

# Multianalytical characterization of priming in Hayez paintings

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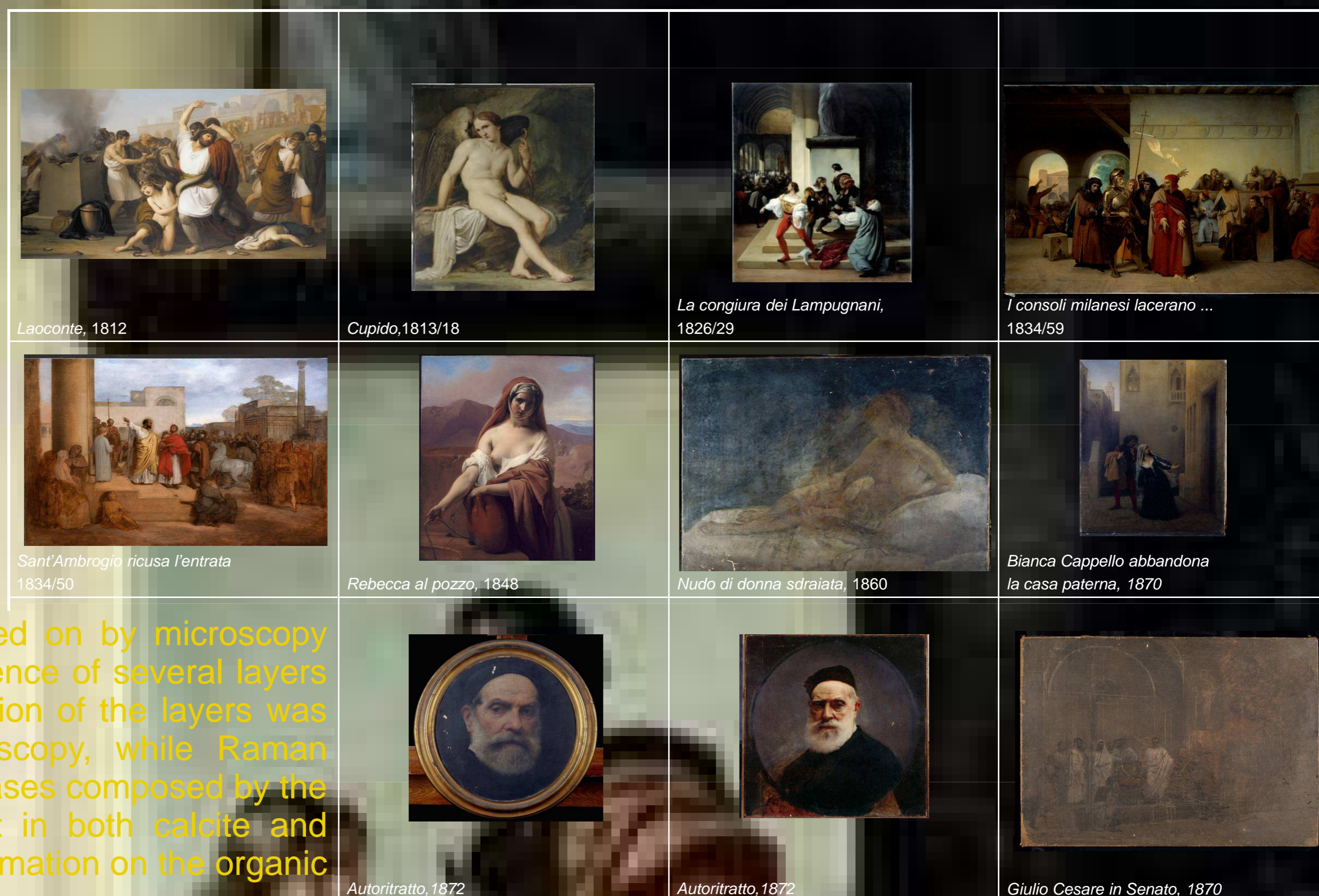
**Background:** The priming and ground layers of a painting have several roles in its making, and they must satisfy both artistic and conservation issues. During 19th century, a revolution in the field of the primings for canvas paints occurred. What was made in small workshop or by the artist himself became an industrial product and many recipes for primings were developed. The study of primings in Hayez works allows evidencing such aspects, as their structure and conservation state appear quite various. Occasionally, degradation aspects of the priming and canvas were also observed.

