What is new in UNIFIT 2010?

The improvement of the processing and presentation of parameter dependent series of measurements is the main goal of the **version 2010** of the software UNIFIT. The new or improved subroutines primarily extend the batch processing and presentation functions, implement film thickness calculation procedures, improve window handling, introduce backup of projects, undo and advanced export functions, and other user demands.

The version 2010 is executable in computer networks now and works on 32-bit and 64-bit Windows operating systems. It offers the following new subroutines:

i) Restrictions of the batch processing and presentation functions (e.g. equal acquisition parameters, equal charge correction …) of former versions were eliminated. Now the batch processing or presentation can be used independent of the different recording parameters or charge corrections (e.g. the peak fit of the C 1s peak from a survey or single region can be carry out together using the batch-processing subroutine). Additionally, new design tools (curve distance and stretching factor are variable) were integrated into the 3D presentations (Fig. 1).

ii) Several new functions improve the window handling:

- manually changing of the window size and position,
- direct selecting and activating of the windows, particularly next or previous ones,
- two different tile arrangements of the windows.

iii) Now one processing step may be taken back via an implemented Undo function.

iv) The definition of the fit parameters using the mouse was improved. The activated peak component is marked by a red colour bar. If the Shift key is pressed the next peak component can be selected by pressing the left mouse button without changing the fit parameters.
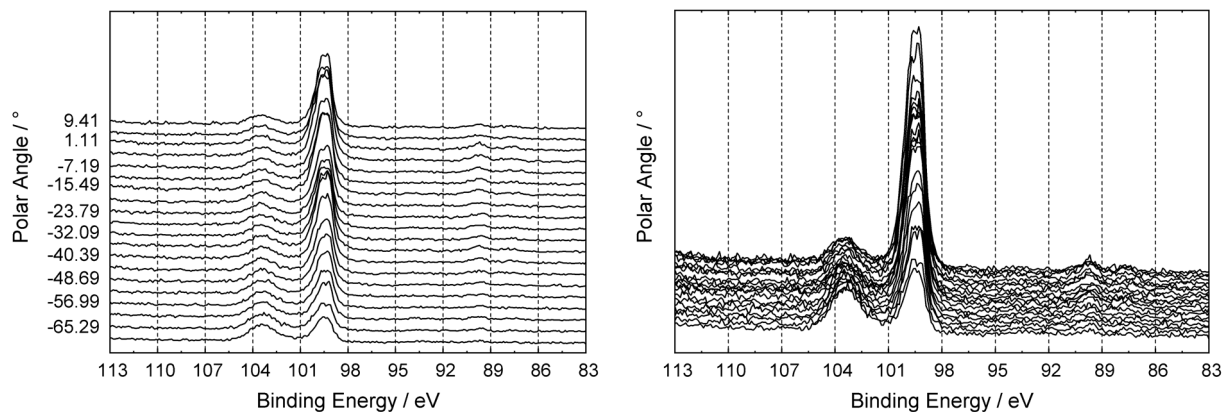

Fig. 1. Plot 3D Waterfall 0° of naturally oxidized Si using different design tools; image created using UNIFT 2010, exported and inserted into this Word document

v) In order to avoid a loss of data an auto-save function was integrated. The new function can be activated or deactivated. The repeating time for saving backups is variable. Five backups are available for the reconstruction of the processing data.

vi) The y-axis of a created parameter plot can be displayed optionally in at-% (Figure 2).

vii) Now the following displayed Unifit window data can be exported:

- Standard Window,
- Wagner Plot,
- Parameter Plot,
- Plot 3D Waterfall 0°,
- Plot 3D Waterfall 0° Plus,
- Plot 3D Waterfall 45°,
- Plot 3D Waterfall -45°.

This new export routine can be used as universal converter of spectra recorded with different data formats, too.

viii) In order to enlarge the presentation tools 10 marker lines can be displayed optionally. Five different marker forms are offered. The colour, thickness and line form are variable (Figure 3).

ix) A new subroutine allows the estimation of film thicknesses using two different methods.

