



# A New Microscope for FT-IR Microspectrometry

David W. Schiering and Gregg Ressler  
Czitek, 6 Finance Dr., Danbury, CT 06810



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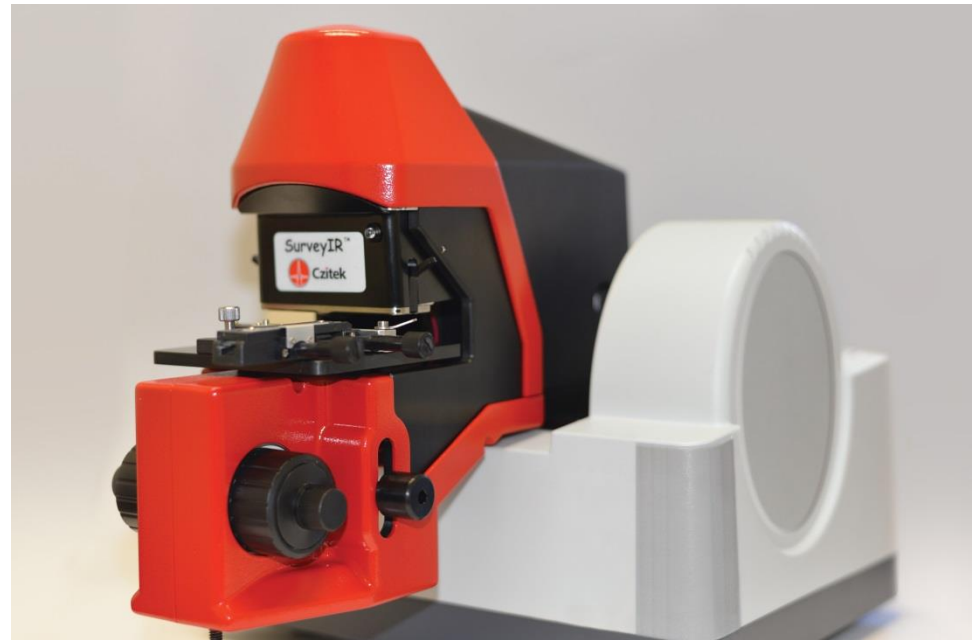
# SurveyIR™ - FT-IR Microspectroscopy Accessory

## Presentation Outline

- Introduction
- System Overview – Features and Specifications
- Performance Benchmarking Results
- Example Applications

# SurveyIR FTIR Microspectroscopy Accessory – System Overview

- **Sample Compartment Mounted – User Installed**
- **USB Powered**
- **Transmission, reflection, and oblique illumination modes**
- **IR reflection, ATR, and transmission modes**
- **Variable remote image mask in IR mode**
- **eSpot Video Imaging Software control**
- **Manual coarse/fine focus adjust**
- **Manual transmission condenser focus adjust**
- **Accommodates variety of sample mounts and cells**



- **Simultaneous Sample Viewing / IR Spectrum Collection**
- **Equal Optical Efficiency in Infrared R/T modes (without compromise)**



# SurveyIR FTIR Microspectroscopy Accessory - Specifications

- 5 mega pixel CMOS color video camera, 2592 x 1944 max resolution
- 0.7  $\mu\text{m}$  pixel pitch in specimen plane
- Research grade visual image quality, 1900 $\mu\text{m}$  field of view
- Sample defining masks - 2000 $\mu\text{m}$ , 250 $\mu\text{m}$ , 200 $\mu\text{m}$ , 160 $\mu\text{m}$ , 100 $\mu\text{m}$ , or 60 $\mu\text{m}$  in specimen plane
- $\frac{1}{3}$ " minimum working distance,  $\frac{1}{2}$ " maximum travel stage z travel
- Manual x, y stage adjust - 1" x 3" standard slide



