., Dritsa V., Cheilakou E., Valavani E., Margariti C. Efthimiou K., Kouli M.</i></p> <p><i>Documentation method for conservation of industrial heritage: Mediterranean region watermill example, Çorapçıoğlu C.</i></p> <p><i>The role of nano-Al<sub>2</sub>O<sub>3</sub> in traditional binders, Tsardaka E. C., Lorena S., Stefanidou M.</i></p> <p><i>Reassessment of conservation materials of ancient stone. The example of Dodona theater, Epirus, Greece, Oikonomou A., Smiris G.</i></p> <p><i>Characterization and properties of silicate and nanocomposite coatings for the protection of dolomite marble against weathering, Spathis P., Triantafyllidis K., Prochaska C., Karapanagiotis I., Pavlidou E., Stefanidou M.</i></p>
<b>16.30 - 17.00</b>	<b>Coffee Break</b>

Parallel Sessions	
17.00 - 18.30	
<b>Thematic Area 5. DTCH (Main Conference Hall)</b>	<b>Thematic Area 4. NADH (Multimedia Auditorium)</b>
<p><i>The use of ontologies for creating semantic links between cultural artifacts and their digital resources</i>, Kyriaki-Manessi D., Vassilakaki E., Triantafyllou I., Giannakopoulos G., Antoniou A.</p> <p><i>Caves as Cultural Heritage:3D Documentation of Dikteon Cave in Crete</i>, Vouklari E., Papanikolaou D., Pagounis V., Zacharis V., Tsakiri M., Arabatzi O.</p> <p><i>3D modeling and “relief-printing” for a more inclusive fruition of cultural heritage</i>, Lombardi M.</p> <p><i>Digital color restoration of vandalized monument’s frescoes</i>, Makris D., Vlachou M., Karampinis L.</p>	<p><i>Rock Characteristics and weathering of rock cut monuments in Lycia (Turkey)</i>, Wedekind W., Gross C. J., López-Doncel R.</p> <p><i>Byzantine Bath, Thessaloniki: Natural and Anthropogenic Damage Hazards, Consolidation, Restoration and Sustainable Preservation of a Secular, World Heritage, Monument</i>, Revithiadou F., Raptis K.</p> <p><i>Enrichment of air pollutants effects on the deterioration of historical buildings in Cairo – Egypt</i>, Abd Elhady M., Algohary M.</p> <p><i>Analysis and documentation of the Colombo Gallery in Thessaloniki. Restoring authenticity from natural and anthropogenic damages</i>, Kotsopoulos S., Tzirini E.</p>
18.30 - 19.30	Welcome Drink (Main Hall)

## 2<sup>nd</sup> Day

Thursday, 21-9-2017

09.00 - 10.00	<b>Registration</b> (Main Hall)
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	<b>Invited Lecture</b> (Main Conference Hall)
10.00 - 10.30	<b>“Sustainable reconstruction for Historical cities in Syria”</b> <b>Prof. Benno Albrecht</b> , Director School of Doctorate Studies IUAV University, Department of Culture and Arts University IUAV of Venice, Italy

Parallel Sessions	
10.30 - 12.00	
<b>Thematic Area 5. DTCH (Main Conference Hall)</b>	<b>Thematic Area 6. PCHM (Multimedia Auditorium)</b>
<p><i>A Novel Information System for the Automatic Reconstruction of Highly Fragmented Objects, With Application to the Reassembly of Prehistoric Wall Paintings and Vessels</i>, Arabadjis D., Zannos S., Papaodysseus C., Giannopoulos F., Exarhos M., Tsakalidou P., Fotopoulos E., Kanellopoulos D.</p> <p><i>Advanced Geometric Guides Were Used for the Drawing of Celebrated Late Bronze Age Wall Paintings</i>, Tsakalidou P., Arabadjis D., Papaodysseus C., Exarhos M., Rousopoulos P., Giannopoulos F., Fotopoulos E., Panagopoulos M.</p> <p><i>A Novel Approach and the Related Information System for the Identification of the Writer of Historical Documents</i>, Fotopoulos E., Arabadjis D., Kampouri K., Tsakalidou P., Papaodysseus C., Panagopoulos M.</p>	<p><i>Restoring roman structural masses The case study of NE versura of Nikopolis’ theatre-Theoretical and structural issues</i>, Bilis T., Magnisali M.</p> <p><i>‘Monument’ of social morality and political ethics: Preserving the sustainability of Arcadian natural and cultural landscape</i>, Moraitis K.</p> <p><i>Make Minoans Great Again? Towards the elaboration of an assessment tool for a tentative revival of their past</i>, Claeys T.</p> <p><i>Hermeneutics and Poetics of Places and Memory: Encoding the Landscape of Sklavokampos in Crete. Community as the Landscape of (In) Tangible Heritage</i>, Markovic N.</p>
12.00 - 12.30	<b>Coffee Break</b>
Parallel Sessions	
12.30 - 14.00	

