

Lumea Nouă Painted Pottery: Experimental Study on Neolithic Ceramic Technology

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Abstract:

The article presents an experimental archaeology project dedicated to the painted pottery from Lumea Nouă archaeological site, aimed to reconstruct the chaîne opératoire of Neolithic ceramic technology in Transylvania. Archaeological, typological-stylistic, and archaeometric data (SEM-EDS, ATR-FTIR, and XRD) are integrated with controlled experiments designed to replicate the procurement of raw materials, preparation of clay and ochre-based pigments, vessel formation, surface treatment, decoration through painting, and firing. The experimental reconstruction of a bichrome globular bowl and its red geometric decoration on a light-yellow slip clarifies the technological options regarding clay selection, levigation procedures, the application and polishing of slips and painted decorations, as well as the optimal drying stages. Firing tests in a single-chamber, ground-dug kiln with a combustion tunnel reached temperatures of 600–800 °C and reproduced the “sandwich”-type internal structure of the original fragments, demonstrating that painted pottery can be produced in simple installations. The results provide robust analogies for interpreting the technological traditions, resource management strategies, and pottery firing practices of the Neolithic community at Lumea Nouă, proposing a replicable methodological framework for investigating other categories of Neolithic painted pottery. Through this article, the proposed project demonstrates how integrated experimental and archaeometric approaches significantly refine the accepted interpretations regarding the Neolithic pottery production.

Keywords: *experimental archaeology, Lumea Nouă, painted pottery, Neolithic, operational chain, ceramic technology*