IDENTIFICATION OF PIGMENTS AND PAINTINGS IN ARCHAEOLOGICAL CERAMICS FROM SANAGASTA AND INKA CULTURES THROUGH SEM-EDS AND XRD (TINOGASTA, CATAMARCA, ARGENTINA)

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Abstract

Pigments and paintings used to decorate ceramic vessels by ancient potters are one of the most interesting research topics in ceramic ancient technology [1, 2]. The study of pre- and postfiring pigments and paintings applied to decorate vessels usually involves the exploration of ceramic surfaces by several analytical techniques (SEM-EDS, XPS, XRD, μXRD, μXRF, WD-EDS) capable to have a good resolution and sensitivity to determine the main chemical and mineralogical components of the paint layers [3, 4, 5]. In this paper we present the first results obtained as part of an ongoing research project involving the study of pigments and paintings used to decorate Sanagasta (Late Period, ca. AD 900 – AD 1100) and Inka (ca. AD 1480 – AD 1530) ceramic vessels from southern Abascan Valley, Dept. of Tinogasta, Province of Catamarca, Argentina. The ceramic sherds are coming from the archaeological site Costa de Reyes. The ceramic painted surfaces were explored through SEM-EDS and in some cases polished cross-sections of the sherds were analysed to complete the mineralogical information. XRD was performed on ceramic pastes to gain information on the main mineral phases present. Paintings of several colours (black, white, red) were analysed by SEM-EDS, and the main results obtained indicate the use of mineral pigment sources to elaborate the decoration.

Keywords: SEM-EDS; Archaeological Ceramics; Late and Inka Periods

Acknowledgement: We are grateful for the financial support of SECYT, UNCAs and CONICET for this project.

References: