Calibration reference

To measure absolute reflectivity one needs a reference. The reference is any sample that has a well known reflectivity. This reference is used to calibrate the system (sometimes it is called taking a baseline). During the calibration process the known reflectivity of the reference sample is compared with the actual signal from the spectrometer. This establishes a “mapping” between the spectrometer signal (in counts of the ADC) and reflectivity.

For diffused reflectance measurement (with Integrated sphere) it is common to use Calibration standards. In this case, a calibration file supplied with the standard should be set in configuration. TFCompanion software will use the data from this file during calibration procedure.
Calibration file should have the same format as supported measured data. (To check if the format is supported, load the standard file as a measurement).

Note.
Filmstack and calibration file are two different calibration options – they are mutually exclusive.

83 Pine Hill Rd. Southborough, MA 01772
Phone +1.617.388.6832 Fax. +1.508.858.5473
email: info@semiconsoft.com http://www.semiconsoft.com

I. Setting the reference filmstack

By default, the reference sample is Si (filmstack Si_bare). The reference sample is defined in configuration and can be any filmstack such as Al, Quartz, Au or others. This filmstack should match to the actual physical sample used in calibration.

Below is an example of setting an Al mirror as a reference sample. The procedure is the same for any other reference.

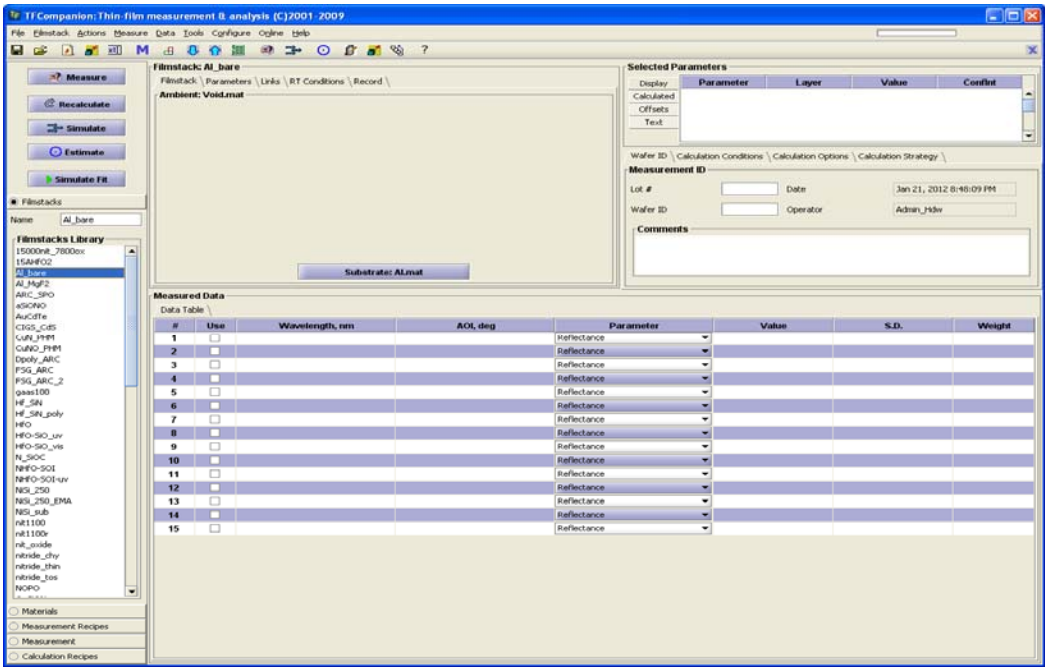

Fig. 1 Create filmstack Al_bare.- it consist of the substrate Al.mat and Save it to the database (Filmstack/Save Filmstack from the main menu) Skip this step if you have Al_bare filmstack already in the database

83 Pine Hill Rd. Southborough, MA 01772
Phone +1.617.388.6832 Fax. +1.508.858.5473
email: info@semiconsoft.com http://www.semiconsoft.com

