



Ancient Materials' Training School

I. General Introduction

Rationale:

Synchrotron-based study of heritage materials is growing rapidly, with more than 1,000 papers published in the field, with the majority in the past ten years. The objective of the Cultural Heritage thematic school, organised by the IPANEMA-CNRS institute (which is a European Research Platform on Ancient Materials), will be to train young researchers from the Middle East to synchrotron spectroscopy and imaging techniques to study cultural heritage materials. There is a significant cultural heritage user community across the SESAME Members including Jordan, Egypt, Iran, Israel, Turkey and Cyprus, with whom CNRS has already established direct contacts.

Global approach:

- Balanced interactions: parity of European and Middle East and neighbouring countries speakers
- An exhaustive overview of the "chaîne opératoire": From sample preparation to data processing and management.
- Taking into account emerging issues about ethical topics: from sampling to radiation damages.
- Making the best of the local context, mobilising local opportunities: CH visit with archaeologist, Museum representatives
- Drawing the overall research environment, from the site to the synchrotrons, including the conservation scientists.

Training concepts

- Interactivity: triggers exchange between lecturers and audience
- Hands-on showing practical and constraints: portable equipment, observing ancient heterogeneity
- Examples will focus on the use of synchrotron techniques to study archaeological materials of interest to the Middle East: from ancient glazed ceramics to glass, mummies and artefacts found in burial environments, to ancient manuscripts and construction materials.
- Specific focuses will be addressed on X-ray and infrared spectroscopy and imaging techniques given the fact that these approaches will be first implemented at SESAME.

Venue:

Science and Technology in Archaeology Research Centre at the Cyprus Institute.

Dates:

End of November 2017.

Public:

Up to 20 funded participants typically Master and possibly PhD students. Tentative list of speakers: 5 funded

II. Draft scientific program and session planning

Monday

- 9:30 > 10:30 OFFICIAL OPENING & GENERAL INTRODUCTION
- 10:30 > 12:00 GENERAL LECTURE ON ANCIENT MATERIALS SPECIFICITIES
- 13:30 > 15:30 INTRODUCTION TO X-RAY TECHNIQUES: FROM THE LAB TO THE SYNCHROTRON
- 16:00 > 17:30 X-RAY TECHNIQUES FOR ANCIENT MATERIALS: CASE STUDIES
- 20:30 > 21:30 INVITED SPEAKER LECTURE

Tuesday

- 9:30 > 10:30 INTRODUCTION TO FTIR SPECTROSCOPY AND IMAGING
- 10:30 > 12:00 LATEST DEVELOPMENTS OF SYNCHROTRON FTIR TECHNIQUES FOR ANCIENT MATERIALS
- 13:30 > 15:00 TRAINING ON SETTING UP SYNCHROTRON PROJECT
- 15:00 > 16:00 SAMPLE PREPARATION
- 16:30 > 17:30 SYNCHROTRON PROPOSAL: SELECTION OF SCIENTIFIC TOPICS BY ATTENDEES

Wednesday

- 9:30 > 10:30 DATA MANAGEMENT (PART I): COLLECTING DATA AND METADATA
- 10:30 > 12:00 DATA MANAGEMENT (PART II): FROM PROCESSING TO ARCHIVING
- 13:30 > 18:00 VISIT OF AN ARCHAEOLOGICAL SITE & HAND'S ON APPLICATION
- 20:00 > 20:30 SPEECHES FROM SESAME AND OFFICIAL FROM MUSEUM INSTITUTIONS
- 20:30 > 21:30 COCKTAIL

Thursday

- 9:30 > 12:00 SYNCHROTRON PROPOSAL: INTERACTIVE WORKSHOP ON DRAFTING SYNCHROTRON PROPOSAL
- 13:30 > 15:00 FUNDAMENTAL COURSE ON RADIATION DAMAGES
- 15:00 > 16:00 RADIATION DAMAGES: FROM MONITORING TO MITIGATING STRATEGIES
- 16:30 > 17:30 ETHICS ON HANDLING CULTURAL HERITAGE OBJECTS AND SAMPLES

Friday

- 9:30 > 12:00 ORAL PRESENTATION BY ATTENDEES OF THEIR SYNCHROTRON PROPOSAL
- 13:30 > 15:00 GENERAL ROUND TABLE AND EXCHANGE