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# eSpot™ Video Microscopy Software

eSpot

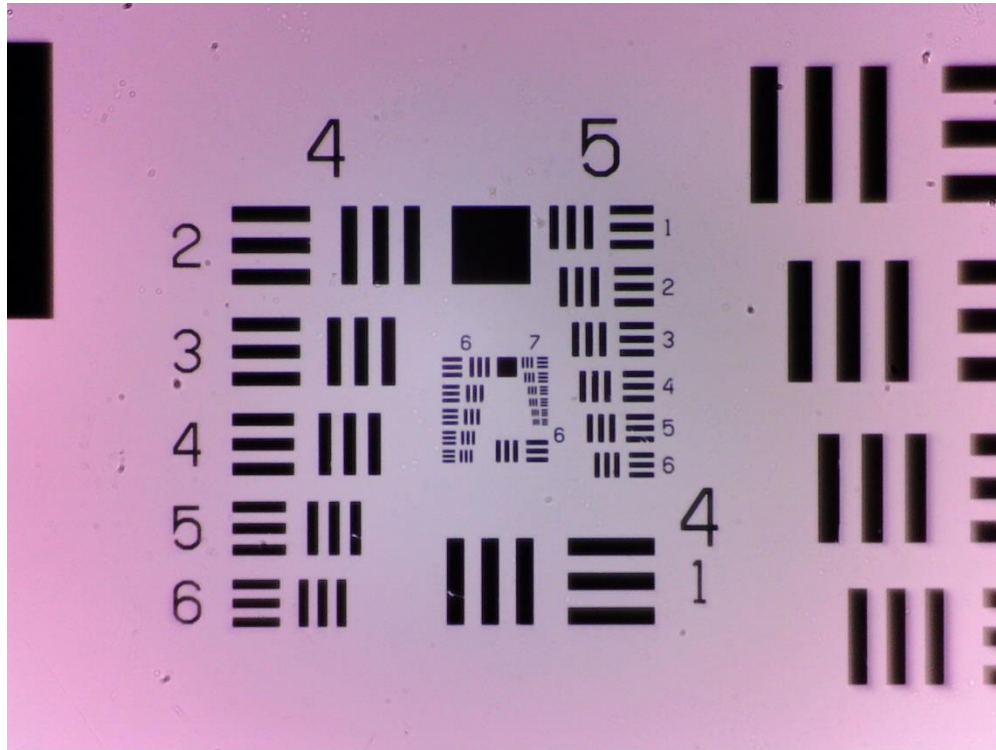
2/27/2016  
2:39:19 PM

single fiber - KBr transmission cell

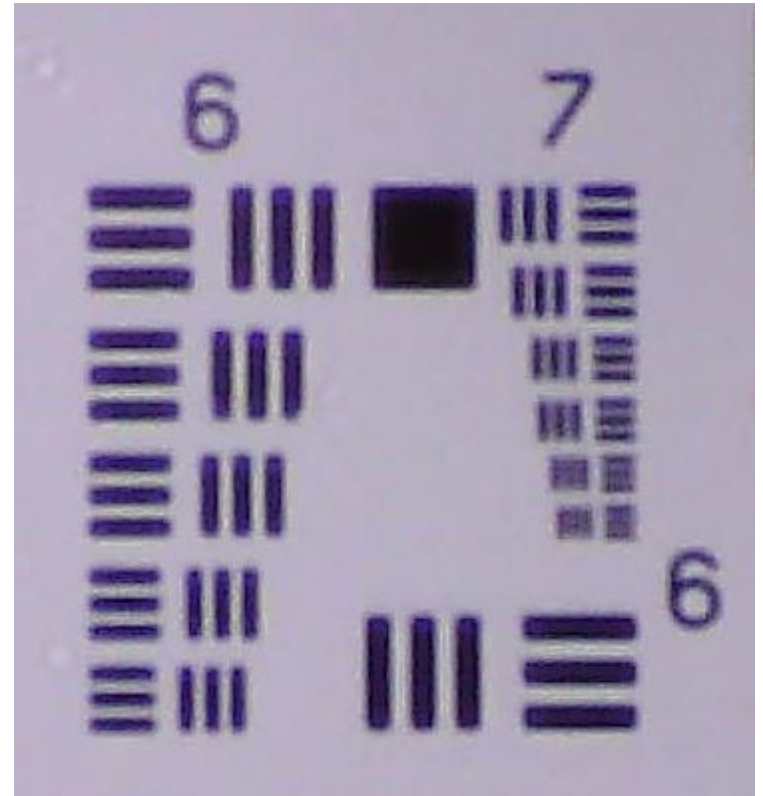
92.33  $\mu\text{m}$

The software interface displays a central microscopy image of a fiber. On the left, there is a vertical control bar with icons for brightness, contrast, and zoom. The top left corner