

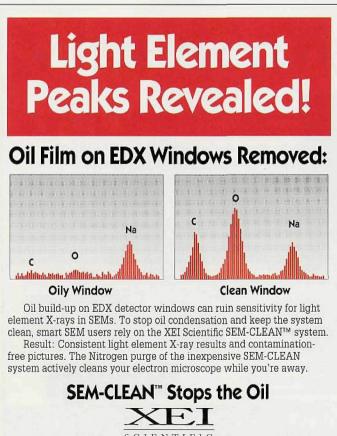
## The Mystery of the Turin Shroud

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In 1355, or close thereto, a 3-foot wide and 14-foot long linen cloth suddenly appeared in history. Greeted rapturously by millions of Christians, it has maintained its acceptance as the true Shroud of Christ from 1300 years earlier. In 1978, a group of about 30 U.S. scientists and engineers studied the Shroud in great detail. All but one concluded the cloth is the burial Shroud of Christ.

The only chemical microscopist in the group came to a negative conclusion and has maintained his position in published papers and lectures since 1979. He found no blood on the shroud as reported by others in the group. He studied 32 sticky tape samples that had been applied to the Shroud surface in a variety of image areas. All 19 of these image tapes showed an abundance of tiny <1-micron red-orange particles. These particles were identified as red ochre pigment by size, shape, color, refractive indices and microchemical tests using polarized light microscopy, by energy-dispersive xray fluorescence (EDS) and x-ray diffraction. There were also tiny vermilion pigment particles in the blood image areas and these were also confirmed by all of the tests listed above for ochre. Yellowed cellulose fibers found predominantly in the image areas are typical of yellowing fibers coated with organic fluids. These image-area yellow fibers were determined to be coated with a collagen tempura by microchemical tests. This paint medium, commonly used in the 14th century explains the yellowed linen fibers, the excellent dispersion of individual pigment particles and the difficulty experienced in picking the pigment particles from the fiber surfaces.

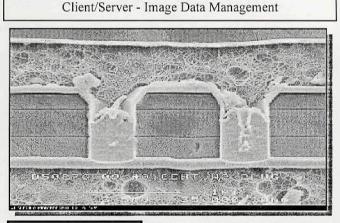
All of the image areas and only the image areas showed the presence of red ochre. The vermilion pigment was found only in the blood image areas. All of the results of this microscopical study consistently confirm the 1355 date and corroborate the report of Bishop Henri at the time that he knew the artist who painted the Shroud. In '1988, three laboratories obtained a date of 1325



SCIENTIFIC 3124 Wessex Way, Redwood City, CA 94061 415-369-0133 • Fax 415-363-1659 for the origin of the linen cloth.

The mystery of the Shroud is - How could the other members of the 1978 study group have found the Shroud to be authentic? And why do they ignore the microscopical data and conclusions?





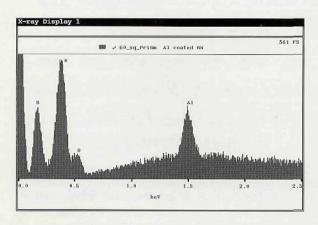
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