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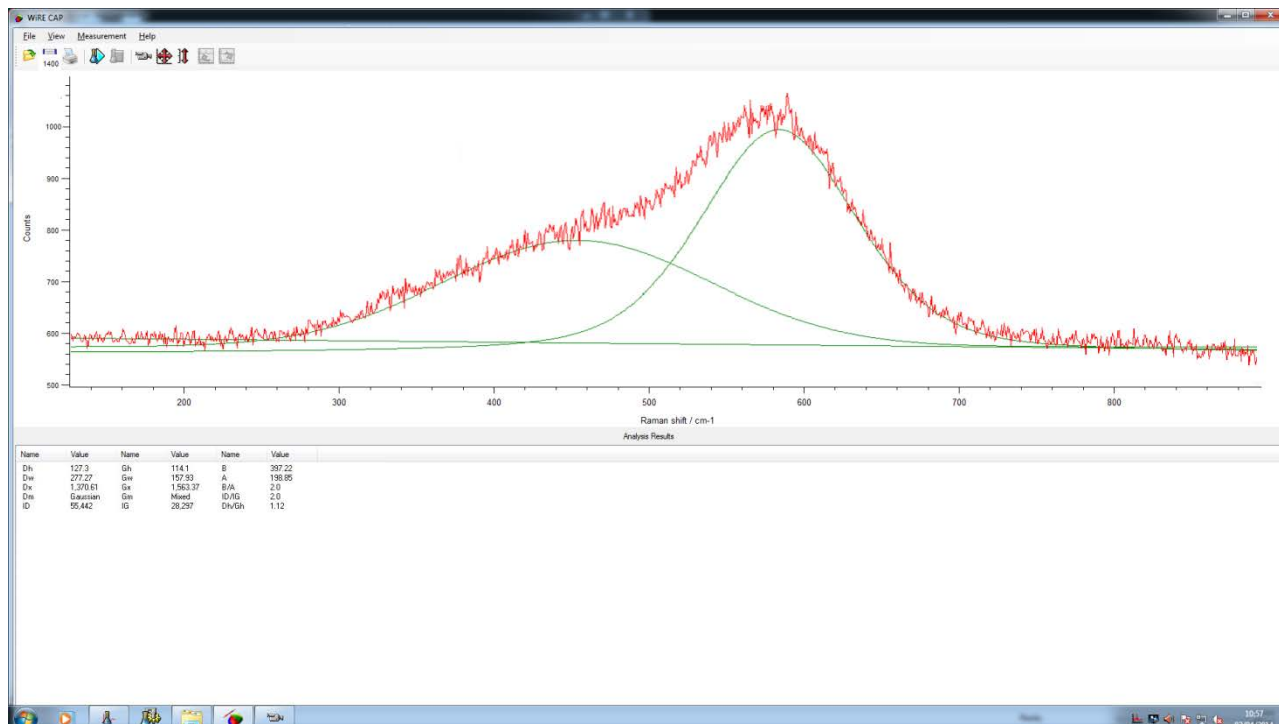
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TM025 – WiRE Custom Analysis Package (CAP)   WiRE™ 5

This document aims to show the WiRE™ 5 user how to use the WiRE CAP software. It assumes that the WiRE™ software is installed.

Overview

Collected data is displayed in the upper pane of the application. If a curve fit has been performed after data collection the fitted curves are displayed in green and the result of the fit in blue. Curves and result are shown offset by the baseline if a baseline has been used.

The Spectrum Viewer property pages can be shown from View > Properties > Spectrum viewer. Results derived from the data are displayed in the lower pane. The relative sizes of the upper and lower pane can be altered. The results table can be shown or hidden from the View > Results menu item. The number of columns and the column widths can be adjusted from the Results view properties (View > Properties > Results View) show below.
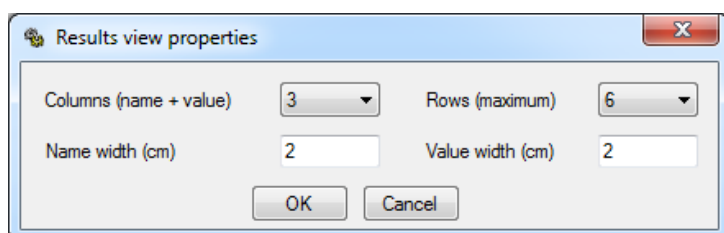
Data can be loaded from File > Open and closed using File > Close. Opening a file will automatically close the currently loaded data. The user will be prompted to save the data if it has been modified since being loaded.