shows the date and time. The top center of the image area contains the text 'single fiber - KBr transmission cell'. A measurement line is drawn across the fiber, labeled '92.33  $\mu\text{m}$ '. On the right side, there is a vertical stack of three thumbnail images, with the top one showing a zoomed-in view of the fiber. Below the thumbnails are icons for a folder and a save button. At the bottom of the interface is a horizontal toolbar with icons for play, aperture, settings, text, draw, scale, and help. The bottom right corner features the Czitek logo.

# SurveyIR Optical Microscopy Resolution



**USAF 1951 Positive Resolution Target  
Transmission Illumination**

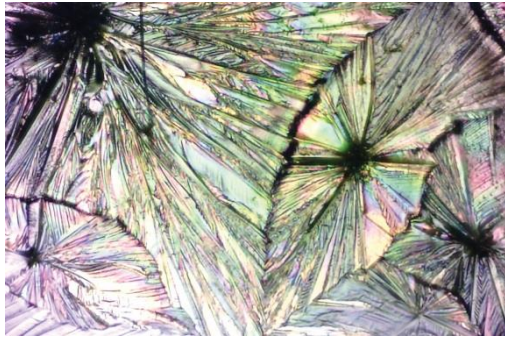


**Better than 3 $\mu$ m optical resolution**



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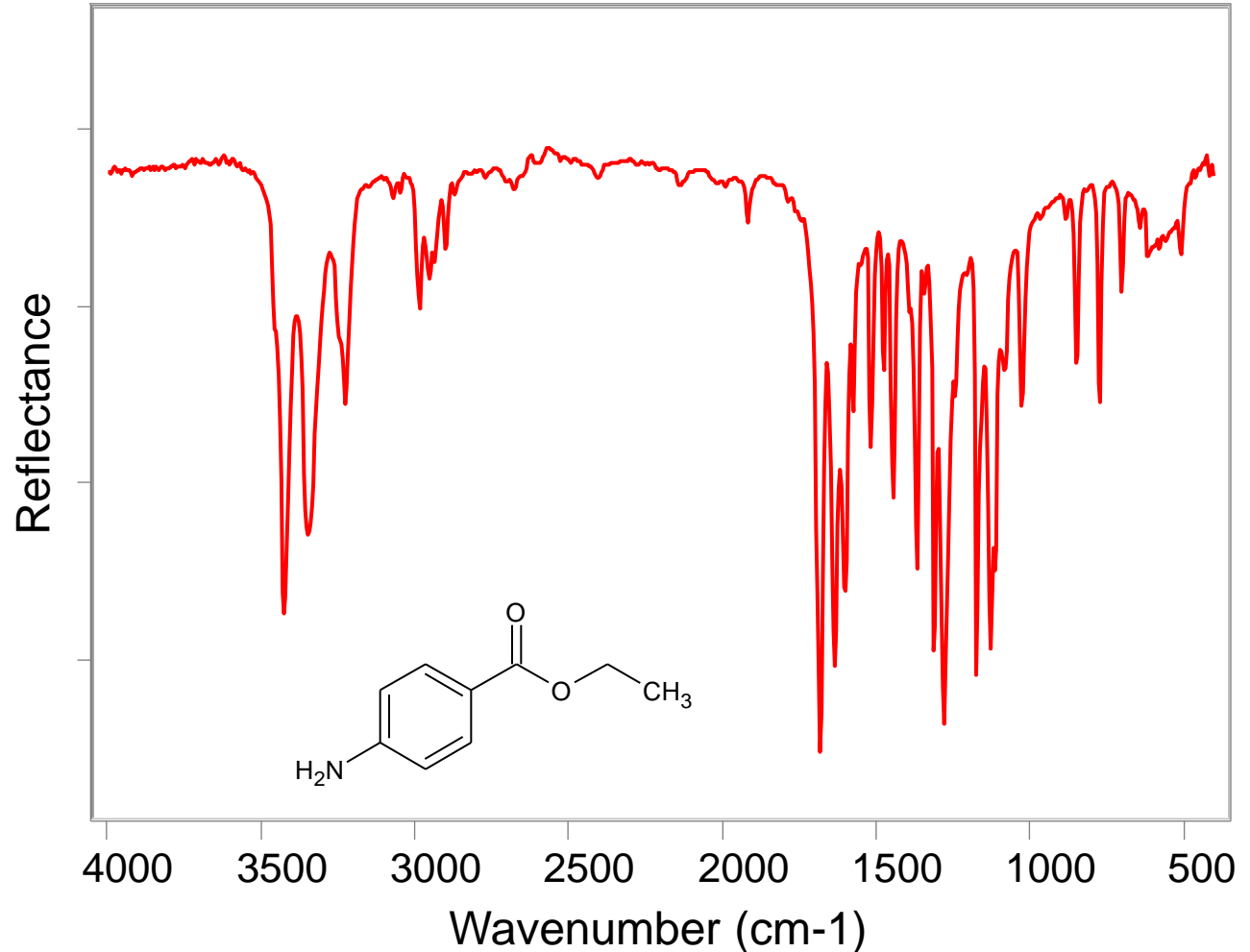
# Pharmaceutical Active Ingredient



