## Technical Information.

- Platform independent - runs on Windows®, Linux and Mac operating systems

- 32bit and 64bit OS support

- Support for multiple CPU cores

- Support for hyperspectral images with >1 Megapixel spatial resolution (64bit OS), <0.2 Megapixel spatial resolution (32 bit OS)

- 30-day fully functional trial version available at www.prediktera.se

System Requirements.

- Supported operating systems

    - Windows® XP/Vista/7/8/10

    - 32 & 64bit Linux, 32 & 64bit

    - Mac OS X, 32 & 64bit

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

- Minimum system memory requirements

    - 2 GB RAM, 32bit OS

    - 4 GB RAM, 64bit OS (8 - 16 GB recommended)

- Java Runtime Environment, JRE 8 or later installed

- OpenGL 1.5 compliant graphics card

- 4 GB free hard drive space

- 1680 x 1050 screen resolution (1920 x 1200 or greater recommended)

Evince Image.

The Expert Analysis Software Tool for
Multivariate Image and Data Analysis

Prediktera.

info@prediktera.se, www.prediktera.se

Prediktera.
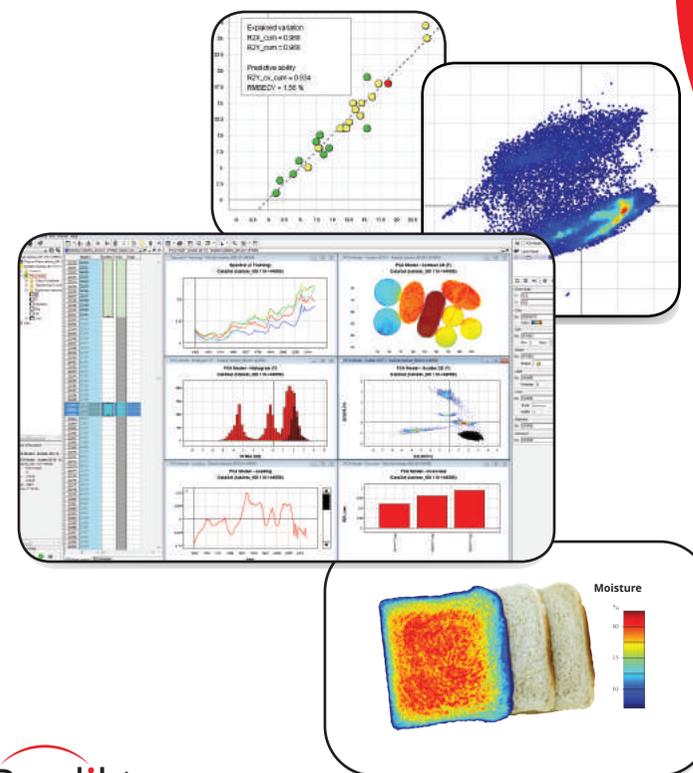
Evince. The Concept.

Evince Image is an advanced software for exploration and analysis of hyperspectral image data, with a flexible graphical user interface which allows easy access to all functions.

After import of any common image formats, the user can apply powerful analysis techniques to efficiently extract relevant information from the image.

A wide range of visualizations are available, both for raw and processed data and a visible interaction between data and graphics makes the exploration fast and effective. Created models can then be saved and applied for prediction of new images.
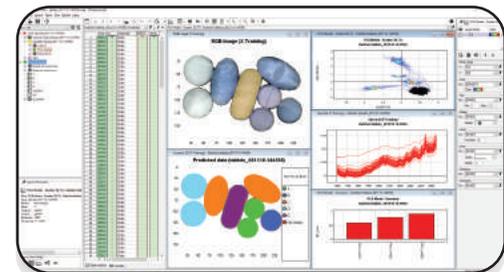
Main Functionality.

