

Preparation of Cross-Section step by step

1. Find area of interest, link Z to WD, move sample to euc. Height.
2. Set beam coincidence point by using e-beam + Z (height)-adjustment
(start with: zero beam shift and uncheck Z-Y link (compu tilt))
 - *If needed start with e-beam deposition in quad 1:*
tilt back to zero; draw rectangle over area of interest.
Choose Pt dep E str(uctures), change DT to 15us, change OL 75% (advance tab)
set time to 300sec. E-beam 2kV >> 1nA ->Start
 - *Retract GIS*
3. Tilt to 52 and continue with ion beam Pt deposition in quad 2.
Draw rectangle over E-beam dep. (increase X); Z=1um. Calculate the correct beam current, insert Pt GIS press F9. Place pattern over E-beam dep. When finished retract Pt GIS
4. Rough cut/bulk milling using Regular Cross Section + Si-multipass application file;
RCS size of pattern: X slightly wider as Pt layer
Set Z to required depth, Y=2Z. Choose a ion beam current according to pattern size and material.
Leave space between end of pattern and the Pt layer (for high BC $\Delta > 2\mu\text{m}$) start to mill front side.
5. Cleaning step: reduce ion beam current 2 steps. Apply an extra tilt according to beam current + use cleaning cross section (+ Si application); Z = $\frac{1}{2}$ - $\frac{1}{4}$ depth of bulk milled depth.
NOTE: instead of CCS; 5 boxes, Y=500nm + Z=8um (total milling time 3-5min.)
6. If needed repeat step 5 with a reduced BC.
7. Image cross section