Analyses of paintings : new advances in the development of micro-destructive and non destructive techniques.

Venue: University of Bologna, Italy

Chemistry Department "G. Ciamician"

Date: ***14th June, 2013***

In September 2007 an analogous workshop aimed at presenting and discussing the available micro-destructive analytical techniques used to characterize the organic materials in paint cross sections was organized by the Microchemistry and microscopy art diagnostic laboratory (M2ADL) of the University of Bologna.

This workshop, which is organized under the auspices of the Division of Environmental and Cultural Heritage Chemistry, Italian Chemical Society will provide an occasion to broaden the available analytical methods to non-destructive ones. This will be achieved by presenting and discussing the results of a two years research project [Scientific Research Programme of National Relevance (PRIN08)], coordinated by the University of Bologna (M2ADL Laboratory) in collaboration with the Universities of Perugia and Florence, on the setting up of micro-destructive analytical methodologies [i.e.: immunological techniques, micro-FTIR, confocal micro-Raman with NIR excitation, SERDS (Shift Excitation Raman Difference Spectroscopy) and SSRS (Subtracted Shifted Raman Spectroscopy), GCMS, proteomics, etc.] for the characterization and spatial location of organic substances (varnishes, binding media, organic pigments, etc.) in paintings and by presenting the research results achieved by colleagues who have been developing new advanced non-destructive techniques (i.e.: *profile* NMR-MOUSE, Optical Coherence Tomography, Terahertz, etc.) for the stratigraphic characterization of paintings materials.

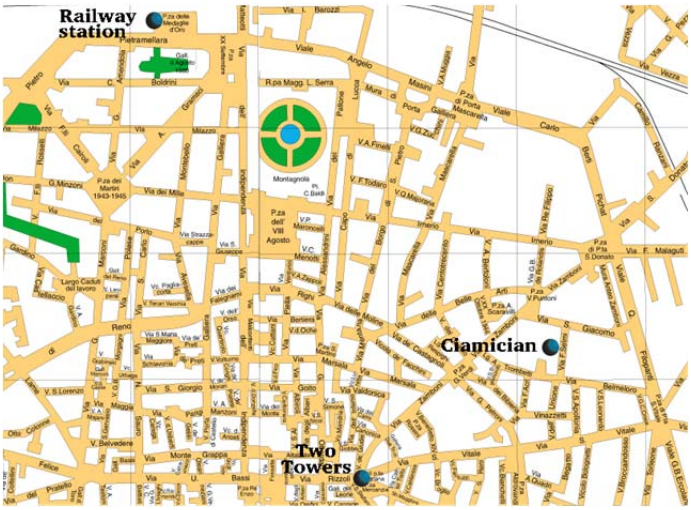
The international workshop foresees presentations given by ***B. Bluemich*** (RWTH Aachen University), ***B. Brunetti*** (University of Perugia), ***M.E. Castellucci*** (University of Florence), ***M.P. Colombini*** (University of Pisa), ***R. Mazzeo, A. Roda, M. Marcaccio, S. Prati*** (University of Bologna), ***M. Menu*** (Centre de recherche et de restauration des musées de France, Paris), ***M. Ricci*** (University of Florence) and ***P. Targowski*** (Nicolaus Copernicus Universuty, Torun) (*see attached workshop agenda*).

SCIENTIFIC COMMITTEE

Rocco Mazzeo, University of Bologna
Silvia Prati, University of Bologna
Aldo Roda, University of Bologna
Bruno Brunetti, University of Perugia
Marilena Ricci, University of Florence
Emilio Mario Castellucci, University of Florence

WORKSHOP LOCATION

The workshop will be held at the Chemistry Department "G. Ciamician", via Selmi 2,



By air

The airport (http://www.bologna-airport.it/uk/?LN=UK) is located outside the city, towards Borgo Panigale. For information about the airport, flights, etc.: Aeroporto G. Marconi, Via dell'Aeroporto 50, Ph. 0039 051 6479615 (05.00 - 24.00)

From the airport

- Take the Aerobus, alight at the railway station and take bus n. 32 (stop Filopanti) and walk to the Department
- Take the Aerobus, stop in via Indipendenza (VIII Agosto) and walk to the Department (10 min)
- Take a taxi (The airoport is 6 Km far from the centre of Bologna)

By train

For timetables and ticket purchases use the Trenitalia web site (http://www.trenitalia.com) website, which gives useful information on train stations, special deals, agencies, and a complete railway timetable.