Parallel Sessions	
<b>12.30 - 14.00</b>	
<b>Thematic Area 3. HSAM (Main Conference Hall)</b>	<b>Thematic Area 4. NADH (Multimedia Auditorium)</b>
<p><i>Critical issues in fire protection of cultural resources, Papaioannou K.</i></p> <p><i>Study of the building materials and techniques of mixed-type structures from the 19th to the 20th century, Pacht V., Papayianni I.</i></p> <p><i>Historical and structural aspects of the Mudéjar Architecture of the Spanish city of Guadalajara, Trallero Sanz A.M.</i></p> <p><i>Architectures and earthquakes. Resistant solutions for the protection of the traditional construction in Abruzzo, Verazzo C.</i></p> <p><i>The course of building materials in historic buildings and monuments. From creation to reuse, Oikonomou A., Bougiatioti F., Georgopoulos P.</i></p>	<p><i>UV-C as an efficient means to combat biofilm formation in cultural heritage monument: Biodiversity and impact on prehistoric pigments? Pfendler S., Bousta F., Alaoui-Sosse L., Khatyr A., Aleya L., Alaoui-Sosse B.</i></p> <p><i>The war memorial of Constantine facing hazards and vulnerability, Bouameur O., Chabi N.</i></p> <p><i>Ancient chemical technology texts from Graeco-Roman literature-an interdisciplinary approach, Yfantis D.</i></p>
<b>14.00 - 15.00</b>	<b>Lunch</b>

Parallel Sessions	
<b>15.00 - 16.30</b>	
<b>Thematic Area 1. TDRSP (Main Conference Hall)</b>	<b>Thematic Area 2. MCDA (Multimedia Auditorium)</b>
<p><i>Assessing the Usage of Calcium and Magnesium Hydroxide Nanoparticles as Consolidant for Dolostones, Karahan-Dag F., Caner-Saltik E.N., Tavukçuoğlu A.</i></p> <p><i>The European Project NANO-CATHEDRAL: Nanomaterials for conservation of European architectural heritage. Pisa, the experience of a Mediterranean cathedral, Lazzeri A., Coltelli M.B., Bevilacqua R., Chirico S., Rovazzani A., Severini G., Sutter A., Bartolini M., Conti L., Festa L., Ioele M., Pujia A., Sidoti G.</i></p> <p><i>Degradation laws of mechanical properties of corroded steel bar - Seismic actions effect in the existing structures on coastal areas, Apostolopoulos C., Drakakaki A., Basdeki M., Apostolopoulos A.</i></p> <p><i>Conservation of Vernacular Dwellings. Matters of Authenticity and Sustainability, Philokyprou M.</i></p> <p><i>The effect of fly ash on the corrosion performance of AISI 316L stainless steel reinforced concrete for application to restoration works of ancient monuments, Tsouli S., Lekatou A. G., Kleftakis S.</i></p> <p><i>A sustainable process for the anastylosis in the Mediterranean area, Santoro V., Del Core L.</i></p>	<p><i>Kinetics of dissolution of monument building materials, Kanellopoulou D., Koutsoukos P.</i></p> <p><i>The P-wave ultrasonic velocity &amp; Infrared Thermometer Non-destructive techniques for estimating the surface weathering and the depth of the consolidation liquid on historical monuments, Dimitraki L., Devlioti K., Christaras B., Arampelos N., Chatziangelou M.</i></p> <p><i>Correlating the Effectiveness of Commercial Graffiti Removers with their Analytically Investigated Components, Pitsiri P., Boyatzis S.C., Stefanis N. A., Batis G.</i></p> <p><i>Restoration and Rehabilitation of the Roman Nymphaeum in Amman: “Nymphaeum Archeological Park”, Abeer Al Bawab, Nizar Al Adarbeh, Mohammad El Khalili</i></p> <p><i>The study of conservation and restoration of monuments by Fourier transform infrared spectroscopy, Theophanides T., Anastassopoulou J., Lazzarini L., Dritsa V., Papandreopoulos P., Koui M.</i></p>