**Benzocaine**

**Deposited from  
solution on Gold  
substrate**

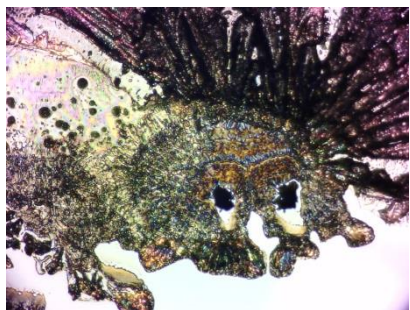
**Measured in  
Reflection  
160  $\mu\text{m}$  sample size**



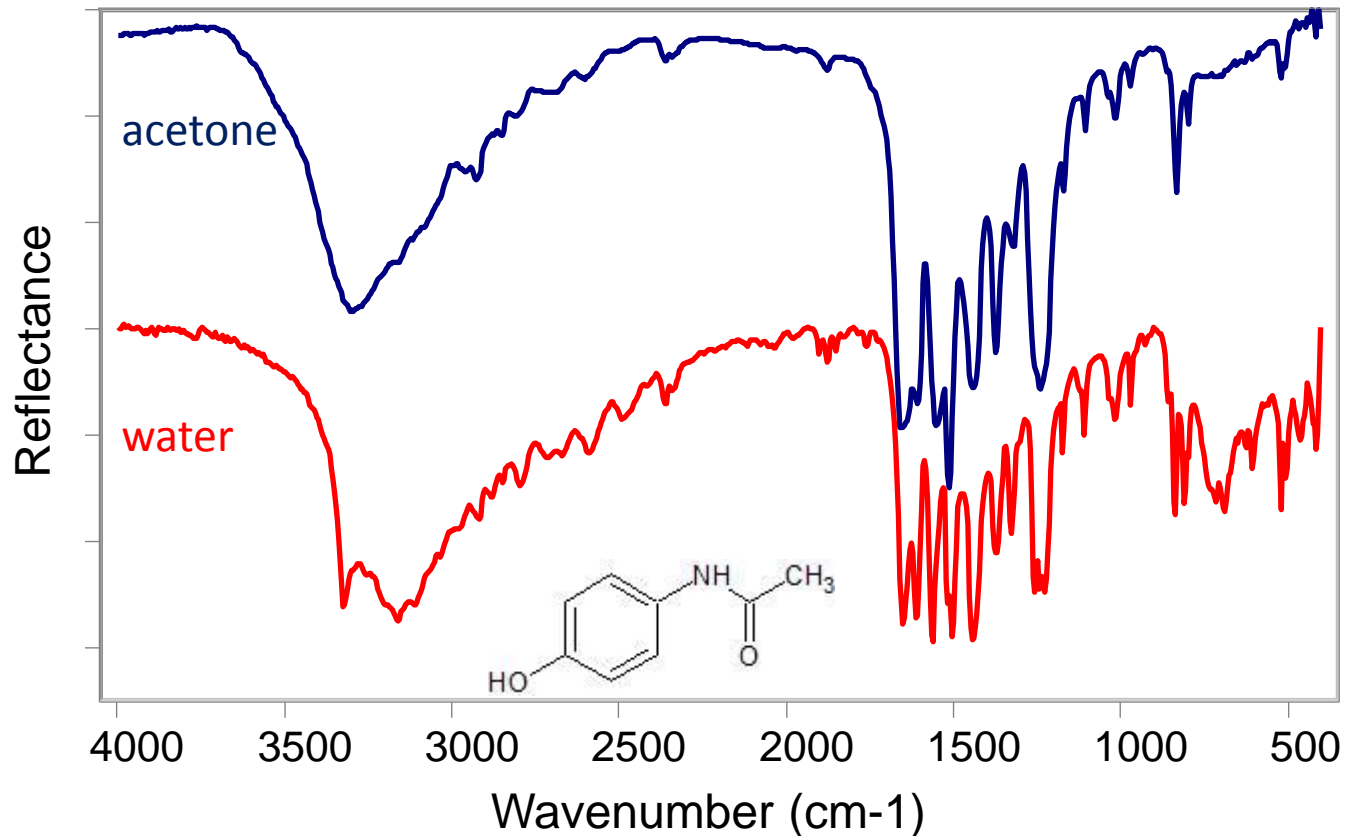
