

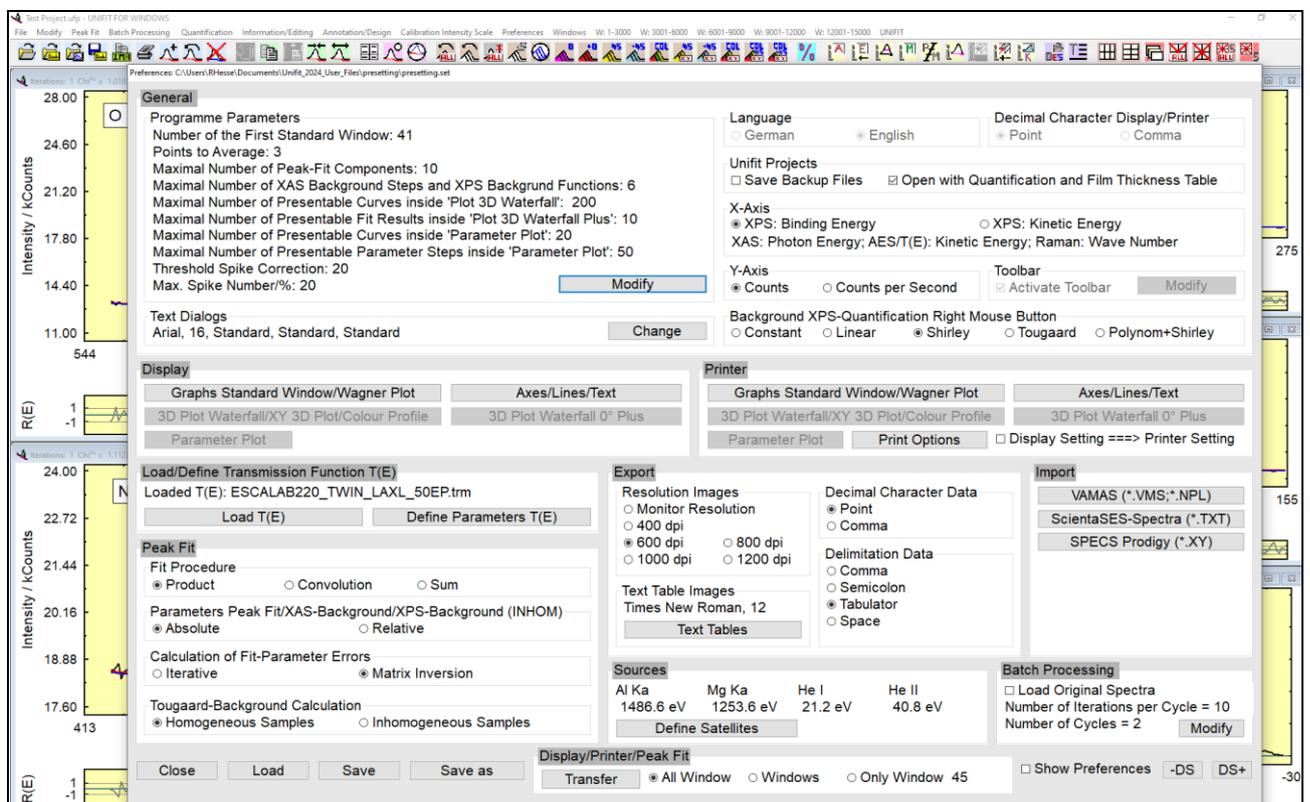
# What is new in UNIFIT 2024?

Main focus of the advancement to the **UNIFIT 2024** software was the rework and new design of the definition and displaying of the preferences. The dialogue 'Programme Parameters' was redesigned and expanded. The definition of the excitation satellites was reworked completely. The pop-up and pull-down commands were improved. The setting options of the x-axis and y-axis dialogues were refreshed. New export functions were implemented.

i) The input management for the definition of the **preferences** (see Fig. 1) was completely reworked and redesigned. A new preference dialogue was implemented. Former pull-down commands of the preferences were removed. Nine groups were defined:

- General
- Display
- Printer
- Load/Define Transmission Function  $T(E)$
- Peak Fit
- Export
- Import
- Sources
- Batch Processing

The operations will be carried out simultaneously. Therefore, the button 'Close' and not 'OK' leaves the dialogue. The automatic transfer of reloaded preferences to open spectra windows was deactivated. The preference 'Save Projects Automatically' was removed. The currently loaded preferences can be displayed optionally after the execution of the software Unifit 2024.



