CMP

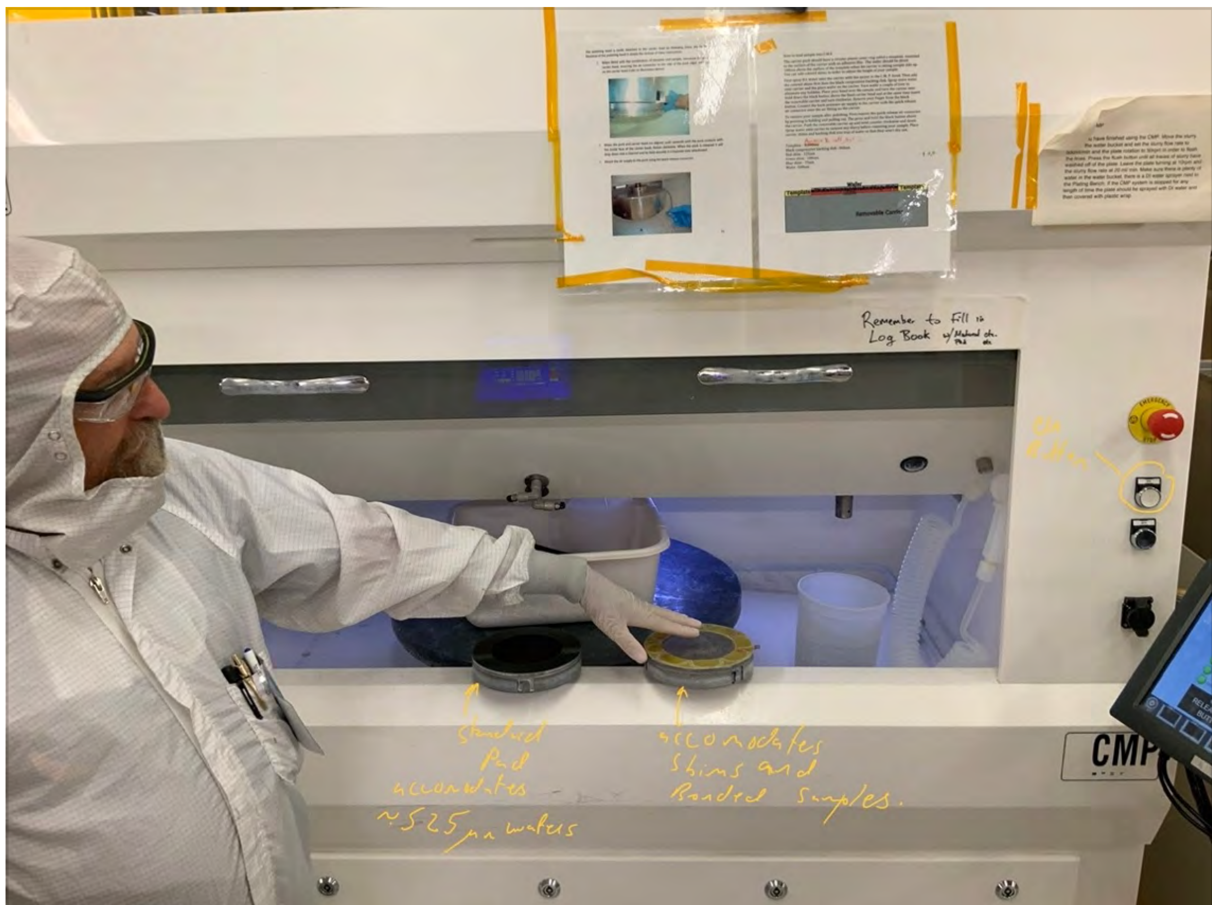
#processing/equipment/CMP

This polisher can take off about ~3um

Trained on Aug 23, 2022.

