

Ref. 16-01 742

Micro-XRD analysis of Medieval glazes

The production of glass represented an important technological achievement, and the starting point for the invention of a large variety of materials, produced by processes involving melting, partial or total, and precipitation of new crystalline compounds during cooling. In particular, those crystallites built-in the glaze due to partial or total insolubility of some elements originally present in the melt (for instance some colorants and opacifiers), as well as, those crystallites formed in the glazes resulting from the interaction of the melt and the ceramic surface are subject of the highest interest in the study of glaze technology. Finally, devitrification and weathering gives rise to precipitation of new crystalline compounds closer to the surfaces and interfaces.

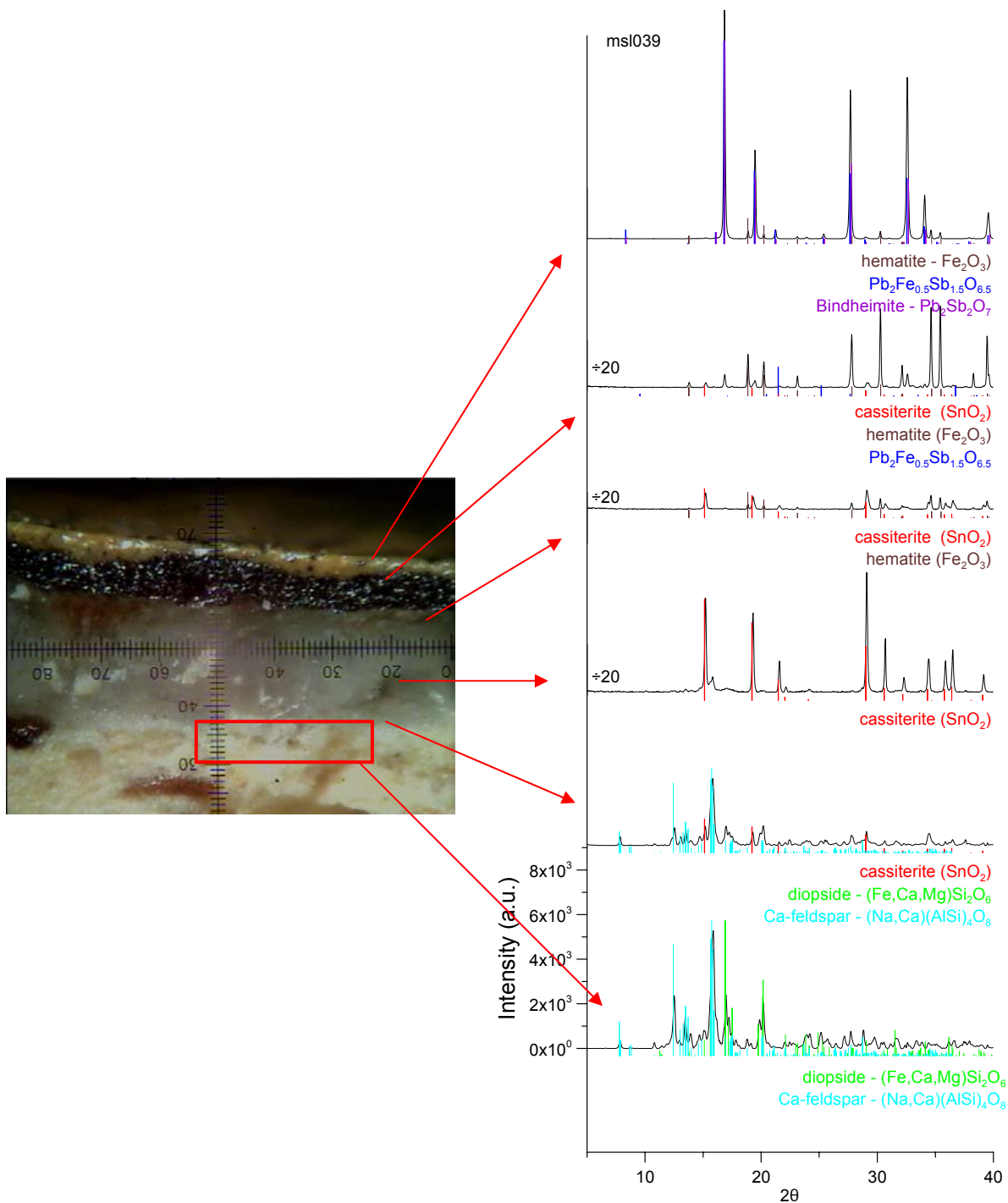
Two sets of the data obtained have been analysed up to now, giving two presentations to the conference ISA2010, the results will be sent to a journal for publication in the next few months:

- "Potters and pigments: preliminary technological assessment of pigments recipes of American majolica" Javier G. Iñáñez, Marisol Madrid, Judit Molera, Robert J. Speakman, Trinitat Pradell

Majolica is the most characteristic tableware ceramic from the European colonial period found in the Americas, late 15th to 18th centuries. The introduction of this new ceramic technology into the preexisting American societies is one of the major technological innovations that Europeans introduced during the contact period. This new ceramic, rapidly replaced the secular social valuable ceramics in many regions of the continent, becoming a social prestigious item by itself, which carried an intrinsic social and cultural meaning within the new society that emerged as a consequence of the European arrival.

Even though majolica making technology is a very standardized production, differences between production centers can be traced down archaeometrically. Thus, diversity on the nature of glazing technology and, especially, the pigments used for the decoration of the majolica glazed coats might be related to different potting traditions, not only European, but also influenced by the preexisting prehispanic ones.

The present study represents the first steps towards the characterization of the different technologies used for majolica making, emphasizing the differences on the nature of the pigments that ancient craftsmen made use of, in order to achieve the outstanding decorations of the majolica pottery produced in the Americas. As a result, 41 majolica sherds from Puebla (15), and Oaxaca (8), both in Mexico, 7 from Guatemala, 7 from Panama and 4 from Mission San Luis (Florida) were analyzed by means of Laser Ablation Inductively Coupled Mass-Spectrometry (LA-ICP-MS). A subsample set of individuals was further studied by Scanning Electron Microscopy (SEM), and micro-X-ray diffraction (μ -XRD). The combination of micro-chemical and micro-structural techniques is able to give a cross section profile of the compounds and gives information about the nature and distribution of the pigment compounds used, their dissolution in the glassy matrix and the formation of new crystalline compounds. These data will give information about the glazing technology.



- “Romita ware: Technological characterization of a hybrid colonial ceramic
 Javier G. Inanez; Jaume Buxeda; Marisol Madrid; Judit Molera; Trinitat Pradell;
 Robert J. Speakman

Romita pottery (Figure 1), also known as Indígena ware (Lister and Lister, 1982) or Loza Indígena (Fournier et al., 2007), is found in greatest abundance in Colonial period contexts in Mexico (Lister and Lister, 1982; Fournier et al., 2007). Romita pottery is earthenware covered with a white slip and a transparent Pb glaze, which results in a white and shiny appearance that is visually similar to tin-glazed Spanish majolica. Romita pottery occurs in many typological forms, such as porringers with leaf-shaped

handles, compound-silhouette plates, bowls, and other forms similar to the forms of Spanish, Italian, and Mexican majolica serving vessels. Achieving a similar ceramic, at least in external appearance, to the majolica ceramics, already in circulation at that time throughout Mexico, would have been among the main motivations for the original Romita potters. Consequently, Romita ware is one of many exponents marking the incipient transculturation process that occurred as a consequence of the European arrival to Americas. The technological characterization of Romita pottery is an important step in better understanding technological change, transculturation, socio-political, and economic issues in Spanish Colonial Mexico.

