

Biography of the objects: dialogue between Egyptology and Sciences

Scientific investigations are an increasingly important part of Archaeological and Egyptological research. This has resulted in a greater understanding of the museum's collections, producing new information that is useful in their preservation. Many new Egyptological discoveries are the result of projects generated by the collaboration between Egyptologists and scientists. Archaeometry, indeed, gives a different but complementary image of the objects, through the characterisation and reconstruction of the object's history, analyzing the natural and artificial traces left during its lifetime.

In the Museo Egizio many archaeometrical analyses have been undertaken on the different materials and for different purposes. An interesting example is the examination of the external sarcophagus of Butehamon (Cat. 2236). Restored by a team directed by Prof. Santamaria and Dr. Amenta of the Vatican Museums, within the international agreement of the Vatican Coffin Project. The analyses were preliminaries to restoration, and fundamental to the technological knowledge of the fabrication of the coffin, the chemistry of its pigments and the history of the object. Moreover, the analyses (ultraviolet induced fluorescence, infrared false colour, radiographic investigation, X-ray fluorescence and 3D shooting) allowed for hypothesizing concerning the re-use and adaptation of a pre-existing internal sarcophagus. In particular, targeted micro samples allowed the identification of the sequence and composition of the layers of pigments both in an inorganic (identifying pigments and preparations with stratigraphic analysis, photomicrographs in the infrared false colour, SEM-EDS and XRD) and organic point of view (identifying binders, paints and any superimposed substance during the restoration with FT-IR analysis and GC-MS).