CAP processing and analysis can be applied to spectra which have previously been collected using File > Apply analysis to existing data.
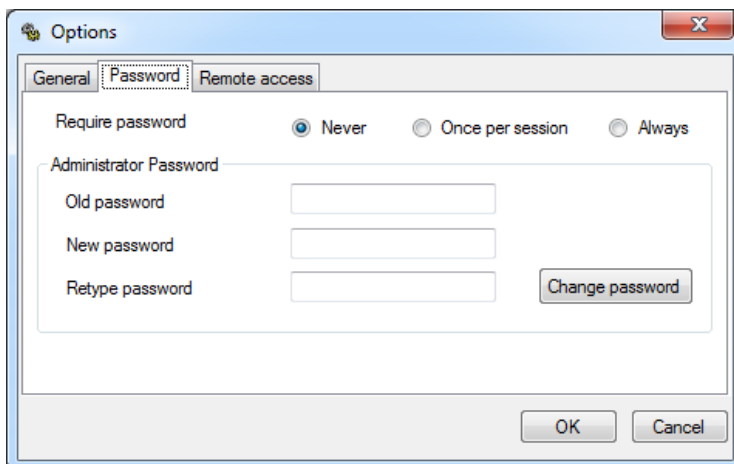
Data can be transferred to WiRE for further analysis / processing using File > Transfer to WiRE. This will start the WiRE Interface if it is not already running.
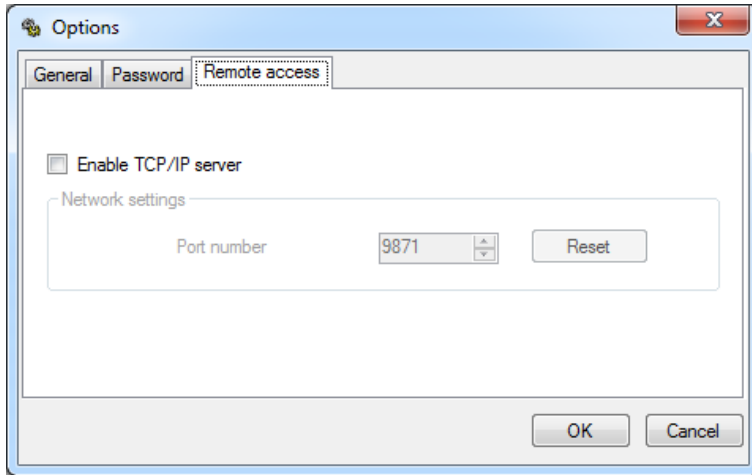
Options
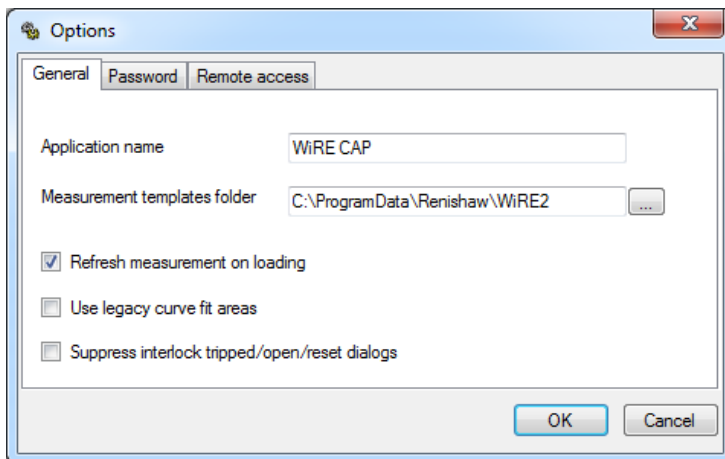
Options can be accessed from File > Options.

Application name configures the name that appears in the application title bar. Measurement templates can also be selected.

