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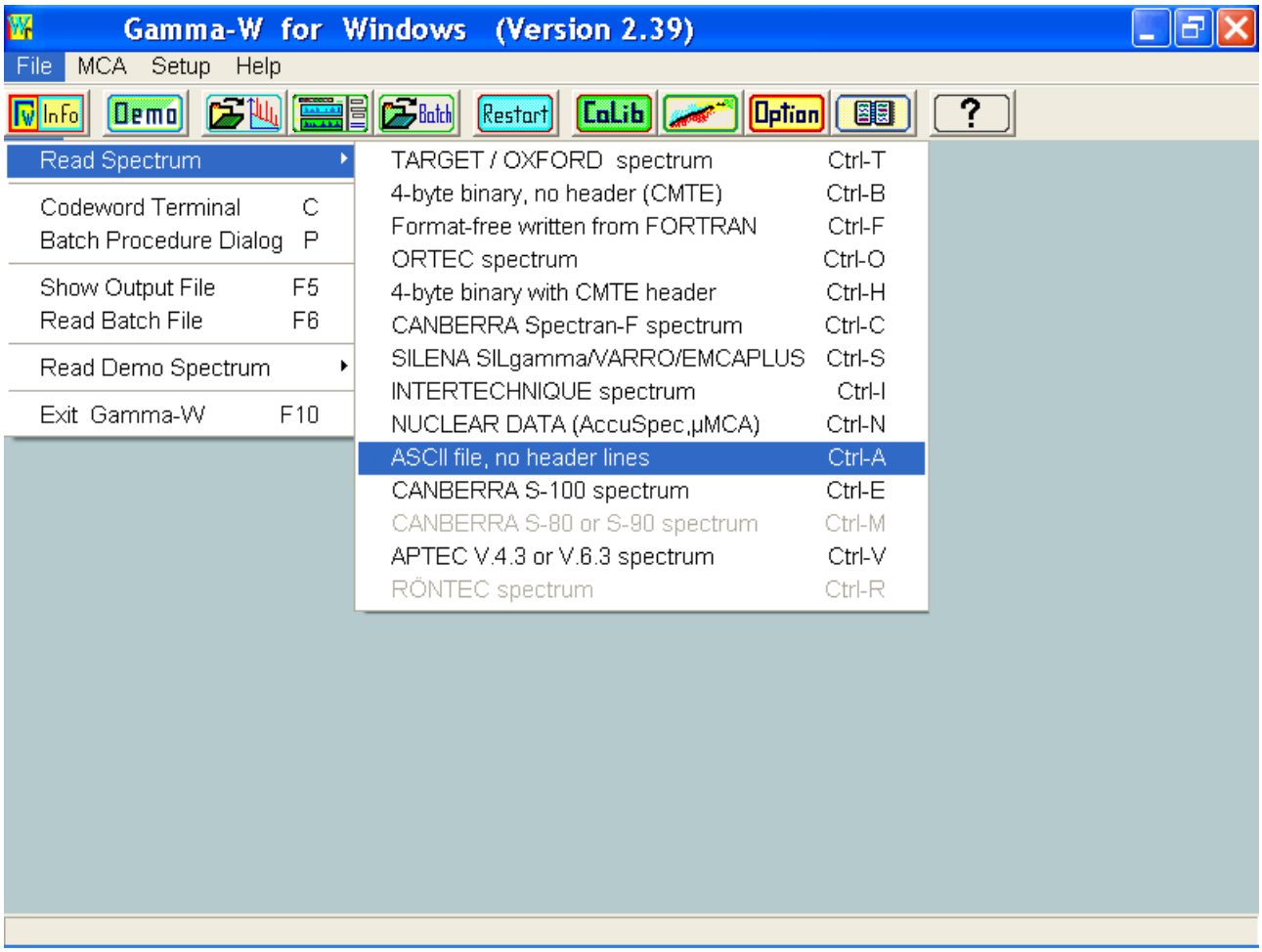
Screenshots from Gamma-W for Windows:

The Welcome Page shows the active program (Gamma-W, Sodigam or Alps), the version number and it tells when the Hardlock software protection key is not active.

Spectrum read-in via menu: ‘File | Read Spectrum’

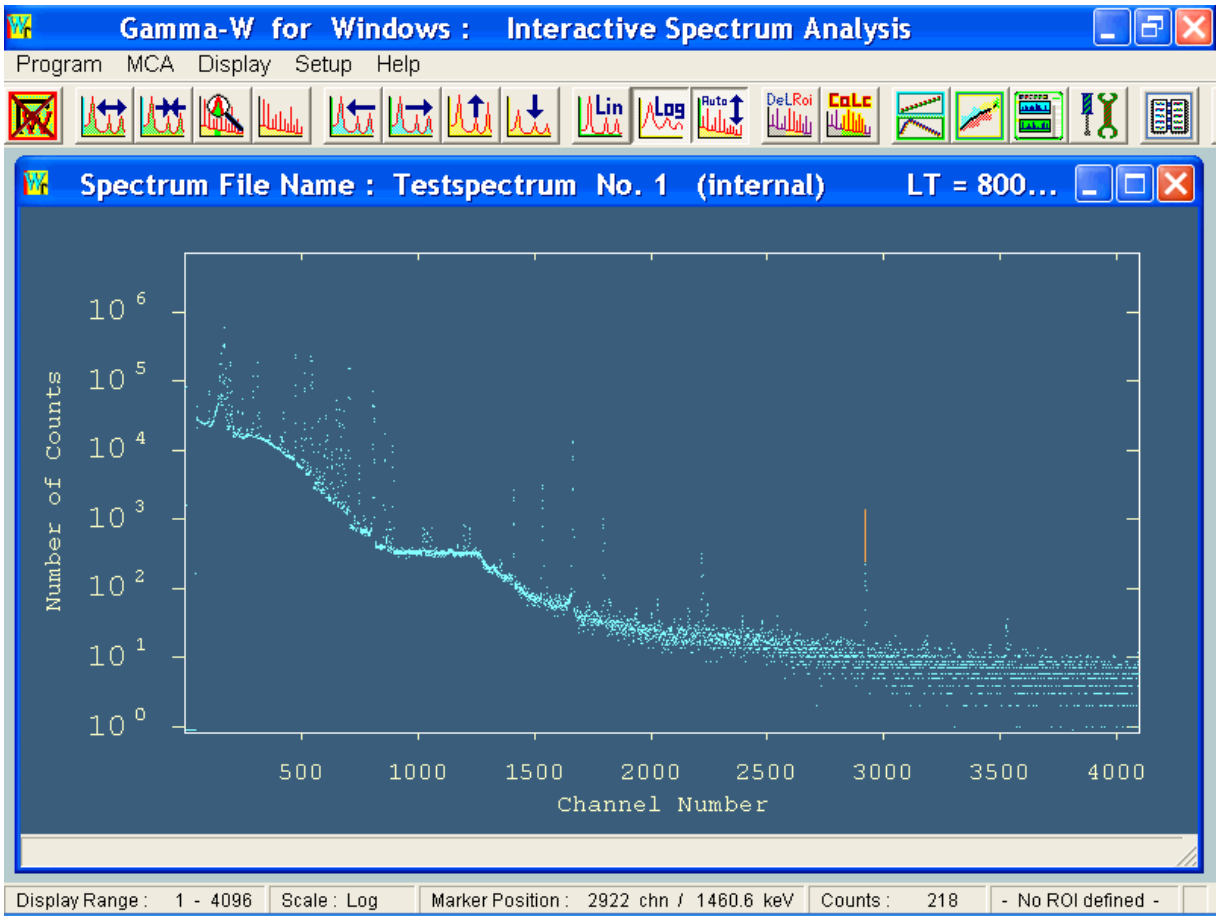
The standard spectrum folder and spectrum format can be pre-selected in the start-up file “Startup.ini”.



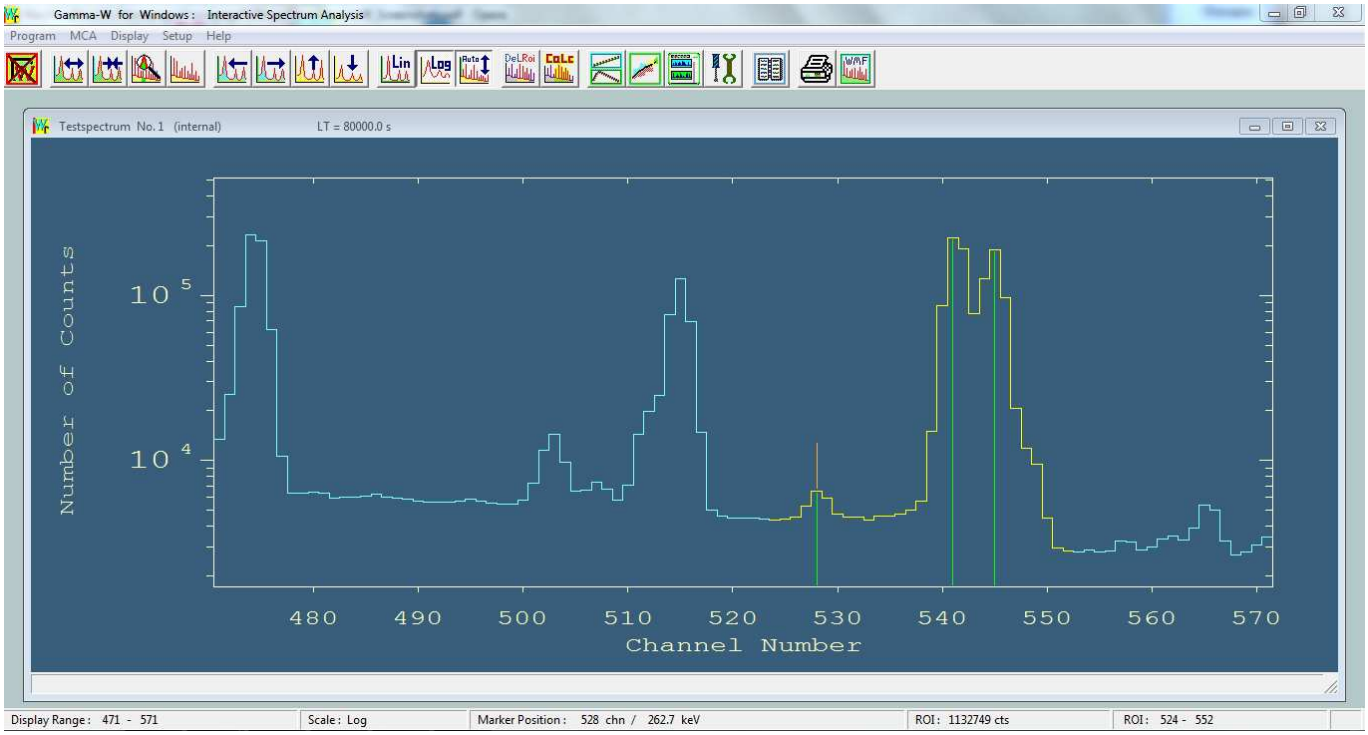
When a spectrum is read in, the program shows the spectrum analysis screen.