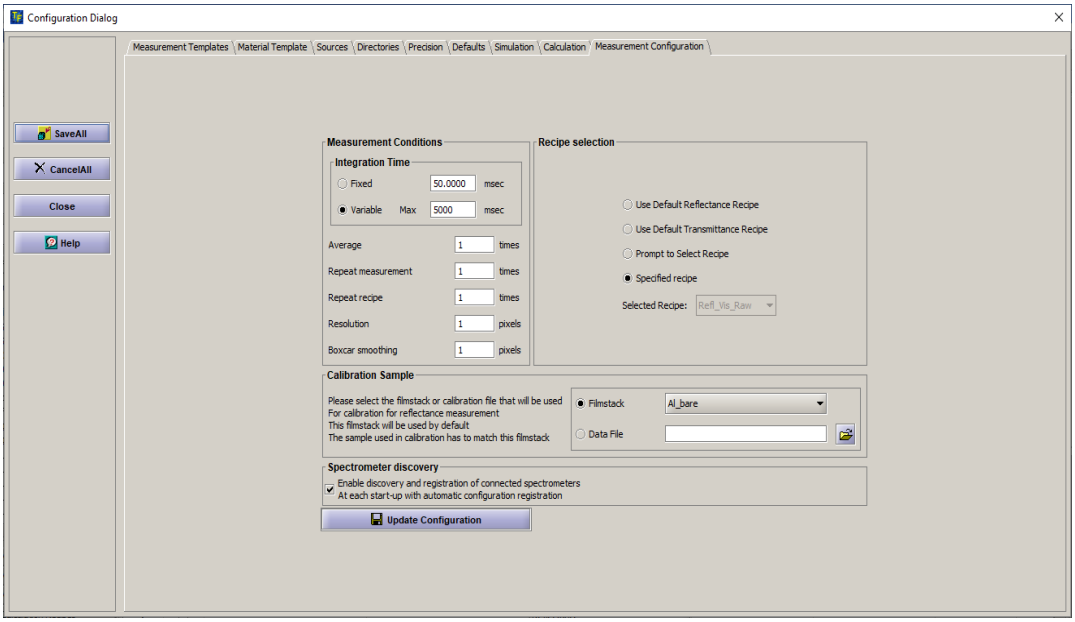

Fig. 2. Change calibration sample selection.

a) Select Configure/Configure software (from the main menu)

b). In Configuration dialog (displayed on picture) – select “Measurement Configuration” tab

c). In Calibration Sample panel: Select “Al_bare” filmstack from drop-down box

d),. Click “Update Configuration” and “SaveAll” buttons

e).Close dialog (“Close” button)

Now “Al_bare” is a default filmstack used in the calibration procedure

83 Pine Hill Rd. Southborough, MA 01772
Phone +1.617.388.6832 Fax. +1.508.858.5473
email: info@semiconsoft.com http://www.semiconsoft.com

II. Setting calibration file

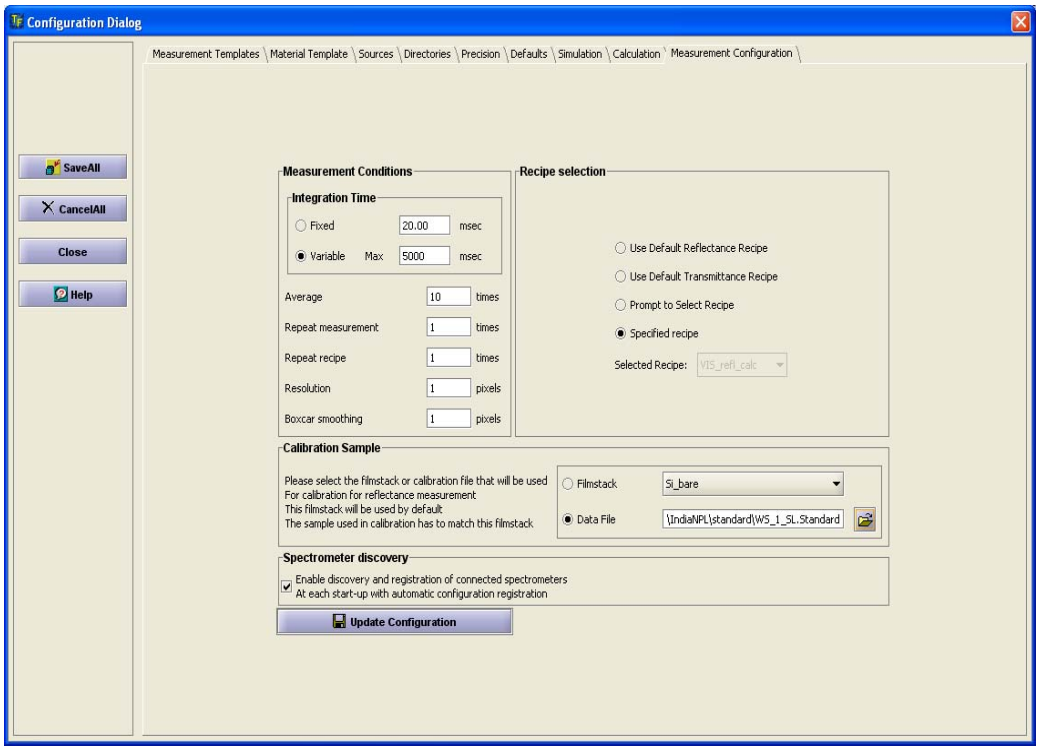

Fig. 3. Setting Calibration file

Select “Measurement Configuration” Tab. In Calibration Sample panel – select “Data File” option, use the icon to open Windows Explorer and select standards file
After selection is completed use UpdateConfiguration and SaveAll buttons - this will save current selection in configuration file.

83 Pine Hill Rd. Southborough, MA 01772
Phone +1.617.388.6832 Fax. +1.508.858.5473
email: info@semiconsoft.com http://www.semiconsoft.com