To set a password for operations that change the application or measurement settings set the require password option buttons, type the chosen password into both "New password" text boxes and select the "Change password" button. After setting a password the user will be presented with a dialog on selecting password protected operations within the application.
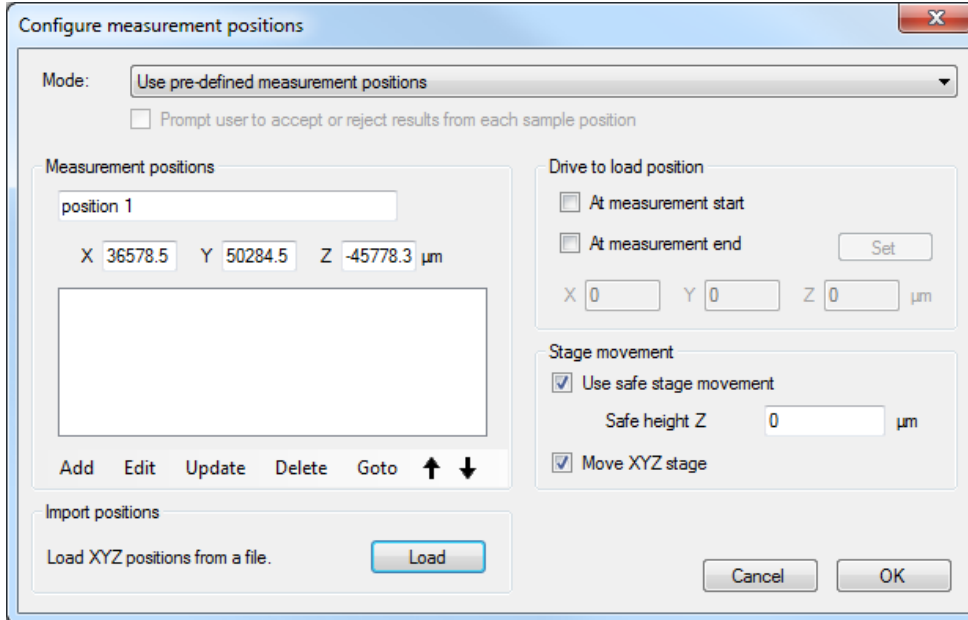

The remote access tab enables activation and set-up of TCP/IP communication.

Measurement configuration
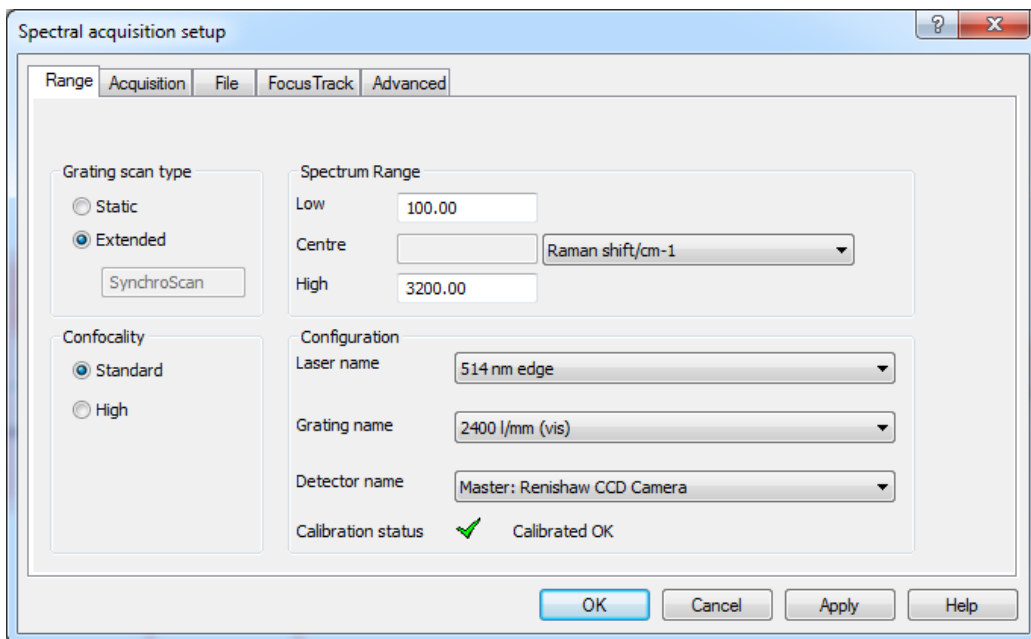
Select Measurement > Configure > Data collection to show the standard measurement setup pages. See the inVia user guide for a description of these pages (available from Help > Index).