In this work, we present an accurate characterization of the priming of several paintings by Hayez, chosen over a time span (1812-1879) covering most of his career. The aim is on one hand to give an accurate characterization of the primings and the other hand to assess their effect on the conservation

## Analytical techniques:

- Scanning Electron Microscopy,
- Optical Microscopy,
- Raman Spectroscopy,
- FTIR.

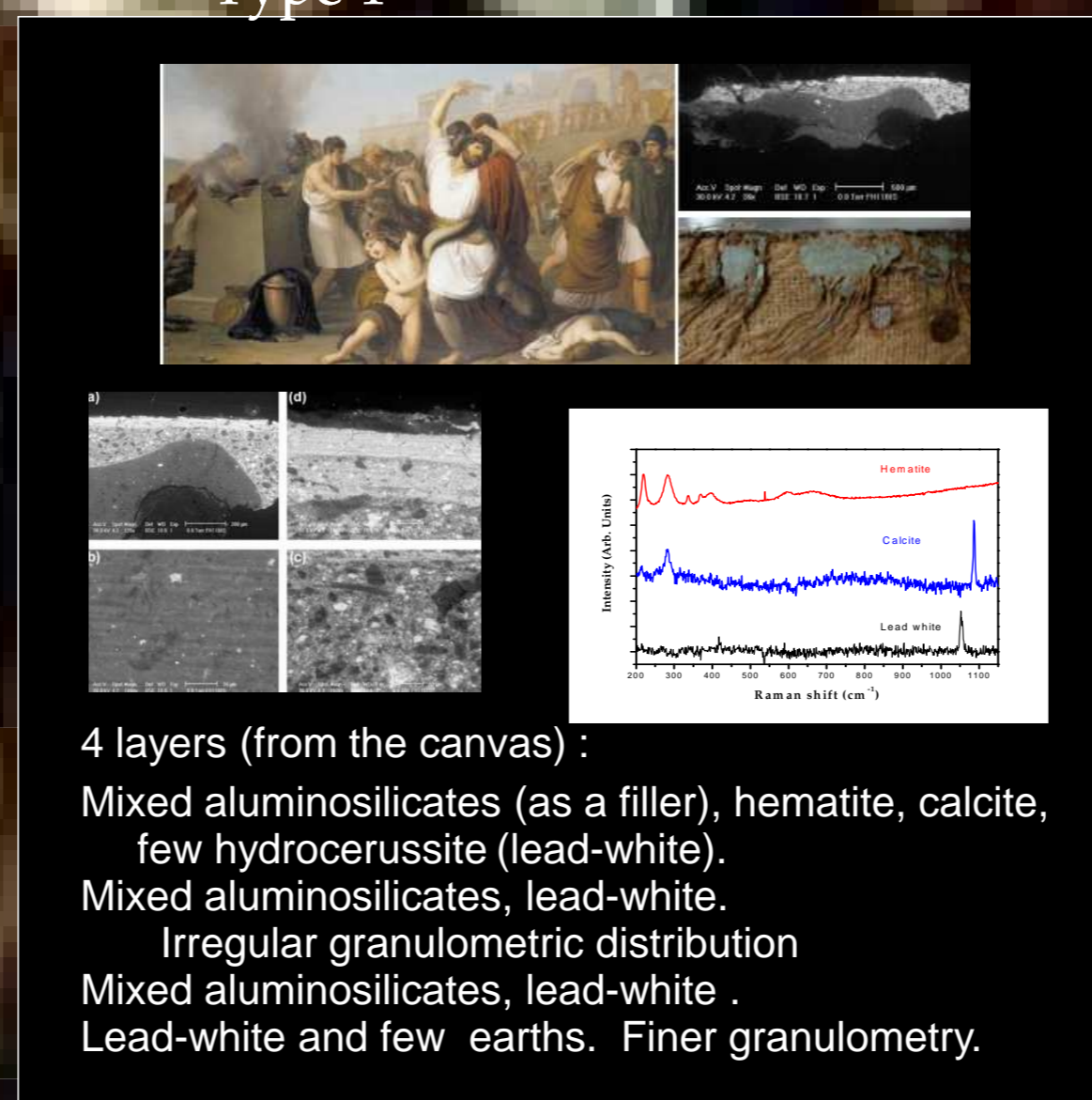
The morphological characterization was carried on by microscopy techniques, able to evidence visually the presence of several layers in the primings. The actual chemical composition of the layers was studied by X-ray energy dispersive spectroscopy, while Raman Microscopy allowed discriminating between phases composed by the same atoms (for instance Ca atoms present in both calcite and gypsum). The FTIR analysis aimed to give information on the organic binders.



