

Workshop - Ref.: W.2

Topic of the Congress: 5. Scientific examination of heritage and analytical applications using different radiation.

Workshop for Conservation: Microscopy and Documentation 2D/3D Measurements for Surface Characterization

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Abstract: Surface scientific examination, material identification and documentation are important topics in the Cultural Heritage integrated preservation process. Digital imaging and specialized software translate what we see through the eyepieces of a microscope into a photograph or a measurement, extracting valuable objective data of our samples.

This workshop is intended for the general microscopy user to better understand the techniques and be prepared to get the best of them. For this reason we open the agenda of the workshop with a general presentation about microscopy where all basic optical concepts are introduced. Then the workshop goes into detail of the different techniques that can be used to support conservation and restoration interventions and risk management/preventive conservation decisions.

Starting point is the use of stereomicroscopes and its ability to provide a 3D perception at low magnification. After that, fluorescence techniques for microscopy and stereomicroscopy that make use of different wavelengths to excite natural substrates and allow their emission thus providing valuable information about its nature and origin. Finally we will focus the workshop on the new microscopy technologies that allow a very precise imaging of the surface of virtually any material and its characterization: Digital Microscopy to extend the capabilities of traditional stereomicroscopes and high performance techniques like Confocal Microscopy, Interferometry and Focus Variation.

In the last part of the workshop, attendees are encouraged to test their samples with the techniques previously explained. Groups of participants, with the support of an experienced user, can freely work in one hour shifts with any of the three instruments available.

Keywords: Microscopy; Stereomicroscopy; Confocal; Fluorescence; Cultural Heritage

BIO NOTE

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Giancarlo Parma graduated, in 1990, from the University of Milan, Department of Physics, in biology and natural sciences and worked since then at Leica Microsystems.

Before his actual responsibility of European Application Specialist at Leica Industry EMEA, Giancarlo took care of different application activities in Leica Italy: start with Electron Microscopy, Product Specialist for microscopy, confocal and stereomicroscopy. He is used to all global application of Microscopy but special for complex instrumentation, he was responsible for market introduction and presentation of Confocal Microscope in Leica.



BRIEF AGENDA

	22.07.2015	Place
10:00 – 12:30	<ul style="list-style-type: none"> . Welcome and introduction . General theory of microscopy I <ul style="list-style-type: none"> - Optical microscopy concepts: resolution, depth of field, etc. - Observation techniques for materials . General theory of microscopy II <ul style="list-style-type: none"> - Fluorescence - Stereomicroscopy - 3D microscopy 	FLUP LabCR 4 th Floor
14:30 – 17:00	<ul style="list-style-type: none"> . Demo and practical session. Rotative groups <ul style="list-style-type: none"> - Digital Microscope DVM6 - Stereomicroscope M205 - Confocal Microscope DCM8 	FLUP LabCR 4 th Floor

NUMBER OF PARTICIPANTS

Minimum 5, maximum 20.

INDICATIONS TO PARTICIPANTS

Participants are invited to bring their own samples and materials for examination.