Gamma-W can make
- analyses of regions-of-interest using one or several Batch-files, including calibrations
- fully automatic quantitative peak analysis
- detailed and user-controlled analyses of selected regions-of-interest (ROI).

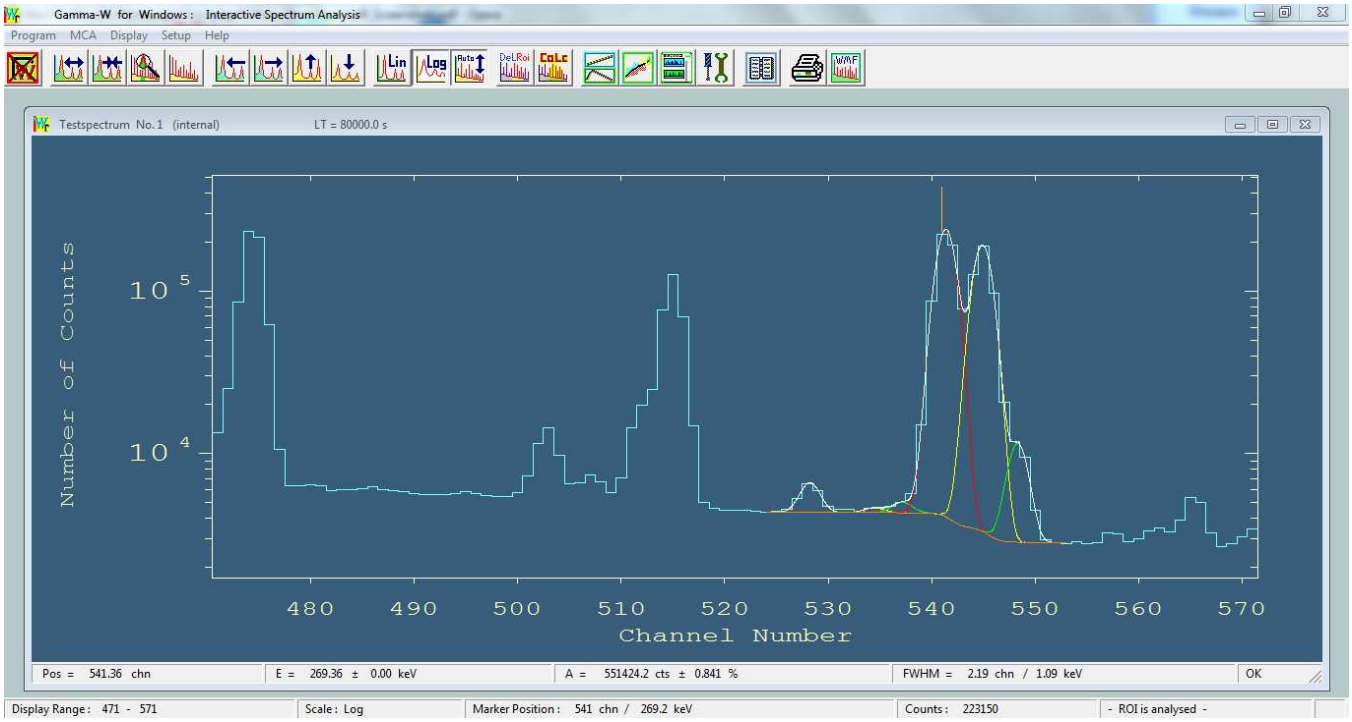
All analysis modes can be combined for the analysis of a spectrum, followed by quantitative nuclide activity calculation.



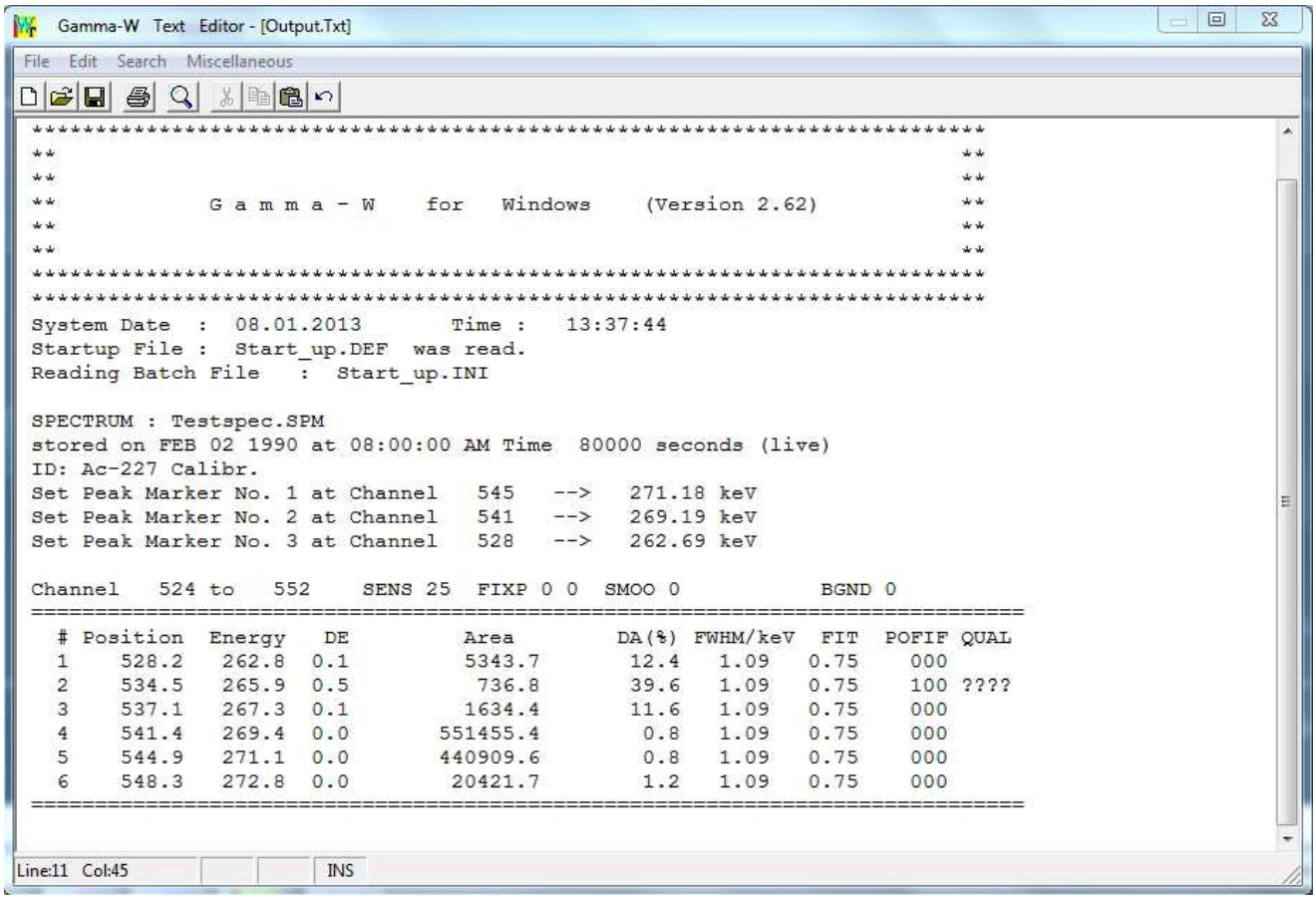
Gamma-W analyses fully automatically, inclusive of peak-search and automatic peak-list improvement, or under complete user control. One can define tentative or well-known peak positions, or one may use the highly sensitive in-built algorithms for peak-find.



The button ‘Calc’ activates analysis of the defined ROI or spectrum range. Fitted peaks and the baseline are graphically displayed and relevant numerical results are shown (Position, Energy, Area, FWHM) in the status line below. The sum-function adding up all fitted peaks can be displayed at request.

