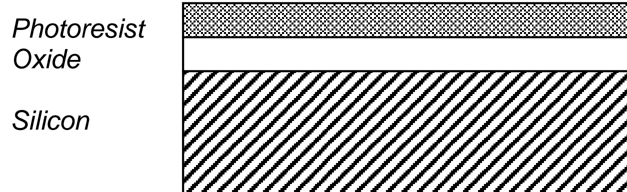
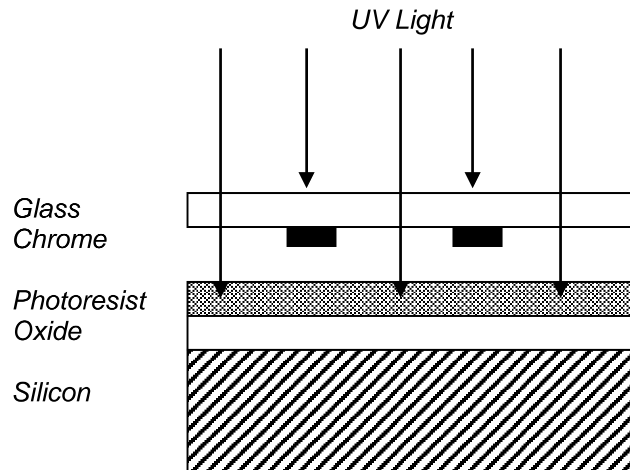
SMIF Baseline Photolithography Processes

Positive Resist

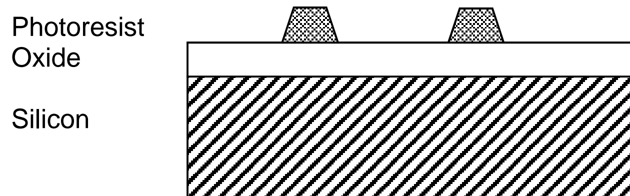
1. Spin coat P-20 adhesion promoter at 3000 rpm for 30 secs with the Headway spinner.
2. Spin coat Shipley 1813 positive resist at 3000 rpm for 30 secs with the Headway spinner. (see spin speed curves at the end of this document)



3. Bake the sample on a hotplate for 1 minute at 115C.
4. This should produce a resist film approximately 1.7um thick (this can be measured on the Nanoscope (NANO1) if desired).
5. Expose the wafer on PHOTO1 for 10 seconds using C1 (365nm) constant intensity with Hard or Vacuum Contact.



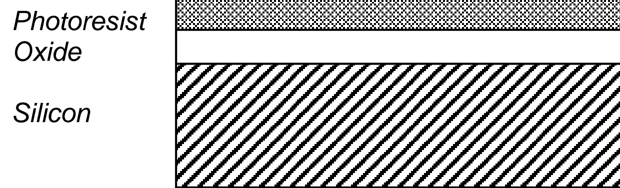
6. Develop for 60 seconds in a beaker filled with MF-319 developer with slight agitation.



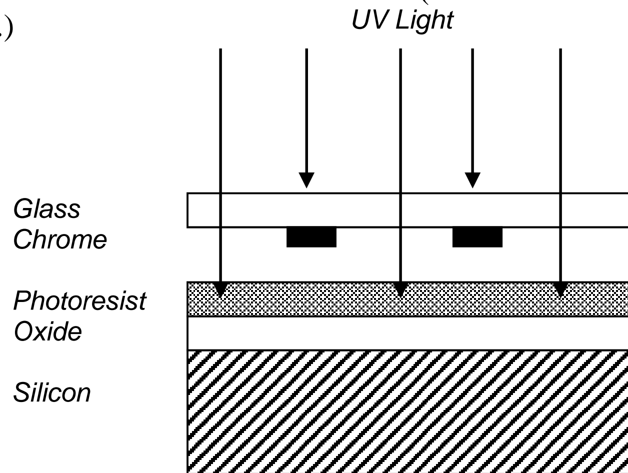
7. Rinse with DI water.
8. Dry with a nitrogen gun.