- Import of a large variety of image formats including Envi, Mat, SPF, JPG, TIF, PNG etc.
- Full exploration of hyperspectral image data and spectral analysis of each pixel
- Analysis of hyperspectral image data with techniques such as PCA and PLS into multivariate Models
- Object based analysis on spectral properties and structure parameters like surface area, diameter, shape etc.
- Visualizations available for raw spectra, pre-processed spectra, entire measured channels and modeled image data
- Visible interaction between spectral data, model components and data tables
- Classification and quantification of image content
- Segmentation of image content, for example background removal

45%

32%
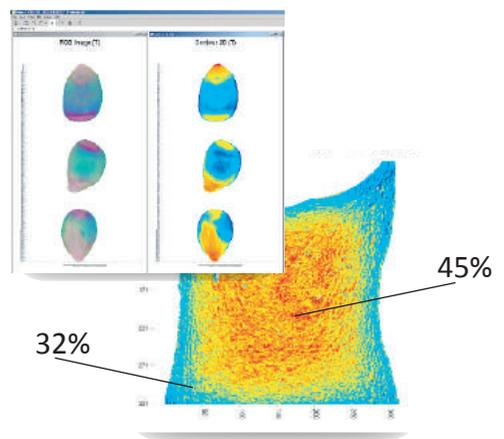
Applications.

Evince Image can be used in a wide variety of applications for research as well as for laboratory routine analysis. Here are some verified applications:

- Prediction of moisture distribution in bread
- Quality control of cheese
- Moisture prediction of incoming timber
- Multivariate calibration
- Freshness control of fruits and berries
- Classification of nuts
- Assessment of glue hardening
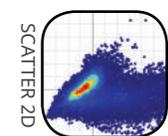- Discovery of adulteration in spices

Data Processing.

- Automatic unfolding of 3D image data
- Principal Component Analysis, PCA
- Partial Least Squares regression, PLS
- Partial Least Squares Discriminant Analysis, PLS-DA
- Object based
  - Spectral properties
  - Structure parameters like shape and size
  - Particle distribution
- Spectral pre-processing:
  - Multiplicative Signal Correction
  - Savitzky-Golay
  - 1st and 2nd order Differentiation
  - Standard Normal Variate
- Prediction table for:
  - Classification
  - Quantification
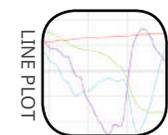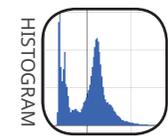- Classify unknown image data using saved calibration models
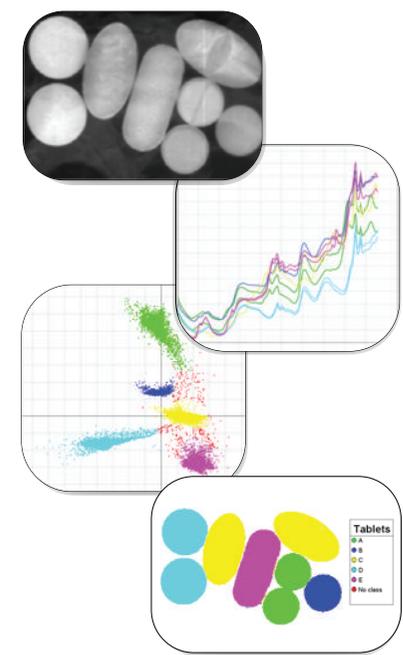
Visualizations.

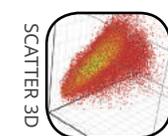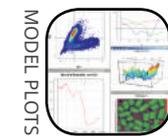|		
RGB IMAGE	Utilize the RGB image for viewing raw image data, PCA scores or response matrices.	
SCATTER 2D	Find image areas of interest. The density coloring is useful for discovering main features in the image.	
LINE PLOT	Analyze the loadings of your multivariate model. Discover important spectral bands, which have high impact on the model.	
HISTOGRAM	Use the histogram for viewing the distribution of a vector or matrix.	
SPECTRAL PLOT	View the spectra of selected points in score plots or RGB images. Both raw spectra and transformed spectra can be shown in this way.	
SCATTER 3D	Find pixels of similar spectral properties while working in three dimensions. It is fully rotatable in real-time.	
CONTOUR 3D	View any two-dimensional data in three dimensions using the Contour 3D plot. It is fully rotatable in real-time.	
MODEL PLOTS	Create a series of useful plots for image analysis in a snap. The pre-defined model plots offers quick access to your image data.	

Evince.

Prediktera.