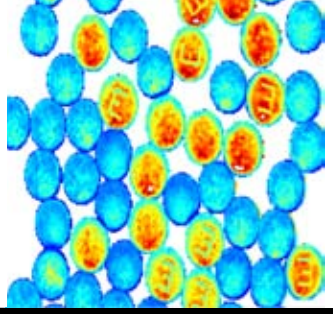
middleton research

PRODUCT SHEET

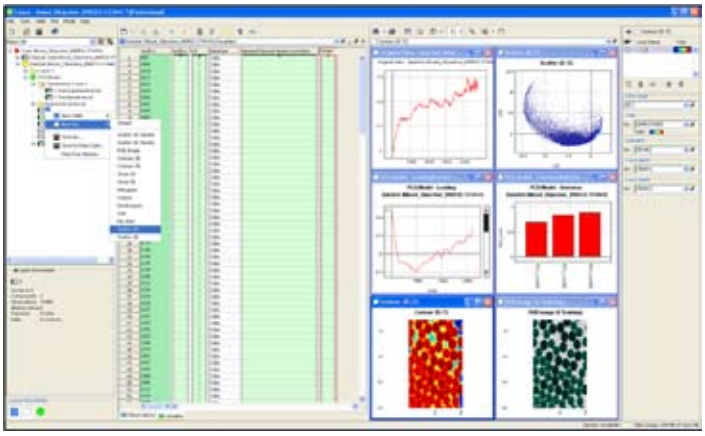
MRC-930-001



Evince™ Hyperspectral Image Analysis Software

Concept

Evince™ image software was specially designed to process hyperspectral images. Common image formats such as Envi, Mat, SPF, JPG, PNG, DAT, and RAW are easily imported into and processed in Evince's graphical user interface. Many visualization types of both raw and processed data are available as analysis tools. Extraction of desired information and exploration of data cube is facilitated with graphical interactions between data and plots. In addition, Evince provides many calculation and correction tools for multivariate image analysis.



Standard Analysis Calculations

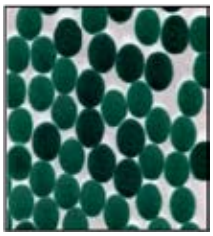
- Spectral derivatives
- Multiple scatter correction
- Standard normal variate correction
- Savitzky-Golay correction

Data Processing

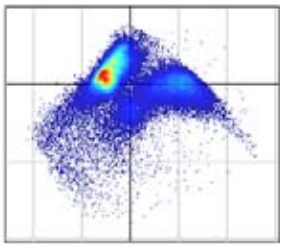
- Detection of important wavelength ranges
- "Crop" spatial data and exclude spectral data or wavelengths from models and plots
- Background removal with spectral segmentation
- Principal Component Analysis (PCA) Model
- Partial Least Squares (PLS) Model
- Partial Least Squares Discriminant Analysis (PLS-DA)
- Drag-and-drop method available for creating visualizations and tables

The interactive graphical user interface of Evince allows for selection of spatial or spectral points and highlights the corresponding portions of each plot or data range. This visible interaction automatically updates plots and visualizations to ease data processing.

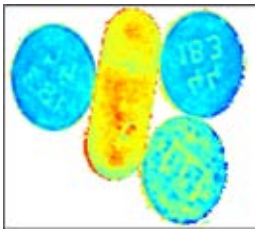
Visualizations



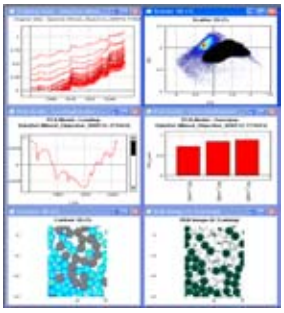
RGB IMAGE *(left)* - a color view of the raw image data using three selected wavelengths



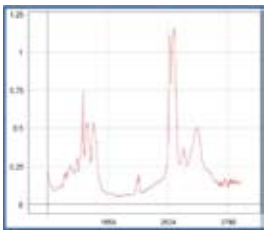
SCATTER 2D AND 3D *(right)* - a spectral density plot of 2 or 3 principal components used to find spectrally similar groups, 3D plot is fully rotatable



CONTOUR 2D AND 3D *(left)* - spectral 2D and 3D rotatable images of data



MODEL PLOTS *(right)* - predefined plots appear when a model is created for immediate analysis



