

ANALYTICAL STUDY AND CONSERVATION OF ARCHAEOLOGICAL TERRA SIGILLATA WARE FROM ROMAN PERIOD, TRIPOLI, LIBYA

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Abstract

The aim of the present paper is to study the chemical and the mineralogical composition of an archaeological pottery ware shard which was found in the excavation belongs to the Roman period (1st A.D). It was found and stored in the National Museum in Tripoli the capital of Lybia. Its type was found to be a Terra Sigillata ware, bright-red, polished pottery used throughout the Roman Empire from the 1st century B.C to the 3rd century A.D. To perform this study, several analytical instruments were used; including X-ray diffraction (XRD), optical microscopy (OM), scanning electron microscopy (SEM), thermal analysis (TG) and differential thermal analysis (DTG) and Fourier transform infrared spectroscopy (FTIR). The texture of the pottery was made of fine quartz and the fracture color is red due to the presence of Hematite (Fe_2O_3). The firing temperature of the ware is high, subsequently; the hardness of the pottery is quite high. The dish was made with a mould In addition to analytical studies, restoration treatments were carried out on the dish including; mechanical and chemical cleaning, bonding and replacement and coloring processes.