

D/teX Energy Resolution Adjustment Part

Contents

1. Setting conditions	1
1.1 Setting conditions	1
2. D/teX energy resolution adjustment sequence	5

1. Setting conditions

In this chapter, how to set the **D/teX Energy Resolution Adjustment** Part conditions is described.

1.1 Setting conditions

Set the basic conditions in the **D/teX Energy Resolution Adjustment** dialog box.

D/teX Energy Resolution Adjustment

PHA adjustment conditions

Tube voltage(kV): 40 Tube current(mA): 30

Theta/2-theta position(deg): 28.4400

Resolution mode: Standard Profile measurement

PHA scan conditions

Scan axis	Mode	Range	Start (div)	Stop (div)	Step (div)	Duration time (sec)
PHA	Step	Absolute	25	55	1	1.00

Default ?

Execute Import... Export... OK Cancel

☒ 1.1.1 D/teX Energy Resolution Adjustment dialog box

Tube voltage(kV)

Enter the value of the tube voltage used in the adjustment.

Tube current(mA)

Enter the value of the tube current used in the adjustment.

Theta/2-theta position(deg)

Enter the theta/2-theta position at which diffraction from the Si powder reference sample can be detected.

Resolution mode

Select the adjustment mode from **Standard**, **XRF reduction** or **SC equivalent**.

Standard	<p>Low(A): Position subtracted the distance between the peak position and high position (B) from the peak position.</p> <p>High(B): Position at which the intensity becomes 1/10 of the peak height.</p>
XRF reduction	<p>Low(A): Position subtracted one point from the peak position.</p> <p>High(B): Position at which the intensity becomes 1/10 of the peak height.</p>
SC equivalent	<p>Low(A): Position subtracted two points from the position at which the intensity becomes 1/10 of the peak height.</p> <p>High(B): Position added two points to the position at which the intensity becomes 1/10 of the peak height.</p>

Profile measurement

If the **Profile measurement** box is checked, the theta/2-theta scan will be performed to confirm the diffraction profile obtained from the Si powder reference sample.

PHA scan conditions

When the **PHA scan conditions** box is checked, the PHA scan will be performed under the specified conditions. When the **PHA scan conditions** box is unchecked, the PHA scan will be performed under the default conditions.

Start(div)

Enter the start voltage of the PHA scan.

Stop(div)

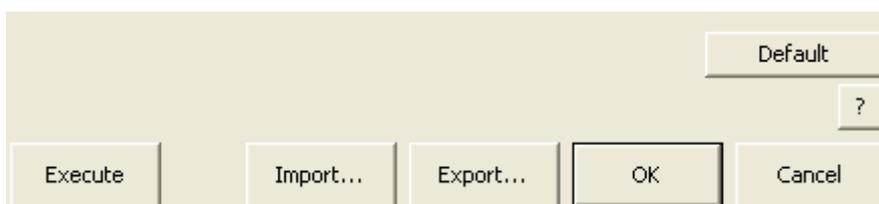
Enter the stop voltage of the PHA scan.

Step(div)

Enter the step width of the PHA scan.

Duration time(sec)

Enter the duration time for each measurement point.

**Default**

Sets the conditions in the **PHA adjustment conditions** and **PHA scan conditions** sections to the default values.

Execute

Executes the energy Resolution adjustment under the conditions specified in the **D/teX Energy Resolution Adjustment** dialog box.



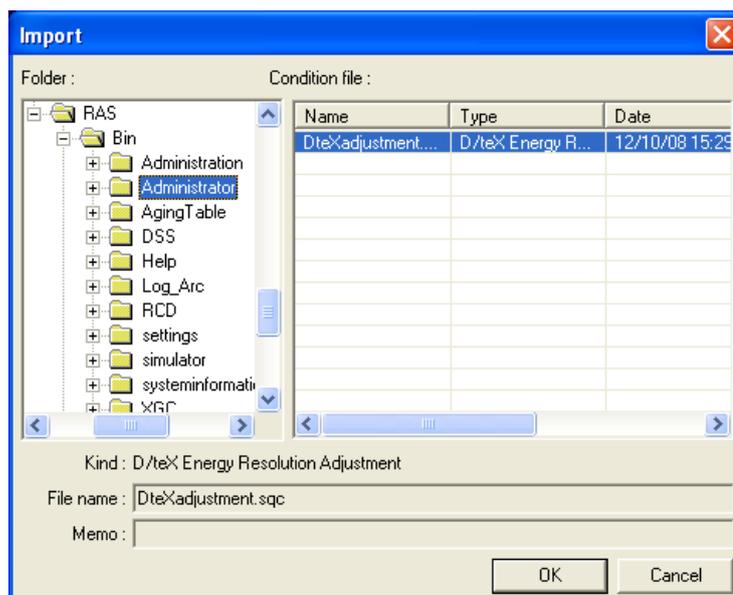
CAUTION: Clicking the **Cancel** button after executing the energy resolution adjustment does not cancel the specified conditions.



