


THIRD PRIZE



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**Analysis by Raman Microscopy
of powder Samples drawn from the
Turin Shroud**

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Method of sampling and analyzing The samples analysed are dusts recovered through aspiration by G. Riggi from Numana, in 1978 and 1988, in the space between the Turin Shroud and the Holland Cloth stitched to it. Such dusts are conserved at the Fondazione 3M of Milan-Segrate and partly they were freely delivered to G. Fanti for the purpose of study; they were selected and arranged in suitable slides. Those samples have been analysed with the team of prof. Pietro Baraldi (University of Modena and Reggio Emilia, Italy) by means of Raman microscopy.

Conclusions and Perspectives

The analyses with Raman microscopy enabled the presence of hemoglobin and of poorly crystallized iron oxides as blood degradation products to be ascertained.

The presence of a number of pigments and materials used in painting has been referred to a contamination and attributed to the painters who usually prepared copies of the Shroud.

Whereas the presence of some materials can not find an interpretation, the one of Silicon Carbide SiC, typical of the Turkish coast, should confirm the historical datum of the passage of the Shroud in that area.

The Raman technique has supplied interesting new data; the research could be extended to other powders, in order to identify other characteristic materials and thereby widen the database available. An experimental study of the kinetic and conditions of blood degradation as a consequence of heating, light and radiation should be included.