**Fig. 1** Screen shot: Dialogue for definition of the presettings of the programme handling

ii) The number of the **excitation sources** (see Fig. 2) was reduced to four. The dialogue for the definition of the satellites was redesigned and the parameters were clearly labelled. The files ‘satellite.set’ and ‘satellite1.set’ were removed. The parameters of the excitation satellites were integrated into the presetting files (\*.set).

Source Name:		Al Ka	Mg Ka	He I	He II
Excitation Energy		1486.6	1253.6	21.2	40.8
Peak	Peak height	100	100	100	100
	Displacement/eV	0	0	0	0
Sat. 1	rel. Peak Height	6.4	8	2	0
	Displacement/eV	9.8	9.4	1.9	0
Sat. 2	rel. Peak Height	3.2	4.1	0.5	0
	Displacement/eV	11.8	10.2	2.5	0
Sat. 3	rel. Peak Height	0.4	0.55	0	0
	Displacement/eV	20.1	17.5	0	0
Sat. 4	rel. Peak Height	0.3	0.45	0	0
	Displacement/eV	23.4	20	0	0
Sat. 5	rel. Peak Height	0.55	0.5	0	0
	Displacement/eV	69.7	48.5	0	0

OK Cancel

**Fig. 2** Screen shot: Dialogue for definition of the excitation satellites

iii) The dialogue ‘**Programme Parameters**’ (see Fig. 3) was extended. Ten parameters are available:

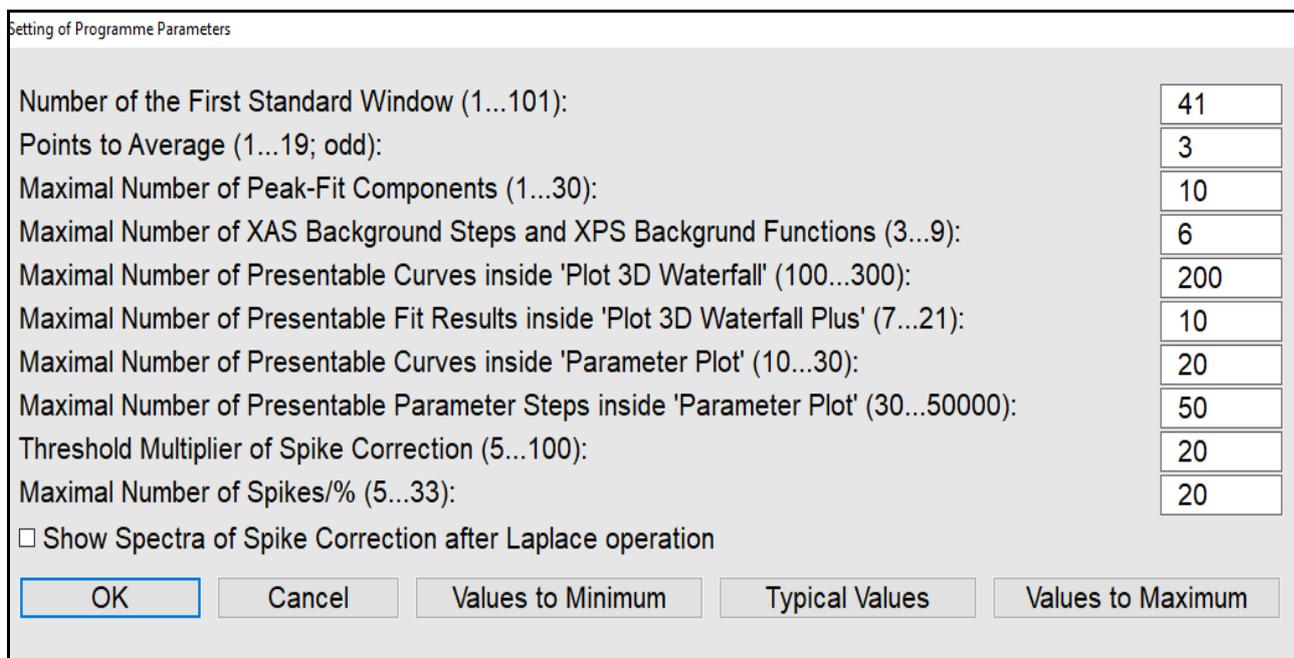
- Number of the First Standard Window (1...101)
- Points to Average (1...19, odd)
- Maximal Number of Peak-Fit Components (1...30)
- Maximal Number of XAS Background Steps and XPS Background Functions (3...9)
- Maximal Number of Presentable Curves inside 'Plot 3D Waterfall' (100...300)
- Maximal Number of Presentable Fit Results inside 'Plot 3D Waterfall Plus' (7...21)
- Maximal Number of Presentable Curves inside 'Parameter Plot' (10...30)
- Maximal Number of Presentable Parameter Steps inside 'Parameter Plot' (30...50000)
- Threshold Multiplier of Spike Correction (5...100)
- Maximal Number of Spikes/% (5...33)

