Hair Spray on an Individual Hair Fiber

Sample
An individual hair fiber with a hair spray coating

Industry
Forensic

Technique
ATR microscopy

Applicable PerkinElmer instruments
Multiscope™ Microscope and Spectrum™ Spotlight™ FT-IR Systems fitted with a Ge ATR Objective accessory
**Discussion of results**

Examination of trace components on individual fibers is essential for the linkage of a victim of crime and/or a suspect to the scene of a crime. FT-IR spectra of hair alone may not provide enough evidence for this. Identification of the particular hair spray found on an individual hair fiber provides further evidence for prosecution. Since an individual hair fiber is typically 50-100 µm in diameter, the use of an infrared microscope is ideal for its analysis. The use of an Attenuated Total Reflectance (ATR) allows for surface measurements of a particular fiber. The depth penetration of the germanium (Ge) ATR objective is less than 1 µm across the Mid-IR working range. This allows for a quick and easy identification of the hair spray with little or no interference from the hair fiber itself.

*Figure 1. ATR microspectra of hair spray (top) and hair fiber with hair spray (bottom).*