

Working Group on Chemistry and Cultural Heritage  
Residential Summer School 2006  
Aristotle University of Thessaloniki, Greece  
[main downtown campus and seminar premises in the village Nymphaion]  
Monday 18<sup>th</sup> July to Saturday 23<sup>rd</sup> July 2006

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### **Aims**

The summer school is addressing 2<sup>nd</sup> and/or 3<sup>rd</sup> cycle chemistry students interested in conservation science, e.g. wishing to acquire a solid knowledge on the ways natural & material sciences are applied in the safeguarding & authentication of material heritage.

A multinational team of experts will deliver theoretical and laboratory lectures on important aspects of the topic, covering both basic information and research case studies.

The courses will be held in English.

Aims of the school are:

- ▷ to acquaint non-specialized chemistry students with this rather recent discipline;
- ▷ to permit conservation science students encountering specialists and improve their expertise and skills;
- ▷ to provide networking opportunities.

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### **Funding**

The European Chemistry Thematic Network will meet the cost of registration, accommodation and meals for successful applicants. There will also be a contribution towards travelling costs.

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### **Programme**

Workshops on the following topics are envisaged:

- ▷ Organic Colorants & Lakes
  - Provenance & History
  - Dyeing Techniques & Imitations
  - Physicochemical Parameters
  - Identification
- ▷ Paint Films
- ▷ Textiles
- ▷ Leather, Wood & Paper
- ▷ Inorganic Colorants
- ▷ Stone, Ceramics & Mortars
- ▷ Mosaics & Wall Paintings
- ▷ Glass & Glazers
- ▷ Metals & Metal Alloys
- ▷ Scientific Dating Techniques
- ▷ Environmental Causes of Deterioration & Biodeterioration

The following practical sessions are designed:

- I. X Ray Diffraction & X Ray Fluorescence
  - II. Infrared, Raman & Ultraviolet Spectroscopy
  - III. Simulation of Material Heritage Artefacts & Microchemical Identification Tests
  - IV. Accelerated Artificial Ageing
  - V. Scanning Electron Microscopy
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## Provisional Timetable

	Monday 18/07	Tuesday 19/07	Wednesday 20/07	Thursday 21/07	Friday 22/07	Saturday 23/07
10:00-12:00	Welcome & Introduction	Metals & Metal Alloys	Inorganic Colorants	Organic Colorants & Lakes	Leather, Wood & Paper	Environmental Causes of Deterioration & Biodeterioration
12:00-14:00	Glass & Glazers	Practical Session II	Mosaics & Wall Paintings	Paint Films	Practical Session III	Practical Session IV
14:00-16:00	Lunch					
16:00-18:00	Practical Session I	Practical Session II	Scientific Dating Techniques	Textiles	Panel Discussion	Practical Session V
18:00-20:00	Stone, Ceramics & Mortars		Panel Discussion	Practical Session III		Conclusions
21:00	Dinner					

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### Contributors

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### Contact

For further information on any aspect of the Summer School please contact:

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	Monday 17 July	Tuesday 18 July	Wednesday 19 July	Thursday 20 July	Friday 21 July	Saturday 22 July
9:00-10:00	Introduction	W. Zeller: English for Chemists P. Mimerò/I. Kozaris: e-chem Test				
10:00-11:00	E. Dölen	G. Cuoco*	B. Singer	D. Kovalá	P. Piccardo	E. Varella
11:00-12:00	R. Karadag	E. Kampasakali*		R. Salzer		H. Liang
12:00-13:00	A. Misopolinou	E. Caponetti	C. de Souza	P. Ferloni		
13:00-14:00	K. Balian					
14:00-15:00	Lunch					
15:00-16:00	O. Abdel Kareem	L. Puchinger	G. Cave	A. Baranski	M. Karayannis	I. Stamatelatos
16:00-17:00			Z. Papiaká*	E. Pavlidou		W. Zeller P. Mimerò/I. Kozaris
17:00-18:00	R. Benslimane	K. Bairaktari*	S. Maedler*		T. Lojewski	
18:00-19:00		A. Tsakaloff				
19:00-20:00	W. Zeller: English for Chemists P. Mimerò/I. Kozaris: e-chem Test Discussion with Teachers					
	Welcome Dinner	Dinner	Dinner	Dinner	Dinner	Farewell Dinner

