

- IGNORANCE OR BAD FAITH?

New lies on the Shroud that forget science

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Tomaso Montanari claims in the weekly La Repubblica that the Shroud is a painting, but the examination with X-ray fluorescence did not detect any paint pigment: not only is the painting binder missing, the pigment is also missing. How, then, after careful chemical analysis can we say that the Shroud was painted? Either one is scientifically incompetent, or one is in bad faith.

It seems impossible, but there are still those who think that the Shroud is a painting. And no poor person thinks it, but even an art historian, Tomaso Montanari, who writes it in Il Sabato, the weekly magazine of La Repubblica, on April 24 last, on p. 79.

The history of the painted Shroud is old: it dates back to forty years ago, when an American chemist, Walter C. McCrone, supported it in the scientific journal [The Microscope Journal](#).

McCrone had the opportunity to examine under a microscope some slides containing fibers taken from the Shroud and found the presence of proteins, iron oxide (which he interpreted as ocher) and mercury sulfide (cinnabar). From this he drew the conclusion that the Shroud is a painting, in which the artist would have used an adhesive made up of animal proteins both for the iron oxide pigment with which he would have created the image, and for the mixture of cinnabar and iron oxide with which he would paint the blood. The binder used would then turn yellow with time.

To establish the validity of a painting hypothesis, the identification of these materials is necessary, but it is not enough. It must also be shown that they are present in sufficient quantities and located in areas that justify what appears to the eye. It must also be shown that their presence cannot be explained more simply by other processes. Moreover, the conclusions reached must be in agreement with the other studies carried out, especially, in this case, with physical research and image analysis. Let us now see how these conditions do not exist in McCrone's work.

By examining the same slides, biophysicist John H. Heller and biochemist Alan D. Adler drew very different conclusions which they published in another scientific journal, the [Canadian Society of Forensic Sciences Journal](#). They pointed out that McCrone used amido black to identify proteins, which is a general reagent and intensely colors pure cellulose. The reactions obtained by McCrone were therefore not due to traces of protein impurities in the linen, but to the cellulose of the fabric that accepted the dye. Its results were therefore not reliable.

Heller and Adler used much more specific reagents, such as fluoroscamine and bromocresol green. Based on the results of these and other complex analyzes, they could affirm with certainty that the red spots are made up of coagulated whole blood, with around serum halos due to the retraction of the clot. This testifies that the blood coagulated on the skin of an injured person and subsequently stained the fabric when the body was wrapped in the sheet; impossible to obtain similar spots even by applying fresh blood with a brush. Protein is present only in blood prints, while it is absolutely absent in all other areas, including those of the body image. Therefore it is impossible to claim that a yellowed protein binder is present in the body image.

On the Shroud there are three types of iron compounds (iron bound to cellulose, iron bound to hemoglobin and iron oxide) which must be clearly distinguished between them. Most of the iron present is in the form bound to cellulose together with calcium during the maceration process of flax. Obviously calcium and this type of iron are found uniformly on the whole sheet.

Spectroscopic and X-ray tests have indeed shown a uniform concentration of iron in the image and non-image areas; therefore it is not iron that forms the figure of the body. A higher iron concentration is observed, as is logical, in the areas of the blood prints, where the iron bound to cellulose, which is everywhere, is added to the iron linked to the hemoglobin of the blood. Here we find the non-birefringent red particles, made up of protein material (blood), which therefore contain the second type of iron that linked to hemoglobin.

Finally, the third type is pure iron oxide (Fe₂O₃). It results from the analysis of birefringent red particles, which have a double origin: they derive from burnt blood and are found in the blood-striated areas; they come from the accumulation due to the migration of iron to the edges of the water spots. This iron oxide is a very small percentage and it should be emphasized that there is no iron oxide on the image or on the blood stains. So not only the paint binder is missing, the pigment is also missing! How then, after such accurate chemical analyzes, can we continue to claim that the Shroud was painted? Either one is scientifically incompetent, or one is in bad faith.

Moreover, with a specific analysis, it was observed that the iron oxide, in those few places where it is present for the aforementioned causes, is extremely pure and does not contain traces of manganese, cobalt, nickel and aluminum above 1 %. These traces are instead present in the mineral paint pigments. Only a cinnabar particle was found, which is to be considered an accidental finding. [The examination](#) of the whole Shroud with X-ray fluorescence did not reveal any paint pigment, therefore not even cinnabar; this substance cannot be responsible for the coloring of red spots, which are certainly made up of blood, simply because it is not present.

It must be considered that many artists have copied the Shroud from life, and therefore the occasional presence of pigments is not unexpected; also because the copies were almost always put in contact with the original to [make them more venerable](#). All this has been known for forty years. Even the radiocarbon dating of thirty years ago has already been authoritatively contested [scientifically](#) and definitively denied last year by an important article published in [Archeometry](#).

How then does Montanari speak of the authenticity of the Shroud as fake news? How can you say "the indisputable scientific truth" that "the Shroud is a medieval French artifact"? Evidently, not being an expert on the relic, he recklessly turned to unreliable sources who deceived him with their - yes - fake news of an alleged falsity seasoned by the ridiculous legend, packaged ad hoc, of the pious artist who creates the Shroud with faith. The zealous art critic hastens to add that "it is certainly not a masterpiece", but then, if he doesn't want to try his hand at the company, why can't he find someone who can do better? I do not add anything other than the only word with which this article by Montanari can be defined: ridiculous.