

## WORKSHOP on...

***...novel non-invasive technologies assisted by robotic & Artificial Intelligence for Cultural Heritage preservation & documentation***

Co-organised by



School of Engineering

*Cross Discipline, Master of  
Science Programme*

***Protection, Conservation and  
Restoration of Cultural  
Monuments***



**Supported by the EU Sca4Reco project**

“Multimodal **Scanning** of Cultural Heritage Assets for their multi-layered digitization and preventive conservation via spatiotemporal **4D Reconstruction** and 3D Printing”



September 25<sup>th</sup>, 2018

Amphitheatre of the Building of the Master of Science: Protection, Conservation and Restoration of Cultural Monuments, 1<sup>st</sup> floor

## **Executive Summary of the Workshop**

### **Cause**

Our cultural heritage and the way we preserve and valorise it is a major factor in defining Europe's place in the world and its attractiveness as a place to live, work, and visit; a powerful instrument that provides a sense of belonging amongst and between European citizens. The need to preserve, provide advanced access to and understanding of cultural heritage is clearly of utmost importance, especially when considering its wealth throughout Europe.

### **Effect**

Scan4Reco project aims deliver a multi-modal and multi-discipline platform that will be able to non-destructively scan any cultural asset Scan4Reco introduces a novel and innovative approach for the scientific and wider community as it enables the processing of multi-sensorial input in such a way that produces a hierarchical, multi-layered and multidimensional complete model of the object of interest. In addition, Scan4Reco will combine the object of interest with inter-disciplinary knowledge derived from the web and specific relevant datasets while also provide it with an automatic inference of its forthcoming state/shape in the future.

## Programme

### 10:00 – 10:10

Opening of the workshop.

Prof. Maria Arakadaki, Department of Architecture, School of Engineering, Aristotle University of Thessaloniki. Director of the Master of Science Programme: Protection, Conservation and Restoration of Cultural Monuments.

### 10:10 – 10:30

The Scan4Reco Project (Scopes & Achievements)

Dr. Dimitrios Tzovaras (*Project Coordinator & Director of CERTH-ITI*)

Dr. Anastasios Drosou (*Post-doc Research Fellow in CERTH-ITI*)

### 10:30 – 10:50

Development of an "iTomography" infrastructure for non-destructive documentation of cultural heritage.

Dr Georgios Karagiannis (*Scientific Director, "ORMYLIA" Foundation*)

### 10:50 – 11:10

Multisensorial and Multispectral scanning, Fusion issues

Dr. Stamatis Amanatiadis, Dr Theodosios Karamanos, (*Research associates, "ORMYLIA" Foundation*)

### 11:10 – 11:30

Spatiotemporal Simulation & Reconstruction, Decision support systems,

Dr. Nikolaos Dimitriou (*Post-doc Research Fellow in CERTH-ITI*)

### 11:30 – 11:50 **Coffee Break**

### 11:50 – 12:10

The Virtual Reality in the service of Cultural Heritage

Athanasios Tsakiris (*Technical Lead of the FAREXTRA*)

**12:10 – 12:30**

Knowledge base and annotation tools on FTIR spectroscopy, Ultrasonic tomography, XRF spectroscopy, Ultraviolet – Visible spectroscopy data

Eirini Tsardaka, Chemist MSc, PhD Candidate, (*Research associate, "ORMYLIA" Foundation*)

**12:30 – 13:00**

Full color and translucency 3D printing for cultural heritage,

Dr. Phillip Urban (*Department Head, Fraunhofer IGD*)

**13:00 –13:20**

Robotic Technologies in the service of Society & Cultural Heritage

Dr. Dimitrios Giakoumis (*Post-doc Research Fellow in CERTH-ITI*)

**13:20 –13:40**

The use of the aforepresented technologies to the Heritage Science and esp. to conservation science.

Eudoxios Mimis, *Restorer MSc*

**13:40 - 13:50 Discussion - Conclusions**