

Evaluation of analytical techniques used for the study of cultural heritage

Ioana-Daniela Dulama, Ioan-Alin Bucurica

Valahia University of Târgoviște, Târgoviște, Romania

e-mail: dulama_id@yahoo.com; bucurica_alin@icstm.ro

The aim of this study is to compare the metric systems Analytical Green Star Area (AGSA) and Click Analytical Chemistry Index (CACI) (Mansour et al., 2025a, 2025b), evaluating for the first time their applicability and convergence in the fields of archaeometry and cultural heritage conservation. Unlike traditional analytical methodologies, the study of archaeological and heritage materials is constrained by the specific restrictions of non-destructiveness and the preservation of the physical integrity of unique items, details that take precedence over pure instrumental performance. Both metric assessment tools provide complementary viewpoints for the selection of the analytical method or methods in this situation. AGSA does not take into consideration the risk of irreversible degradation of the sample, while CACI assesses museum and routine feasibility, applying the concepts of click chemistry, is excellent at giving priority to non-destructive and portable methods (i.e., pXRF, Raman, etc.), immediately assessing sample size, logistical expenses, and field mobility.

