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Deciphering ceramic workshops practices in classical athens

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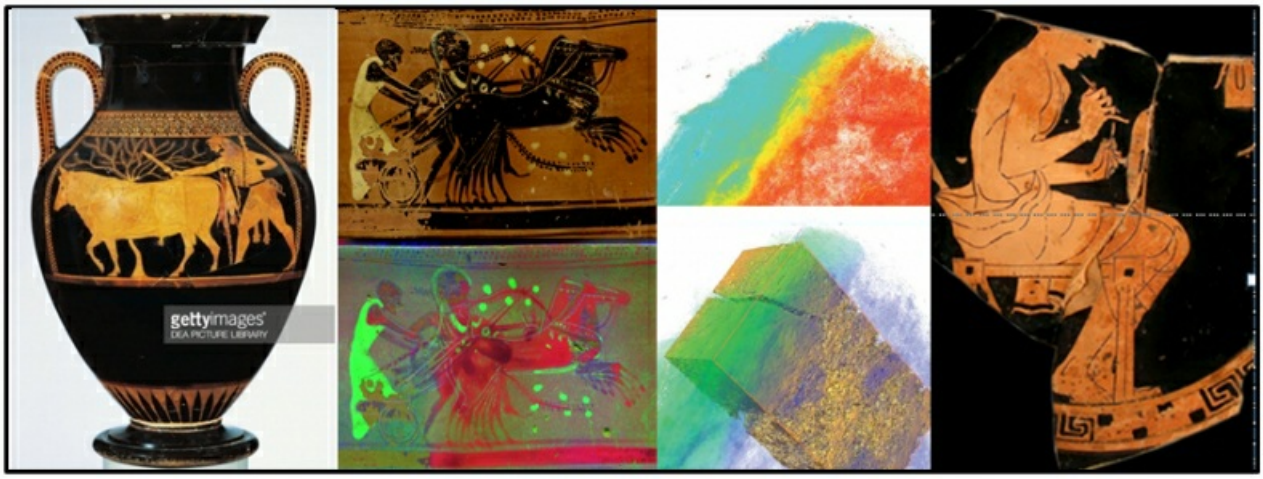
In the late Bronze Age, the Greeks began a long tradition of decorative pottery painted with Fe-rich illite clay, which evolved to produce iconic black and red figure Athenian vessels. The glossy black and reds, and the red-orange ground on the vessels have similar bulk chemistry; the differences in color are created by manipulation of Fe oxidation state and mineralogy through skilled control of nanoscale porosity. Such a precise control of chemistry through porosity is still considered one of the milestones of technological achievement. During the rise of the city-state of Athens (5th cent BCE onwards), the Kerameikos region housed many artisanal "workshops" producing large quantities of these fine ceramics. They were the "high tech" products of the classical era, in demand throughout the Mediterranean basin. Though thousands of fragments from this period have survived, the details of the technology and even the kilns that produced them are lost. In here, I will describe results of a multi-year collaboration between Stanford, Getty Conservation Institute, ESRF and CEMES-Toulouse to rediscover this lost technology through synchrotron x-ray based advance materials characterization. Our current understanding of Athenian ceramic industry is almost entirely based on shape-studies, inscriptional and other decorative evidence, and is very sparse on reliable materials or technological details. Complementing this art historical scholarship with material evidence from products from several Athenian, Corinthian and even Roman workshops allows new insights in to how these workshops really operated, and how a complex and sophisticated technology evolved through competition and collaboration among workshops operating within close proximity producing similar goods.



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