



NTUA University  
Athens



CNR – Institute  
of Chemical  
Methodologies



Association  
Investing  
in Culture

## 6<sup>th</sup> International Congress on

*“Science and Technology for the Safeguard of  
Cultural Heritage in the Mediterranean Basin”*

# ***ABSTRACTS***



**Athens, Greece**

22 – 25 October 2013

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Management of Cultural Heritage in  
the Mediterranean Basin  
ABSTRACTS

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# SCIENTIFIC PROGRAMME

## **SESSION A Resources of the Territory**

- A.1– Identity and Globalization
- A.2 – Reuse of Historical Centres
- A.3 – a) Archaeological Sites
  - b) Robotic Systems in Underwater Archaeology
  - c) Remote Characterization of Surfaces: robotic platforms
  - d) Signal Processing Advances
- A.4 - Natural Environment
- A.5 - Naval Heritage
- A.4 – Unmanned Aerial Vehicles on Site Surveillance
- A.5– Artefacts Dating

## **SESSION B Diagnostics, Restoration and Conservation**

- B.1 – a) Historical Buildings and Monuments
  - b) Non Destructive Techniques: In situ advanced diagnostics
  - c) Crack Mapping by Autonomous Flying Robots
  - d) Robotic Systems in Harsh Environmental Sites
  - e) Quad-rotor Helicopters in Monuments Diagnostics
  - f) Climbing Robots for Structure monitoring
- B.2 – a) Seismic Emergencies and Early Protection
  - b) Seismic Retrofitting of Historical Masonries
  - c) Climatic Change
  - d) Natural and Human Driven Hazards Endangering Cultural Heritage
- B.3 – Marbles, Stones and Lithic Materials
- B.4 – Mosaics, Frescos, Stuccos
- B.5 – Mural and Oil Paintings
- B.6 – Gems, Ceramic and Vitreous Materials
- B.7 – Paper Documents
- B.8 – Textiles
- B.9– Coins and Metallic Artefacts
- B.10 – Microbial Colonies Attack on Artefacts
- B.11 – Nanotechnologies in Cultural Heritage
- B.12 – Lab on Chip

## **SESSION C Biological Diversity**

- C.1 – Analysis and Preservation of Biological Diversity



- C.2 – Ethno Anthropological Heritage
- C.3 – Plants and Historical Gardens
- C.4 – Virtual Environment for Art
- C.5 – a) Robots and Tele Participation
  - b) Verbal Human – Robot Interaction

### **SESSION D Museums Projects and Benefits**

- D.1 – Museums Cultural Projects
- D.2 – Museums Monitoring and Microclimate Data Bases
- D.3 – Mobile Tele Presence for Museums
- D.4 – Multiple Embodiments for Robots in Heritage Applications
- D.5 – Tourism and Economic Outcome

### **SESSION E Cultural Heritage Identity**

- E.1 - Documentation – Metadata description
  - a) Geometrical
  - b) Architectural
  - c) Structural
  - d) Materials
  - e) Integrated protocols
- E.2 - Interdisciplinary Knowledge Based Decision Making
- E.3. a) 3D reconstruction in Cultural Heritage
  - b) Image Processing Techniques in Cultural Heritage
- E.4 - a) ICT in Cultural Heritage Protection
  - b) Media production and Reuse
- E.5. - Collective Intelligence in Cultural Heritage
- E.6. - Education for Cultural Heritage Protection
- E.7. - Research policies for Cultural Heritage Protection

### **SESSION F Cultural Assets as Resources and Sustainable Development**

- F.1 - Sustainable Tourism in Cultural Heritage
- F.2 - Integrated Environmental Management for the Protection of Cultural Heritage
  - a) in Historic Cities/Centers/Sites
  - b) in Rural and Isolated Areas (Mountains, Islands)
- F.4 - Monitoring Technologies
- F.5 - Strategic Planning of Sustainable Development



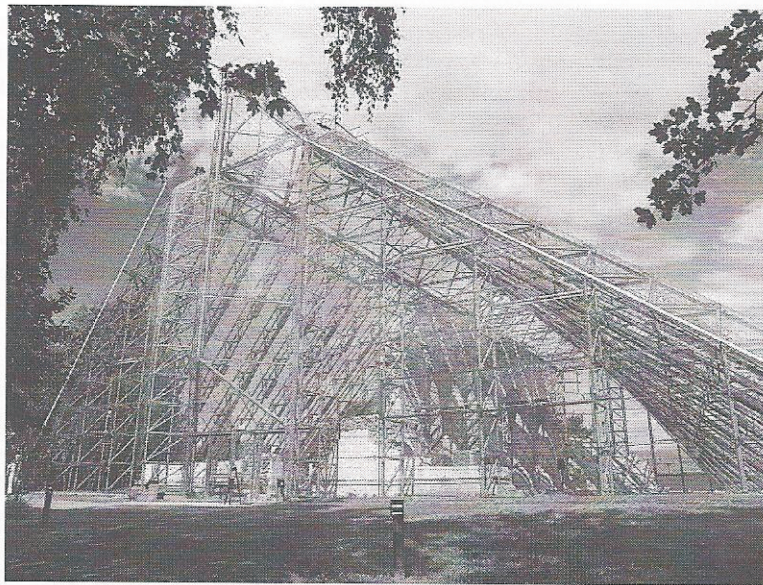
## THE EFFECTS OF SOLAR RADIATION IN ARCHAEOLOGICAL SITES

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### **Abstract**

Ruined walls, paving and decorative elements of archaeological sites are mainly composed of materials with chemical, physical and biological degradation problems that are primarily due to environmental factors. The conservation of archaeological finds requires a protection against these factors. Solar radiation may constitute one of those causes of deterioration. In recent decades the use of glass to cover archaeological sites has been more and more widespread (Fig. 1). The purpose of those glass covers is to reconcile the need of the display capabilities with the preservation of the remains. In general, a protective cover structure determines new conditions that must be carefully controlled to avoid negative undesirable effects. The transparent structures, in particular, allow that solar radiation directly acts on the microclimate, resulting in variations of temperature and humidity conditions of the finds. The article aims to study the different types of glass that filter the components of sunlight which can damage the remains.



**Fig. 1** Archaeological Site of Hamar, Norway



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