



Criminalistics Section – 2007

B13 Evaluation of a Hand-Held Raman Instrument for Identification of Hazardous Substances

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After attending this presentation, attendees will understand the strengths and limitations of a rapid method for bulk identification of hazardous substances using Raman spectroscopy.

This presentation will impact the forensic community and/or humanity by increasing awareness of the strengths and limitations of a hand-held Raman instrument for bulk identification of hazardous substances.

Raman spectroscopy is a rapid, powerful, non-destructive analytical technique that is being used by hazardous materials and explosives response teams to assist in the identification of unknown substances in the field. Portable instruments have been used to attempt to identify hazardous chemical and biological materials, drugs, explosive compounds, and unstable substances sensitive to light, heat, or shock. In response to current needs, Ahura Corporation designed the First Defender™ - a hand-held, light-weight, self-contained Raman spectrometer for rapid material analysis. The Counterterrorism and Forensic Science Research Unit, the Hazardous Materials Response Unit, and the Explosives Unit at the FBI Laboratory have joined to conduct a performance evaluation of the First Defender™ as tool for field investigative purposes. This presentation will report on the accuracy of the hand-held Raman unit in the analysis of known pure substances and mixtures.

Field Investigative, Unknown Identification, Raman Spectroscopy