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Measurement positions configuration

In order to configure a measurement to collect data at several positions on a sample the measurement positions configuration dialog is used. Choose the relevant 'mode' from which positions will be defined.

Selecting 'Add' will then add a position at these co-ordinates for future measurement, with the currently displayed identifier as a reference that is used during data collection or later review. Alternatively, if known, the co-ordinates of the required position may be typed in to the X, Y and Z textboxes without moving the stage to these positions.
Existing positions may be reordered, edited or deleted. The stage may be moved to the co-ordinates of the position or the co-ordinates of the position can be updated to reflect the current stage position.

A load position can be set such that the stage will automatically drive to this position at the start and / or end of the measurement to allow the user to load or unload the sample. A user prompt is shown for this purpose. In the case where the sample name is also requested (see under the Output configuration section below), the prompt to load the sample is performed at the same time.

The Safe stage movement feature ensures that the stage drops to a user-set safe height before any XY movement is performed. Note that this also applies to movement initiated from the current dialog, such initiated by the Go to position button.

'Import positions' enables the user to load a text file containing pre-determined coordinates which will be analysed.
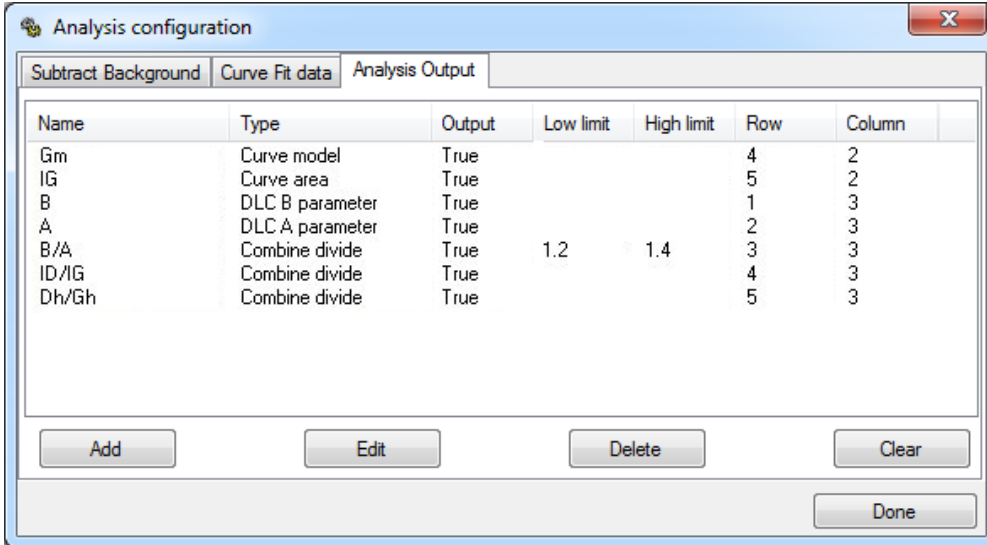
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Analysis configuration
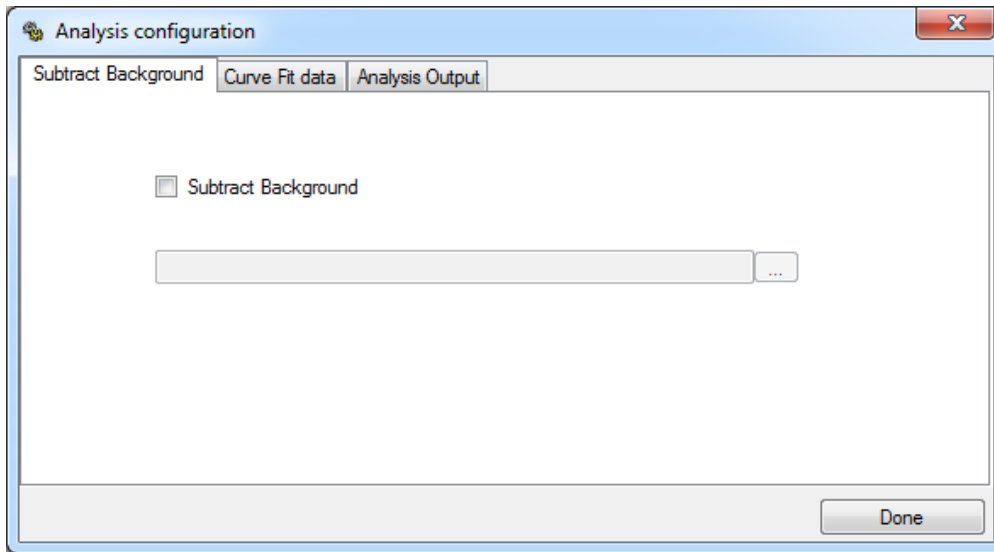
To subtract a background substrate spectrum select "Subtract background" and use the browse button to select the spectrum file to use as the background spectrum. The first collected dataset from this file shall be used as the background spectrum. If selected, background subtraction takes place before curve fitting.
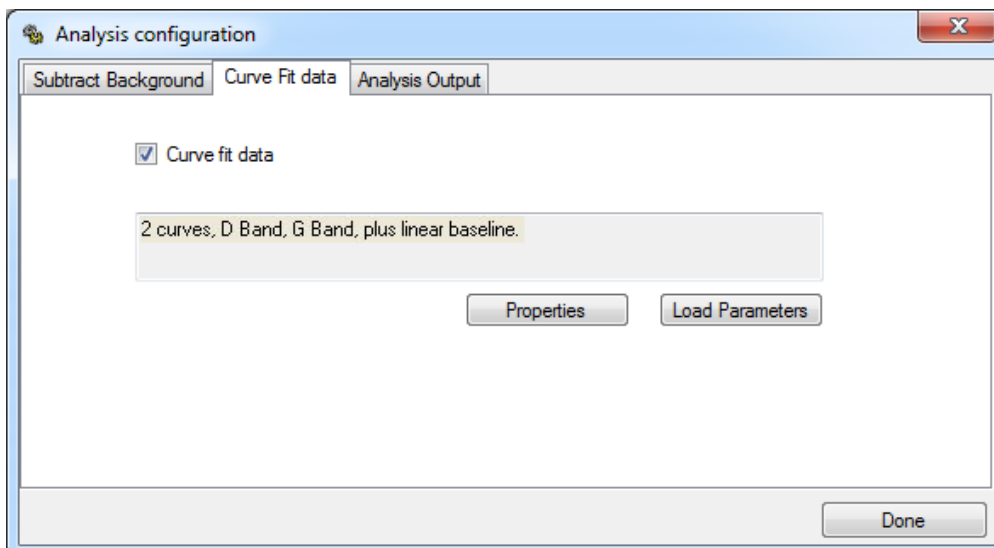
To load a curve parameter select "Load parameters" in the Curve fit group box. To modify the curve fit properties select "Properties."

