User manual - SIO Measurement Conversion Center

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1. Introduction

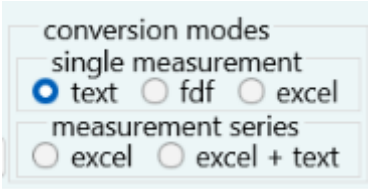
This software package is designed to convert the measurement data from different devices into the SIO data formats for the later use in the SIO software package lines **FilmDoctor** and **ToolBox**. Some device manufacturers support a direct export into the **SIO data formats**. For customers using devices without such a support the SIO Measurement Conversion Center (MCC) is the tool of choice. It converts measurement data in different formats and will be updated regularly to support new data formats. Missing information in the files are entered by the customer before the data is loaded and converted. After the conversion the data is shown in the lower part of the software. So you can check it visually. If something wrent wrong, simply change the inputs and load the data again. The conversion process is restarted and the old data will be overwritten.

2. Installation

The software does not need a special installer. Simply download it from **https://siomec.com/measurement-conversion-center** and unpack the archive to the destination folder.

3. Conversion modes

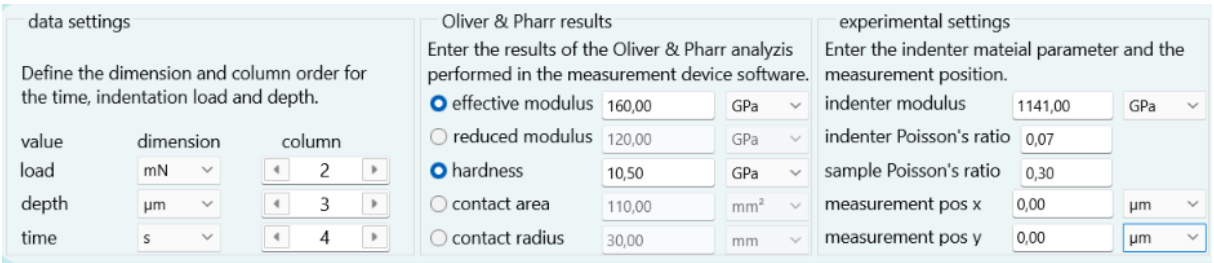
The software supports the data in different file formats for the conversion. The subsections below will give more details about the file formats, assumptions and rules.



During the conversion process any non number values will be ignored or threated as 0. So you don't need to prepare the data files by deleting the header lines. Or other additional string based information.

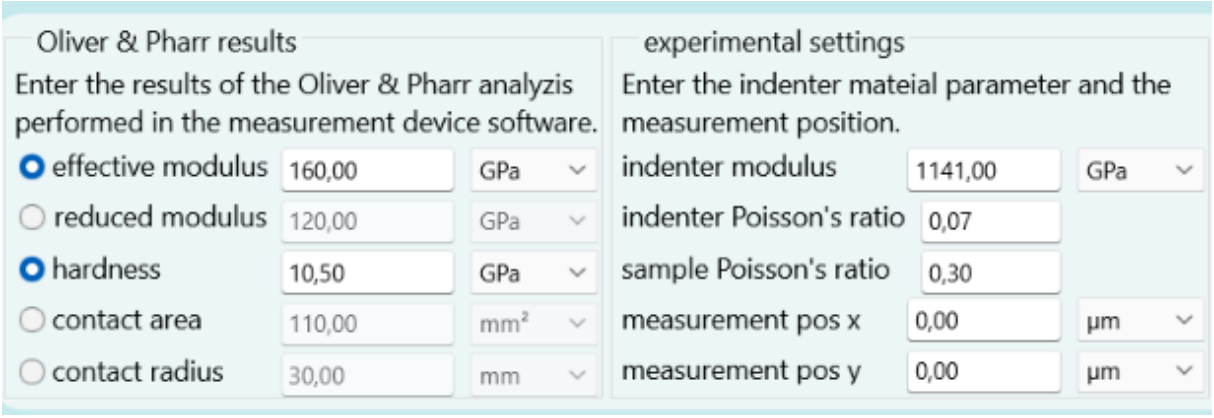
3.1. Single indentation measurement in a text file

The measurement data is stored in a single text file in column separated values. Only the measurement data is stored and the column order and used units need to be defined before the data conversion. Also the results of the Oliver & Pharr analyzis, which is performed by the device software, need to be entered. At last the information about the used indenter and the measurement position are needed.



