

## Introduction

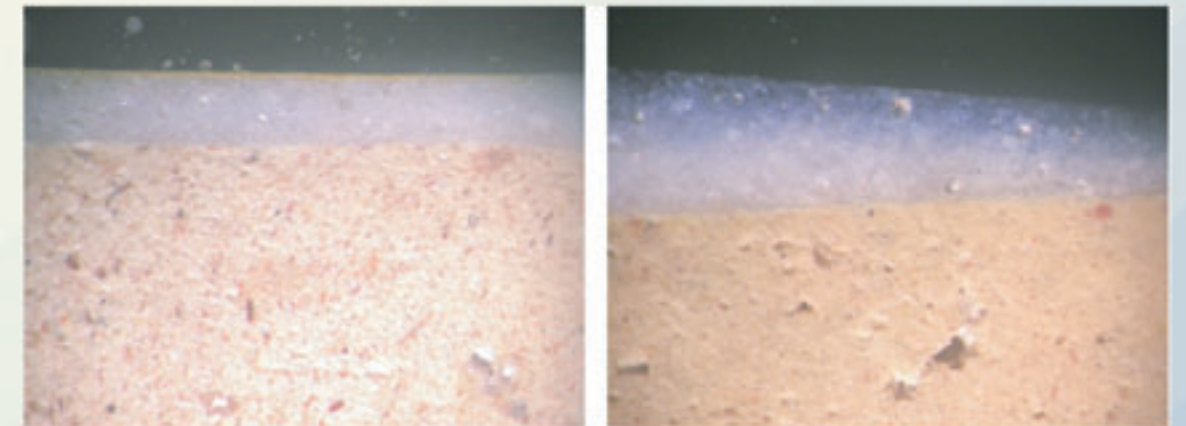
Majolica is a ceramic ware type, which was produced in the Iberian peninsula based on Islamic traditions from 14th century on, but especially flourishing in 16th and 17th century. Its characteristics are a thick lead-glaze decorated with paintings using predominantly green and black, or blue and yellow pigments, or metallic lustre. The vessel forms comprise mainly plates and bowls, but also jars.



Examples of archaeological Majolica

## The matrix

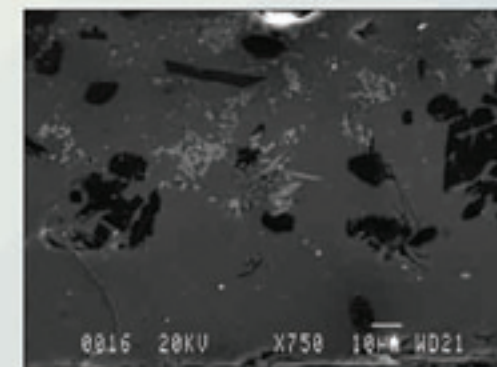
As the final decoration needed a white background, and as pure lead-glazes are transparent, highly calcareous clays (CaO about 15%) with low Fe contents were used in order to achieve a pale colour already for the body of the vessels.



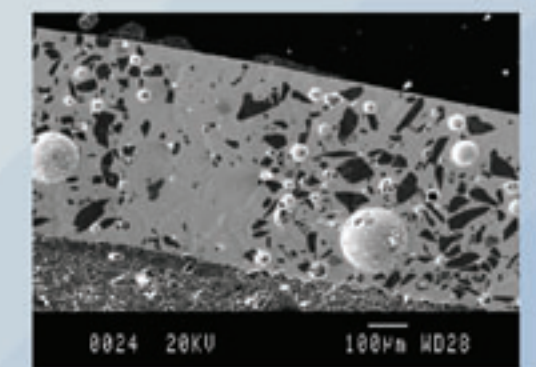
Cross sections of archaeological Majolica under the optical microscope

## The glaze

In order to achieve a fully white background for the decoration, the lead-glazes needed to be opacified by addition of tin oxide. Additionally, inclusions or bubbles in the glaze contribute to the opacification.



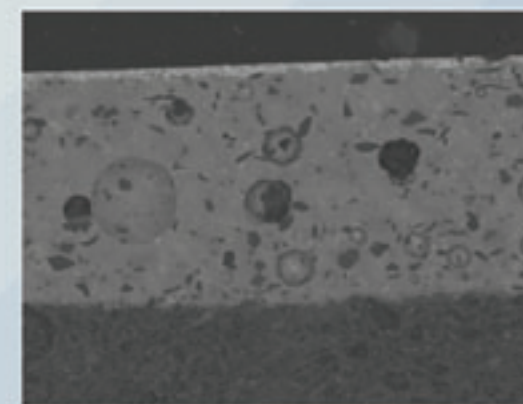
Tin opacified glaze  
(SnO<sub>2</sub>: light grey particles)



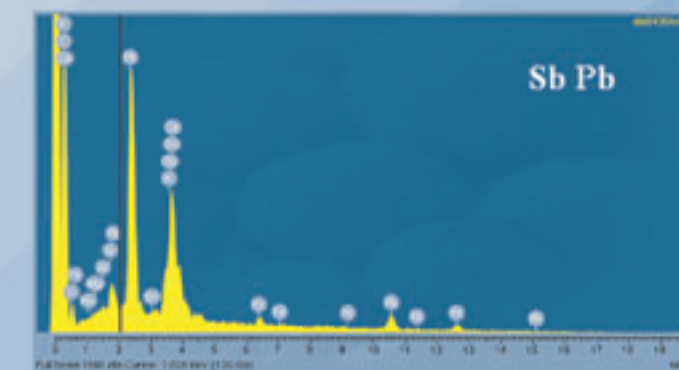
Quartz inclusions in glaze

## The decoration

The decoration was painted over the glaze. Used pigments were Cobalt for the blue, and Lead Antimonate for yellow. Lustre is achieved by a thin metallic layer of Ag and Cu at the surface of the glaze



Pigment layer at the surface



EDX spectrum of yellow pigment

## The firing

For archaeological samples different firing cycles can be found, from just one firing for vessel and glaze at the same time, up to three different firings, one for vessel (*biscuit firing*), glaze and decoration in a separate glaze layer, free of opacifiers, each (*Coperta technique*).



Schematic sketch of a kiln