

## Paraskevi Pouli:

Paraskevi Pouli is a research scientist at the Institute of Electronic Structure and Lasers of the Foundation for Research and Technology –Hellas (IESL-FORTH), Photonics for Cultural Heritage group, in charge of developing novel laser technologies for restoration of art and antiquities.

She holds a degree (Aristotle University of Thessaloniki, Greece) and a Ph.D. (Loughborough University, UK) in Physics. Her Ph.D. thesis was supervised by prof. D.C. Emmony and was entitled “Laser cleaning studies on stonework and polychromed surfaces” while her current research interests include the investigation of laser ablation mechanisms on Cultural Heritage materials, the development of laser-cleaning methodologies on a variety of conservation challenges and their monitoring through spectral imaging, holographic and laser spectroscopic techniques.

She is actively involved in a number of EU (H2020 HERACLES, H2020 IPERION-CH, FP7-CHARISMA, FP5-PROMET, etc) and nationally (KRIPIS-POLITEIA, LASTOR, MOBILART, CRINNO II etc.) funded research projects, while she has over 40 publications in refereed scientific journals and conference proceedings, and more than 420 citations in the field (according to Elsevier-SCOPUS). She is also closely involved with the two Research Infrastructures operating at IESL-FORTH (MOLAB of IPERION-CH and Ultraviolet Laser Facility of LASERLAB EUROPE), and through these schemes she has been in charge of and participated in a number of research projects aiming to approach unresolved conservation challenges related to CH materials.

Since 2001 she is responsible, on behalf of IESL-FORTH, for the laser-cleaning projects on the Athens Acropolis sculptures (i.e. the Parthenon West Frieze, the Caryatids of the Erechtheion etc.). The outcome of this collaboration is a prototype laser system and a laser cleaning methodology customarily developed in order to ensure the removal of thick pollution accumulations in a controlled and safe way for both the object and the operator. In this context the Acropolis Museum and IESL-FORTH have been awarded the 2012 Keck Award by the International Institute for Conservation of Historic and Artistic Works (IIC) for their collaboration regarding the “laser rejuvenation of Caryatids opens to the public at the Acropolis Museum: A link between ancient and modern Greece”.

## Lecture Topic:

This communication aims at presenting the related research, the development of the cleaning methodology for the requirements of the sculptures and monuments of the Athenian Acropolis, as well as, its potential and use in other demanding laser-cleaning applications in the CH field.

The two-wavelength laser-cleaning methodology, which has been introduced and developed in order to meet demanding cleaning challenges in CH conservation, is based on the combined (in space and time) use of two laser beams. This arrangement allows the regulation of the laser ablation effective regimes towards an efficient and controlled cleaning intervention. The

methodology has been defined and optimized through systematic studies on technical samples and real fragments in order to ensure that the original surface, including its details and historic traces, is safeguarded.

Among the outstanding examples of its application in practice is the laser-assisted removal of pollution accumulations from the sculptures and monuments of the Acropolis of Athens. The associated laser cleaning methodology and the prototype laser cleaning system, which have been developed in a collaborative effort between IESL-FORTH, the Acropolis Restoration Service and the Acropolis Museum, are successfully employed for the conservation of these unique monuments and their sculptures since 2002.