

Technical and analytical investigation study of late period Egyptian stele from The Grand Egyptian Museum

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Abstract

Upper Egypt is well-known for its famous Pharaonic stone monuments. they give the unique creative work of humankind in ancient times. the monuments are significant for the cultural identity of Egypt and they are very important for the economic situation of the country, Sandstones from the Gebel el-Silsila area in south-western Egypt—as one group of the formerly so-called “Nubian sandstone”—the study deals with examination and analysis of painting sandstone Stela preserved in The Grand Egyptian Museum under the number (SR -22106), with inscriptions and writings in hieroglyphics, Complimentary techniques were used in this study; the optical microscope, X-ray fluorescence spectrometry (XRF), Fourier transform infrared spectroscopy (FTIR), Electronic microscope scanner (SEM), The pigment color employed was red , which have been shown to be the protective iron oxide as well as the clay minerals compounds. By analyzing the color medium, it was found to be animal glue, and by examining and analyzing the manifestations of the deterioration phenomena, solid and thick calcium layers, limestone calcifications and assembly materials for a previously separate part, and a layer of calcium carbonate, gypsum and Arab glue were found in the pasting of a modern wooden base.

Keywords :

Gebel elsilsila , Nubian sandstone, Historical Stelae of late period , XRF , XRD, SEM , Polarizing microscope, Optical microscope , Animal Glue