

## **CERAMICS MATTER: 16<sup>TH</sup> EDITION OF THE EUROPEAN MEETING ON ANCIENT CERAMICS – EMAC 2023 & 1<sup>ST</sup> EMAC SCHOOL**

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The European Meeting on Ancient Ceramics (EMAC) is a biennial conference convening scholars and young researchers with diverse academic backgrounds from both the humanities and sciences. The meeting aims to promote interdisciplinary and integrated studies of ancient ceramics, covering various aspects ranging from production, dissemination, and use to post-depositional alteration and conservation. Methodological developments, new approaches, and scientific advances are presented in terms of analytical and measuring techniques, data processing, and interpretation.

After two years of postponement, the 16<sup>th</sup> edition the European Meeting on Ancient Ceramics 2023 is back as in-person conference in Italy, which was the very first venue of EMAC. The 16<sup>th</sup> edition of the EMAC conference was initially expected for 2021, when it was postponed due to the pandemic; to keep active the community and promote the scientific discussion, in July 2021 a three-day online event - WAITING FOR EMAC2023@Pisa - offered the opportunity discussing recent research and future prospective on ancient ceramics studies, also favoring the participation of PhD students, post-doc, young researchers.

Organized by CNR-ICCOM-Pisa, in collaboration with the Dept. of Civilizations and Forms of Knowledge and Dept. of Chemistry of the University of Pisa, the 16<sup>th</sup> edition of EMAC Conference is introduced - for the first time - by a two-day School hosted by the University of Pisa in the amazing frame of the Collection of Plaster Casts and Antiquities and focused on the application of portable, non-destructive, non-invasive methods for the study of archaeological ceramics. Theoretical sessions given by scholars from different countries and research fields will introduce practical workshops.

During EMAC 2023 conference, researchers from both European and not-European countries will entail discussions on different topics, casting a glance over recent advances in ancient ceramics studies. To join the 2023 celebration of benefits and success of Open Science, a special session on Digital archaeology and pottery studies will introduce the Plenary session, set to be a fascinating exploration of the implications of Open Science and Open Data for ceramics studies.

This year, the collaboration with Siriusgame offered the opportunity for an epistemological reflection over our discipline, getting a glimpse of themes related to inclusion and democratization of science within the traditional EMAC scientific session; highlight the role of women in the production of ceramics, de-colonise the study of ceramics, discuss ethical issues in working with minorities and underrepresented communities, promote an inclusive research design through a continuous dialogue with expert whose work is committed to promotion of D&I, are some of the inspirations proposed.

The high quality of received contributes – included in this special edition of Plinius - enabled to build a rich scientific program, embellished by glamour social activities in the frame of the vivid city of Pisa.

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## THE ORIGIN OF THE LEAD USED IN THE PRODUCTION OF GLAZES: THE CASE OF MAIOLICA MADE IN THE FLORENTINE AREA BETWEEN THE 15<sup>TH</sup> AND 19<sup>TH</sup> CENTURY

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The production techniques and materials used for the manufacture of Italian maiolica during the Middle Ages and the Renaissance have been broadly studied in the past. However, very little is known about the provenance of the raw materials used to produce the tin-opacified glaze typical of maiolica. This study aims at obtaining a first set of data on the provenance of lead used as flux in the production of maiolica glazes in the Florentine area.

Maiolica wares made between the 15<sup>th</sup> and 19<sup>th</sup> centuries were analysed to trace the lead's origin and its possible variation over the centuries. Two of the main productions of Tuscany were investigated: the one of Montelupo Fiorentino and the Ginori manufactory in Doccia (Florence, Italy). The analysis of lead isotopes was performed by thermal ionization mass spectrometry (TIMS). Moreover, the samples were analysed by scanning electron microscopy (SEM-EDS) to characterize their layered structure and chemical composition.

Isotope analysis showed that the samples tend to be distributed into distinct groups according to their historical period of production. This indicates the potentiality of discriminating between maiolica produced at different times by lead isotope analysis, although a larger dataset would be needed to confirm this. The comparison with the lead isotope composition of the deposits of the European and Circum-Mediterranean area, from which lead was historically extracted, showed that the isotopic composition of samples differs from that of the Italian deposits, suggesting that lead was imported from abroad. All the samples are compatible with German ore deposits, in agreement with historical sources: Cipriano Piccolpasso mentions the proverb 'piombo tedesco, stagno fiandresco' ('German lead, Flanders tin') in his famous treatise about maiolica written in c. 1557. At the same time, also the lead deposits of Great Britain, Bulgaria, France, and south-western Switzerland are isotopically compatible with the investigated maiolica glazes and cannot be excluded as possible centres of supply.

Lead isotope analysis on Tuscan manufactories investigated provided promising results for the reconstruction of Italian maiolica technology and the commercial relations in the European and Mediterranean area over time.

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