

XENOS XPG2 Ebeam pattern writer

Short SOP

4/21/2020



1. EBL sample preparation example:

Typical photoresist: PMMA A2 or A4

Spin Coater: program 1 for 45s at 4000 RPM

Hot plate: 90s at 180 C.

Scratch the corner of the sample for focusing!!

SEM software needs to be ON before turn on pattern generator and ECP software!!

2. Load the sample onto the EBL sample holder (small samples)

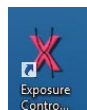
The offset of this EBL sample holder is 5.5 mm or 1.5 mm for 2nd sample holder. Make sure input it into the sample holder offset in SEM setting.



3. EBL operation steps:

1. Turn on the XPG2 switch at the back of the console.

2. Click “ECP” icon to start the the computer and beam blanker. It

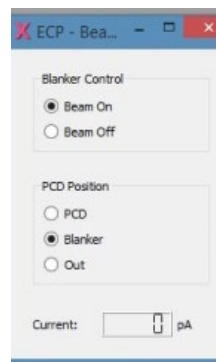
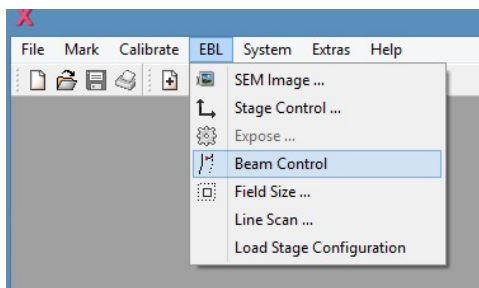


software. The XPG2 console should connect to will show the “Current clock: 39999 KHz”.



3. “File”=>”Open” your control file *.ctl.

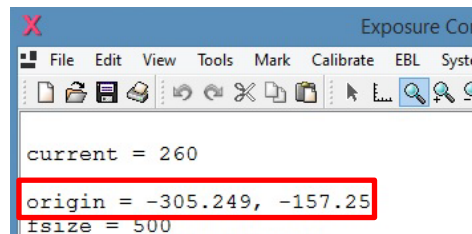
4. Go to “EBL” => “Beam Control” to turn the electron beam on.



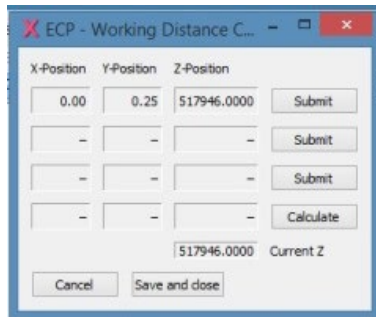
5. Follow SEM SOP to find focus of your sample at high Magnification and the reference spot (normally the scratched area).


6. Locate the area where your pattern will be in SEM.

7. Go to “Tools”=> “Map Exposure Origin” to have the stage reference location (X and Y value on SEM page) as the origin position in the control file.



8. Then go to “Calibrate”=> “Working Distance Correction” on XPG 2. “Submit”. Click “Submit” 3 times and “save and close”.



9. Click Exposure” to  start the exposure process. The ECP software will give an estimate of time at the bottom of the window for the exposure process.

2. Shut down steps

1. Click Beam “OFF” to shut off the Ebeam on the SEM.



2. Close the ECP software and turn off the ECP console (switch on the back).

3. Take the sample out by following SEM procedures.

4. Make sure “Evac” the chamber!! and log out of **SEM software completely**

5. Log off SEM session in FOM.