# Solid Form Studies - Acetaminophen



recrystallized from acetone



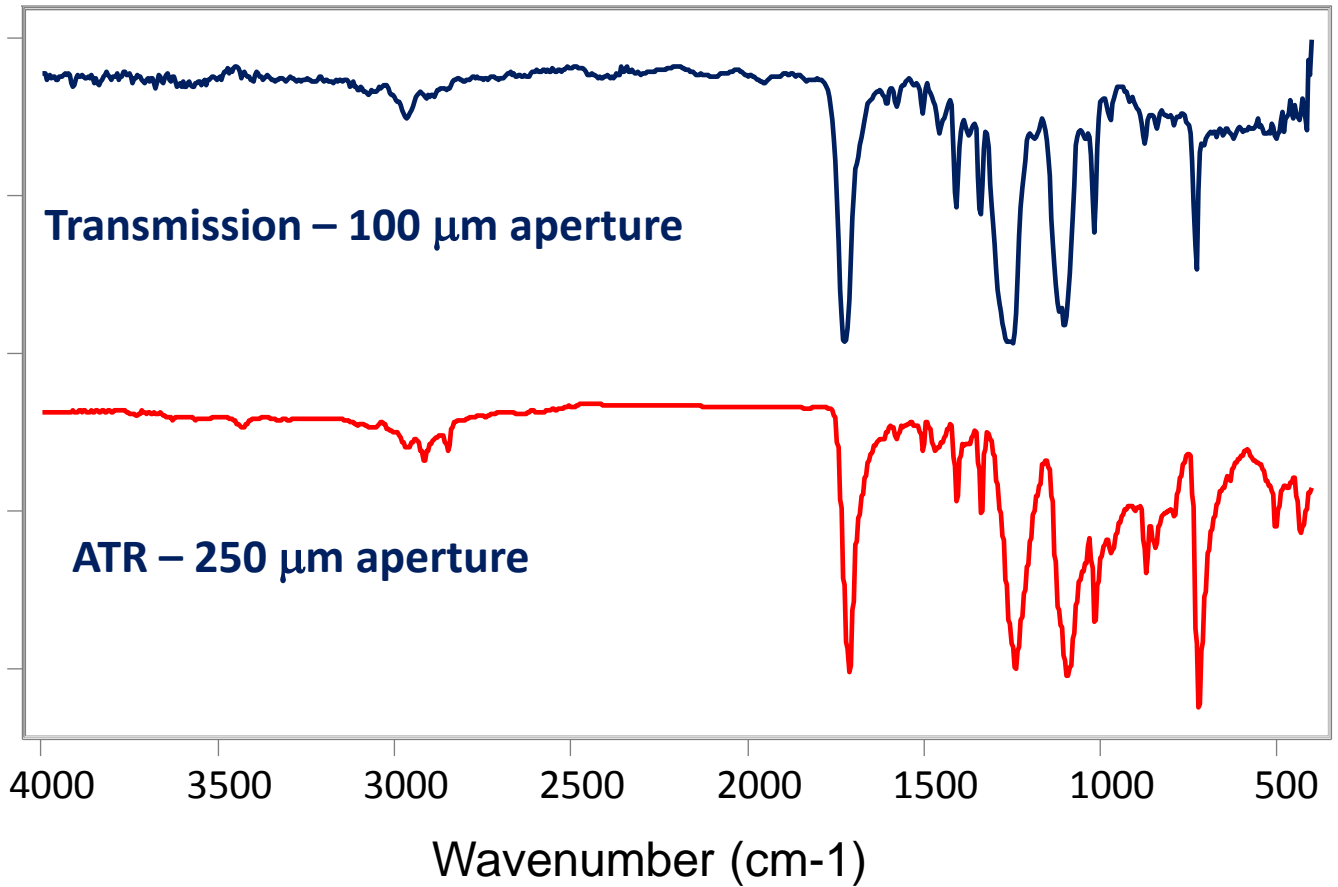
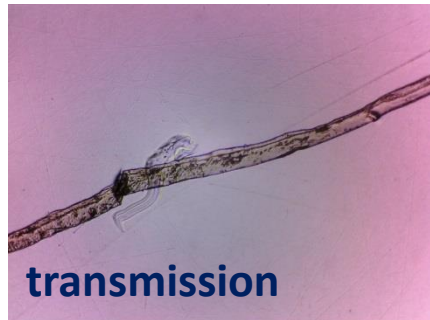
recrystallized from water