3.2. Single indentation measurement in a fdf file

The FilmDoctor format (fdf) stores the data similar to the FDOP format as key value pairs. Therefore no information about the measurement data are needed, but as in the text file conversion (Section 3.1) the Oliver & Pharr results and the indenter information are needed.



3.3. Single indentation measurement in an excel file

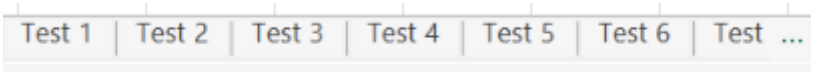
The software reads the data from the first sheet. Other sheets are ignored if existing. The same user inputs are needed as in the text file conversion (Section 3.1)

3.4. Indentation measurement series in an excel file

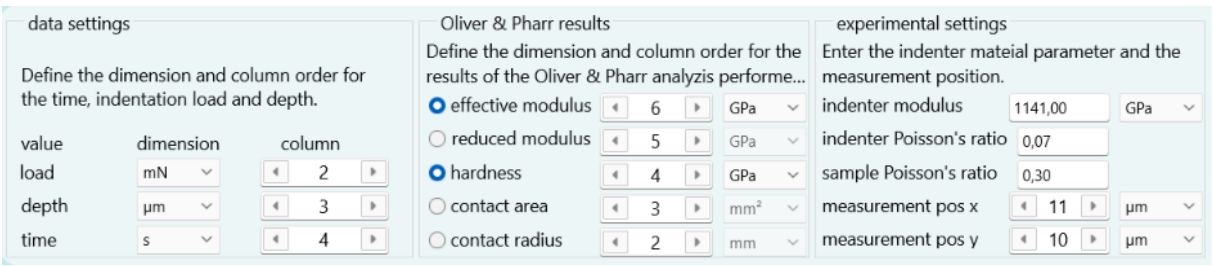
In this mode a series of indentation measurements is converted into single fdop files. The software looks for a sheet named **results** and scans the first column.

A
Test
1
2
3
4
5
6
7
8
9

This information is used the get the names of the sheets containing the measurement data.



Instead of entering the Oliver & Pharr results and indenter parameters by hand this time the column numbers and used units are entered. The software will read this information from the results and data sheets and create an fdop file for each measurement.



3.5. Indentation measurement series in an excel file and separate text files

This data format contains an excel file storing the Oliver & Pharr results and additional information, and a set of text files containing the measurement data. The first sheet is used as the result sheet and the data file names are evaluated similar to the data sheet names in (Section 3.4). Because there can be some restrictions for filenames the characters / : , and a blank space are converted to _ . As file extension for the data text files **.txt** is used. Only the spreadsheet file needs to be selected and the software assumes that the text files are stored in the same directory.

3.6. Single scratch measurement in a text file

The measurement data is stored in a single text file in column separated values. Only the measurement data is stored and the column order and used units need to be defined before the data conversion. At last the information about the used indenter are needed.

