

# Analysis of Organic Residues Preserved in Archaeological ceramics

*Dr. Abdulraouf Mayyas*  
*Department of Conservation Science (DCS)*  
*Queen Rania Institute of Tourism and Heritage (QRITH)*  
*The Hashemite University*  
053903333 - Ext 4910

## **Abstract**

This paper summarizes the importance of the analysis of organic residues, mainly lipids, preserved in archaeological ceramic vessels. Organic residues occur as a result of the common use of ceramics for different purposes in everyday life. These purposes include cooking, preparing and processing, storing, transporting and consuming foodstuffs and other natural products, in addition to the use of other vessels in beekeeping. The analysis however, can reveal hidden information concerning the function and use of ceramic vessels, diet, trade (when results of this type of analysis are linked with the results of the provenance of ceramics), lighting, medicines, perfumes (such as frankincense), adhesives, technology of the use of ceramics, sources of subsistence activity and other human activities at the site. Therefore, these results can provide clear picture about behaviours of ancient people.

The main goal of the analysis however, is to identify the nature and origins of organic remains that cannot be characterized using traditional techniques of archaeological investigation because they are either amorphous or invisible. Analytical organic chemical techniques, such as gas chromatography – mass spectrometry (GC-MS), are usually used for this type of analysis. Identifying the nature and origins of organic remains however, can be achieved based on the detection of biomarkers; components of organic materials of natural origin associated ceramics found at archaeological sites. Once biomarkers are identified, the structure of a given biomolecule (fingerprint) or suite of biomolecules can be related to the compositions of organic natural material exploited by humans in the past.

**Keywords:** Organic residues, lipids, archaeological ceramic, vessel, chemical technique, gas chromatography – mass spectrometry, biomolecules.