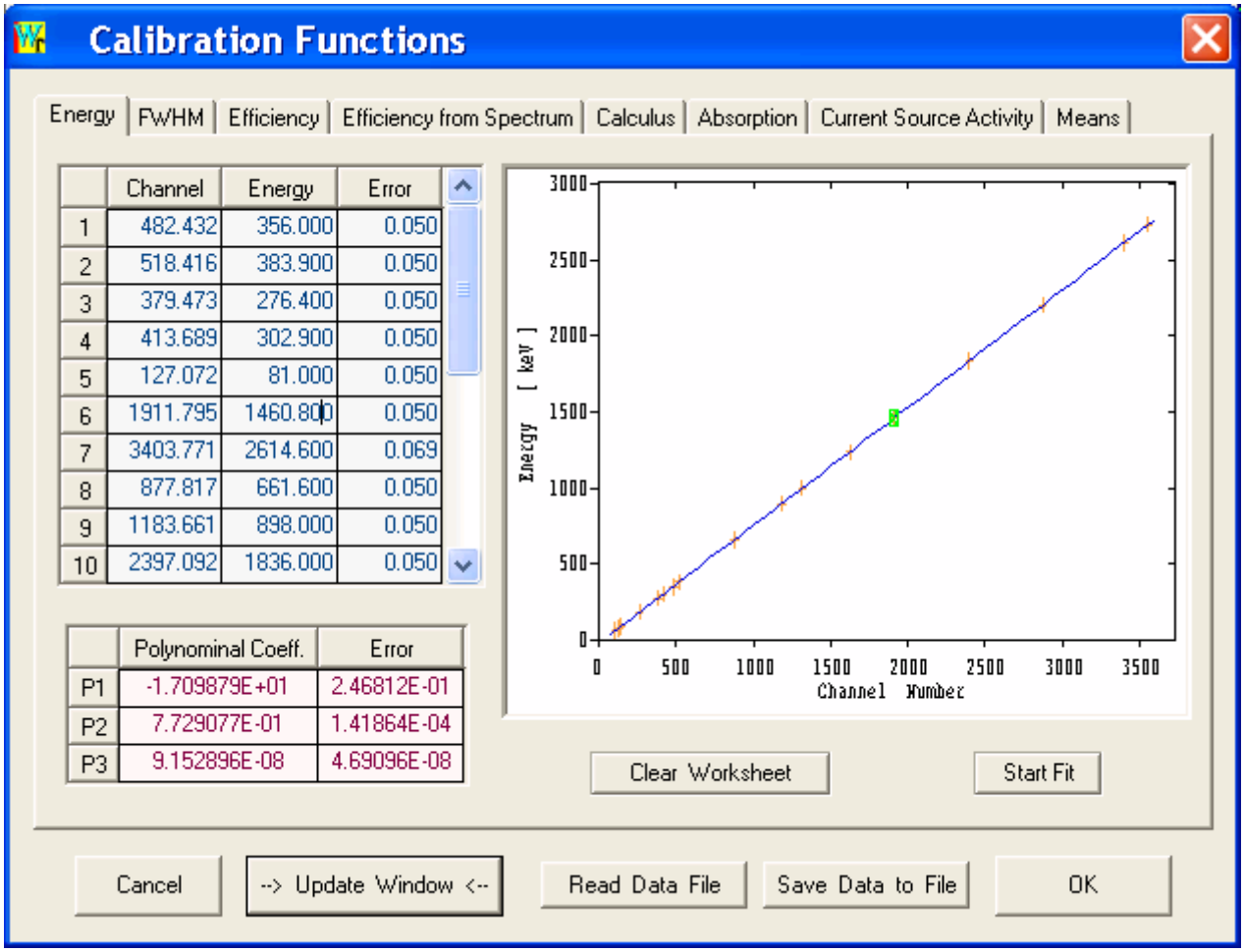


Details of the peak analyses and all other actions are stored in the Output (results) file.
The length of protocol can be selected in 6 levels of extensiveness.
Several lines have been deleted from the printout below in order to fit the page.

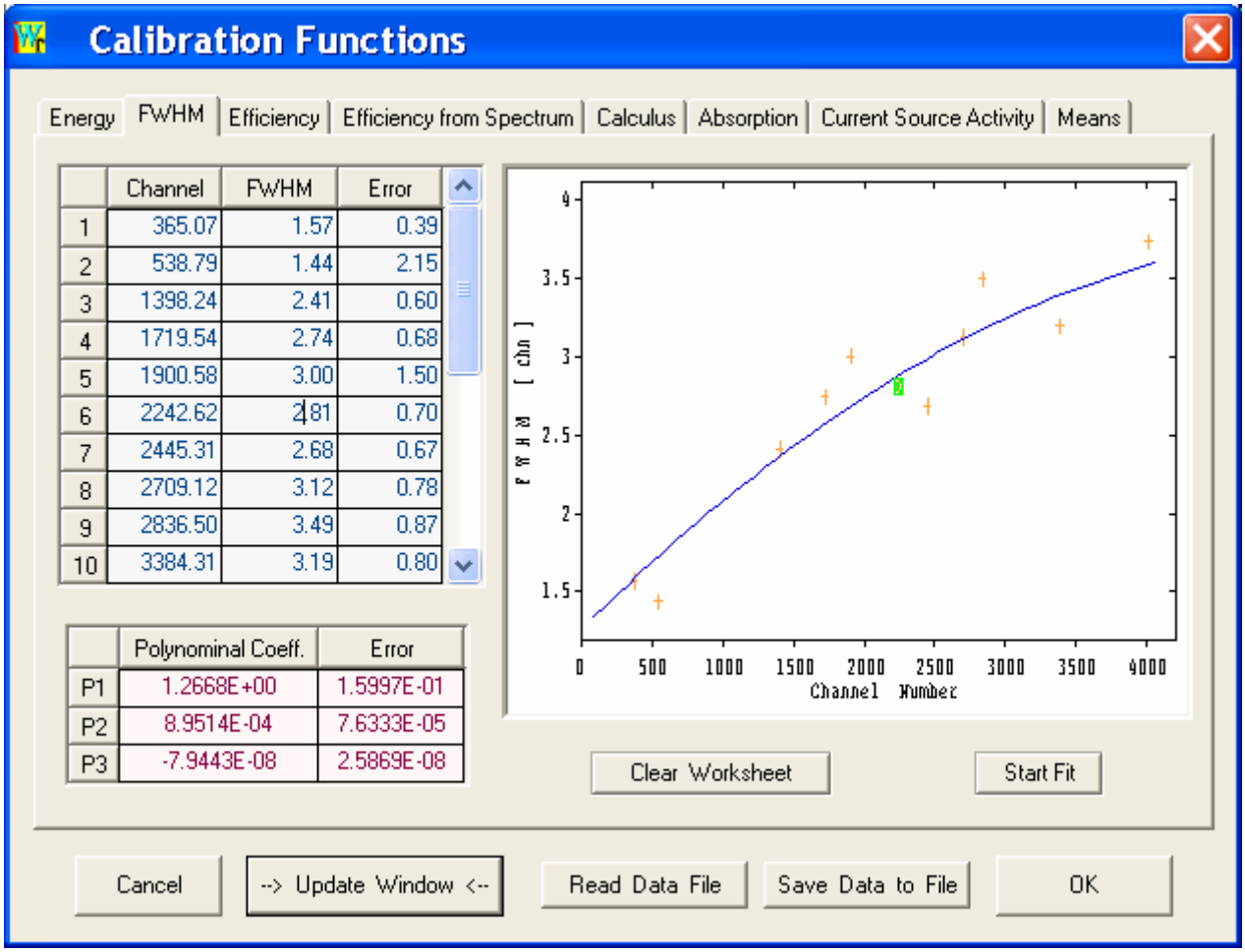


All calibration functions (Energy, FWHM, Efficiency, Self-absorption) as well as other mathematical support options are operated from one window.

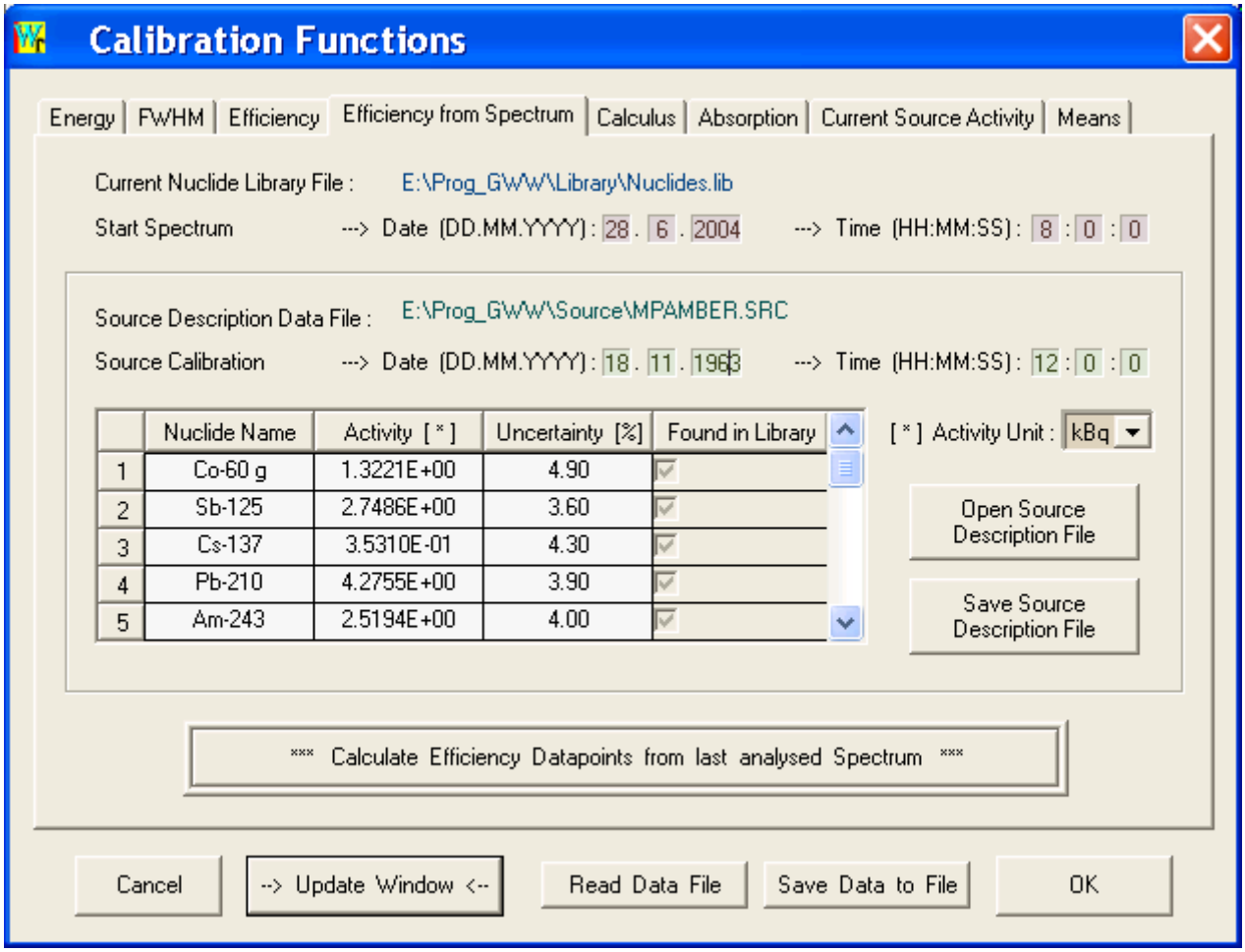
Energy calibration:
When an energy calibration for a spectrum exists, it is uploaded along with the spectrum.
A least-squares-fit calibration with up to 20 data points taken directly from the spectrum graphics is very straightforward (point-and-click, then type “e” and fill the table). The data points and the parameters of the fitted energy calibration polynomial can be stored in a data file and the details of the fitting process are stored in the Output file.



