

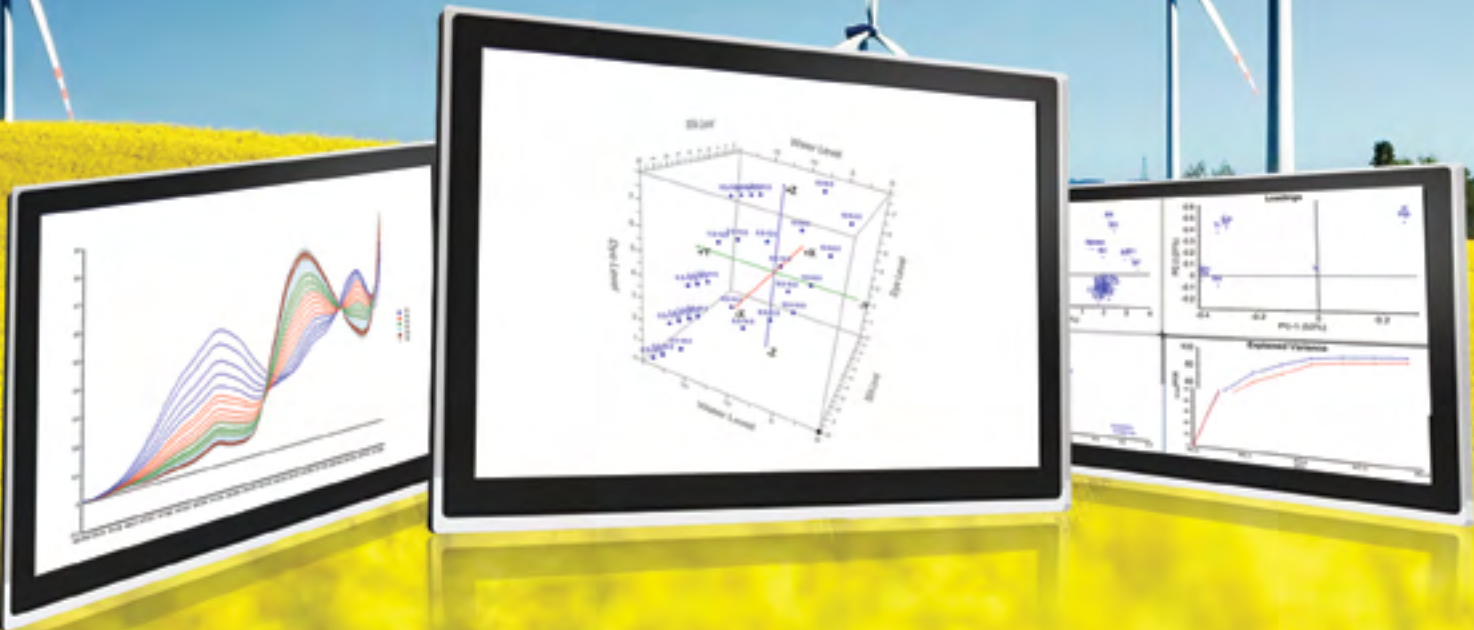
# The Unscrambler<sup>®</sup>X

Leading all-in-one **Multivariate Data Analysis** and **Design of Experiments** software, now even more powerful and easy to use.

■ Powerful multivariate analysis methods and design of experiments >

■ Easy data importing options with intuitive workflows and interface >

■ Outstanding graphics, plots and interactive data visualization tools >



*“Cutting through complex data sets to underlying structures...is simplicity itself”*

**scientific  
computing world**

*“This intelligent engine borders upon data mining, as it cuts through prediction and classification problems”*

**Scientific  
Computing**



**CAMO**  
Bring data to life

## GET DEEPER INSIGHTS FROM YOUR DATA, FASTER AND EASIER

The Unscrambler® X is world-leading data mining and predictive modelling software used by over 25,000 data analysts, researchers, engineers and scientists worldwide. The latest version builds on its tradition of powerful multivariate analytical methods and ease of use, adding even greater calculation efficiency and performance.

### New to version 10.2

The Unscrambler® X version 10.2 has several new analytical methods and import options, as well as a wide range of added features throughout the software for improved usability and security.

- Support Vector Machine Regression (SVMR) has been added
- Compliance Mode has been added as an installation option for organizations that must meet the requirements of electronic signature and records handling
- Recalculate With New is added as a new feature to PCA, PCR, PLS, which allows the addition of new data to an existing model
- Digital signatures have been added for enhanced data integrity
- Blocking of Designs added to Full Factorial designs in the Design of Experiments module
- Three new spectroscopy vendor specific imports have been included
- An Interpolation function has been added

### Application areas

Our advanced yet easy to use software is designed to be flexible for many different data analysis needs. The Unscrambler® X is used by companies and researchers in applications including:

- Research & Development
- Customer segmentation / Marketing
- Manufacturing, production & engineering
- Quality assurance & control
- General data mining & analysis
- Six Sigma / Lean manufacturing

“The Unscrambler is much more intuitive and has all the features I need plus more advanced methods than generalist statistical software”

Søren Bech, Head of Research, Bang & Olufsen

## TURN YOUR DATA INTO A COMPETITIVE ADVANTAGE

The powerful analytical tools in The Unscrambler® X let you discover underlying patterns in large data sets, understand processes and build better predictive models. This enables you to make more informed, data-driven decisions, reduce R&D costs, improve manufacturing processes, product quality and time to market.

