LACONA VIII

LASERS IN THE CONSERVATION OF ARTWORKS

8th international Congress on the Conservation of Lasers in Artworks

Book of Abstracts

21 – 25 September 2009, Sibiu, Romania
www.lacona8.ro

C-6	Robert Sitnik	Robotized structured light system for automated 3D documenting of cultural heritage
C-7	Roberto Ricci	RGB-ITR: an amplitude-modulated 3D colour laser scanner for cultural heritage applications
C-8	Haida Liang	3D imaging of jade carvings with optical coherence tomography
C-9	Haida Liang	A hyperspectral remote imaging system in the VIS/NIR and SWIR for wall paintings
C-10	Dragos Ene	3D laser reconstructions of Buddhist temple from Ladakh
C-11	Laurentiu Angheluta	Editing Protocol for the Digital Mapping of Related Imagistic Investigations

Oral papers - Section D

D-1	Giorgio Bonsanti	The Human Factor
D-2	Marta Guttmann	Designed climate of the new storage facilities in the Open Air Department of ASTRA Museum, Sibiu, Romania
D-3	Marina Biccheri	Non-destructive spectroscopies on fragments found in Sana a (Yemen): evidence of different recipes for iron tannic inks
D-4	Sebastien Aze	Reversion of darkened red lead-containing wall paintings by means of cw-laser irradiation: In situ tests and first application
D-5	Miroslaw Wachowiak	Krakow collection of historical paint tubes and palettes identification of materials of 1880-ies oil paintings of Jan Matejko
D-6	Ileana Delia Apostol	Innovative Laser Based System and Technologies for In-Situ Cleaning of Painting Artworks project results

Posters

Poster - Section A

A - P1	Ileana-Delia Apostol	Ablation depth analyses in laser removal of easel painting layers.
A - P2	Irina - Alexandra Paun	Studies on the UV femtosecond ablation of polymers: Implications for the femtosecond laser cleaning of painted artworks
A - P3	Nicolas Gines	Strategies for laser cleaning of environmental deposits on Heritage buildings
A - P4	Maria Luisa De Giorgi	Chromatic stability of painted layers with natural dyes
A - P5	Marek Strzelec	Collective Tombs of Polish Immigration at Montmartre Cemetery - laser intervention cleaning during the conservation program.
A - P6	Panagiota Vounisiou	On line monitoring of cleaning interventions on modern paintings
A - P7	Malgorzata Luiza Walczak	Nd:YAG laser cleaning of encrustation layers of historical stained glass windows.
A - P8	Ruth Lahoz	The effect of wavelength on laser cleaning of Mudejar brick masonry
A - P9	Alberto Ramil	Monitoring the laser cleaning process of ornamental granites by means of digital image analysis
A - P10	Ana J. López	Optimization of laser cleaning parameters for the removal of biological black crusts in granites.

LACONA VIII Chair

Roxana Radvan	National Institute of Research and Development for Optoelectronics from Bucharest, Romania

Permanent Scientific Committee

Margaret Abraham	Los Angeles County Museum of Art, USA
John Asmus	IPAPS, University of California, San Diego, USA
Gerd v. Bally	Laboratory of Biophysics, University of Münster, Germany
Giorgio Bonsanti	University of Florence and Centro Europeo di Ricerche sul Restauro (CERR) di Siena, Italy
Marta Castillejo	Instituto de Química Física Rocasolano, CSIC, Madrid, Spain
Martin Cooper	The Conservation Centre, National Museums Liverpool, UK
Klaus Dickmann	Laserzentrum FH Münster, Germany
Costas Fotakis	Foundation for Research and Technology Hellas, IESL, Heraklion, Crete, Greece
Wolfgang Kautek	University of Vienna, Department of Physical Chemistry, Vienna, Austria
Eberhard König	Freie Universität Berlin, Germany
Mauro Matteini	Istituto per la Conservazione e Valorizzazione dei Beni Culturali, CNR, Florence, Italy
Johann Nimmrichter	Bundesdenkmalamt, Austrian Federal Office for the Care of Monuments, Centre of Art Conservation, Vienna, Austria
Roxana Radvan	National Institute of Research and Development for Optoelectronics, Romania
Renzo Salimbeni	Istituto di Fisica Applicata Nello Carrara CNR, Florence, Italy
David Saundersn	The British Museum, Department of Conservation, Documentation and Science, London, UK
Manfred Schreiner	Academy of Fine Arts Vienna, Austria
Matija Strilic	University College London - Centre for Sustainable Heritage The Bartlett School of Graduate Studies, London, U.K.
Veronique Verges-Belmin	Laboratoire de Recherche des Monuments Historiques, Champs-sur-Marne, France
Kenneth Watkins	Department of Engineering, University of Liverpool, UK
Vassilis Zafiropulos	Technological Educational Institute of Crete & Center for Technological Research - Crete, Sitia, Crete, Greece