Full Width at Half Maximum (FWHM) Calibration:
Gamma-W automatically calculates the FWHM of peaks when a spectrum is read in. The polynomial fit to the data points, i.e. the FHWM function, can be improved by the user through a selection of data points (e.g. points with large uncertainties may be excluded from the fit). The storing and reading of FWHM data to/from file is similar to that for energy calibration data.



Efficiency:
The Efficiency can either be calculated from the just analysed spectrum of a calibration standard or read in from an existing calibration file. In the first case, the data (nuclide, activity, date of calibration, etc.) from the certificate of a given calibration source are entered and saved in a source description file. It is then a straightforward process to calculate efficiency data from the peak-areas in the spectrum of the source. Results from several spectra can be combined to generate one set of efficiency data.



Two types of fit functions are available for efficiency data:
- the intrinsic HPGe or NaI(Tl) Jäckel-Westmeier Efficiency-Function
- polynomials of order from 1 to 9 in double-logarithmic data display

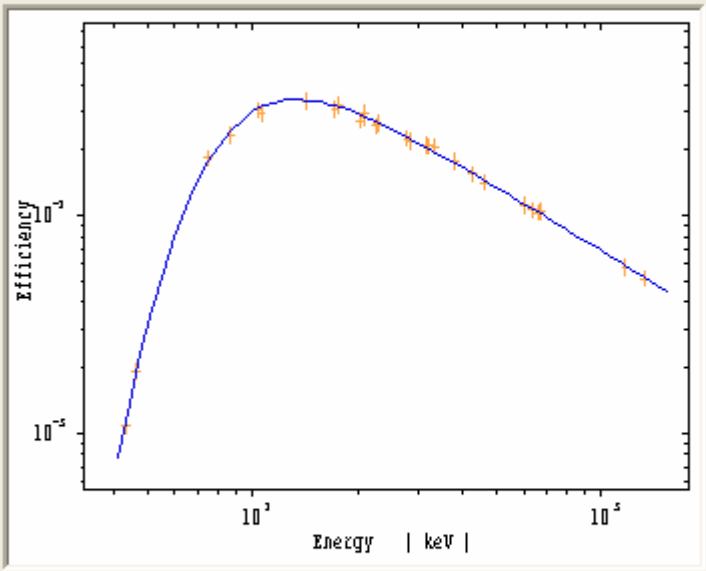
Details of each function-fit are listed in the output file.

Calibration Functions

Energy | FWHM | Efficiency | Efficiency from Spectrum | Calculus | Absorption | Current Source Activity | Means

	Energy	Efficiency	Error
23	600.60	1.1158E-02	4.979E-04
24	606.60	1.1100E-02	4.628E-04
25	635.90	1.0618E-02	4.794E-04
26	661.60	1.0347E-02	4.914E-04
27	671.40	1.0447E-02	5.651E-04
28	1173.20	5.7888E-03	2.916E-04
29	1332.50	5.1515E-03	2.609E-04

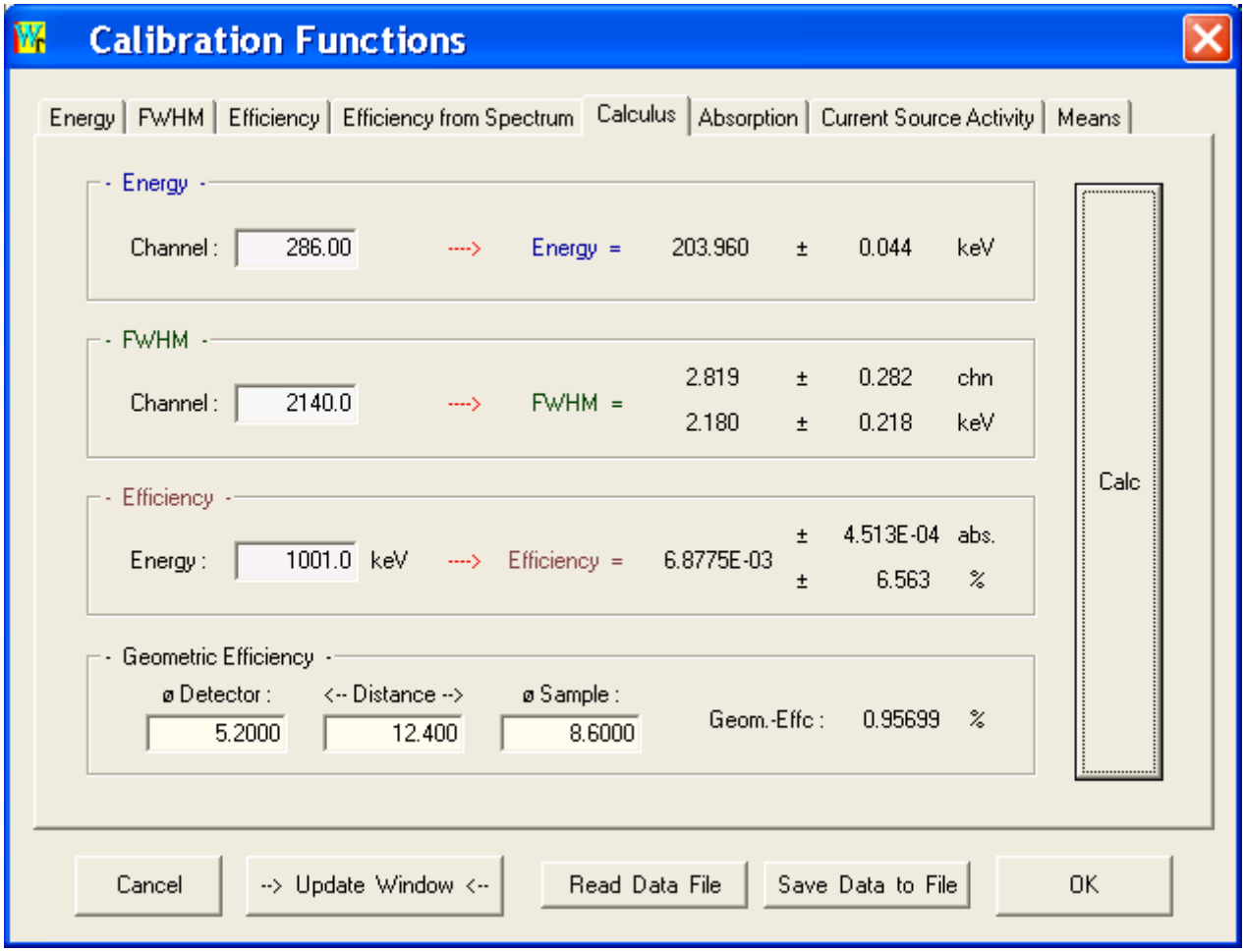
	Parameter	Error
P1	2.6024E+01	3.0603E-02
P2	-7.5751E-01	5.2779E-03
P3	-1.6127E-02	8.8245E-04
P4	-1.9713E+00	4.7967E-02
P5	2.7448E-01	1.1837E-02
P6	3.7928E-02	6.9399E-04