### Software for every industry

For over 25 years, The Unscrambler® has enabled organizations across a broad cross section of industries and research fields to combine their industry expertise with deep data insights.

- Aerospace
- Agriculture
- Automotive
- Chemicals/Petrochem
- Electronics
- Energy/Renewables
- Oil & Gas
- Pharmaceuticals
- Pulp & Paper
- Research & Academia
- Retail
- Semi-conductors
- Engineering
- Food & Beverage
- Manufacturing
- Marketing
- Medical Devices
- Mining & Metals

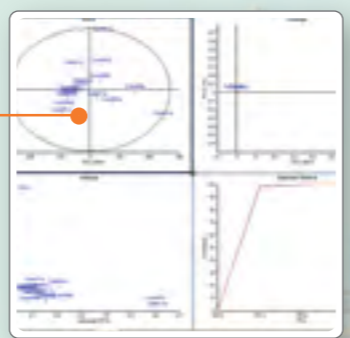
### Powerful data analysis tools

- Exploratory data analysis
- Regression and classification
- Predictive modeling
- Design of Experiments
- Data pre-processing
- Classical statistics

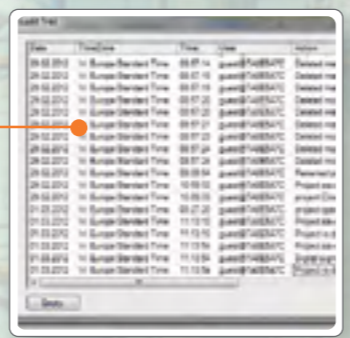
“Using The Unscrambler, we were able to resolve a product quality problem which has saved us \$1M per year. It also gave us better process understanding which we have used to optimize other manufacturing processes”

Siri Sølberg, Senior Process Engineer, Nidar AS

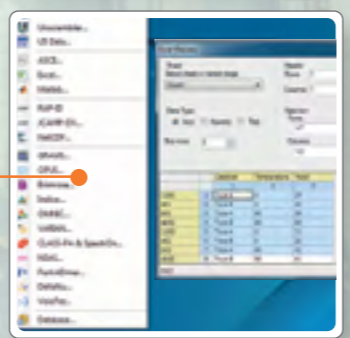
See different plots all on the same screen for easier data interpretation



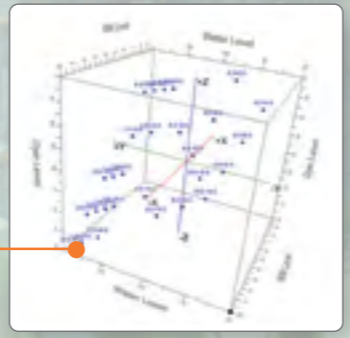
Enhanced security features including compliance mode, digital signatures and audit trail



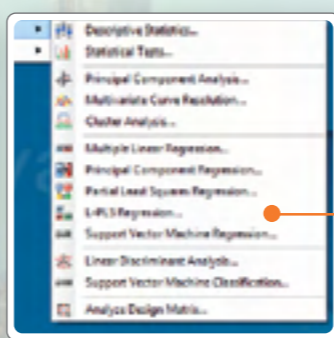
Drag 'n' drop data directly from Excel or import from scientific instruments



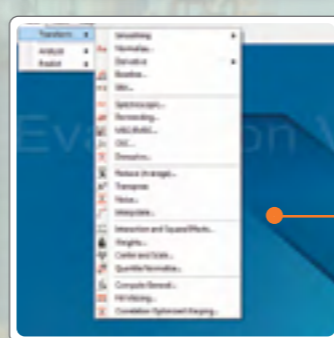
Interactive data visualization tools: zoom, rotate and drill down to individual data points



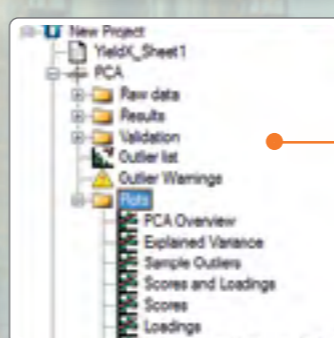
Powerful regression, classification, exploratory data analysis and classical statistics