3.7. Single scratch measurement in an excel file

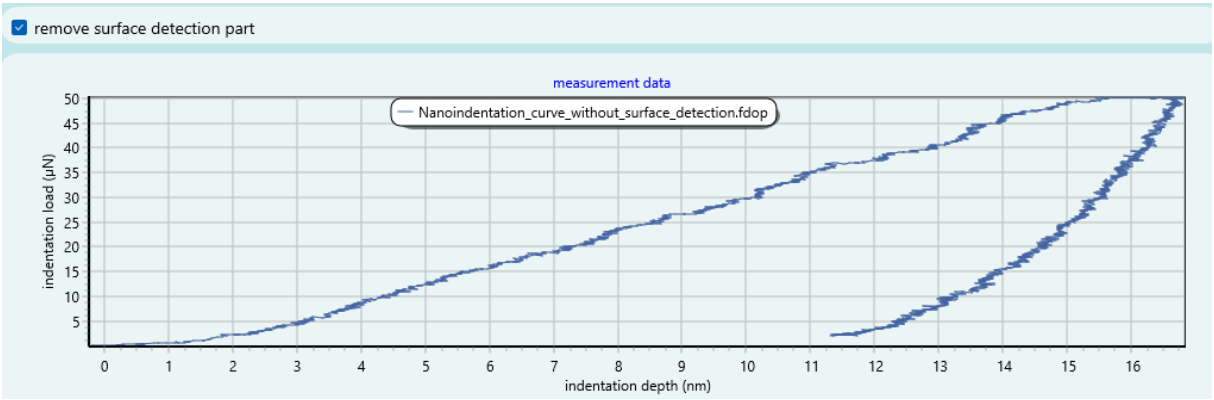
The measurement data is stored in a single file containing only one spreadsheet. Only the measurement data is stored and the column order and used units need to be defined before the data conversion. At last the information about the used indenter are needed.

3.8. Scratch measurement series in an excel file

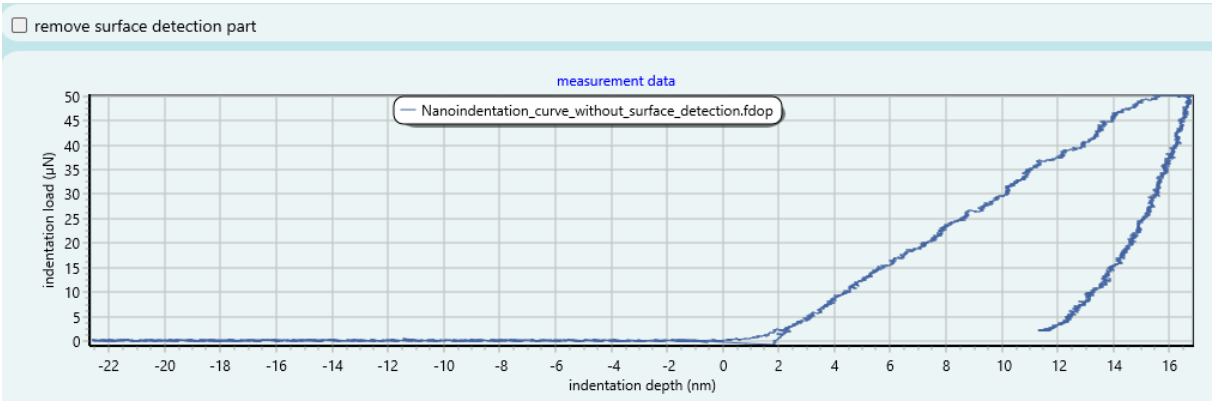
The measurement data is stored in a single file using one sheet per measurement. Only the measurement data is stored and the column order and used units need to be defined before the data conversion. At last the information about the used indenter are needed. A sheet named **Results** is expected and in this the test numbers are in the first column. The software reads these numbers and loads the measurement data from the sheet with the names **Test** plus that number. E.g. **Test 2**. If no sheet with that name is found the software add leading zeros for more flexibility. It would search for a sheet named **Test 02** or **Test 002**.

4. Indentation data preparation

Sometimes the surface detection part is included in the measurement data. This part is not needed in our analyzis packages and will be ignored during the conversion process by default.



If you want to convert the complete measurement data simply uncheck the option **remove surface detection part** .


remove surface detection part
measurement data
Nanoindentation_curve_without_surface_detection.fdop
indentation load (µN)
indentation depth (nm)
50
45
40
35
30
25
20
15
10
5
0
-22
-20
-18
-16
-14
-12
-10
-8
-6
-4
-2
0
2
4
6
8
10
12
14
16