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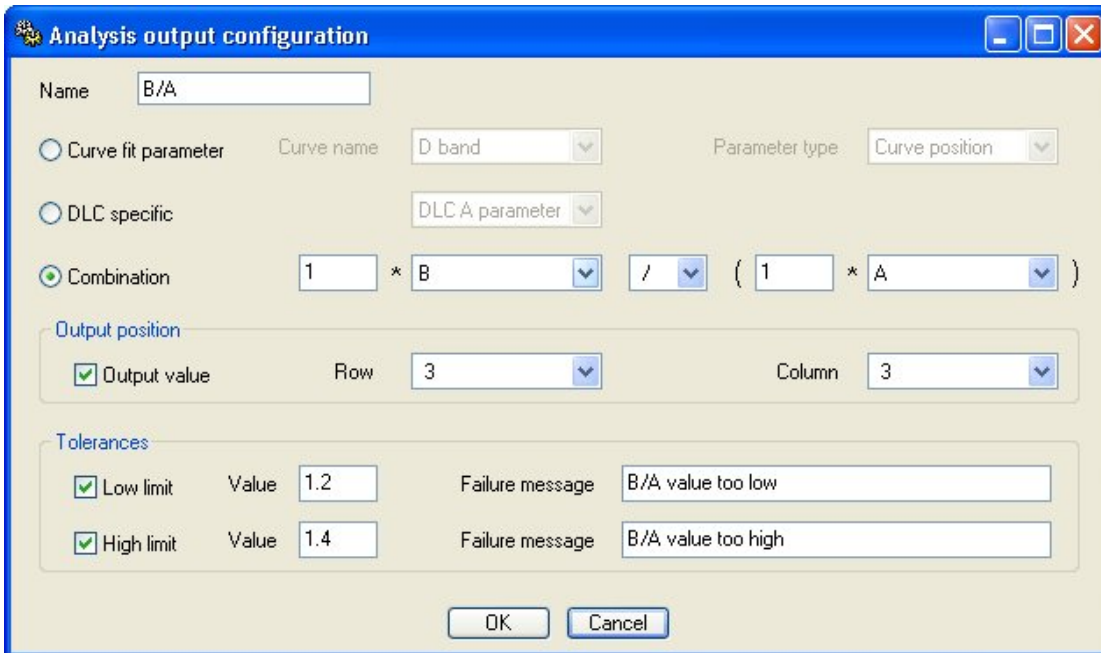
A summary of the analysis output is given in the "Analysis output" table. The buttons below this table allow addition of a new analysis output, editing an existing analysis output and deletion of one or all analysis output values.