From the railway station:

- Take bus n. 32 in front of the railway station to stop Filopanti (4th stop). On foot, take the 1st street right (via S. Giacomo), then the first left (via Selmi).
- On foot it takes about 20 minutes following via Indipendenza, via Irnerio, via DeRolandis, via S.Giacomo, via Selmi

Taxi

Co.Ta.Bo.: Ph. 051 372727

Radiotaxi: Ph. 051 534141

Taxi sharing

For more information about taxi sharing, in which at least three passengers are taken from the same starting point to the same destination, contact:

UFFICIO TAXI e N.C.C.

Via Brugnoli 6/c, Ph. 051 203071 Fax 051 203052 Mon-Tues-Fri from 8:30 to 12:30, Thurs from 15:00 to 17:00

WORKSHOP REGISTRATION

The workshop is free, however due to the limited seats available, prospective participants are kindly asked to send, as soon as possible, to Silvia Prati (s.prati@unibo.it) an email confirming their interest to participate in the workshop.

WORKSHOP AGENDA
Chairmanship: Rocco Mazzeo

	Speaker	*Title*
10.00-10.15	Registration and coffee break	
10.15-10.30	Welcome address by Prof. Dario Braga, Pro-rector for research, University of Bologna, Prof. Francesco Zerbetto, Head of the Department of Chemistry, University of Bologna	
	NON DESTRUCTIVE TECHNIQUES	
10.30-10.55	P. Targowski, M. Iwanicka, M. Sylwestrzak, E. Kaszewska, Ł. Ćwikliński	Non destructive Testing of Paintings by Optical Coherence Tomography
10.55-11.20	B. Bluemich	Nondestructive Testing of Paintings by Mobile Magnetic Resonance Imaging (MRI).
11.20-11.45	D. Giovannacci, D. Martos- Levif, M. Menu, V. Detalle, G.Walker	Terahertz application to reveal hidden faces on fresco
	BULK TECHNIQUES	
11.45-12.10	M. P. Colombini	Looking at contemporary paintings by Py-GC/MS, GC/MS and HPLC-Q-TOF techniques.
	MICRO DESTRUCTIVE TECHNIQUES-SPECTROSCOPIC	
12.10-12.35	S. Prati, G. Sciutto, E. Catelli, A. Ashashina, R. Mazzeo	Evaluation of the effects of sample preparation on the results achievable by means of FTIR spectroscopy in ATR mode
12.35-13.00	F.Rosi, C. Miliani., A. Sgamellotti, A Federici, B. Brunetti	Micro-infrared reflection spectroscopy for the study of paint-cross sections.
13.00-14.00	Lunch	
14.00-14.25	G. Sciutto, P. Oliveri, S. Prati, S. Lanteri, R. Mazzeo	Analysis of paint cross-sections: a combined multivariate approach for the interpretation of μATR-FTIR hyperspectral data arrays
14.25-14.50	C. LoFrumento, M. Ricci, E. Platania, M. Becucci, E.M. Castellucci	Novel SERS-Raman methodologies for cultural heritage
14.50-15.15	M. Ricci, C. Lofrumento, M. Quaranta, G. Sciutto, S. Prati, R. Mazzeo	Cinematographic film: a SERS-active substrate?
	MICRO DESTRUCTIVE TECHNIQUES-IMMUNOLOGICAL	
15.15-15.40	M. Palmieri, M. Vagnini, L. Pitzurra, L. Cartechini, CNR-ISTM	Immunologic strategies for detection of proteinaceous binders in painting materials
15.40-16.05	G. Sciutto, S. Prati, R. Mazzeo, M. Zangheri, M. Guardigli, A. Roda, L. Litti, M. Mengeghetti, C. LoFrumento, M. Ricci, E. Castellucci	New immune-based systems for the selective detection of proteins in paint cross sections
16.05-16.30	M. Marcaccio, G. Sciutto, S. Prati, R. Mazzeo, M. Zangheri, A. Roda, L. Bardini, G. Valenti, S. Rapino,F. Paolucci	Localization of Proteins in Paint Cross-Sections by Scanning Electrochemical Microscopy as an Alternative Immunochemical Detection Technique
16.30-17.30	Round Table	The examination of paintings: identification of future research priorities