

## **CHEMICAL CLASSIFICATION OF THE SLIP LAYERS IN ITALIAN CERAMICS OF THE XV-XVII CENTURY**

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The use of slip layers as coating is typical of slipped/glazed and sgraffito ceramics from XV to XVII century, produced in several localities all around Italy. In addition a slip coating can be present under the opaque glaze layer in majolica artefacts of some Italian centres. This work deals with the study of artefacts attributed, through stylistic approach, to important ceramic manufactures in central and northern Italy.

Representative samples have been analyzed for the purpose of characterizing and classifying their slip layers according to the chemical composition. Observations by optical microscopy on thin section have been carried out in order to determine the structure and the average thickness of the slip and to obtain information on its application time, before or after cooking of the ceramic body. Scanning electron microscopy combined with energy dispersion spectroscopy (SEM-EDS) has been performed for individuating the chemical composition, which has been useful for classifying the slips and defining their provenance.

Investigations indicate that ceramic slip layers of the various production sites have always been produced using clays that turn white during firing, in accordance with their ornamental and functional role of covering and hiding the red colour of the paste. The slip layers were obtained from different raw materials, in contrast with the common idea of an unique source from Vicenza area, in north Italy. As a consequence it has been possible to reconstruct the areas where the same type of slip was used. For example a Mg-rich slip is used in several centres of Tuscany, while Mg-poor slips are characteristic of productions in north-eastern Italy. Chemical composition of the slip of slipped/glazed ceramics sometimes differs from that of majolica produced in the same productive centre. This difference could be explained with the hypothesis of a change in the position of clay excavation, or could suggest a different way of preparing the slip before its application.