

Roman coloured glass objects Excavated from Tripoli, Libya: a chemico-physical characterization study.

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Abstract

The finding of considerable collections of coloured glass artifacts, together with considerable lumps of glass chunks, fuel ash slag and kiln fragments related to glass processing strongly suggests a local secondary production (working) of glass at the archaeological site in northern Tripoli, Libya from the Roman period. The main objectives of the research are to understand the production technology and provide some insights into their probable provenance. In addition, corrosion and decay processes were also assessed to determine the influence of the cremation ritual within the fragments structure. The materials used for the manufacture of the glass were revealed using optical microscopy, X-ray diffraction (XRD) and scanning electron microscopy–energy dispersive X-ray spectroscopy (SEM-EDS) and X-ray fluorescence (XRF). According to the microscopic examination, it can also be observed that mould-blowing was the main technique used for forming glass. The resulting data suggest that both soda-lime-silicate and, probably, aluminum-silicate glasses were produced in the making of these glassy materials, using some transition metal oxides as chromospheres or coloring agents. The compositional evidence gathered also suggests that glass fragments were the outcome of trade or exchange practices rather than locally produced.