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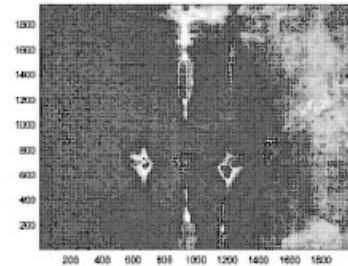
Tom McAvoy was born in Brooklyn, New York, in 1940. He taught chemical engineering for 40 years, first at the University of Massachusetts (1964-1980) and then at the University of Maryland (1980-2004). Since his retirement in 2004 Tom has conducted research on two biomedical engineering projects. He became interested in the Shroud in 2014 and attended the St. Louis Shroud Conference. He is currently looking into the application of signal processing techniques to photos of the Shroud.

ABSTRACT

An Approach to Analyzing Vern Miller's UV Photos that Overcomes Uneven Illumination and Shows How Entire Shroud Fluoresces

A method that overcomes the illumination problem in Vern Miller's UV photos has been developed. This method can be used to calculate uv intensity plots of the entire Shroud. One such intensity plot is shown below.

The colors indicate the ratio of the UV intensity as one moves perpendicular from the right side of the Shroud (edge) to the center (body image) divided by the UV intensity as one moves from the center of the Shroud (body image) to the left side of the Shroud (edge). Yellow indicates a large ratio and blue/purple a small ratio. The results indicate that UV fluorescence intensity is higher near the Shroud edge and lower near the body image. However, it cannot be concluded that the UV intensity changes monotonically. If one goes in the opposite direction from the left to right the same conclusion about UV intensity being higher at the Shroud edge compared to the body image also holds. A very interesting question is what gives the Shroud this very interesting UV intensity property.



In related work UV photos of neutron irradiated linen have been taken. Preliminary results indicate that the neutron irradiated linen fluoresces about 3-4% less than control linen. Since the lowering of intensity is small these UV photographic experiments with modern linen are being repeated and results will be available at the Shroud conference. One explanation for the Shroud's UV intensity results involves neutron radiation. If the neutron radiation occurred from Christ's body at the time of the Resurrection then the edge of the Shroud would have received less neutron radiation than parts close to the body image, and thus they would have fluoresced more.