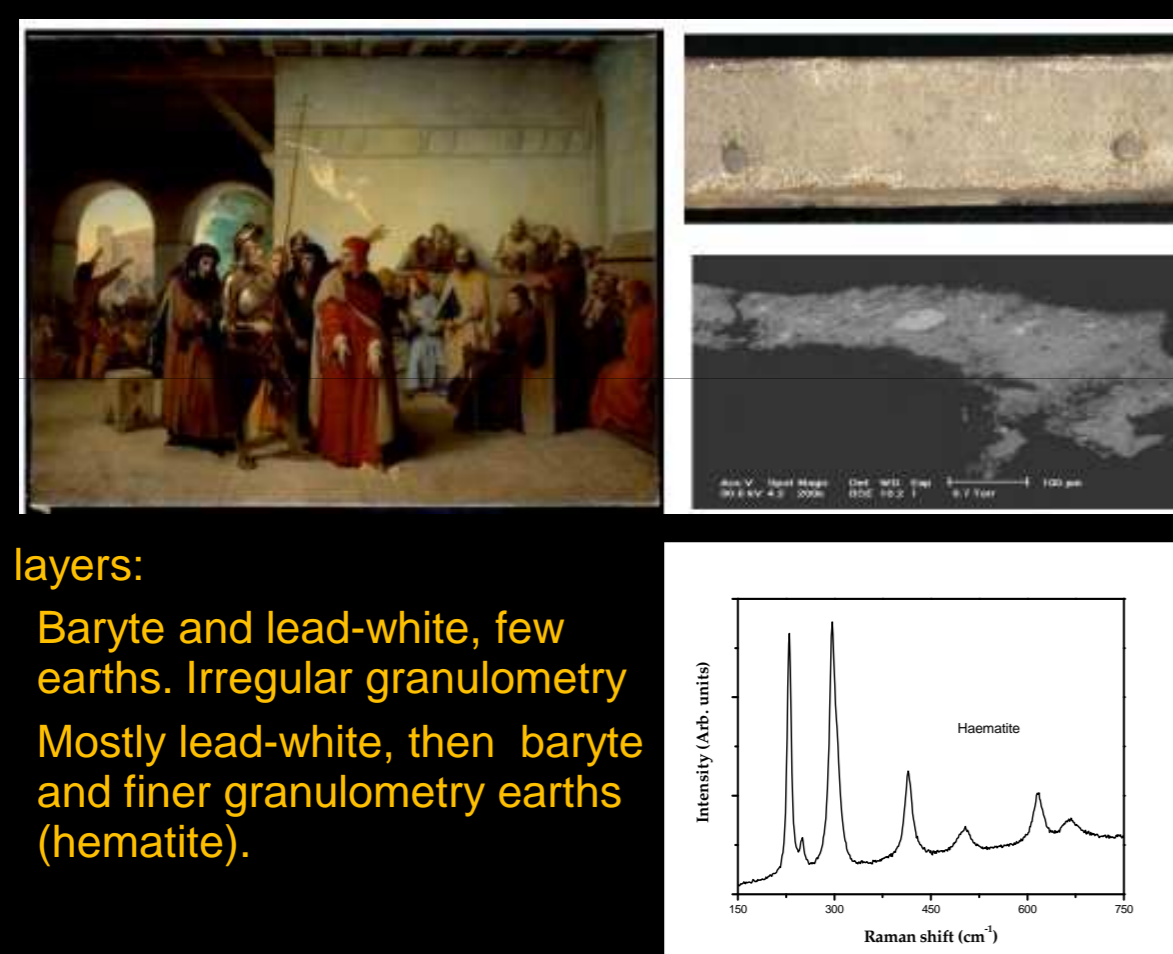
Type 1

Type 2

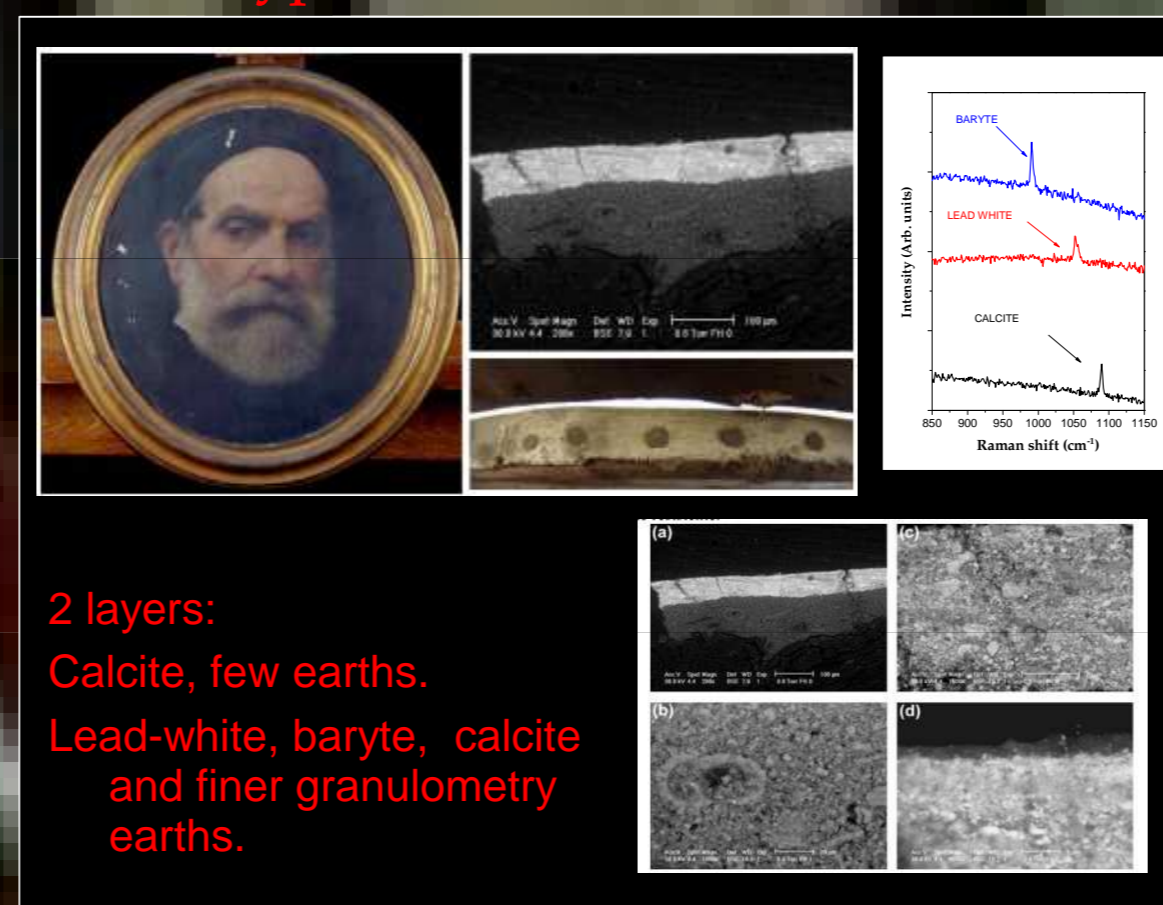
Artwork	YEAR	PRIMING
Laocoonte	1812	Type 1
La congiura dei Lampugnani	1826	Type 2
I consoli milanesi lacerano il decreto di Barbarossa	1834	Type 3
Sant'Ambrogio ricusa l'entrata nel Tempio a Teodosio	1834	Type 3
Rebecca al pozzo	1848	Type 5
Nudo di donna sdraiata	1860	Type 3
Bianca Cappello abbandona la casa paterna	1870	Type 5
Giulio Cesare in Senato	1870	Type 3
Autoritratto	1872	Type 4
Autoritratto	1879	Type 3



