KolXPD Web

http://www.kolibrik.net/kolxpd/

- Download KolXPD and track new versions
- Download documents, manuals and tutorials
- Visit eshop and purchase a license or make a donation
- Get a trial license for KolXPD evaluation
- Contact author for any questions, remarks or requests

About author

Mgr. Jiří Libra, Ph.D.

- Business activities: development of software and electronics (not only) for science. Experiment automation, data acquisition and processing, electronics for angle-resolved experiments, software for beamline monochromator control, scientific device interfacing, etc.
- Surface science experienced during 10 years spent in Department of Surface and Plasma Science at Faculty of Mathematics and Physics, Charles University in Prague under supervision of *prof. Vladimír Matolín*
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Watch video-tutorial at
http://www.kolibrik.net/kolxpd/

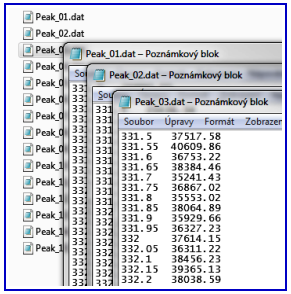
How to import 15 spectra, make graphs, fit peaks and analyze results in 90 seconds !!!

Tutorial steps:

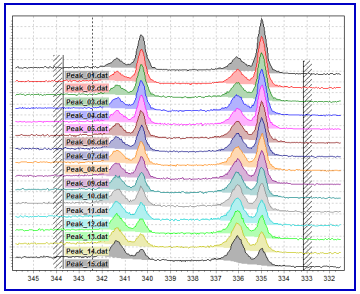
- start: 15 raw XY text files with sample spectra (2 doublets)
- import to KolXPD by single drag-and-drop
- place spectra to one graph, change x-axis to binding energy
- change display to waterfall and color-filled peak area
- define x-axis range and fitting function for middle spectrum
- automatically fit all spectra with this function
- display fit results
- export area evolution of doublets and display in new graph
- fit area evolution with linear function

All this done in 90 seconds!

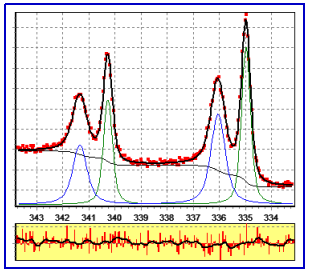
Video snapshots:



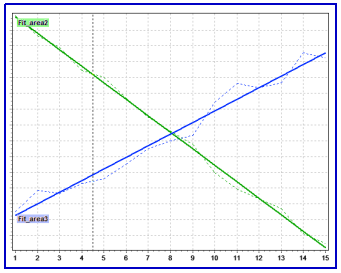
Raw XY text files



Waterfall view in KolXPD



Fitting of one spectrum



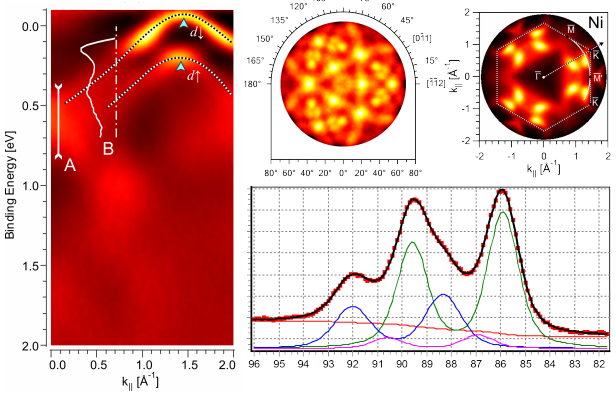
Doublets - area evolution

KolXPD

software for photoelectron spectroscopy
data measurement and processing

Feature Highlights

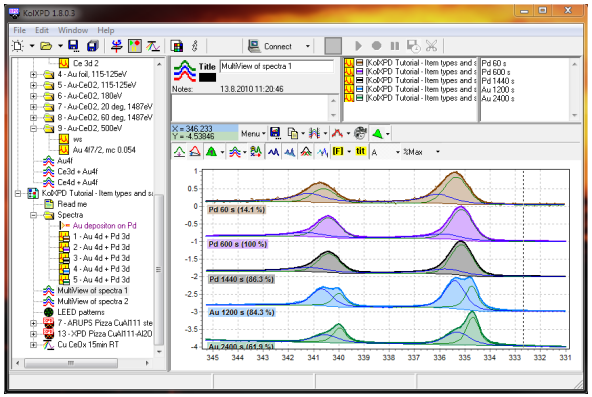
- Focused to photoelectron spectroscopy
- Very fast data viewing and processing
- Energy- and angle-resolved experiments
- Import and export of variety formats
- Huge amount of data handling
- Fitting, waterfall charts, quantitative preview
- Functionality customizable on request