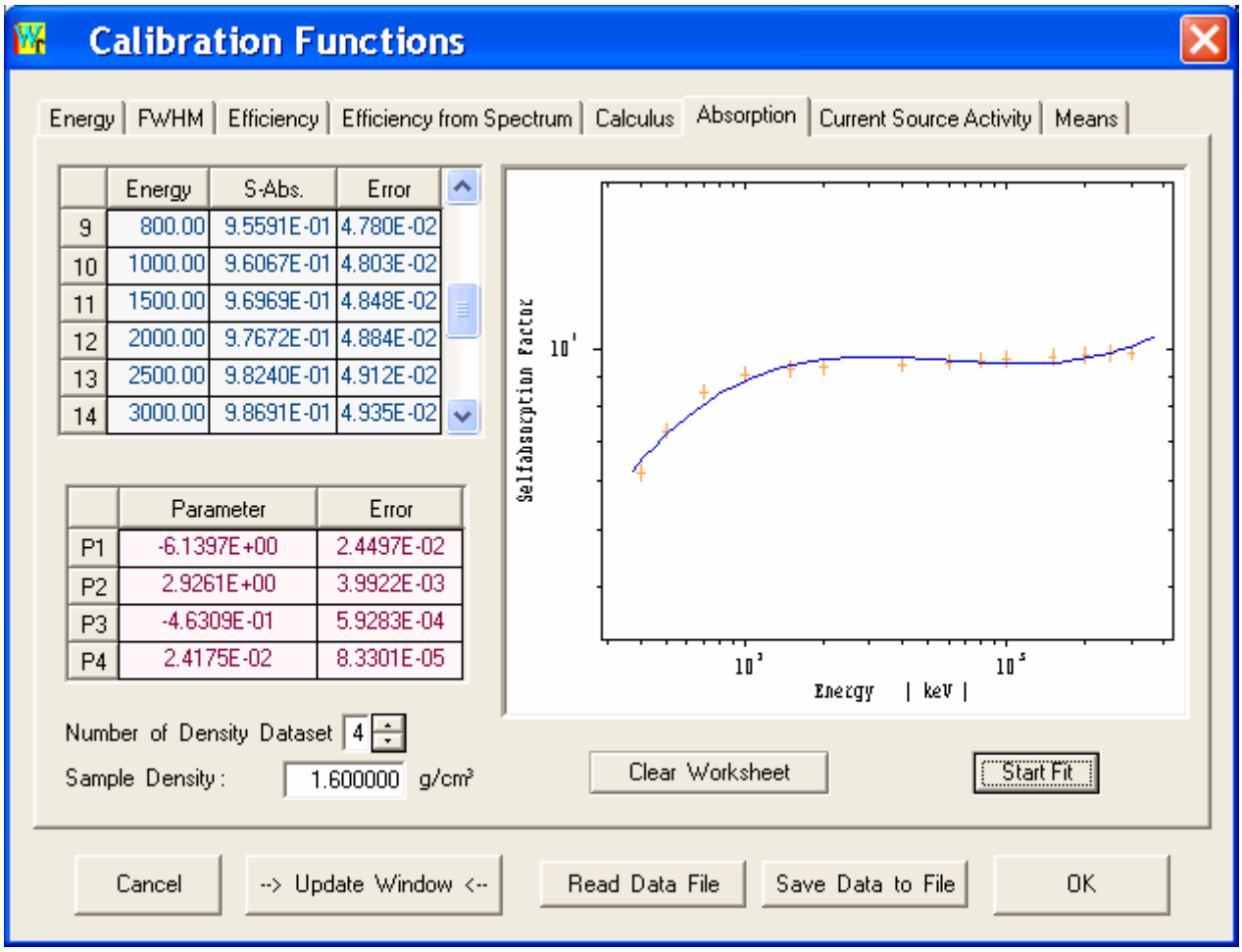
Clear Worksheet | Number of Coefficients 0 | Start Fit

Cancel | --> Update Window <-- | Read Data File | Save Data to File | OK

Individual data for all calibration functions with uncertainties as well as the geometric efficiency can be calculated in the Calculus-window.



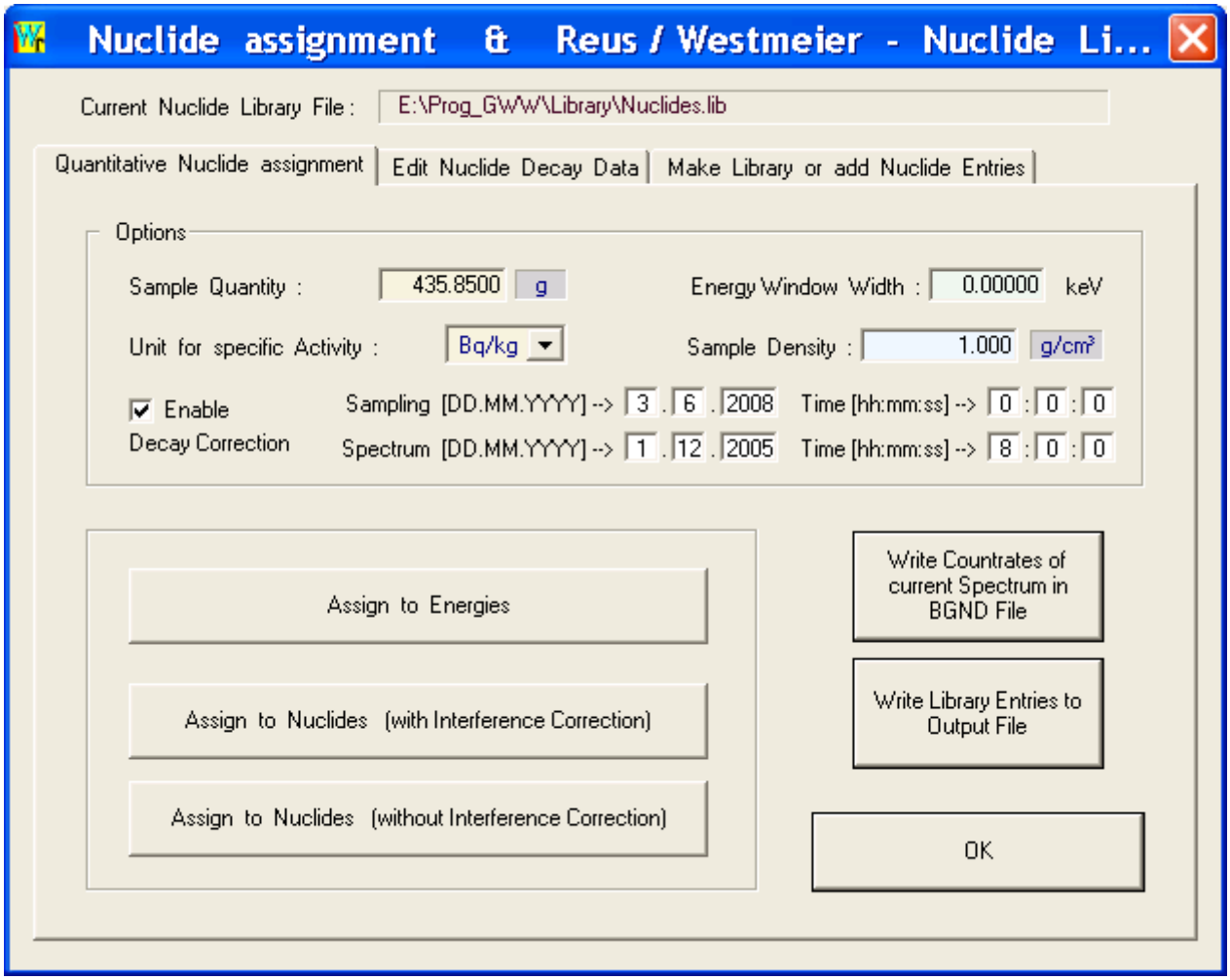
Self absorption correction:
Gamma-W calculates energy dependent correction factors for each sample density by interpolation in experimental data that were measured for various densities.



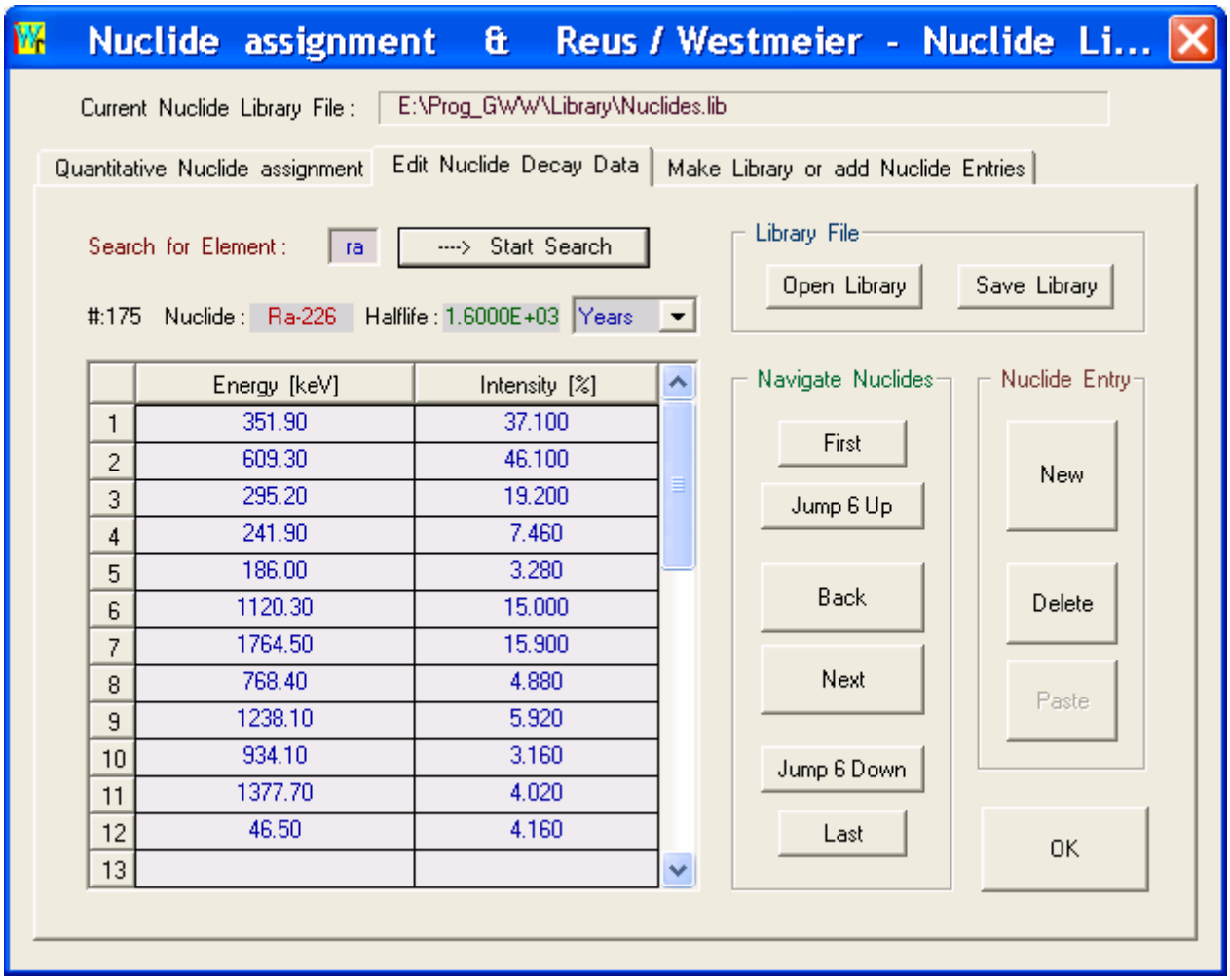
Quantitative nuclide assignment

All options for quantitative nuclide assignment and for library management are compiled in one window.