iv) The **pop-up and pull-down commands** were refreshed. The pull-down group ‘Information’ was renamed to ‘Information/Editing’. The pull-down command ‘Design - Edit Parameters...’ was shifted to ‘Information/Editing – Edit Parameters...’.

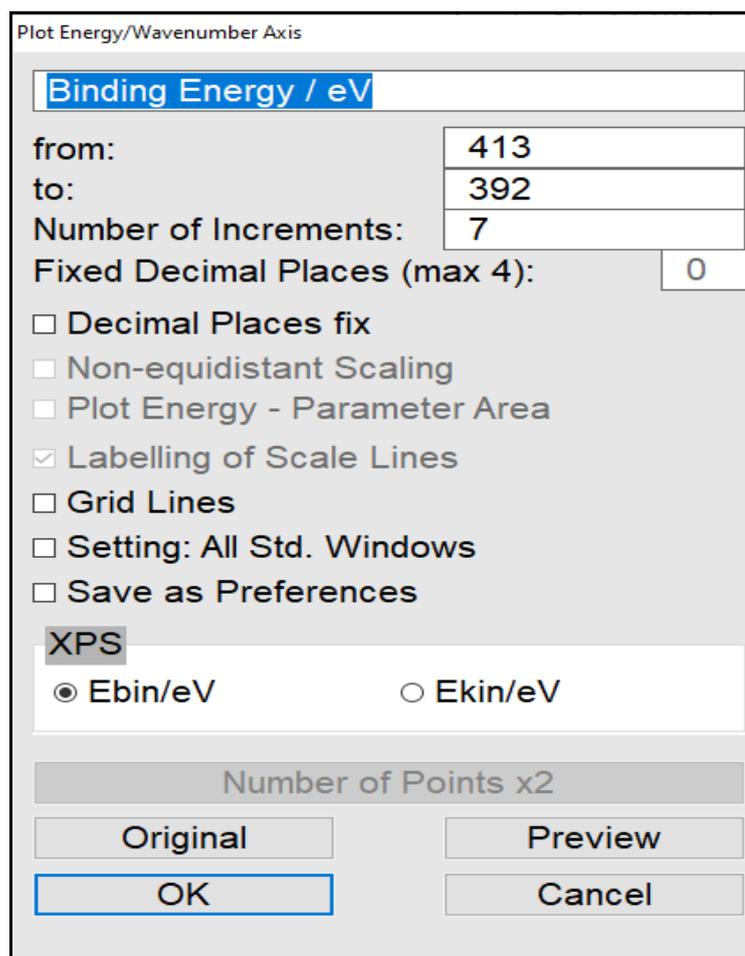
v) The dialogues ‘Plot Energy/Wavenumber Axis’ (see Fig 4) and ‘Plot Intensity Axis’ were refreshed (see Fig 5).

vi) Two new options were implemented in the **export of fit parameters** (see Fig 6). Now the absolute and relative peak area can be exported, too.