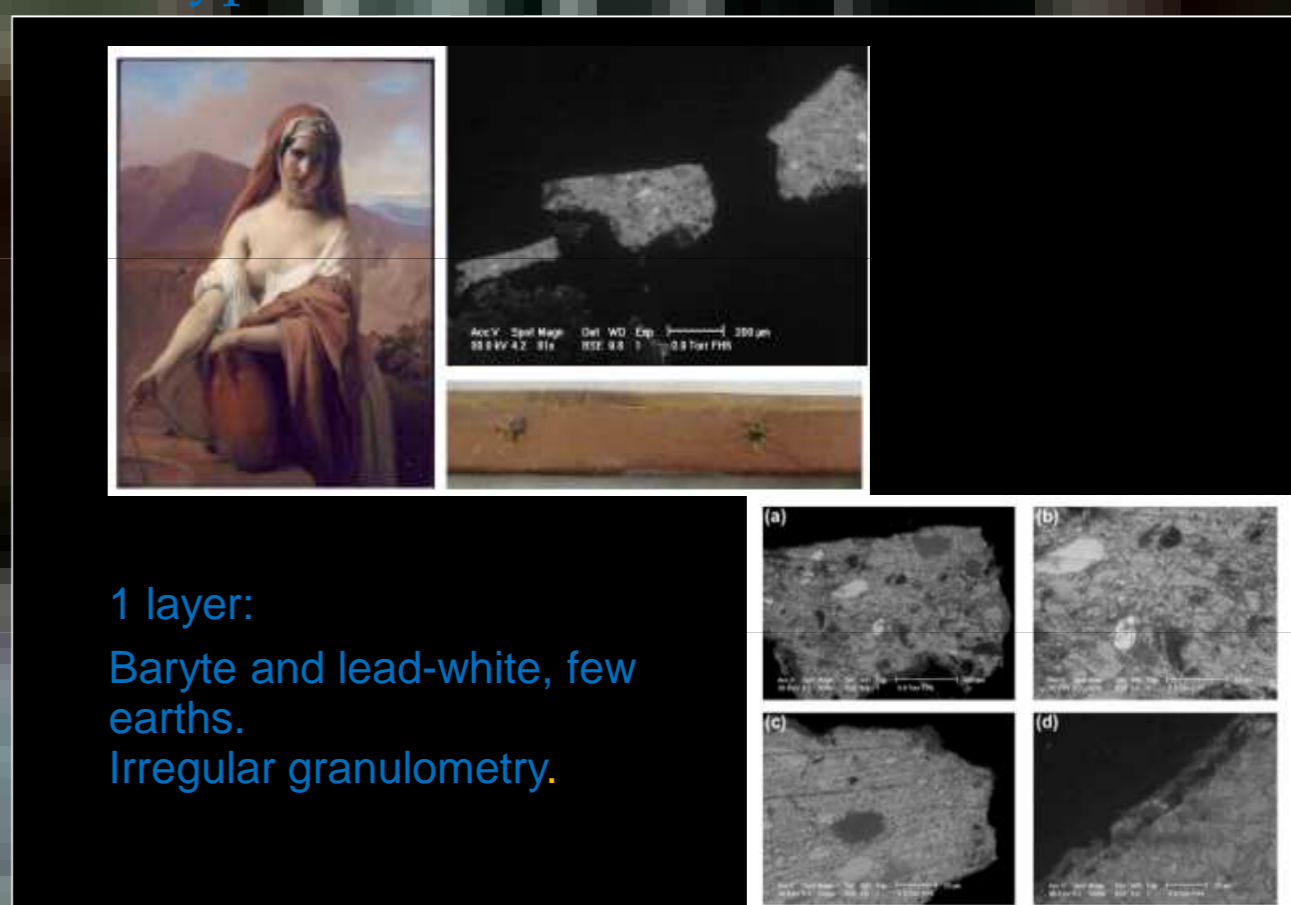
Type 3



Type 4



Type 5



## Conclusions

The study shows an extreme variety in the priming used by the artist. While the main components of the layers of the priming are usually white lead, barite and calcite: their concentration along the thickness (between 100 and 500 microns) of priming may change considerably. Moreover, aluminosilicates (clays/earths) were added as filler.

According to number of layers, composition and grain size at least five different preparation methods for the canvas were recognized.

From the point of view of the conservation, it is interesting to note that separated layers allow blocking of the cracks originating on the surface.