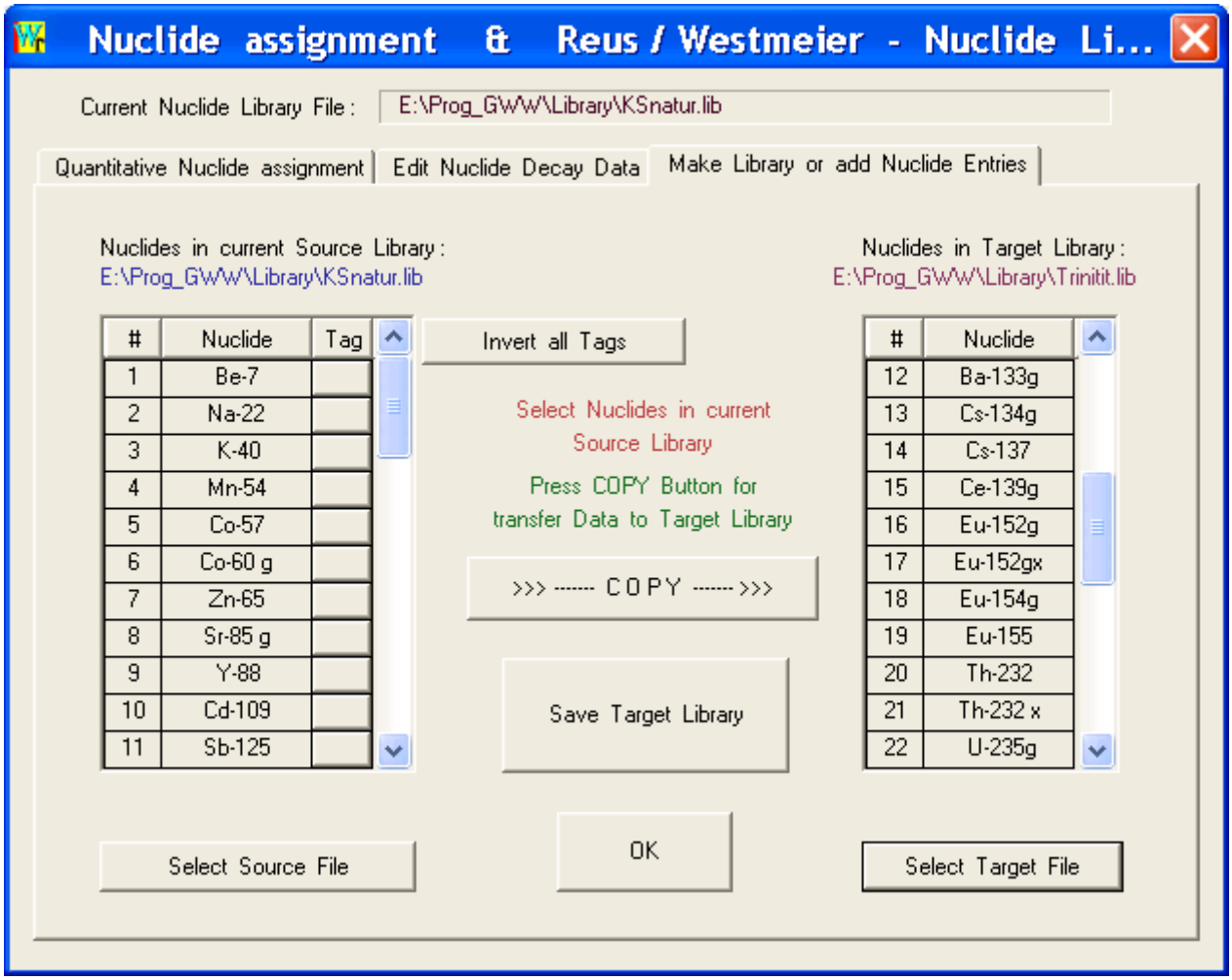
The overview page shows the current library file, sample mass, activity unit, sample density and data for decay correction (if activated).
Nuclide activities can be calculated by energies or by nuclides. In the former case for each energy the activities for all potential nuclides are listed that match this energy, in the latter case the activity is determined for each line of a nuclide and finally the weighted mean activity is calculated. An interference correction can be activated.
This window also serves for the set-up of a background reference file that is later used to correct spectra for external background peak contributions.



The nuclide library can be edited very comfortably and new user libraries are produced by excerpting from the master library. Each library can hold up to 2000 nuclides with up to 32 gamma-ray lines per nuclide. The Gamma-ray master library holds data for 1554 nuclides with half-lives >10 seconds.

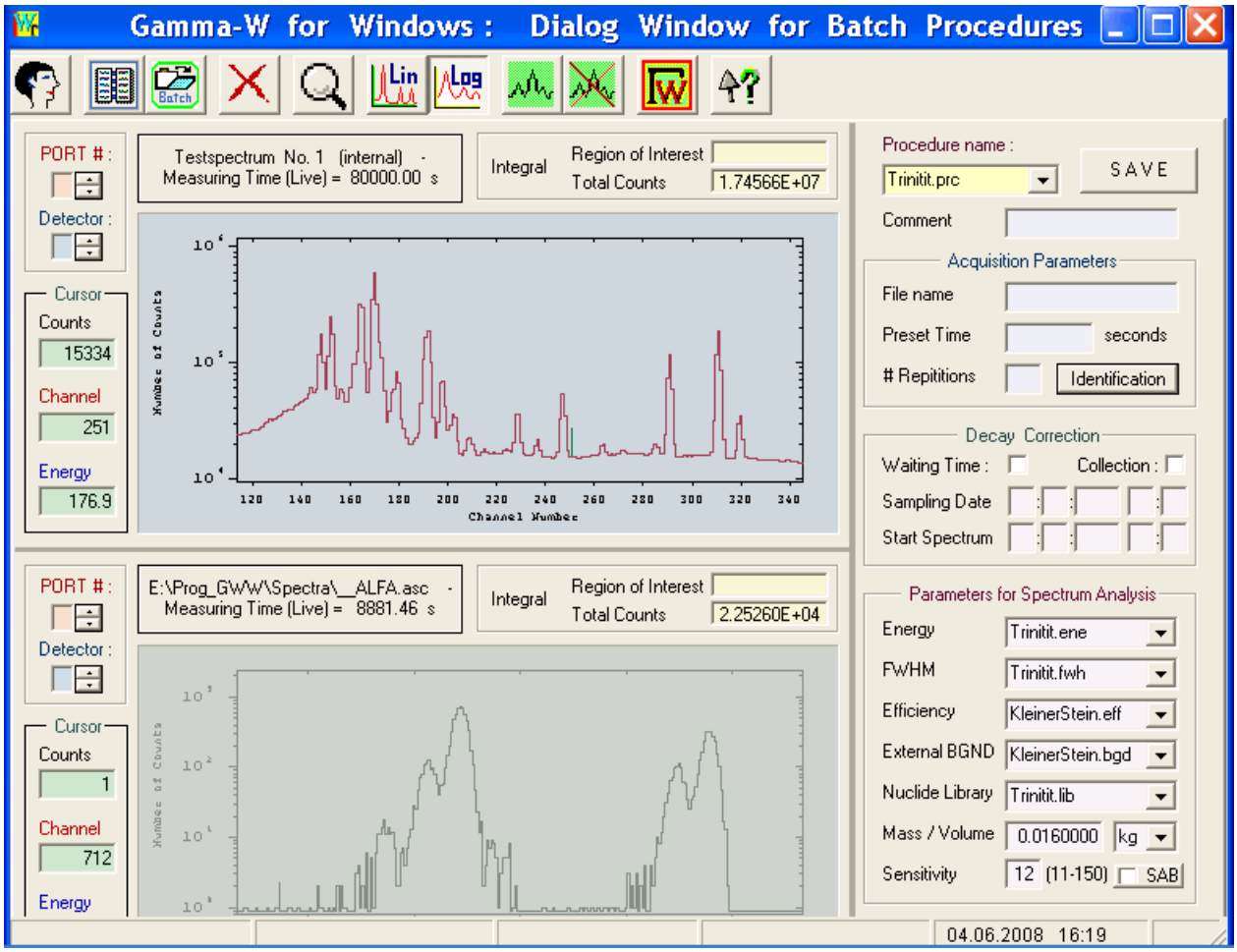


Existing libraries can be combined or new libraries created to make libraries that are optimized for specific applications.