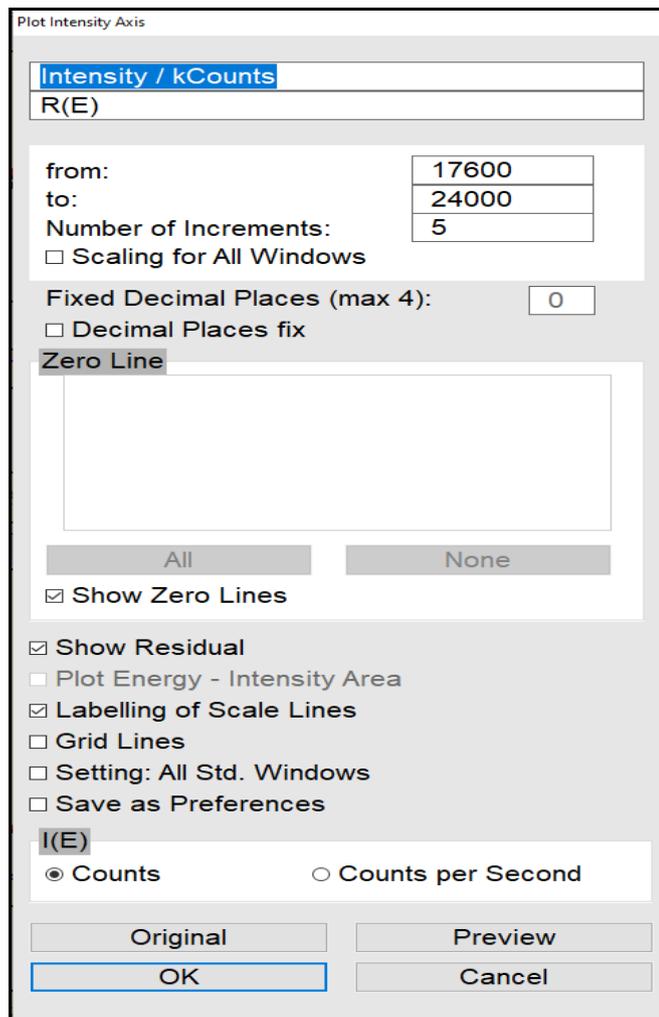
vii) The **satellite subtraction** can be carried out for the active window and optionally for all standard windows without the batch processing operation.



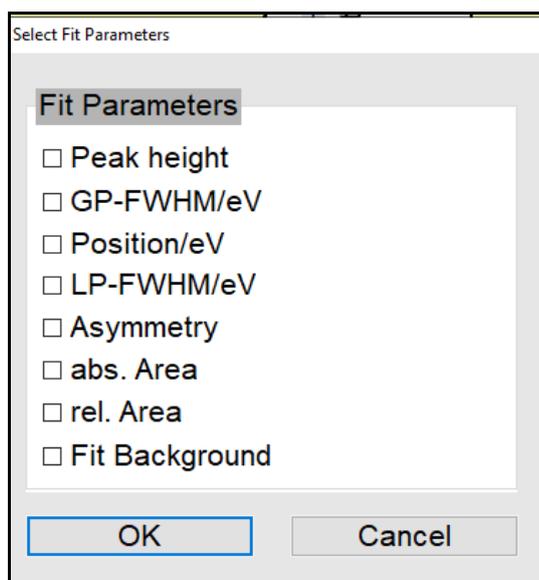
**Fig. 3** Screen shot: Dialogue for definition of the general programme parameters



**Fig.4** Screen shot: Dialogue 'Plot Energy/Wavenumber Axis'



**Fig.5** Screen shot: Dialogue 'Plot Intensity Axis'



**Fig.6** Screen shot: Dialogue 'Export Fit Parameters'