Degradation studies of cultural heritage materials using μ-XANES and μ-XRD

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This kind of information is very important for determining adequate investigated objects, also thanks to modern 3D rendering techniques. Computed Tomography is currently playing an increasingly important way the volume and the internal structure of the metals Cr and Hg in other chemical environments that what they are used, but a certain interest in high energy CT (more than 1 MV) is now growing up. In order to highlight the versatility and the potential of Computed Tomography as a tool of knowledge in the field of Art and Cultural Heritage, we will present the results of several diagnostic investigations carried out by our research group, in collaboration with major restoration and conservation centers, both in Italy and abroad. Among the case studies that will be treated, it is worth mentioning the “Goldfinch Madonna” by Raffaello (CT carried out at “Opificio delle Pietre Dure” in Florence), two Japanese wooden statues of the XIII and the XVII century (CT performed at the Conservation and Restoration Center “La Venaria Reale” in Turin) and a Roman bronze Eros statue dating to the 1st century A.D. (CT scanning carried out at the Getty Conservation Institute, Los Angeles CA, USA). [1] F. Casali, X-ray and Neutron Digital Radiography and Computed Tomography for Cultural Heritage, in: Physical Techniques in the Study of Art, Archaeology and Cultural Heritage, ed. by D. Bradley and D. Creagh, Elsevier, 2006, 61-123.


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Investigations of ancient Egyptian faience using XAS and PD

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Electrodeposition of Platinum on Characteristic Applications of 2D XAS Spectroscopy to the Ancient Egyptian Faience, 4000 BC. Faience is a glazed, quartz-based material that was commonly used to make objects such as beads, pendants, rings, tiles, bowls, jars, gaming pieces and specialist funerary equipment (e.g., [1, 2]). The most common colors are light and dark blue, probably developed to imitate valuable stones, such as turquoise and lapis lazuli, but other colors also occur, albeit less frequently. Faience is relatively common on archaeological sites.