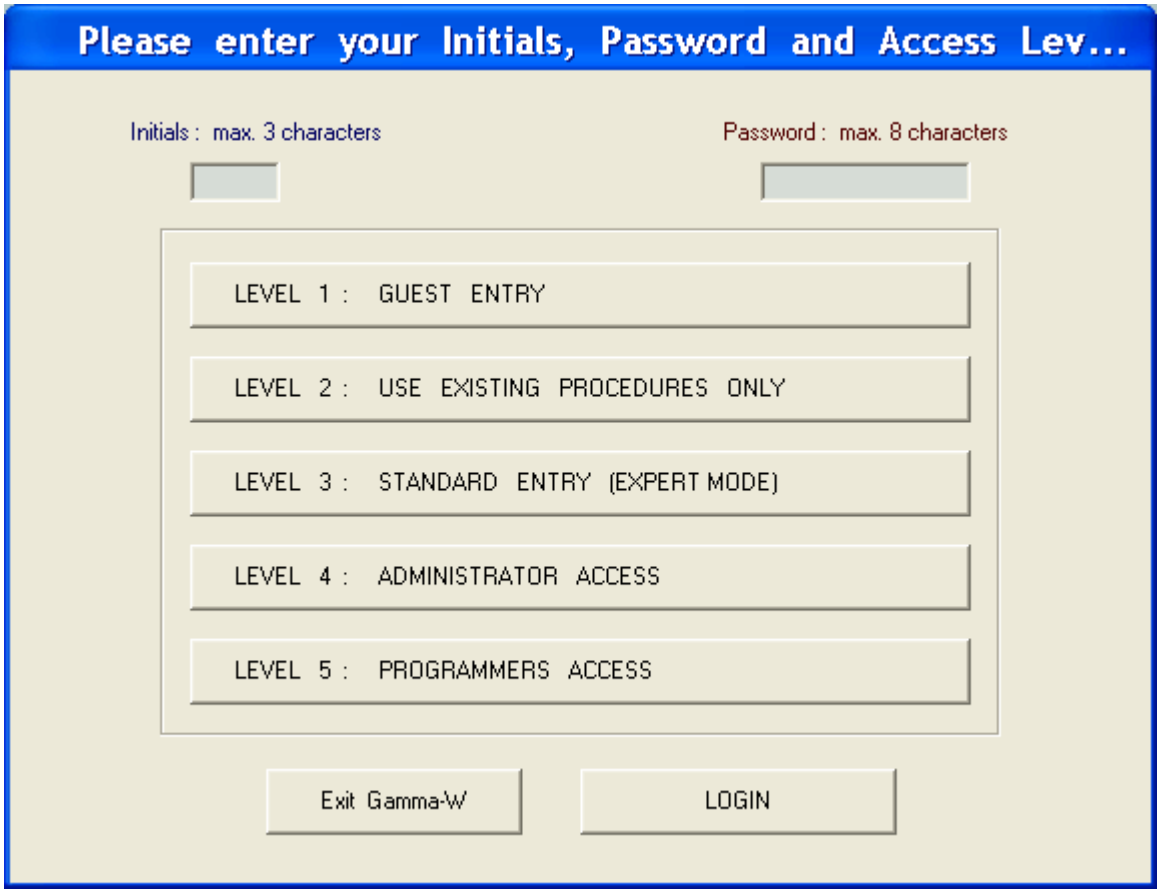


Automatic analyses in the Procedure Mode:
All relevant steps and settings can run automatically in the Batch-Procedure-Dialog.
This feature allows pre-definition of calibration data, background, decay correction, sensitivity and others which are stored in a reference (procedure) file and available for future analyses. Thus, one can make repetitive analyses of similar samples using the same data sets, definitions and procedures.

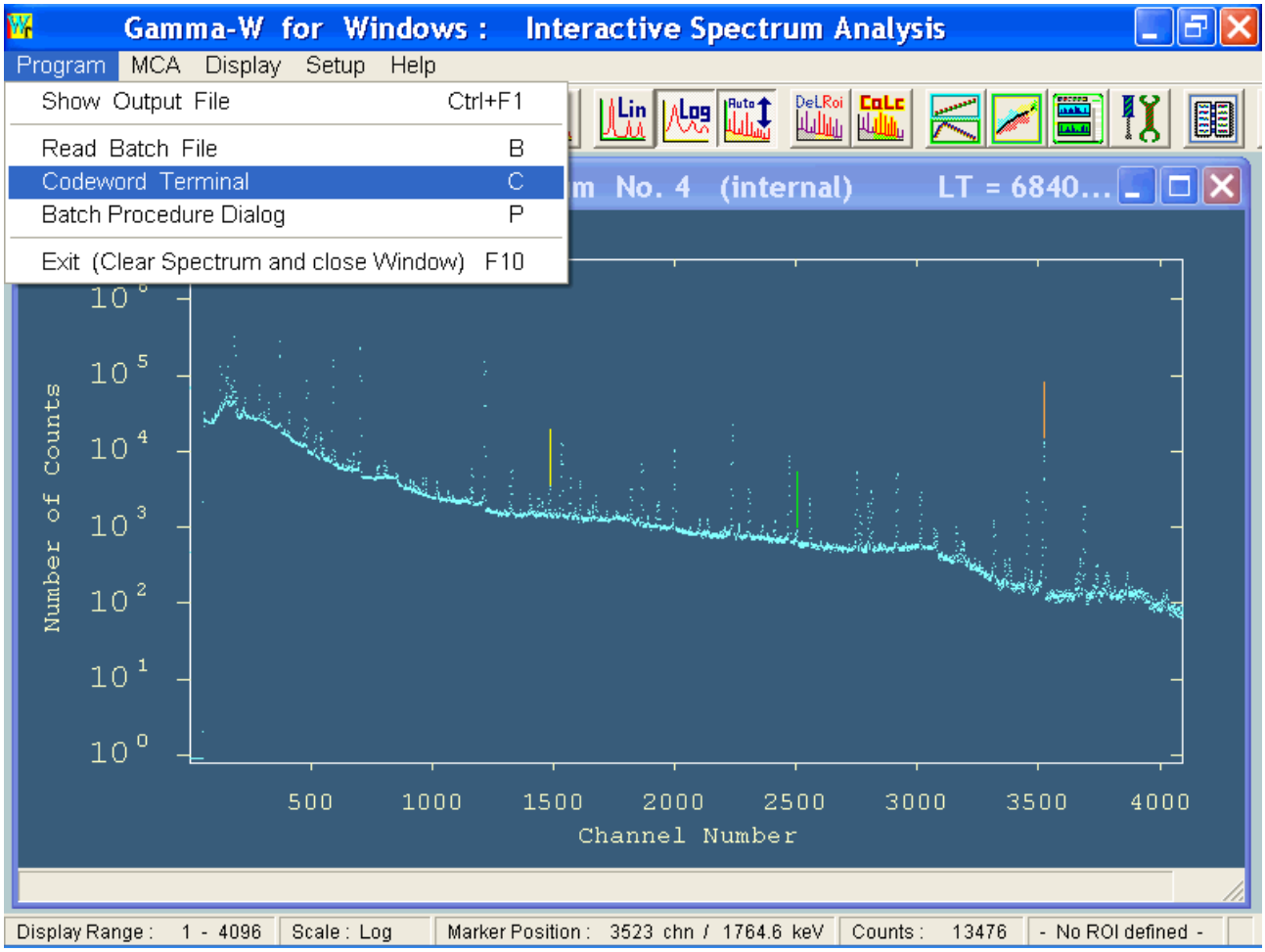
The Procedure Mode is meant for industrial data production where the program is operated by laymen in spectrometry.



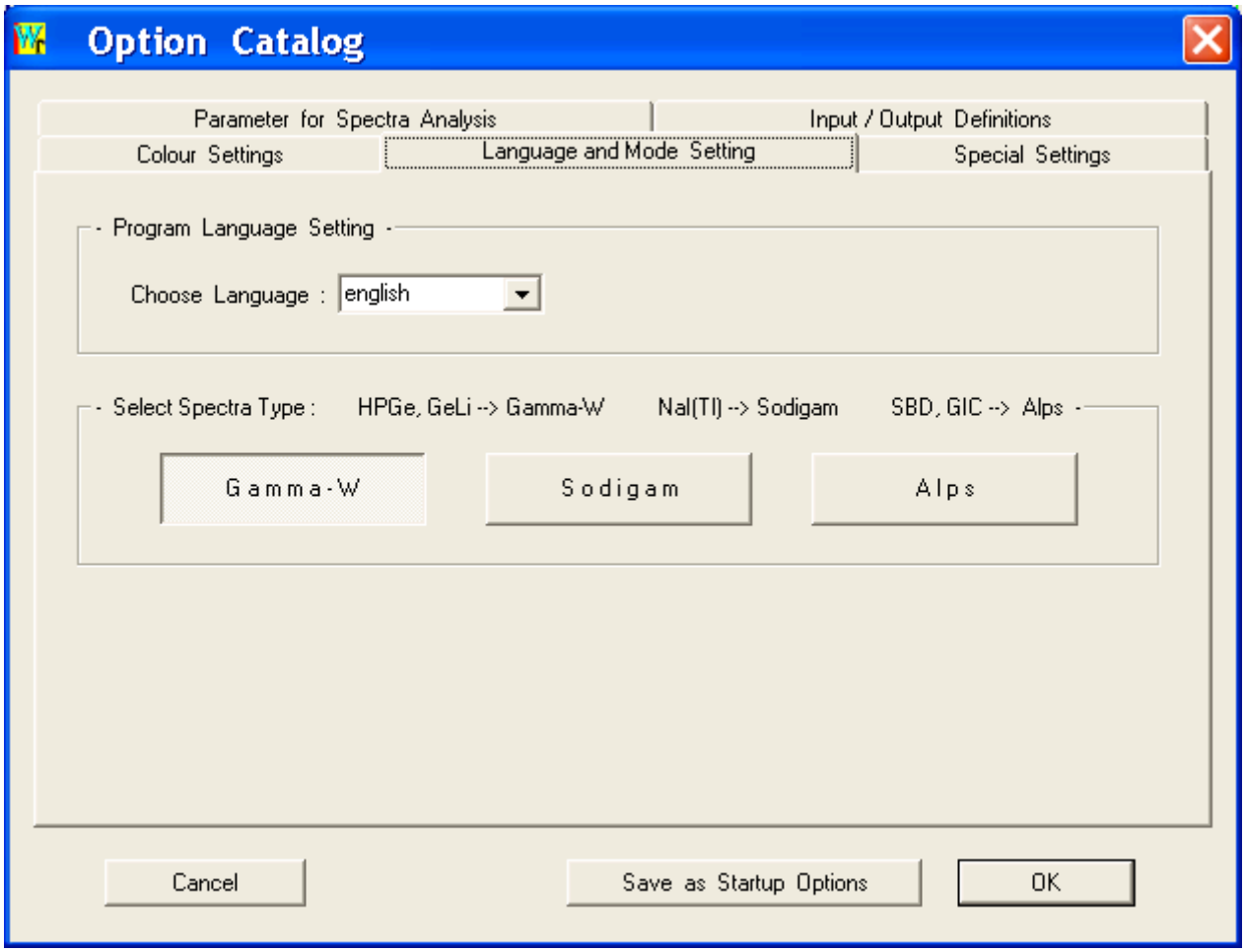
A user-management defining various password protected access- or user-levels can be activated.



