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考古學陶器化學成分分析方法的運用：以墾丁地區爲例*

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由於成分分析能同時呈現自然與技術變異方面的訊息，因此近年來廣被考古學運用在一些議題的探討上，且業已發揮了其特有的功效與助益。本文主要嘗試應用化學成分分析中的酸液萃取法來進行墾丁地區出土之陶器的成分分析，復輔以岩象礦物分析，期盼經由二者的比對結果，展示化學成分分析的功效，以及其運用於臺灣考古學上的可行性，再進而提供做爲未來研究墾丁地區工藝的生產技術與制度，及其背後各種社會和經濟脈絡等議題的可能方向。

關鍵詞：陶器分析，成分分析，酸液萃取法，岩象（礦物）分析，墾丁地區

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The Application of Chemical Compositional Analysis in Archaeological Ceramics: A Case Study in Kenting Area

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The related questions of the organization of craft production, social interaction, local exchange, interregional and long-term social-political affiliation, regional trade and social boundaries have become major interests for archaeologists in recent years. All these approaches would benefit from the compositional analysis of ceramics. In general, the selection and processing of raw materials of ceramics are directly reflected in their compositional data. Compositional analysis distinguishes among sources of raw materials used in pottery manufacturing. Therefore, it helps to recognize which resources were exploited locally and which non-locally, thereby allowing reconstruction of the organization of production and even the identification of some forms of exchange from which raw materials were procured. Moreover, the composition of ceramic paste is in part determined by cultural practices. Therefore, the composition of ceramics does not just indicate the sources of their specific unprocessed geological raw materials , but also reflects the human behaviors involved in paste preparation, mixing of clays, choice of temper, and firing conditions. The purpose of this research project is to apply the acid-extraction chemical method, complemented by a thin-section petrographic study, to the compositional analyses of certain local ceramic collections (mainly from several sites in the southern Taiwan area). The results present the raw materials used in the ceramic manufactures of two cultural traditions (O-laun-pi Phase II and Phase III-IV) that temporally overlapped. These raw materials came from the same sources but were manufactured in different ways. Particularly, the people of O-laun-pi Phase III-IV procured certain materials to make their pots from either local sources or from somewhere in east Taiwan. The results also indicate possible variation in terms of manufacturing technique among sites of the same cultural tradition.

Keywords: archaeological ceramics, compositional analysis, acid-extraction method, petrographic analysis, Kenting area