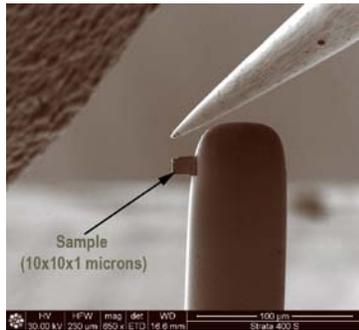


From the nanostructure of an Ancient Greek vase to the field study of rapid stone decay: Recent adventures in analytical imaging for conservation



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Imaging methods have long been used in art conservation for documentation, analysis, and monitoring. Work in nano and biotechnology has extended the usefulness of traditional imaging methods and also opened up new possibilities for the conservation field. Eric Doehne takes us on a tour through two recent projects where the use of imaging methods has helped resolve some long-standing questions.

Ceramics were the “high technology” material of Ancient Greece, used to produce popular drinking vessels and exotic works of art. Starting in Athens, in about 530 BC, a red glossy layer began to be applied to some vases, along with the traditional black gloss. 200 years later the method was abandoned. Analyzing these materials on the nanoscale using FIB/STEM, ESEM, and EPMA, has finally revealed the origins and limitations of this technology.

Monitoring the rate of deterioration of cultural heritage is essential in order to decide what needs our attention and whether our interventions are having the expected results. The use of field time-lapse and polynomial transform imaging has proven to be useful in understanding and working to prevent the rapid decay of dolomitic limestone buildings in the north of England, such as York Minster and the world heritage site of Fountains Abbey.

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