Setting up

Press white On button on right

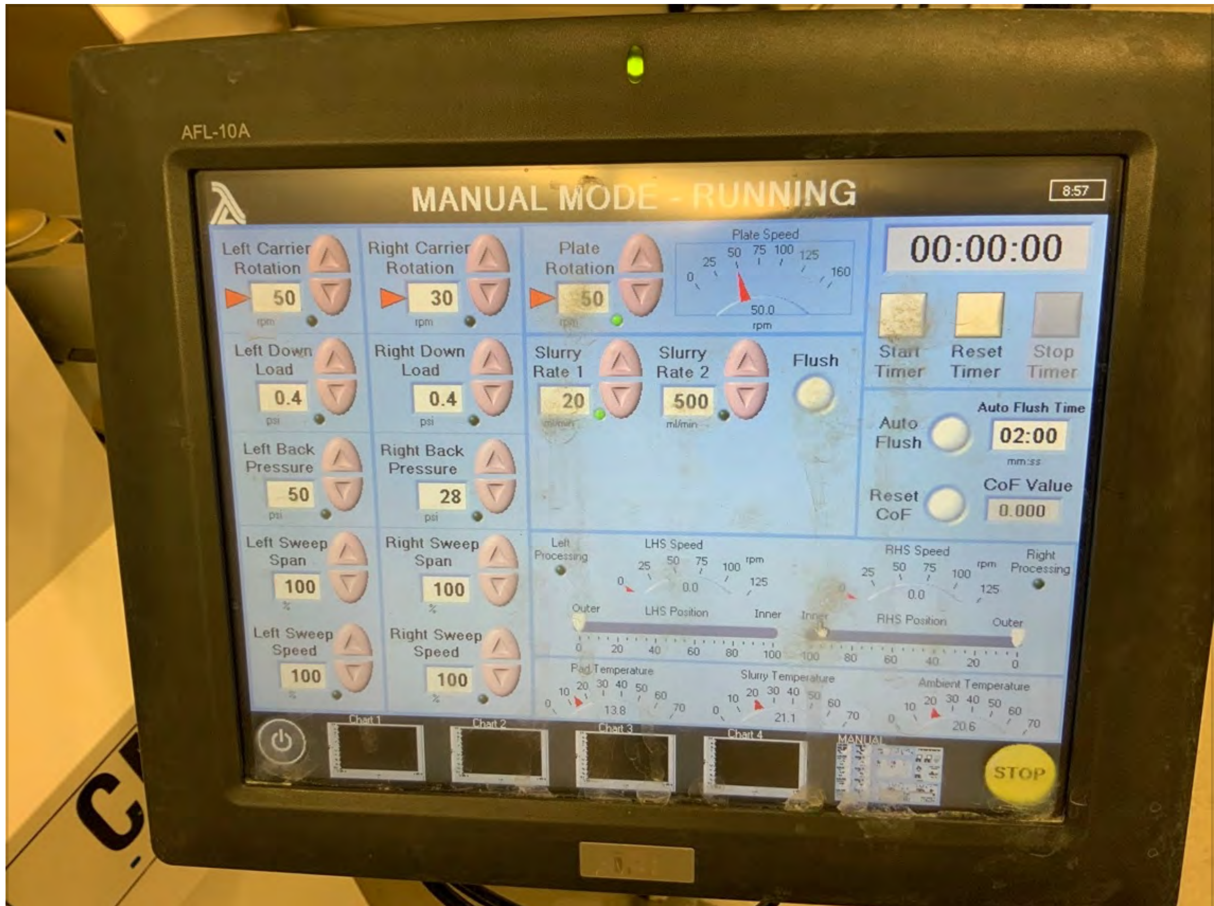


- black template is for standard wafer
- white pad (right) accommodate shims and samples bonded to carriers. shims are kept in water bucket sitting inside polish chamber
- “template” is the annulus on the pad

- Choose an install a polishing pad
    - white pad is hard 'IC 1000 pad' (depicted)

- black bad is soft 'politex pad' - for fine polish
- To change between pads, loosen three set screws (dont take them out, just loosen), and then lift out heavy plate

On display once all lights are green can run in manual mode or use recipe
choose which water pump you want to use (1 to 2)
then put the corresponding two hoses in the slurry container (take them out of the water bucket)

