



Istituto Nazionale di Fisica Nucleare
Laboratori Nazionali di Frascati

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WP3.

Task 3.1 INFN-Laboratori Nazionali di Frascati

Characterization of Roman frescoes by Fourier Transform Infrared (FT-IR) reflection Spectroscopy.

Samples 1, 2, 3a, 3b and 4:



Pigments characterization:

- Red pigment (samples 1,2, 3b) characterized as Cinnabar
- Violet pigment (samples 1, 2, 3a, 4) characterized as Hematite/Red burnt earth
- Yellow pigment (samples 1, 2, 3a,4) characterized as Yellow ocher/Goethite
- Green pigment (sample 4) characterized as Green earth
- Blue Pigment (sample 3a) characterized ad Egyptian Blue
- White pigment (samples 1, 2, 3a, 3b, 4) characterized as Calcium carbonate

All the analyzed samples showed the presence of a superficial layer characterized by an IR spectrum compatible with a synthetic substance, probably an acrylic one.

Samples 11, 12 and 13:



Sample 11

Preliminary results:

- White: Calcite
- Mushroom decoration: Egyptian Blue
- Difference between the two greens. Presence of green earth, while the presence of malachite is still under analysis.

Sample 12

- Presence of green earth, while the presence of malachite is still under analysis.

Sample 13

- Presence of green earth, while the presence of malachite is still under analysis.

WP4

Task 4.1 INFN-RM2

Samples: 1, 2, 3a, 3b and 4.

Fluorescence Imaging analysis, by using a Wood lamp, were carried out. All the analyzed samples are characterized by the presence of a superficial patina.

Fluorescence measurements, by the TR-LIF prototype (realized in the ADAMO project) were carried out.

No characteristic emission bands were found neither for the analyzed pigments nor for any superficial coating.

Samples 11, 12 and 13:

No characteristic emission bands were found neither for the analyzed pigments nor for any superficial coating.