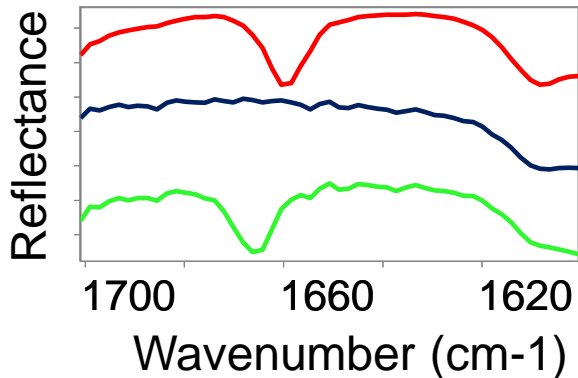
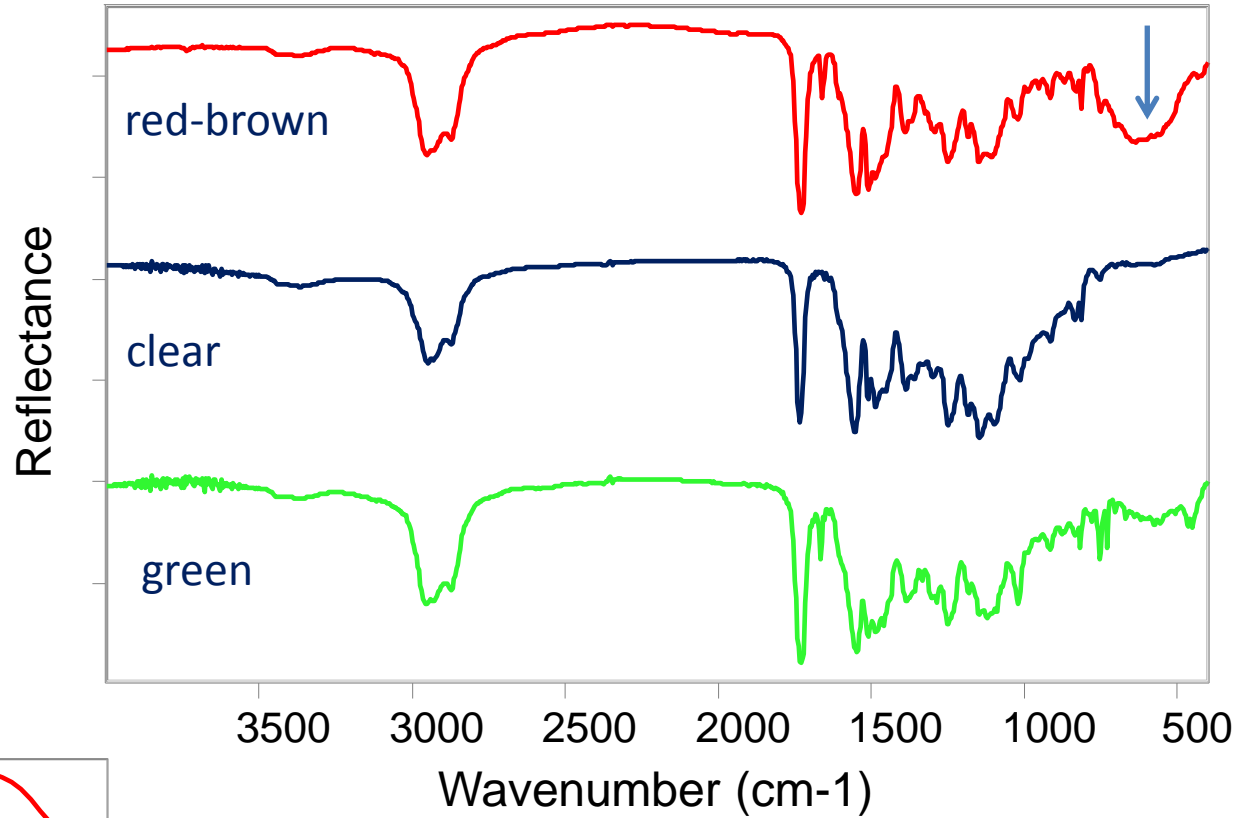
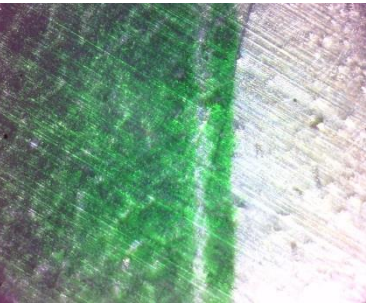
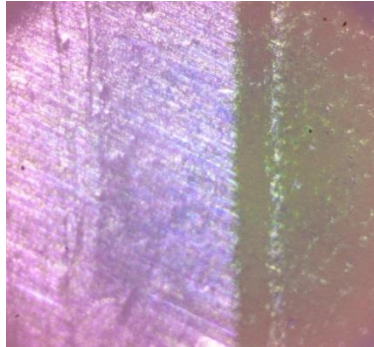