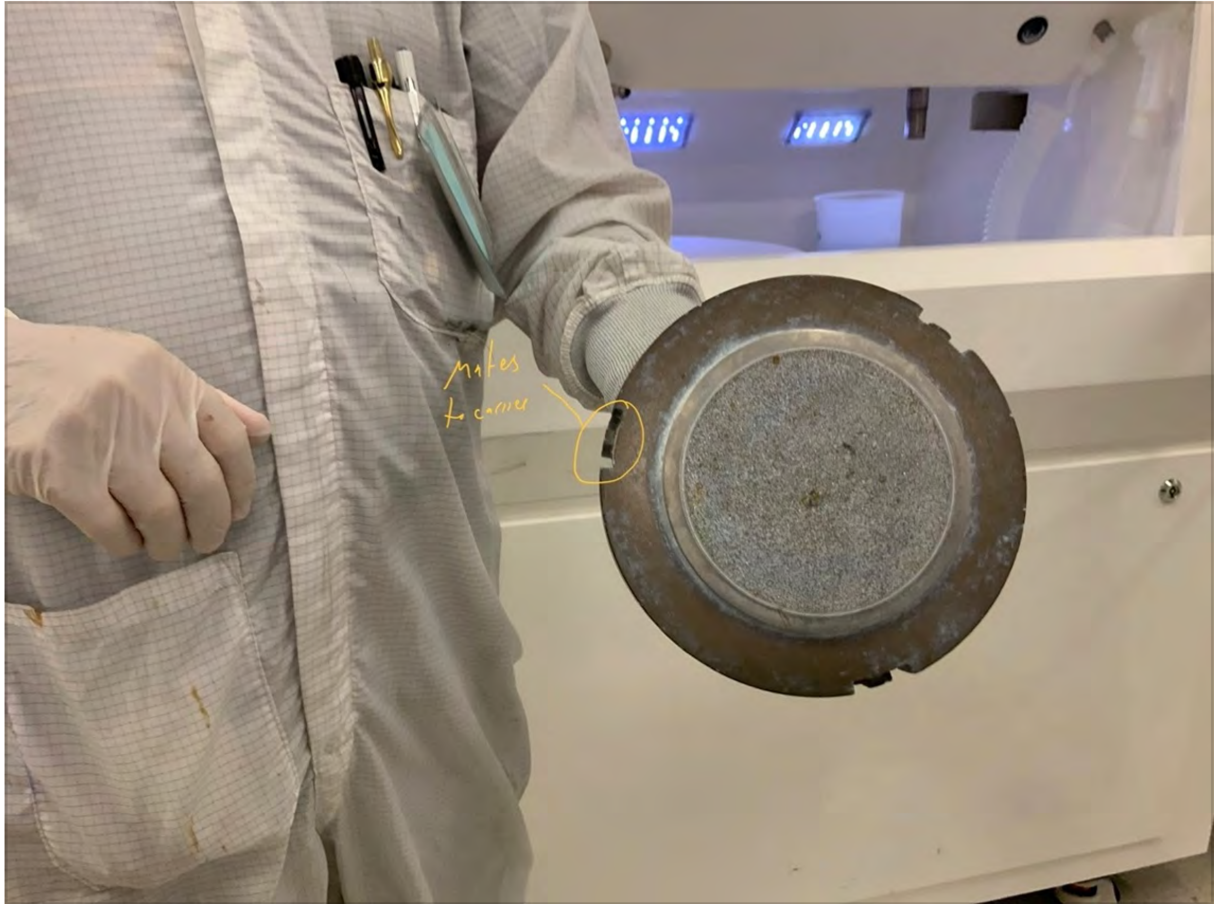


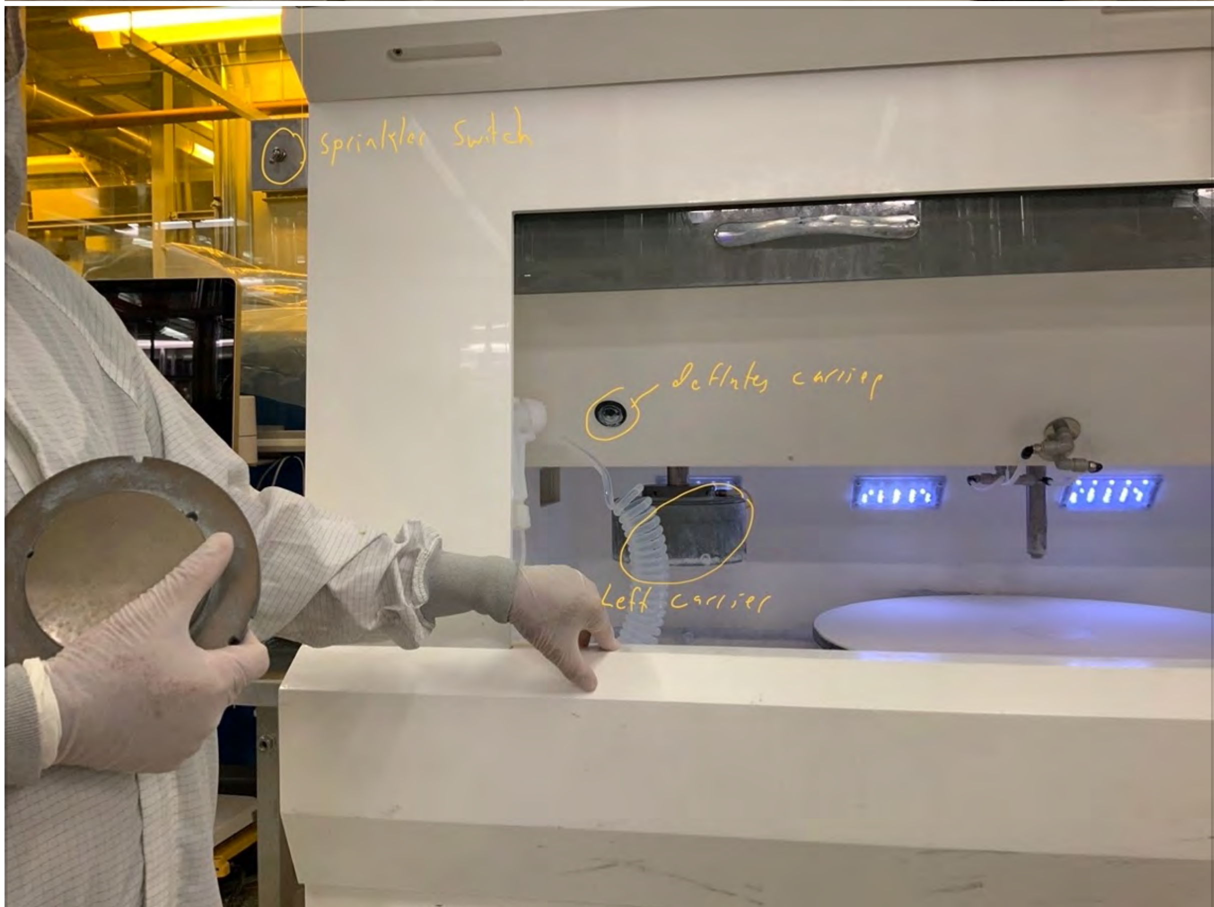
Conditioning the pad

Condition once per hour of polishing and before you start to polish

- install conditioning pad
- set down load (0.4 is min)
- sweep span and sweep speed (how far and fast it does across the plate) set both to 100
- turn flush on. this puts DI water on pad
- condition for 5min (use timer)

Must condition with hard pad every 1 hour of use to "deglaze" large (white) polishing pad plate. Conditioning pad looks like this. . .





Polishing

Polishing proceedure in manual mode:

- Install polishing pad. (Using black pad depicted)
- wet the pad, make a puddle
- push wafer into puddle (only surface tension keeps the wafer in place as pad is inverted)
- mate pad into carrier (latched onto pins in carrier with a twist)
- connect yellow hose to securely to pad
- position the slurry hoses down toward the polishing pad plate
- turn the plate rotation on 50 rpm
- put slurry on 500 until the slurry starts to flow then turn down to about 20 - 40
- Down load should be < 2psi for a 525um Si wafer
- apply back pressure. this back pressure inflates the chuck/black polishing pad. Want to keep chuck flat-ish. To do this use 50% (25psi) or 30psi (imperical observation from user feedback.)
- Use 100% span press OK