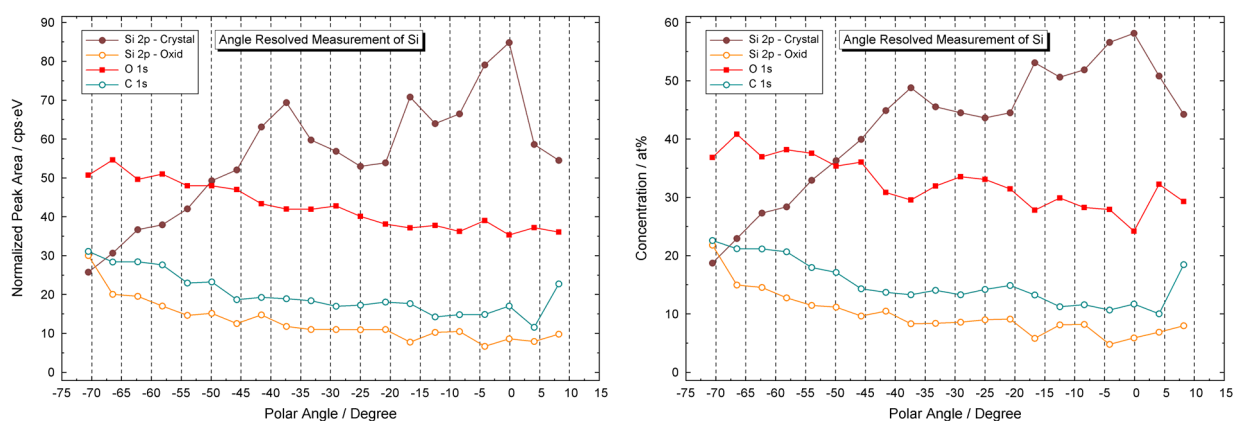**x)** The excitation satellites can be defined for any sources.

Fig. 2. Plot of the quantification results of a ARXPS analysis of naturally oxidized Si; left: y-axis shows normalized peak areas, right: y-axis shows atomic percentage image created using UNIFT 2010, exported and inserted into this Word document

xi) Six measurement formats were additionally included:

1. batch processing format of the spectrometer PHI-1600/1600C (*.csv),

2. new standard format of the spectrometer PHI-1600/1600C (*.csv),

3. standard format of SCIENTA3000 (*.txt),

4. standard format of PHI spectrometers (*.spe),

5. profile and ARXPS format of PHI spectrometers (*.pro), (*.ang)

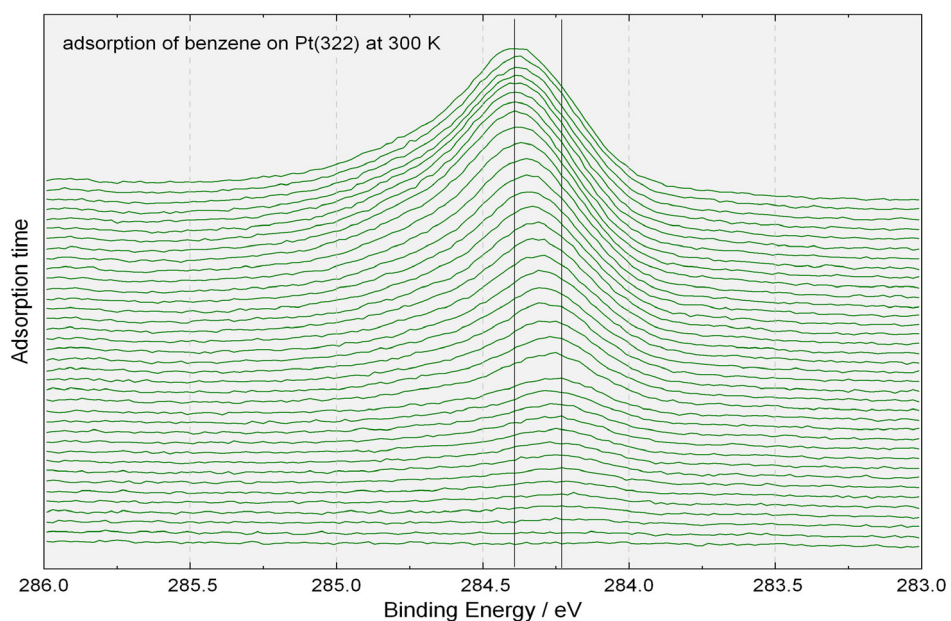6. standard format of the Focus spectrometer CSA (*.dat).

Fig. 3. Plot 3D Waterfall 0° of Benzene C 1s peak adsorbed on Pt(322) at 300 K, marker lines show the peak maximum at low and high coverage; image created using UNIFIT 2010, exported and inserted into this Word document