Tip: The energy resolution adjustment is executed with the **D/teX Energy Resolution Adjustment** dialog box open. While the measurement is running, the Part conditions cannot be changed. They can be changed again after the measurement has been completed.

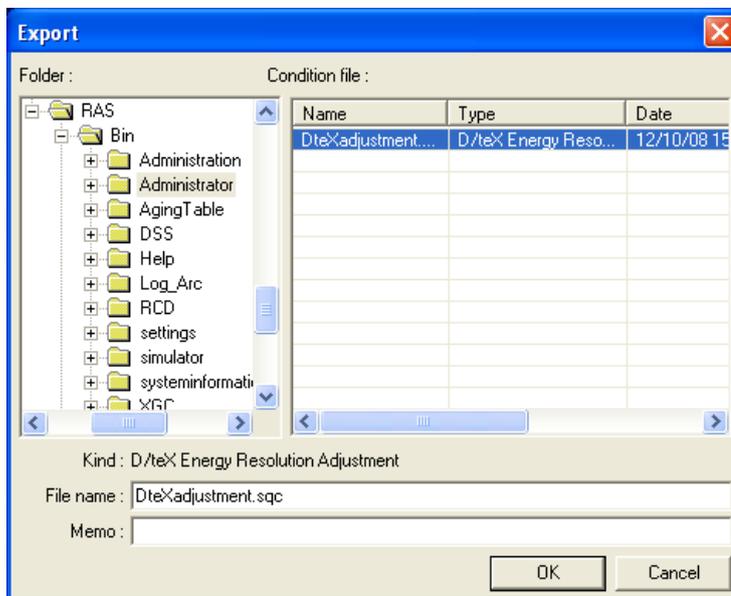
Import

Loads the saved Part conditions. Clicking the **Import** button opens the **Import** dialog box. Select the folder including the file you want to import from the **Folder** tree view. In the **Condition file** list, select the condition file you want to import and click the **OK** button to load the Part conditions.



Export

Saves the specified Part conditions in a file. Clicking the **Export** button opens the **Export** dialog box. From the **Folder** tree view, select a destination folder to save the conditions file then enter a file name in the **File name** box. Enter comments in the **Memo** box, if needed. After entering them, click the **OK** button.



OK

Sets the conditions and closes the dialog box.



CAUTION: When selecting another Package measurement or switching the task to the **Manual Control** task, etc. the specified conditions will be cancelled. To save the specified conditions in a file, click the **Export** button and save the conditions.

Cancel

Does not set the conditions and closes the dialog box.

?

Opens the online help of this Part.

2. D/teX energy resolution adjustment sequence

The D/teX energy resolution adjustment is performed automatically. However, the Si powder reference sample or devices must be installed manually as instructed by messages displayed on the screen.

Described below is the D/teX energy resolution adjustment sequence.



CAUTION: Before executing this Part, optics alignment for the para-focusing optics must be completed.



Tip: The **D/teX Energy Resolution Adjustment** Part will register the adjusted values of the PHA baseline and PHA window in the system parameter management database.

- (1) Insert the Si powder reference sample into the height reference sample plate as instructed by the message. Set the incident parallel slit (Soller/DSC), the incident length limiting slit (IS L), and the receiving parallel slit (In-plane PSA) as shown in Fig. 2.1.

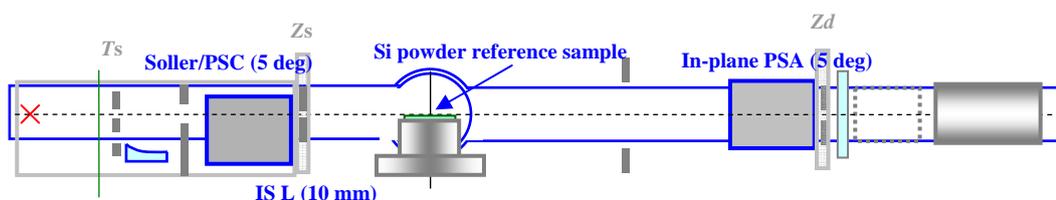


Fig. 2.1 Installation of manual exchange slits

- (2) Set the tube voltage and current to the values entered in the **D/teX Energy Resolution Adjustment** dialog box.
- (3) Set the IS width = 2/3 deg, RS1 width = Open, RS2 width = Open, and Attenuator = Open. Drive the theta/2-theta axes to the angle entered in the **D/teX Energy Resolution Adjustment** dialog box.