- 100% sweep, press SWEEP ← brings pad with wafer to polishing plate
- hold finger over stop quickly button to stop if wafer comes loose

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Finishing up

When finished polishing, flush the line and flush the plate:

- turn on Plate rotation to 50
- turn slurry rate to 500
- turn on the round green flush button
- flip sprinkler switch
- flush for 3-5 min

Clean slurry off part:

- spray wafer with DI ware when pad is inverted in carrier
- remove pad from carrier
- spray wafer again with DI water when pad is removed and wafer is facing up

Clean system:

- unplug yellow hose from pad (see pic)

- plug yellow hose back into top of carrier
- dump 5 gallon water bucket into system then spray out bottom of bucket
- then refill bucket from shower
- put black plate cover back on plate
- put pad in to pad storage bucket and place bucket on top of black plate cover
- turn off computer (off soft button is lower left)

Troubleshooting

if computer freezes, use the hard reset button

Standard slurry: Alkaline colloidal silica

Datasheet

LOGITECH
SF1 Polishing Suspension
EC Label EC No. 231-545-4
Important!
• Do not expose to temperatures below 4°C.
• Storage temperature range 4°C to 25°C.
• Shelf life 12 months from receipt of goods.
• Store in dark location.
Batch No.
4581
Cat No.
0CON-137
Net Contents 25 litres