16.30 - 17.30	<b>Poster Session (Main Hall)</b>
	<i>Laboratory characterization of deteriorated siloxane and epoxy resins applied for the consolidation of Venetian monumental surfaces in the XX century, Tesser E., Lazzarini L., Antonelli F.</i>
	<i>The Application of a Modified Sol- Gel Silica Coating for the Protection of Corroded Roman Soda-Lime Silica Glass: an Experimental and Analytical Study, Al Bawab A., Al-Omari R., Abd-Allah R., Bozeyab A., Al-Ajlouni Y. A., Zurayk R.A., Odeh F.</i>
	<i>Characterisation of pigments in wall paintings of Macedonian tombs using non-invasive and non-destructive techniques, Alexandros Konstanta, Georgia Theofanidou, Ioannis Karapanagiotis and Vasileios Tsinaridis</i>
	<i>Rare objects as substrates of paintings: The example of a 17th century portable icon, Ougiarou E., Malletzidou L., Zorba T., Paraskevopoulos K., Pavlidou E., Ganitis V., Stamkopoulos T. G., Karapanagiotis I.</i>
	<i>Silver corrosion in a Museum collection storage facility - A preliminary study, Gouda V., Angelini E., Grassini S., Parvis M., Vassiliou P., Papadopoulou O.</i>
	<i>Non-destructive investigation of salt efflorescence on Roman Tomb after relocation in Ancient Cornth, Greece, Ftikou E., Prokos P., Stefanis A.</i>
	<i>Traditional village in Margariti (Perfection of Thesprotia), Saltagianni E., Gousis C.</i>
	<i>Post-Byzantine monumental pictorial art: painting materials and techniques in the church of the Transfiguration of Our Savior in Klimatia (Epirus, NW Greece), Mastrotheodoros G., Filippaki E., Bassiakos Y., Beltsios K. G.</i>
	<i>The combined use of non-invasive methods for the identification of pigments and the weathering damage on marble figurines and statues, Dritsa V., Saint A.C., Cheilakou E., Kouli M., Kostanti K., Christopoulou A., Zezza F.</i>
16.30 - 17.30	<i>From space to ground. Digital techniques for the investigation of monuments and sites, Lysandrou V., Agapiou A., Kyriakides N., Hadjimitsis D.</i>
	<i>MedSTACH: Eastern Mediterranean Science and Technology Center of Excellence for Archaeology and Cultural Heritage, Kyriakidis P., Agapiou A., Lysandrou V., Kyriakides N.</i>
16.30 - 17.30	<i>Two field representation of Virgin Eleousa: Characterization of a portable icon of 19th century, Papazoglou D., Malletzidou L., Zorba T., Pavlidou E., Paraskevopoulos K.M., Beinas P., Karapanagiotis I.</i>
	<b>Sponsors Presentations (Mail Hall)</b>
18.30 - 20.00	<b>Guided Tour in the Byzantine Museum</b>
20.00 – 22.30	<b>Gala Dinner - Byzantine Museum</b>