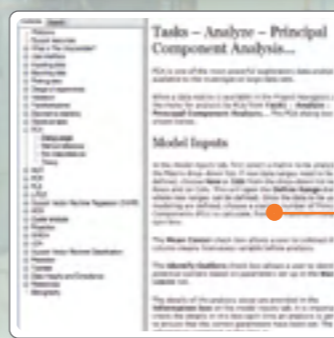
Extensive data pre-processing tools including spectral transformations



Intuitive project based workflows make it easier to manage your daily work



Comprehensive tutorials on multivariate analysis and using the software



# FEATURES OF THE UNSCRAMBLER® X VERSION 10.2

## Exploratory Data Analysis

### Descriptive Statistics

- > General Data Summary Tools Min/Max and Mean Chart **NEW**

### Statistical Tests

- > Univariate Statistical Tools, Including t-test, F-tests etc.
- > Contingency Analysis **NEW**

### Cluster Analysis

- > K-Means
- > Hierarchical Cluster Analysis

### Principal Component Analysis (PCA)

- > Choice of using NIPALS or SVD algorithms
- > Rotation methods including Varimax, Equimax, Quartimax and Parsimax

### Multivariate Curve Resolution (MCR)

- > Resolve time evolving data such as chemical reaction or chromatographic data into pure constituent profiles and pure spectra

## Regression and Classification

### Regression Methods

- > Multiple Linear Regression (MLR)/Principal Component Regression (PCR) and Partial Least Squares Regression (PLSR)
- > Support Vector Machine Regression and Prediction **NEW**
- > Choice of algorithms, NIPALS and SVD for PCR and NIPALS, Kernel Methods and Orthogonal Scores for PLSR
- > Improved Test Set Validation options and Test Scores added **NEW**
- > L-PLS, incorporating three data tables for greater insights into data structure

### Advanced Classification Methods

- > Projection, Soft Independent Modelling of Class Analogy (SIMCA), Linear Discriminant Analysis (LDA), Support Vector Machines (SVM) Classification with numerous kernel types

## Data Pretreatments

### Spectral Functions

- > Smoothing, Derivatives: Moving Average/Norris Gap/Savitsky-Golay, Baseline Correction
- > Normalization

### Scatter Correction /Advanced Functions

- > Multiplicative and Extended Multiplicative Scatter Correction (MSC/EMSC)
- > Standard Normal Variate (SNV)
- > Orthogonal Signal Correction (OSC) New Algorithm **NEW**
- > Deresolve, Detrending
- > Interpolation **NEW**

### General Transforms

- > Improved Centre and Scale options
- > Spectroscopic: Reflectance/Transmission/Kubelka-Munk
- > Interaction & Squares and Individual Variable Weighting
- > Compute General
- > Quantile Normalization
- > Correlation Optimization Warping (COW)

## Design Of Experiments

### Intuitive Design Wizard with full

- descriptions and Beginner/Expert modes**
- > Complete range of full and fractional factorial designs
- > Enhanced optimization designs including Central Composite (CCD) and Box-Behnken (BB) designs
- > Mixture designs including Axial, Simplex Lattice and Simplex Centroid designs

### Blocking of Full Factorial Designs **NEW**

### Comprehensive Analysis Overview

- > ANOVA tables and other tabular results
- > Cube Plots
- > Response Surfaces
- > Analysis of Effects
- > Interactive Tables

For a full feature list and system requirements please visit [www.camo.com](http://www.camo.com)

Compliant with 21 CFR Part 11 (Electronic records)

## Benefits of The Unscrambler® X

- Multivariate data analysis tools
- Flexible & adaptable for different uses
- Ideal for large & complex data sets
- Integrated Design of Experiments
- Intuitive & user-friendly
- Works with MyInstrument Driver
- Affordable & value for money
- Easy data importing
- ODBC compatible and OPC connectivity

“The new version is even more intuitive and easy to use, especially for new users”

Dr Garth Maker, Lecturer in Pharmaceutical Chemistry, Murdoch University, Western Australia

## Find out more >

For more information please contact your regional CAMO office or email [sales@camo.com](mailto:sales@camo.com)

 [www.camo.com](http://www.camo.com)

### NORWAY

Nedre Vollgate 8,  
N-0158  
Oslo  
Tel: (+47) 223 963 00  
Fax: (+47) 223 963 22

### USA

One Woodbridge Center  
Suite 319, Woodbridge  
NJ 07095  
Tel: (+1) 732 726 9200  
Fax: (+1) 973 556 1229

### INDIA

14 & 15, Krishna Reddy  
Colony, Domlur Layout  
Bangalore - 560 071  
Tel: (+91) 80 4125 4242  
Fax: (+91) 80 4125 4181

### JAPAN

Shibuya 3-chome Square Bldg 2F  
3-5-16 Shibuya Shibuya-ku  
Tokyo, 150-0002  
Tel: (+81) 3 6868 7669  
Fax: (+81) 3 6730 9539

### AUSTRALIA

PO Box 97  
St Peters  
NSW, 2044  
Tel: (+61) 4 0888 2007



Bring data to life