(sample images made using results of KolXPD data processing)

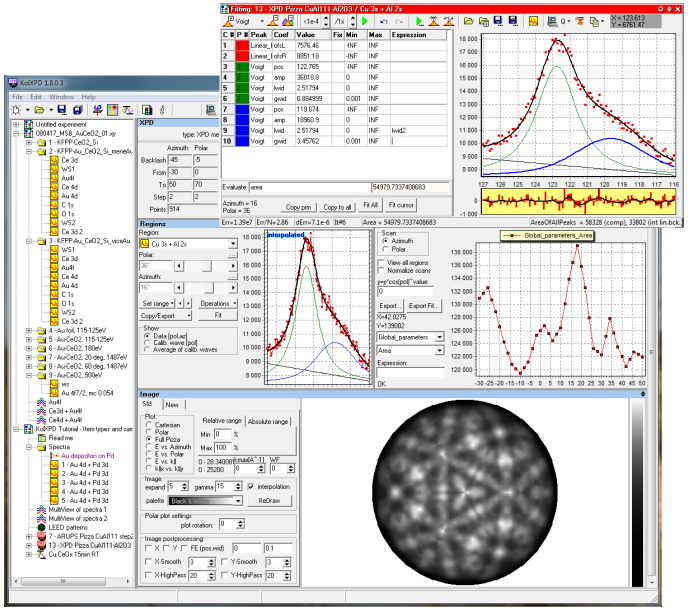
Photoelectron spectroscopy features

- import of data from many analyzer softwares (SpecsLab, Spectra, Omicron, VG, etc.)
- complete XML experiment file of SpecsLab can be loaded and processed, including each region channel and sweep data
- spectra can be acquired by KolXPD (currently with Specs analyzer, others on request)
- support for synchrotron radiation spectroscopy
- spectra can be quickly fitted with most common peak shapes and backgrounds
- all data are organized in one tree structure
- just select more items to view them in one multiview chart
- multiview has many icons for instant processing which doesn't affect original data. Just click to view normalized spectra, make waterfall, subtract background, show fit results, smooth, etc.
- using multiview it is possible to fit dozens of spectra quickly and automatically
- all result data can be exported, all graphs copied into clipboard and pasted anywhere
- data can be transferred in both directions between KolXPD and WaveMetrics Igor Pro for further processing and presentation



Multidimensional experiments

- support for energy-resolved experiments using synchrotron radiation – methods like NEXAFS, Resonant photoemission, etc.
- support for angle-resolved spectroscopy, e.g. XPD (X-ray Photoelectron Diffraction) and ARUPS (Angle-Resolved UV Photoelectron Spectroscopy - band mapping)
- KolXPD can measure this experiments using analyzer, sample manipulator or beamline monochromator
- 2-dimensional angle-resolved data can be plotted as a pattern picture in Cartesian or polar coordinates
- thousands of 2D experiment spectra can be easily and automatically fitted by one shape
- intensity of each pattern point can be spectrum area or any parameter of fit function
- results of XPD pattern modeling software EDAC can be imported and displayed in same way
- multidimensional data can be imported and exported, including pattern pictures – as both text and image format



Other features

- tree structure is useful for whole experiment handle; other items can be added to describe experiment steps e.g. cleaning, heating, deposition, gas exposure etc.
- you can add own notes to any item; folders and note items can contain HTML-formatted text
- simple image browser e.g. for LEED pictures
- KolXPD allows simple quantitative preview by showing peak areas corrected by analyzer transmission function and photoemission cross-section
- relative concentrations can be showed for each folder; it's useful for preview of concentration evolution during experimental steps
- all files of KolXPD has open text format – you can write an import to your favorite software