SPECTRAL PLOT *(left)* - raw or transformed spectra of points selected in other plots or images

middleton research

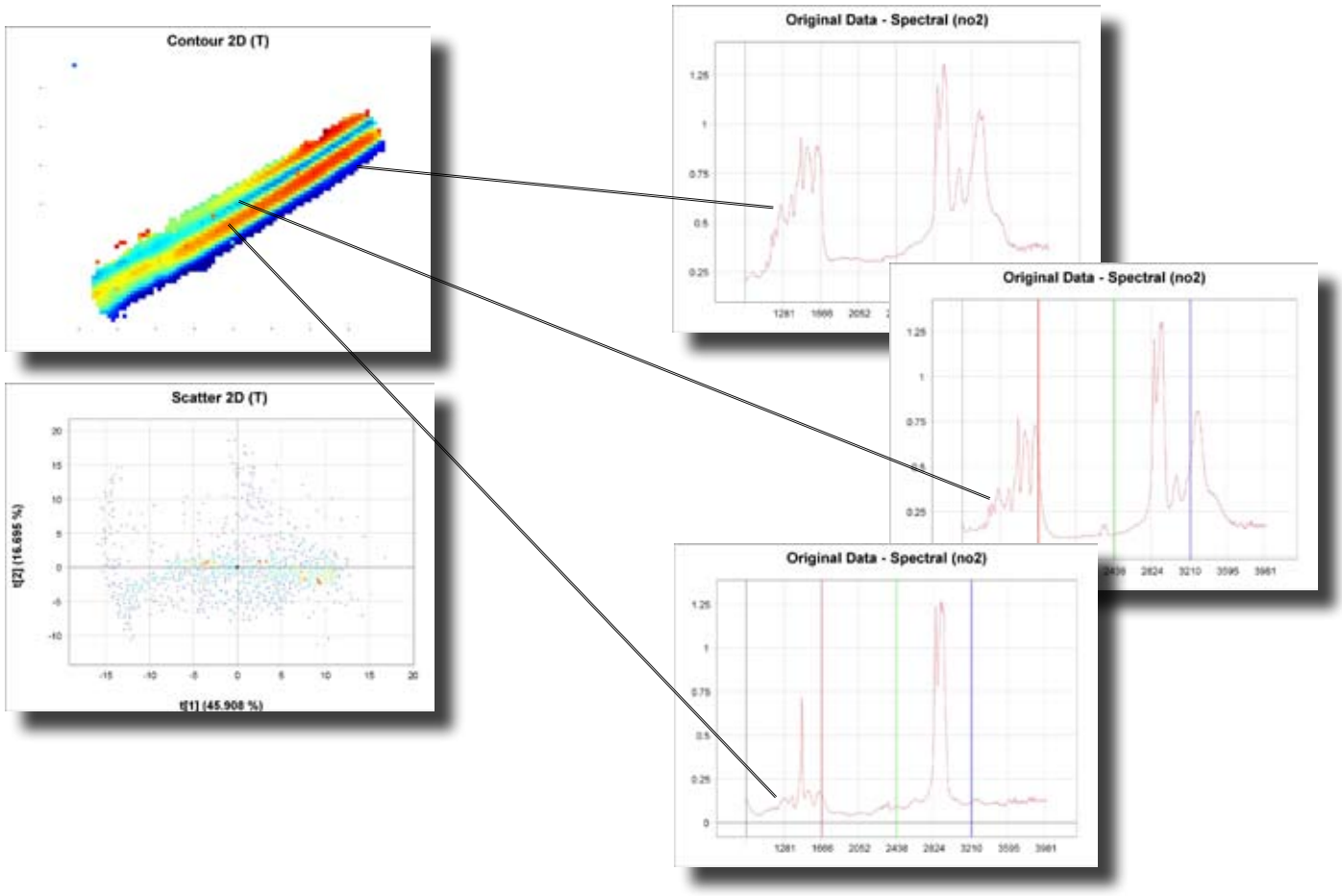
PRODUCT SHEET

MRC-930-001

Example: FTIR Microscope Data

The following images demonstrate how Evince analysis can help detect and identify the multiple laminate layers of a sample taken with a Varian Analytical Instruments UMA 620 FT-IR microscope. Using the built-in easy to use functions the background was removed and the PCA components of the remaining spectra in the image calculated. The contour and scatter maps are shown below.

The plots below show the spectral differences between a selected point on the dark blue, light blue, and reddish-orange layers shown on the Contour 2D image of the sample.



System Requirements

Supported operating systems
- MS Windows XP/Vista, 32- & 64-bit
- Linux, 32- & 64-bit
- Mac OS X 10.4, 32-bit

Intel or AMD dual-core CPU
- (quad-core CPU recommended)

Minimum system memory requirements
- 2 GB RAM, 32-bit OS
- 4 GB RAM, 64-bit OS (8 GB recommended)

Java Runtime Environment, JRE 1.6 installed
OpenGL 1.5 compliant AGP/PCI Express graphics card
4 GB free hard drive space
1280x1024 screen resolution
- (1680x1050 or greater recommended)

Ordering Information

Please contact Middleton Research to order the Evince™ Image software.

Evince™ Image software created by UmBio (Sweeden).
30-day trial version available for download at www.umbio.com

Support

Middleton Research provides personal training for prospective customers, as well as continued support following software purchase. Please contact Middleton Research with any technical questions you may have.