Analysis output configuration

The following screen is obtained by adding a new analysis output or selecting edit (or double-clicking) one of the existing analysis output entries in the above dialog.

Three types of analysis output can be defined:

- Curve fit parameter – the analysis output is a parameter is a fitted property of one of the curves

- DLC Specific – A or B parameter: these relate to the maximum intensity value of the curve fit, either total intensity (B) or intensity above the fitted baseline (A).

- Combination – an arithmetic combination of any analysis output value that has already been defined. Constants can also be used in these combinations.

Note that deleting any curves that are referred to by existing curve fit parameter analysis output values, or deleting any analysis output values that are referred to by existing combination analysis output values, will cause an error to be displayed when the analysis output value is calculated. Note also that renaming referenced analysis output values will have the same effect, since the curve fit parameters refer to the curves by name and the combination parameters refer to analysis output values by name.

The precision to which the analysis output value should be displayed is selected here as the number of decimal places that are required.

Analysis output values do not necessarily have to be output to screen, but may be required for an intermediate stage in a calculation. Deselecting "Output value" will achieve this aim. If selected, however, a unique Row and Column for the analysis output value in the results table must be selected.

High and low limit values can be set for each analysis output value defined. Checking the appropriate box ensures that the analysis output is compared to the limit value entered. In the case that the limit is breached the failure message set here will be displayed in the analysis step following data collection and curve fitting. Limits may be set on any or all defined analysis output results. Where more than one limit is breached the user will be presented with a dialog listing all failure messages.

Output configuration

Output to devices other than the screen are configured via the following dialog.
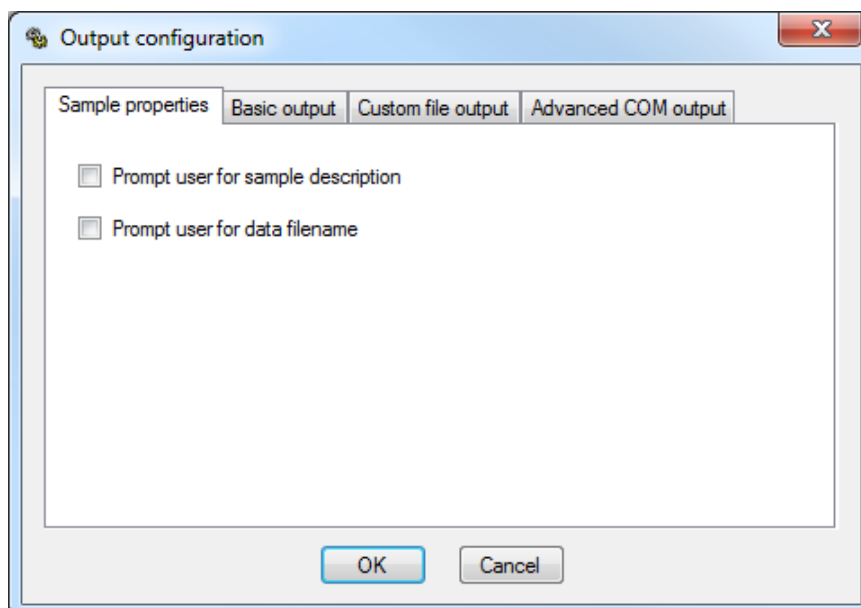
In order to see a sample description prompt every time a measurement is run check the "Prompt user for sample description" option.

The number of columns that will be displayed in the analysis output results table, the width of the columns, and the maximum number of rows to which output can be written are set here.
From this dialog text file and com port output can also be activated.