### 3<sup>rd</sup> Day

Friday, 22-9-2017

09.00 - 10.00	<b>Registration</b> (Main Hall)
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	<b>Invited Lecture</b> (Main Conference Hall)
10.00 - 10.30	<b><i>“The monument stone an eternal link of the past civilization”</i></b> <i>Prof. Fulvio Zezza, President of the Symposium and Coordinator of the International Group on the Conservation of Monuments in the Mediterranean Basin (I.G.C.M.M.)</i>
10.30 - 11.00	<b><i>“Philosophical Approaches for Conservation and upgrade of the Cultural Heritage”</i></b> <i>Prof. Enzo Siviero, Fabrizio Comodini and Francesco Focacci</i>

Parallel Sessions	
11.00 - 12.15	
<b>Thematic Area 1. TDRSP (Main Conference Hall)</b>	<b>Thematic Area 2. MCDA (Multimedia Auditorium)</b>
<p><i>Unusual Design Influences a Building's Biocolonization Pattern and Complicates Remediation, Grissom C., Charola A.E., Sledge J.</i></p> <p><i>Videor Project: development of advanced technological system for safety of Archaeological sites, Annamaria Giovagnoli, Carlo Cacace, Elena Fiorini, Marta Acierno (as a consultant), Antonio Monteleone, Nicole Dore</i></p> <p><i>The Drums of Parthenon's North Colonnade; the process of structural intervention and results, Mentzini M.</i></p> <p><i>Exploring nano-materials for the consolidation of cultural heritage, Odeh F.</i></p>	<p><i>Deterioration of dolostone by phase changes of iron oxide inclusions in its composition, Yucel N., Caner-Saltik E., Bakirer O.</i></p> <p><i>Assessing damage in cultural heritage monuments using advanced infrared thermography methods, Matikas T., Exarchos D.</i></p> <p><i>Non-destructive investigation of paintings on canvas by infrared thermography, air-coupled ultrasound and x-ray radiography, Zhang H., Sfarra S., Osman A., Theodorakeas P., Avdelidis N. P., Koui M., Ibarra-Castanedo C., Maldague X.</i></p> <p><i>Variable weathering response of architectural marl stones against NaCl crystallization, Michalopoulou A., Sioulas D., Amenta M., Kilikoglou V., Karatasios I.</i></p> <p><i>Mechanical model for bridge “Guglie” through dynamic identification procedure, Manzato A., Trevisani S., Cecchi A.</i></p>
12.15 - 12.30	<b>Coffee Break</b>

Parallel Sessions	
12.30 - 14.00	
<b>Thematic Area 3. HSAM (Main Conference Hall)</b>	<b>Thematic Area 6. PCHM (Multimedia Auditorium)</b>
<p><i>The religious architecture in the island of Santorini from the 13th c. up to the 20th c.,</i> Ritzouli K.</p> <p><i>The initiatives for the preservation of Greek-Orthodox Monuments of Istanbul by the Ecumenical Federation of Constantinopolitans,</i> Uzunoglu N.</p> <p><i>Study on Painting Technique of Medieval Mural Painting,</i> Hidaka M., Miyata J.</p> <p><i>Issues of Structures Management of Modern Cultural Heritage - The case of Xenia 2 Motel,</i> Apostolopoulos A., Drakakaki A., Koulouris K., Konstantopoulos G., Apostolopoulos C.</p> <p><i>Thermal Bath Complex in Vrnjačka, Banja</i> Mitrovic G.</p> <p><i>A comparative analysis of masonry chimneys: typical damages and preservation strategies,</i> Condoleo P., Cardani G.</p>	<p><i>TUNeIT and GRALBeIT as opportunities to valorize the Cultural Heritage from Cape Town to Beijing,</i> Siviero E., Culatti M., Stocco A., Martini V.</p> <p><i>Bridges in the landscape: qualitative aspects,</i> Culatti M.</p> <p><i>Haliç Metro Crossing Bridge A bridge in the historical heart of Istanbul,</i> Siviero E., Culatti M., Martini V., Stocco A.</p>
14.00 - 15.00	Lunch
15.00 - 16.00	Conference Closing Ceremony (Main Conference Hall)
17.00	Guided Tour in the National Archaeological Museum by Archaeologist Katerina Kostanti



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