

REGISTRATION

Please use the on-line registration form:

<http://iuca.unizar.es/science-and-past-registration>

Registration fees:

REGISTRATION PERIOD	DATE	SENIOR REGISTRATION FEE	STUDENT REGISTRATION FEE
Early registration	until November 7, 2014	200 €	110 €
Late registration	from November 8, 2014	275 €	180 €

Registration fees include:

- Attendance to course sessions
- Program and course documentation
- Certificate of attendance
- Coffee Breaks

PAYMENT:

Payment (in euro) should be made by bank transfer to:

Bank: Ibercaja

IBAN: ES 82 2085 0111 79 0330788546

Swift code: CAZRES2Z

Please, include clearly your name in the bank transfer voucher

CONFIRMATION OF REGISTRATION:

Your registration will be confirmed when the payment of the registration fee is received by the organizers (please, send copy of the bank transfer to iuca@unizar.es).

FINANCIAL SUPPORT:

Financial support will be given for a limited number of participants to cover travel expenses in full or partly. Application deadline October 31st, 2014.

Course coordinator:

Dr. Josefina Pérez-Arantegui (IUCA, University of Zaragoza)

Further information:

Environmental Sciences Institute (IUCA). University of Zaragoza (Spain)

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SCIENCE & PAST: THE ROLE OF NON-DESTRUCTIVE METHODOLOGIES IN CULTURAL AND NATURAL HERITAGE STUDIES

6th INTERDISCIPLINARY COURSE

NOVEMBER 26-28, 2014
UNIVERSITY OF ZARAGOZA - SPAIN

VENUE:

Biblioteca María Moliner

Campus San Francisco · Universidad de Zaragoza



Instituto Universitario de Investigación
en Ciencias Ambientales
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Facultad de
Filosofía y Letras

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THE ROLE OF NON-DESTRUCTIVE METHODOLOGIES IN CULTURAL AND NATURAL HERITAGE STUDIES

6th INTERDISCIPLINARY COURSE

The course is focused on the new developments of non-destructive methodologies and on the role that they play in the study of cultural and natural heritage problems. In this edition, special focus will be given on non-invasive techniques that provide imaging and then 2D and 3D information.

The lectures are addressed to students, researchers and professionals in chemistry, physics, geology, geography, archaeology, conservation science, palaeontology, etc., to acquire a solid knowledge on the state of art of this topic.

Wednesday, 26th November

9:00. Registration

9:25. Presentation

9:30. "Spectral imaging applications in art conservation, history and archaeology". **Haida Liang** (Nottingham Trent University, United Kingdom)

10:30. Coffee break

11:00. "In situ chemical analyses by portable X-ray fluorescence spectrometers: principle of the method and its contribution for a better comprehension of decorated Palaeolithic key cave sites". **Marine Gay** (CNRS/Université Pierre et Marie Curie Paris 6, France) and **Ina Reiche** (CNRS/Université Pierre et Marie Curie Paris 6, France, and Staatliche Museen zu Berlin, Germany)

12:00. "X-ray based investigation of (altered) paintings: probing the chemical state of pigmented materials on and below the visual surface". **Koen Janssens** (University of Antwerp, Belgium)

13:00. Discussion

Lunch

16:00. "Non-invasive methods applied to the archaeo-paleontological record". **Rebeca García** (Universidad de Burgos, Spain)

17:30. Discussion

Thursday, 27th November

9:00. "Hyperspectral Imaging. Technology and components". **Carolina López** (Infaimon, Spain)

10:30. Coffee break

11:00. "Environmental monitoring from Satellite Earth Observation". **Emilio Chuvieco** (Universidad de Alcalá, Spain)

12:15. "Guided visit to the Geoforest-IUCA ERTA-lab: case studies and demonstrations of the use of remote sensing for environmental issues". ERTA-lab (Universidad de Zaragoza, Spain)

Lunch

16:00. "TISCH - Terahertz Imaging and Spectroscopy for Cultural Heritage: art, architecture and archaeology conservation science". **J. Bianca Jackson** (University of Reading, United Kingdom)

17:30. Discussion

Friday, 28th November

9:30. "Portable Spectroscopic Instrumentation in the Field of Cultural Heritage: Raman Spectroscopy". **Kepa Castro** (Universidad del País Vasco, Spain)

11:30. Coffee break

12:00. "In-situ non-destructive tests in the Mid-Infrared with portable instruments. Some examples and applications". **Fernando Tobalina** (Agilent Technologies, Spain)

13:30. Discussion and Concluding remarks

PROGRAM