Ceramic Glazes Studies Meeting

Thin-section petrography of Chinese glazed ceramics

Chandra L. Reedy, University of Delaware (USA)

Thin-section petrography provides information on the raw materials and technological processes used in glazed ceramics. Insights come from a combination of traditional optical microscopy and emerging image analysis methods; statistical tests with qualitative and quantitative data to highlight significant variations; and the examination of sequence within a ware, including underfired glazes that contain incompletely melted batch materials, correctly fired glazes of higher quality, and overfired ones. The research methods are illustrated with a variety of case studies of Chinese glazed ceramics.

Thin-section petrography of decorated lead glazes

Roberta Di Febo, University of Vic – Central University of Catalonia

Due to their small size and growth habits, micro-crystallites are usually difficult to determine on the polished cross section of glazes. Thin-section petrography is a very powerful tool that reveals the presence, growth habits and distribution of micro-crystallites. The combination of thin-section petrography with SEM-EDS and SR-μXRD analyses can overcome difficulties related to the use of the polished cross section of glazes.

Medieval pottery workshops: from waste to the rebuilding of the "chaine operatoire"

Jaume Coll, Director of the National Museum of Ceramics and Decorative Arts "González Martí", Valencia

Findings on the production of waste and the archaeological structures of workshops are the first step towards understanding the knowledge and technology required to manufacture ceramics at a given time. The remains of lathes, settling ponds, clay

deposits containing pristine raw materials, kilns and workshops provide a vivid picture of the daily reality of the workshops' trade and ergonomics.

The della Robbia glazed terracotta production and the evolution of Cobalt Blue raw materials

Alessandro Zucchiatti, Director of the Centre for Microanalysis of Materials (CMAM), Madrid

The century-long della Robbia production of glazed terracotta sculptures, characterized by a predominance of white figures on a blue background, provides insight into the fabrication technology and the use of raw materials. There is evidence of a sharp change in the blue base ingredients, which clearly corresponds with some ancient documentary sources. We discuss how ion beam analysis and, recently, synchrotron radiation, can help to understand the use of cobalt throughout the Renaissance.

Galena transformation during the firing of lead glazes

Judit Molera, University of Vic – Central University of Catalonia

The transition reactions of galena during firing were investigated in a time-resolved high-temperature SR-μXRD experiment. The study revealed some mineralogical transformations that were previously observed in archaeological lead glaze. Furthermore, we could estimate the ranges of thermal stability, and relate them to specific raw materials, glaze composition and firing characteristics.

Colour and nanostructure of lustre ceramics

Trinitat Pradell, Universitat Politècnica de Catalunya, BarcelonaTech

Lustre is a decorative glaze with a colourful metallic and iridescent appearance of sparkling beauty. It is among the first technologies that made use of the peculiar optical properties of nanostructures, and in particular, metallic nanoparticles. This talk unveils the science behind lustre: how the nanostructure is obtained, how it is related to the colour and shine, and the main features of historical lustre production.

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