

Abstract

The scientific research aiming to study, characterize and conserve of archaeological findings is based on a strong interdisciplinary approach, which implies the collaboration among scientists and archaeologists expert in many different fields. A considerable amount of different conventional and advanced techniques can be applied to archaeological and cultural heritage sciences. One of the main requirements imposed by the archaeologists in the studies of ancient and precious materials is that the selected techniques must be non-destructive. In this context, Synchrotron radiation-based techniques can play a major role in the micro-non-destructive analysis.

In this contribution, synchrotron radiation-based experiments employing highly brilliant and collimated micro-beams of X-rays exploited in diffractometric, spectroscopic and imaging investigations of archaeological objects will be discussed. The specifications of SESAME Synchrotron built in Jordan will also be presented. In addition the main components of the X-ray Fluorescence Microscopy (XFM) beamline proposed to be built at SESAME Synchrotron for archaeological and cultural heritage sciences will be presented and discussed.