LACONA VIII

LASERS IN THE CONSERVATION OF ARTWORKS

Local Organizing Committee

Alexandru Oprea	Ministry of Culture and Religious Affairs, Romania
Andrea Bernath	ASTRA Museum, Sibiu, Romania
Dalvina Luculescu	National Office of Historical Monuments, Bucharest, Romania
Dan Savastru	National Institute of Research and Development for Optoelectronics from Bucharest, Romania
Dorin Barbu	Brukenthal Museum, Sibiu, Romania
Dragomir N. Popovici	National Museum of History from Bucharest, Romania
Gheorghe Ban	Brukenthal Museum, Sibiu, Romania
Gheorghe Papuc	National Museum of History from Constanta, Romania
Ioan Opris	National Museum of History from Bucharest, Romania
Ioan Sbarciu	University of Art and Design from Cluj-Napoca, Romania
Ioana Gomoiu	National University of Art from Bucharest, Romania
Maria Dumbravician	National University of Art from Bucharest, Romania
Marta Guttmann	ASTRA Museum from Sibiu, Romania
Nicolae Puscas	“Politehnica” University from Bucharest, Romania
Roxana Savastru	National Institute of Research and Development for Optoelectronics from Bucharest, Romania
Silviu Angelescu	Institute of Art History “G.Oprescu” of Romanian Academy
Stela Matioc	Sibiu City Hall
Szabolcs Guttmann	SC ARH SERVICE GUTTMANN SI COMP SNC
Tereza Sinigalia	National Institute of Historical Monuments, Bucharest, Romania
Valeriu Olaru	ASTRA Museum, Sibiu, Romania
Viorel Vulturescu	Ministry of Research and Education, National Agency, Romania

STRATEGIES FOR LASER CLEANING OF ENVIRONMENTAL DEPOSITS ON HERITAGE BUILDINGS

M.P. Mateo[1], T. Ctvrtnickova[1], P. Ortiz[2], M.S. Abad[2], M.A. Vazquez[3], R. Ortiz[2], M.A. Gomez[4], G. Nicolas[1]*

[1] Universidad de A Coruña, Laboratorio de Aplicaciones Industriales del Láser, Campus de Ferrol, Spain
[2] Universidad de Pablo de Olavide Sevilla, Departamentos de Sistemas Fisicos, Qumicos y Naturales, Spain
[3] Universidad de Sevilla, Departamento de Cristalografia, Mineralogia y Quimica Agricola, Spain
[4] Instituto Andaluz de Patrimonio Historico, Seville, Spain

The purpose of the present work was to establish an appropriate way for laser cleaning of stones covered by crusts and deposits due to atmospheric pollution. Specimens investigated correspond to fragments of several Monuments located in Seville (South Spain) and exhibit surface weathering with deposits, black crusts and biocrusts of thickness around 100-2000 µm.
Prior to the laser removal, the elemental composition was determined by LIBS and XRF methods whereas SEM-EDX observations carried out on surfaces and cross-sections allowed to provide information about morphology and distribution of species not well detected by LIBS such as sulphur.
Due to its ability to perform rapid analysis, LIBS can be applied on multiple locations of the sample surface without preparation.
Spectra obtained on deposits layer showed the presence of several elements not detected in the stone and their in-depth variation, therefore allowing monitoring the pollutant species lines during the laser cleaning process.

A-P3

gines@cdf.udc.es