

Identification of gilding techniques on Roman marble sarcophagi

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Abstract

Several Roman marble sarcophagi (2nd–4th centuries AD) have been investigated in a first systematic research effort to detect (pigments and) gilding techniques employed in the Imperial Rome. A comparative study was performed on a conspicuous group (no. eighty) of Roman sarcophagi identified in the Vatican Museums, the Capitoline Museums and the National Roman Museum collections. A focused in situ campaign of non-invasive analytical investigations have performed by multispectral imaging, spectroscopic and elemental analysis, followed by aimed micro-invasive techniques. As for the main issue of the gilding and its application techniques, the microscopy still remains one of the most efficient tools for their characterization. Therefore, some micro-samples of three sarcophagi chosen as case studies were examined by means of optical petrographic microscopy (OPM) and scanning electron microscope and energy dispersive X-ray spectrometer (SEM–EDS). The results of archaeological data and scientific analyses show that the leaf gold was applied by two different techniques. In the most attested method, the gold leaf was applied on a ground layer of colour (yellow and/or red ochre, Egyptian blue, etc.); on the other hand, in the other technique, the gold leaf was applied directly onto the marble surface or more probably on top of a thin ground layer of kaolin.

Keywords: Gilding techniques, Roman sarcophagi, Purplish substance, Colloidal gold, Optical petrographic microscopy, SEM–EDSa