



Criminalistics Section – 2004

B123 Near Infrared Microspectral Analysis of Trace Evidence

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After attending this presentation, attendees will understand techniques for analyzing representative trace evidence samples in the near infrared. Results from the analysis of basic types of trace evidence useful for aiding scientists with their own identifications.

This presentation will demonstrate the analysis of representative types of trace evidence in a spectral region that has not been previously explored.

The examination of trace evidence by UV-visible microspectroscopy has been an integral part of trace evidence examination for thirty years. Many types of fibers, paints and other evidence of concern have been analyzed in detail for both their color and UV characteristics. However, almost no work has been done investigating the near infrared spectral characteristics of such samples and determining the utility of microspectroscopy in this region as a comparative technique.

By the near infrared region, we mean the spectral range from 700 nm to 2100 nm. This work shows the results of microspectral analysis of a number of representative samples in the spectral region from 700 to 2100 nm as well as an analysis of the results. The major features are described for use by other examiners in their casework. It also discusses the best techniques for preparing samples for analysis in the NIR region.

Near Infrared, Trace Evidence, Microspectroscopy