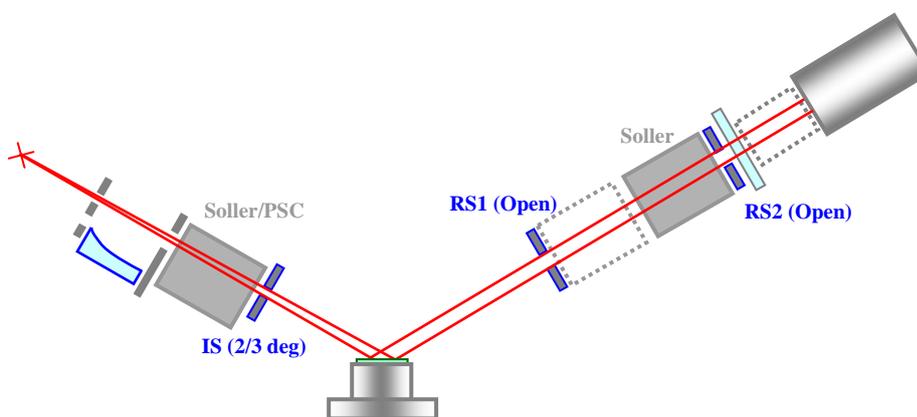


Fig. 2.2 Driving axes

- (4) Perform the PHA scan.

- (5) Calculate the peak position and the position at which the intensity becomes 1/10 of the peak height. Then, set the PHA baseline and PHA window according to the resolution mode selected in the **D/teX Energy Resolution Adjustment** dialog box.
- (6) If the **Profile measurement** box is checked in the **D/teX Energy Resolution Adjustment** dialog box, set the IS width = 2/3 deg, RS1 width = 2/3 deg, RS2 width = 0.15 mm, and Attenuator = Open. After driving the theta/2-theta axes to the angle entered in the **D/teX Energy Resolution Adjustment** dialog box, scan the theta/2-theta axes.

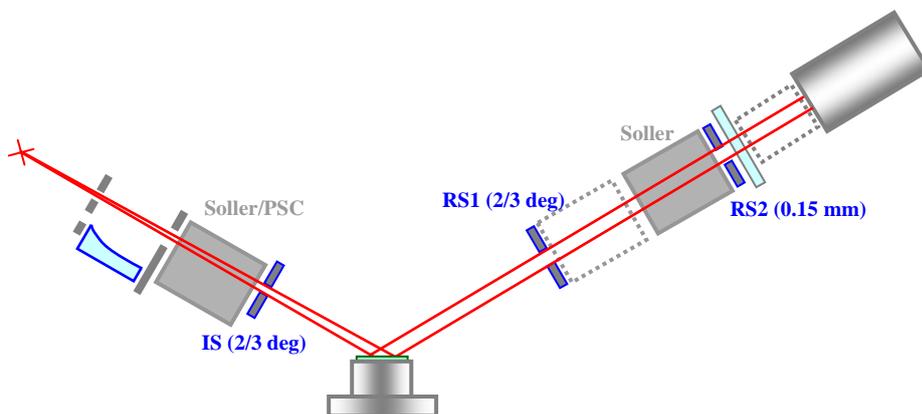


Fig. 2.3 Driving axes

- (7) A confirmation message will appear to show the values of the PHA baseline and PHA window width. Confirm the values determined by the adjustment, and click the **Yes** button to register the values in the system parameter management database. If you do not register the values, click the **No** button.

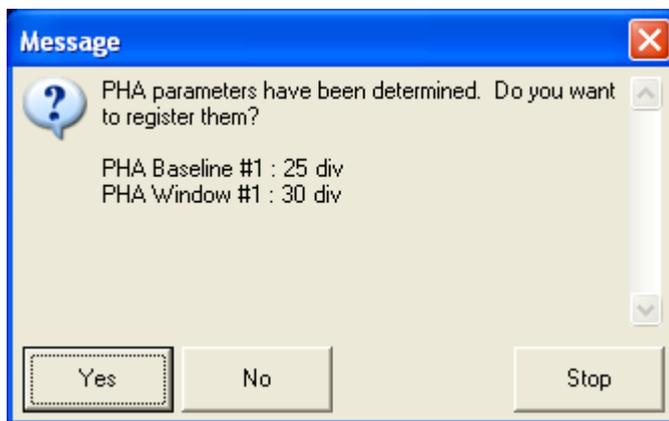


Fig. 2.4 Confirmation message