

Study on Efflorescence of Ceramic Objects of Archeological Excavation

Bahadory, R.

Research Center For Conservation of Cultural Relics,

Iranian Cultural Heritage Organization

Key Words: *Efflorescence, Historical Ceramic, Excavation, FT-IR,*

Abstract: Efflorescence means formation of crystals or whitish deposits on the surfaces of objects. The appearance of these crystals are due to the type of art works, pigment, binding factor used, conservation treatments and the environment in which the objects are kept. In order to study the components of efflorescence and the reasons for their formation, samples were collected from the sediments present on the surfaces of twenty six ceramic objects. These objects were excavated from regions with different climatic conditions, and were all unglazed, and belonged to the first or second millennium BC. Fourier transform infrared spectroscopy (FT-IR), X-ray diffraction (XRD) and wet chemical analysis were used for analysing of these minute samples. The results showed that the deposits consisted of either one or a mixture of gypsum, calcite, hydrated ferric chloride, feldspar, pyroxene, hematite and halite. Also the soil of region was analysed and the effects of the environmental factors on components and amount of efflorescence was studied.