



Contribution ID: 365

Type: Oral

Radiographic Investigation of Archeological Objects

Thursday, 27 April 2017 17:00 (15 minutes)

RADIOGRAPHIC INVESTIGATIONS OF ARCHEOLOGICAL OBJECTS

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ABSTRACT

Radiography is a versatile technique with many applications to archaeological and art historical artefacts. It can be used to assess the condition of objects before conservation or restoration treatment, to gain information of materials used and methods of construction, and to reveal the secrets of the embalmer's art, hidden within mummified remains. The techniques can be applied to materials as diverse as papers, fabric, wood, ceramic and metal, as well as to human and other animal remains. Radiographic examination basing on film imaging or digital imaging techniques may provide images of objects concealed within a mass of corrosion and may even reveal a previously unknown painting, hidden beneath a later work. All of this can be carried out non-destructively, making radiography an invaluable tool for the study of cultural materials.

Radiographic investigations of the archaeological objects at Çekmece Nuclear Research and Training Centre were carried out since 2004 in collaboration with Archaeology Museum of Istanbul and Directorate of Istanbul Central Laboratory for Restoration and Conservation. This work describes radiographic investigations of the archaeological objects in order to support museums, laboratories and archaeology specialists for the restoration, conservation and replica processes, as well as inventory purposes. Film based, flat panel and imaging plate radiographic techniques were used in the examinations. Some of the investigated objects in this study are anchors of 13th Century of Byzantine Empire taken out from a wracked excavation, chains used in the Golden Horn during the period of Byzantine Empire, head of the Snaky Statue from Roman Period being situated in Sultan Ahmed Square in Istanbul, metal objects from Bathonea excavation in Istanbul, etc.

Findings obtained from the examined objects were assessed together with archaeology specialists in order to make comment about their history and production methods and to decide for the restoration and conservation processes.

The use of radiographic examination for the preservation of cultural heritage became a very important tool that allows scientists and archaeologists to accurately identify and conserve items that would

have been lost or damaged in the past. The results obtained from this study were very beneficial for the Istanbul Archaeology Museum and Conservation and restoration Laboratory for determining the internal structure and surface condition of the objects before treatment for restoration, conservation, replica works and a lot of other processes.

Country/Organization invited to participate

Turkey

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Session Classification: B14

Track Classification: RADIATION TECHNOLOGIES FOR MEASUREMENT