E. Dölen R. Karadag A. Misopolinou	Historical Approach to Natural Dyes	with Practical
K. Balian	Colour in Ancient Art	
O. Abdel Kareem	Dyes for Textile Conservation Purposes The Role of Natural Dyes in Preservation of Museum Textiles	
R. Benslimane	Fibrous Materials & Image Analysis	
G. Cuoco*	Study of Chemical Markers for Red Dyes	
E. Kampasakali*	Colorimetric Studies of Russian Avant Garde Paintings	with Practical
I. Kozaris P. Mimerò	Information & Communication Technologies in Cultural Heritage	with Practical
E. Caponetti	Auger Electron Spectroscopy, X-Ray Photoelectron Spectroscopy, Ultraviolet Photoelectron Spectroscopy and Secondary-Ion Mass Spectrometry in Conservation Science	
L. Puchinger	Chemical Chromatographic Identification of Lipids, Waxes, Pitches, Dyes & Laquers in Art Objects	
K. Bairaktari* A. Tsakaloff	Binding Media Identification in Art Objects	
B. Singer	Analysis of Organic Materials – Paint Media, Resins & Waxes	
C. da Souza	Chromatographic Study of Natural Resins in Ancient Egypt	
G. Cave	1D and 2D Diffusion NMR and its Applications in Pigment Analysis	
A. Lojewska	Application of Vibrational Spectroscopy to Cultural Heritage Objects	
S. Maedler*	Vibrational Spectroscopy as a Powerful Tool for the Characterization of Paintings	
D. Kovalá	Fourier Transform Infrared Spectroscopy for the Characterization of Pigments in Art	
R. Salzer	Characterization of Stones & Mortars by Infrared & Raman Spectroscopy	
P. Ferloni	Physico-Chemical Studies on Ancient Mortars and Plasters	
A. Baranski Z. Papiaká*	Accelerated Artificial Ageing	with Practical
E. Pavlidou	Scanning Electron Microscopy Applied in Cultural Heritage Diagnosis	with Practical
P. Piccardo	Inside Copper Alloys Patina – Use of Dark Field Optical Microscopy, Scanning Electron Microscopy and Raman Microspectroscopy to Determine Corrosion Products	
H. Liang	New Frontiers in Non-Invasive Examinations of Art	
M. Karayannis	Methods & Techniques for Dating Archaeological Objects	
E. Varella	Imitations and Adulterations – Interpreting Ancient Recipes	
A. Karydas	X-Ray Fluorescence as a Routine Diagnostic and Analytical Tool for Museum Artefacts and Artworks Ion-Beam Analytical Techniques for the Non-Destructive Analyses of Objects of Art	with Practical
I. Stamatelatos	Neutron Activation Analysis – New Challenges and Applications	
T. Lojewski	Mass-Scale Treatments in Conservation of Library Material	

\* young scientist

## Teachers

Mathe Carole	Avignon
Karydas Andreas	Athens
Stamatelatos Ion	
Salzer Reiner	Dresden
Benslimane Rachid	Fez
Piccardo Paolo	Genova
Kovala Dimitra	Ioannina
Abdel Kareem Omar	Irbid
Dölen Emre	Istanbul
Karadağ Recep	
Baranski Andrzej	Krakow
Lojewska Joanna	
Lojewski Tomasz	
Mimero Pascal	Lyon
Singer Brian	Newcastle upon Tyne
Karayannis Miltiadis	Nicosia
Cave Gareth	Nottingham
Liang Haida	
Caponetti Eugenio	Palermo
Ferloni Paolo	Pavia
Balian Konstantinos	Thessaloniki
Kozaris Ioannis	
Misopolinou Athina	
Pavlidou Eleni	
Varella Evangelia	
Puchinger Leopold	Vienna
Zeller Walter	

## Students

Bairaktari Kyriaki	Athens
Kliafa Maria	
Hughes Andrew	Austin
Maedler Stefanie	Dresden
Gaino Michela	Genova
Deb Somdatta	Helsinki / Bombay
Calin Alexandru Vasile	Ioannina / Cluj Napoca
Staninska Malgorzata	Ioannina / Poznan
Abu al Hassan Yazan	Irbid
Sharairi Nidal	
Khraise Nour	
a Ababnh Wa'ed	
Malek Monika	Krakow
Sawoszczuk Tomasz	
Zieba Katarzyna	
Peng Ke	Leiden / Da Lian
Ballesteros Ruth	Madrid
Perez Cortes Yolanda	
Polo Dorian	Manchester
Papanastasiou Malvina	
Horsfall Craig	Newcastle upon Tyne
Bowley Neil	Nottingham
Martin Simpson Sophie	
Saladino Maria Luisa	Palermo
Trilcová Anézka	Prague
Tanevska Vinka	Skopje
Gyulyay Mehmed Ahmed	Sofia
Petinova Asya	
Villa Medina Jose Luis	Tarragona / Bogotá
Ramos Pablo	Tarragona / Buenos Aires
Vicente Valverde Isabel	Tarragona / Caracas
Bernikola Eirini	Thessaloniki
Frangou Angeliki	
Kampasakali Elli	
Papliaka Zoi	
Barros Santos Sónia	Tomar
Mühlgassner Gerhard	Vienna
Puchinger Martin	
Wei Shuya	Vienna / Zhengzhou

