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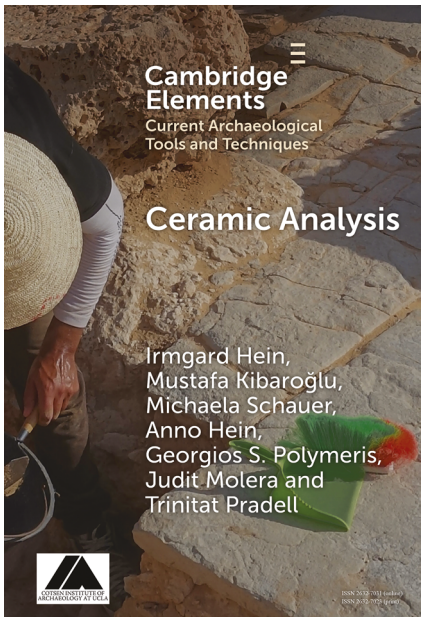
Book reviews

Ceramic Analysis: Laboratory Methods
Irmgard Hein, Mustafa Kibaroğlu, Michaela Schauer, Anno Hein, Georgios S. Polymeris, Judit Molera and Trinitat Pradell, 2025.
Cambridge: Cambridge University Press, 85 pp., ISBN 9781009530774 (online), DOI: http://dx.doi.org/10.1017/9781009530774



Ceramic Analysis: Laboratory Methods, published by Cambridge University Press, provides a concise yet relatively comprehensive overview of the analytical methods employed in the study of archaeological ceramics. The authors aim to present the laboratory approaches currently used in ceramic research while familiarising readers with their potential applications to archaeological questions. The publication is conceived primarily as an introduction to the subject and focuses on presenting a broad range of methods that can be applied both to the characterisation of ceramic materials and to wider archaeometric research.

The book is divided into several thematic sections covering the main areas of contemporary archaeological ceramic analysis. Following an introductory chapter outlining the significance and characteristics of archaeological ceramics, the authors present an overview of visualisation methods as well as microstructural, mineralogical, and chemical analytical methods. Subsequent chapters address the study of the physical and thermomechanical properties of ceramics, technological aspects of ceramic production – particularly firing processes – thermoluminescence dating, the analysis of glazes and other surface treatments, and the statistical approaches to the evaluation of analytical data. This structure provides readers with a quick overview of the broad range of analytical methods currently available.

One of the most notable strengths of the publication is its clarity and well-structured presentation. Each analytical method is presented in a systematic manner, including a concise explanation of its underlying principles, potential applications, sample preparation requirements, and the principal advantages and limitations of the method. Readers therefore gain not only a basic understanding of how each method works but also of the type of information it can provide in the study of archaeological ceramics. This approach is particularly valuable for students and early-career researchers seeking an initial orientation in ceramic archaeometry.

A significant contribution of the publication is that it is not limited solely to laboratory-based analytical methods. For several techniques, portable methods are also introduced, enabling the non-destructive investigation of ceramic artefacts directly in the field, museums, or depository. The authors thus highlight the possibilities for obtaining analytical data even in cases where sample collection or transport is not possible or is undesirable from the perspective of cultural heritage preservation. The inclusion of these methods significantly enhances the practical value of the publication while reflecting current trends in archaeometric research, which increasingly relies on flexible analytical approaches rather than exclusively on specialised laboratory facilities.

Another valuable feature is the inclusion of a concise overview of ceramic production technology. Although this section is relatively concise given the scope of the publication, it provides the reader with a basic overview of the individual stages of production and their impact on the resulting properties of the ceramic material. It therefore complements the analytically focused chapters and helps readers better understand the types of information that individual analytical methods can reveal about ceramic artefacts. Particular attention is devoted to firing, which significantly influences the structure, composition, and physical and chemical properties of ceramics and represents one of the key variables investigated in ceramic archaeometry.

This chapter is followed by a chapter devoted to thermoluminescence. The authors provide an overview of the method, explaining its application to the dating of fired ceramic materials. The chapter is presented in a clear and accessible manner. Nevertheless, its placement within the overall structure of the volume may appear somewhat unusual. Whereas most of the book provides a broad overview of analytical techniques and their applications, this section devotes considerable attention to a single specific method. However, although its inclusion in the overall structure of the book may seem somewhat unexpected, this should not be regarded as a significant weakness.

The chapters focusing on the study of glazes and other surface treatments of ceramic artifacts are also valuable. Here, the authors introduce analytical approaches suitable for the characterisation of these surface layers and demonstrate how the resulting data can contribute to understanding manufacturing technologies and production practices, thereby showing that ceramic analysis extends well beyond the investigation of the ceramic body itself. These chapters extend the scope

of the publication beyond basic material characterisation and provide readers with a more comprehensive understanding of the possibilities offered by contemporary ceramic archaeometry.

One aspect that could have been developed further is the inclusion of a greater number of practical case studies. While the publication presents the individual analytical methods, their principles, and their potential applications very effectively, it provides only a limited number of examples demonstrating their application to specific archaeological problems. Contemporary archaeometric research increasingly relies on the integration of multiple analytical approaches whose results complement one another. The combination of petrographic, microstructural, mineralogical, and chemical data often enables interpretations that would not be possible using a single analytical method alone. The inclusion of a larger number of case studies would therefore have better illustrated not only the practical application of individual analytical methods but also the benefits of combining multiple analytical approaches when addressing specific archaeological questions.

However, this comment should be considered in light of the publication's main objective. Ceramic Analysis: Laboratory Methods is not intended to be a detailed methodological handbook or a collection of archaeometric studies. Rather, its primary aim is to provide an overview of the analytical methods currently available and to facilitate readers orientation within the broad spectrum of methods used in the study of archaeological ceramics. In this respect, the authors have successfully achieved their goal.

Overall, the publication represents a successful introduction to the analysis of archaeological ceramics. The book's main value lies not in the detailed treatment of individual analytical techniques but in its ability to present readers with a broad overview of the analytical methods that can be applied in archaeological ceramics. The book will be a useful resource, especially for students and early-career archaeologists seeking an accessible introduction to the analytical approaches used in the study of ceramic materials.

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