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. This project, a collaboration between Stanford, Getty Conservation Institute and Aerospace Corporation, attempts to rediscover this lost technology through advance materials characterization and replications. Our current understanding of Athenian ceramic industry is almost entirely based on shape-studies, inscriptional and other decorative evidence. Complementing this art historical scholarship with material evidence from products from several Athenian, Corinthian and even Roman workshops allows a glimpse into how these workshops really operated, and how a vibrant technology evolved through competition and collaboration among workshops operating within close proximity producing similar goods.

Apurva Mehta is a staff scientist at SLAC National Accelerator Laboratory with over 30 years of experience in advance material characterization. Over the past 20 years he has worked on several projects of interest to cultural heritage research community.

Wednesday, November 4, 2015
12:00pm - Seminar Room

Location:  Building 500
488 Escondido Mall
Room 106

If you have any questions regarding our events, please contact:

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