# Single Fiber Microanalysis

## Polyethylene terephthalate

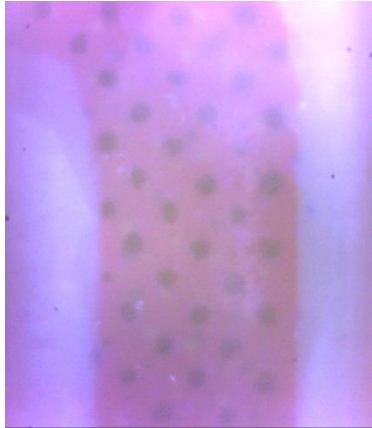


# External Reflectance of Coatings on Metal Substrates



**Melamine-alkyd polyester coating on Al**

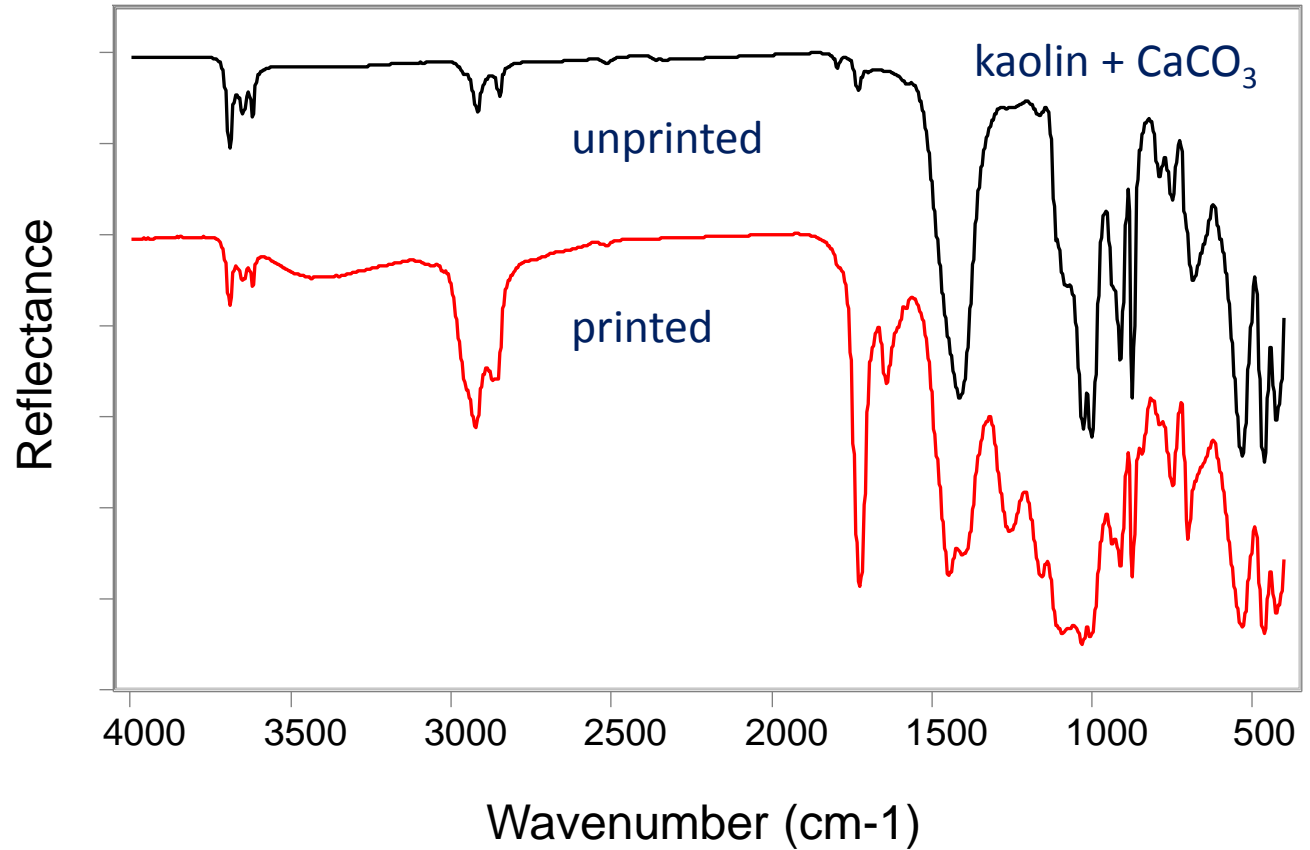
# Surface Characterization - Diamond ATR of Printed Paperboard



atr survey



atr contact





# SurveyIR™ - FT-IR Microspectroscopy Accessory

- **The future of FT-IR microspectroscopy is bright**
- **Instrumentation for broader application and adoption by more users is available**
- **Thank you for your attention**