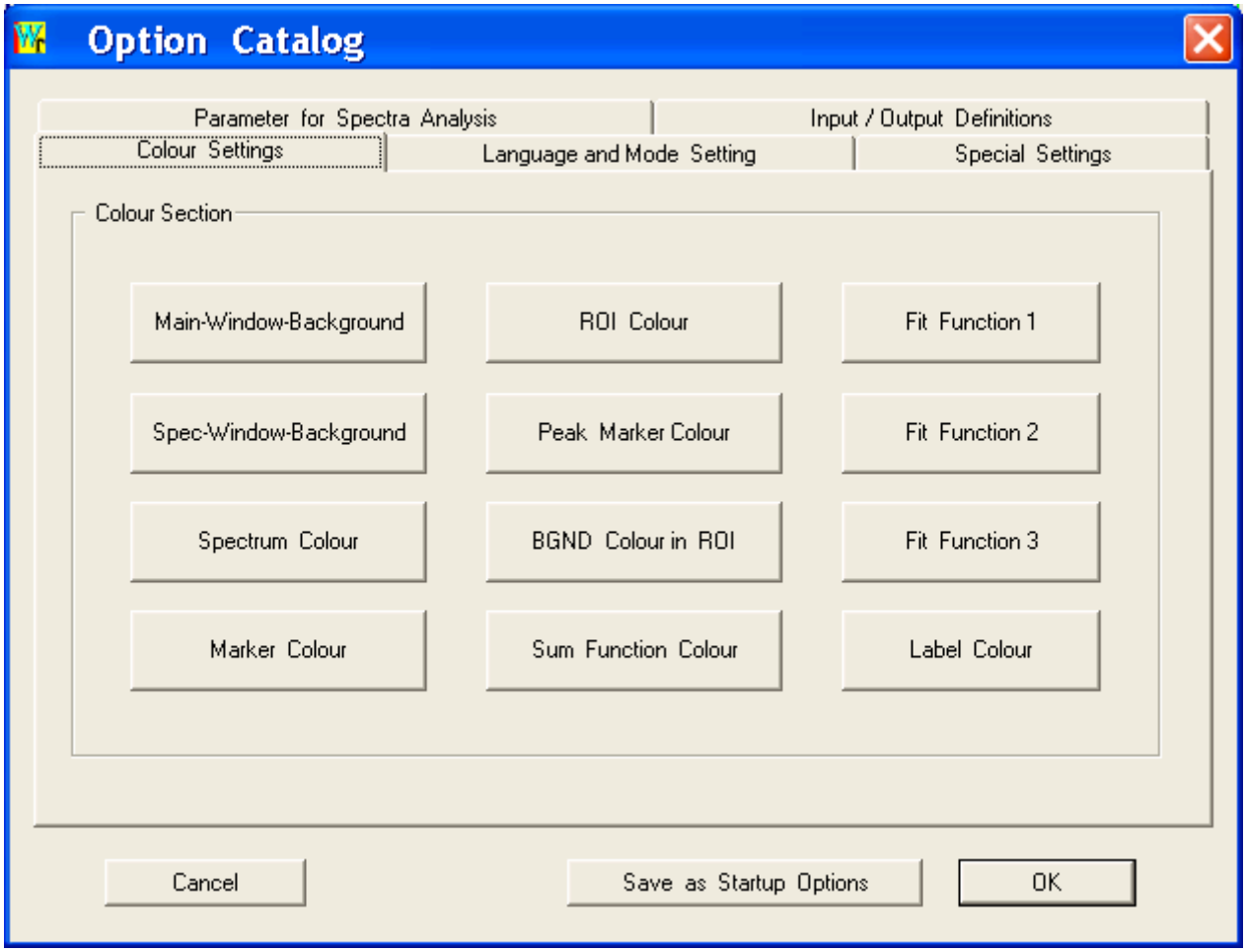
Batch-files can always be used for repetitive analyses, i.e. in the procedure dialog or in user-controlled analyses.



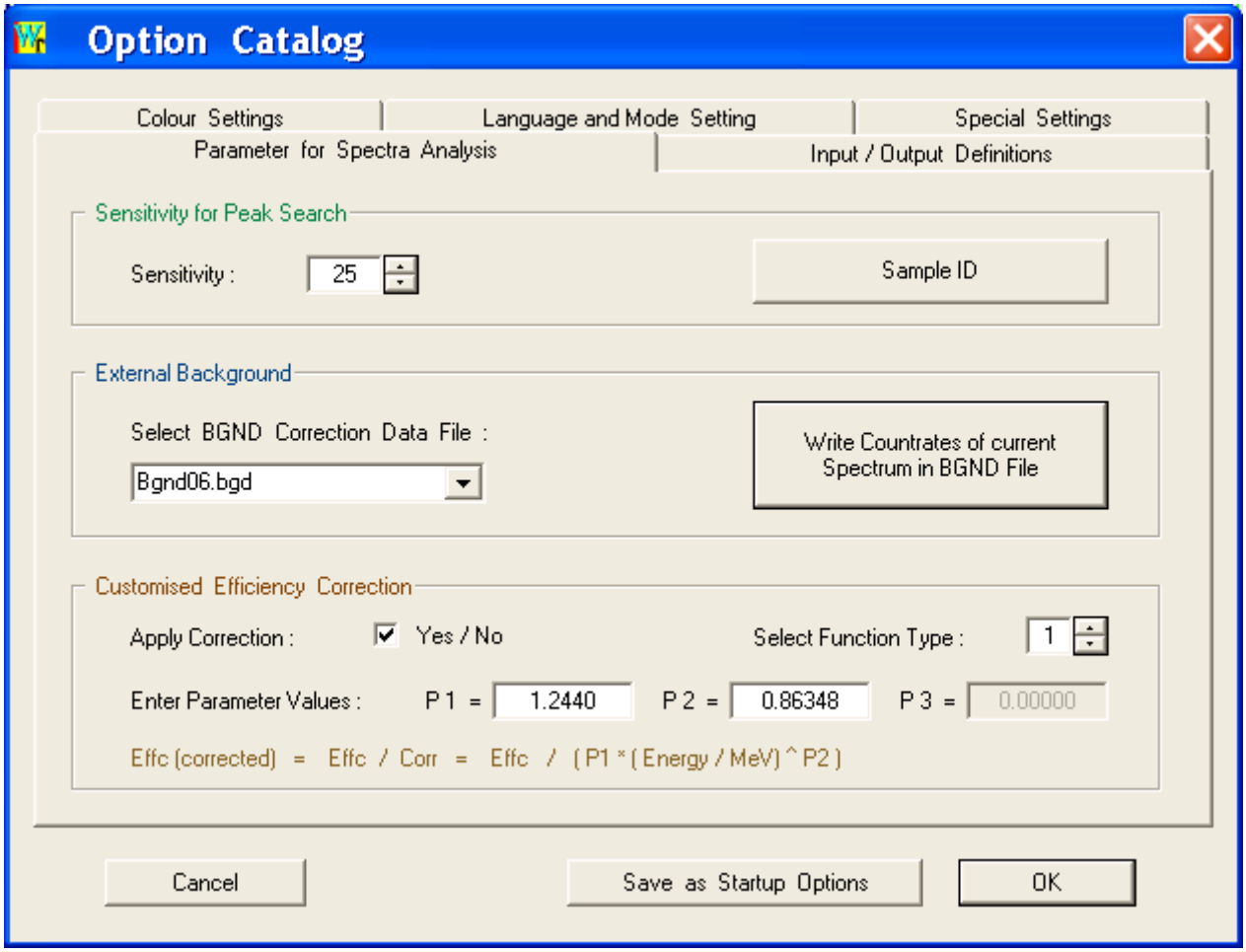
General settings such as operating language (deutsch, english, francais) or the program mode (GAMMA-W, SODIGAM or ALPS) are selected in the Options Catalog and can be stored as start-up options.



Colours for graphic display (backdrops, spectrum, ROI, baseline, fit- and sum-function and others) can be selected and stored, i.e. one can personalise the program.



Additional parameters for spectrum analysis, printout length, background correction and others can be defined.



Our Hotline :

Please note our new address: Möllner Weg 5