

CERAMICS MATTER: 16TH EDITION OF THE EUROPEAN MEETING ON ANCIENT CERAMICS – EMAC 2023 & 1ST EMAC SCHOOL

RANERI S.

Italian National Research Council, Institute of Chemistry and OrganoMetallic Compounds, Pisa,
simona.raneri@pi.iccom.cnr.it

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 16th 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 16th 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 16th 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.

The support of the Italian Society of Mineralogy and Petrology (SIMP) to the 1st edition of EMAC School and the 16th edition of EMAC Conference is acknowledged.

MAIOLICA SEEN BY VIS-NIR HYPERSPECTRAL IMAGING: THE APPLICATION OF AN ULTRAPORTABLE CAMERA AT THE MUSEO NAZIONALE DEL BARGELLO

GALLUZZI F.^{1*}, PUNTIN M.², MANCA R.³, SCIUTO C.², PAGHI D.³, BENVENUTI M.³, CHAPOULIE R.¹

¹ Archéosciences Bordeaux /UMR 6034 CNRS, Université Bordeaux Montaigne, France

²MAPPA Lab, Department of Civilizations and Forms of Knowledge, University of Pisa, Italy

³Dipartimento di Scienze della Terra, Università degli Studi di Firenze, Italy

*francesca.galluzzi@u-bordeaux-montaigne.fr

Keywords: hyperspectral imaging, glazed pottery, Museo Nazionale del Bargello

Collections of glazed ceramics in museums represent a key resource for the study of the manufacturing techniques and materials used, as well as the evolution of museography and restoration strategies over time. The investigation of museum objects, however, can be challenging since it often requires the use of non-invasive techniques and ultraportable instruments. Hyperspectral Imaging (HSI) presents several advantages in this context since it i) allows to perform non-invasive and contactless analysis; ii) can be performed with highly portable cameras; iii) does not provide health and safety constraints linked to ionizing radiation; iv) is fast and easy for data acquisition, thus allowing the screening of large areas and/or a high number of objects (Sciuto et al., 2022).

In this study, we propose the use of an ultraportable HSI camera (IQ-SPECIM) operating in the Vis-NIR range (400-1000 nm) for the study of a selection of tin-glazed pottery (maiolica) of the Museo Nazionale del Bargello in Florence (Italy). The study aimed to acquire information on original Renaissance maiolica, 19th-century forgeries and pastiches of authentic and forged/restored parts, distinguishing between them. Multivariate statistical modelling such as PCA (Principal Component Analysis) and SAM (Spectral Angle Mapper) led to clear analytical discrimination and exact localization of the restored/forged areas and the original ones in the objects under study. Through multivariate modelling, it was also possible to identify outlier pixels due to scattering effects. Moreover, HIS and XRF mappings (Manca et al., 2019) proved to be complementary in identifying colouring agents and, in some cases, in highlighting differences between glazes with similar colours but slightly different compositions; for example, different types of cobalt-based blues were recognized.

In conclusion, this study showed that ultraportable HSI cameras can be a powerful tool for a fast and straightforward screening of museum collections to discriminate between different types of glazes and pigments in maiolica wares and verify their authenticity. The acquisition of a more extensive HSI database is therefore suggested.

ACKNOWLEDGEMENTS

The authors warmly thank Dr Marino Marini, curator of the Museo Nazionale del Bargello, for providing access to the collection.

REFERENCES

- Manca R., Tartaglia E. & Benvenuti M. (2019): Analisi archeometriche per l'autenticazione di maioliche conservate presso il Museo Nazionale del Bargello - Analysis report, Dipartimento di Scienze della Terra Università degli Studi di Firenze, 111 pp.
- Sciuto C., Cantini F., Chapoulie R., Cou C., De la Codre H., Gattiglia G., Granier X., Mounier A., Palleschi V., Sorrentino G. & Raneri S. (2022): What Lies Beyond Sight? Applications of Ultraportable Hyperspectral Imaging (VIS-NIR) for Archaeological Fieldwork. *Journal of Field Archaeology*, **47** (8), 522–535. <https://doi.org/10.1080/00934690.2022.2135066>.