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Athens



CNR – Institute
of Chemical
Methodologies



Association
Investing
in Culture

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

ABSTRACTS



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FOREWORD

Even if scientists do their best to increase human lifespan, nobody really thinks we may live forever; on the contrary, we often wish that our Cultural Patrimony, our monuments, stone or paper, should withstand for centuries, even for millennia!

But, to begin with, how large is our Cultural Patrimony?

The vagueness of this terminology makes rather difficult to answer such a question; we must also add that a “monument” suggestive for a community may be worthless for another community.

In any case, we can for sure state that the Cultural Patrimony worth saving, the world over, is made up of many million pieces.

The complexity of the activities needed to safeguard such a Cultural Patrimony strictly depends on its complexity, because we put together “items” as different as metal coins, paintings, historical buildings and monuments, churches and mosques, books and manuscripts, musical instruments, bones and mummies, and ancient trees.

Purpose of the present Congress, analogously to the previous Congresses held in Italy, France, Spain, Egypt, and Turkey, is to demonstrate how crucial may prove the contribution of scientists and technologists who may help saving both our common Cultural Patrimony and public money often wasted by erroneous public interventions.

This time, a special opportunity is offered by the coincidence with the start next January 2014 of the next 8th Framework Programme of the European Commission for the years 2014-2020 titled “Horizon 2020”.

A specific Project called EACH was approved during our last Cairo (2009) and Istanbul (2011) Congresses devoted to the preservation of Cultural Heritage, prepared with the suggestions of thousands of scientists.

Since 2010, the Project was submitted to the attention of the European Commissioner for Science and Research, with the concrete purpose to obtain for this research area more attention within next “Horizon 2020”.

European Union motto is “*united in diversity*” even if sometimes a better motto seems “*disunited in diversity*”; however, European citizens are really “united” willing to preserve their identities, grounded on their Cultural Patrimony.

Athens Congress has the privilege of being held in a city cradle of one of the most important civilizations of the world. We may be sure that with their presentations, Participants will significantly contribute to the safeguard of our precious Cultural Heritage!

prof. A. Guarino

prof. A. Moropoulou

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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 - Strategical Planning of Sustainable Development

SESSION A

RESOURCES OF THE TERRITORY

**CULTURAL HERITAGE THROUGH HISTORY AND NATURE:
CONSERVATION AND RE-USE. THE SCICLI CASE STUDY.**

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Abstract

The research originates from a time-honoured relationship between a local body of illustrious traditions and a research facility of the University of Palermo – the Interdepartmental Research Centre on Historical Centres (hereafter C.I.R.C.E.S.), that has the aim of providing consultancy and scientific support to the initiatives of territorial bodies concerning policies and urban and territorial redevelopment plans and the redevelopment of historical centres.

Scicli is one of the most important municipalities belonging to the province of Ragusa, which has always been a sort of “island within the island”. has always been a sort of “island within the island”.

The urban centres, in addition to being able to boast a special identity deriving from the peculiar impact of the dazzling baroque architectures on the surrounding landscape, often characterized by a very uneven altimetry, feature on the whole urban spaces and building heritage in fairly good conditions, bespeaking good urban management and a methodical focus on maintenance activities.

The municipal territory is characterized by a landscape of great beauty where the steep clefts of the “cave”, dotted by cave dwellings entrances and rupestrian vegetation, coexist with the hilly ridges that sometimes feature naturalistic configurations, highlighted by white rocky landscapes coloured in parts by the green of the Mediterranean maquis and sometimes featuring cascades of constructions clinging to the ground in the most daring ways.

To conclude, in this specific case, the territorial capital is considerable and also in fairly good condition. Efforts should continue to be channelled towards conservation and re-use, but, first and foremost, we should attract human resources with planning capabilities of business and management; i.e., increase the social capital capable of managing the territorial capital with profit.