<u>NFR-016D2 Negative Resist (*Use for liftoff applications*)</u>

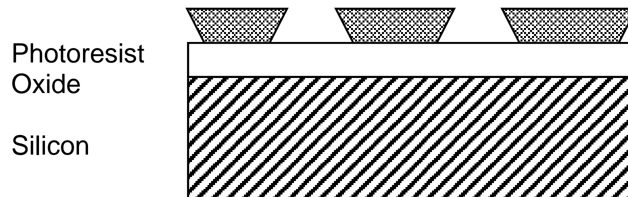
1. Spin coat NFR016D2 negative resist at 3000rpm for 30secs with the Headway spinner. (See spin speed curves at the end of this document)



2. Bake the sample on a hotplate for 1 minute at 90C. (Or oven bake for 2min.)
3. This should produce a resist film approximately 3.9um thick (this can be measured on the Nanoscope (NANO1) if desired with n=1.55)
4. Expose the wafer on PHOTO1 for 12 seconds using C1 (365nm) constant intensity with Hard or Vacuum contact. (Or PHOTO2 for 9secs with Hard Contact.)



5. Post exposure bake on a hotplate for 1 minute at 90C. (Or oven bake for 2min.)
6. Develop for 60 seconds in a beaker with MF-319 Developer at room temperature with slight agitation.



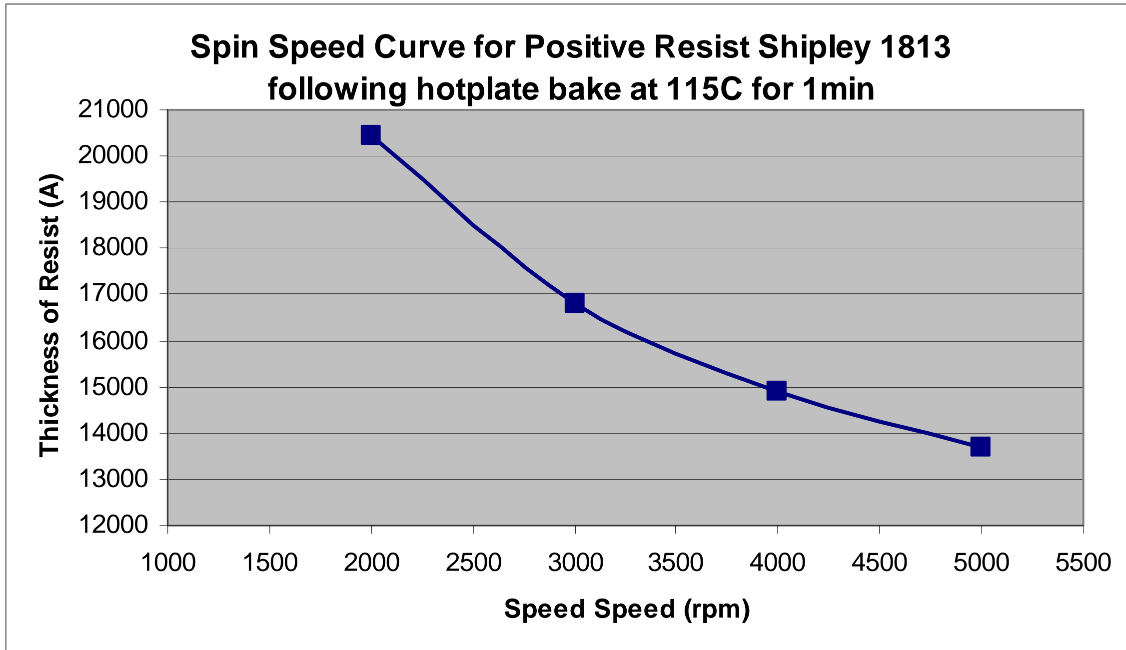
7. Rinse with DI water.
8. Dry with a nitrogen gun.
9. Remove remaining moisture by oven baking for 5 minutes at 110C.

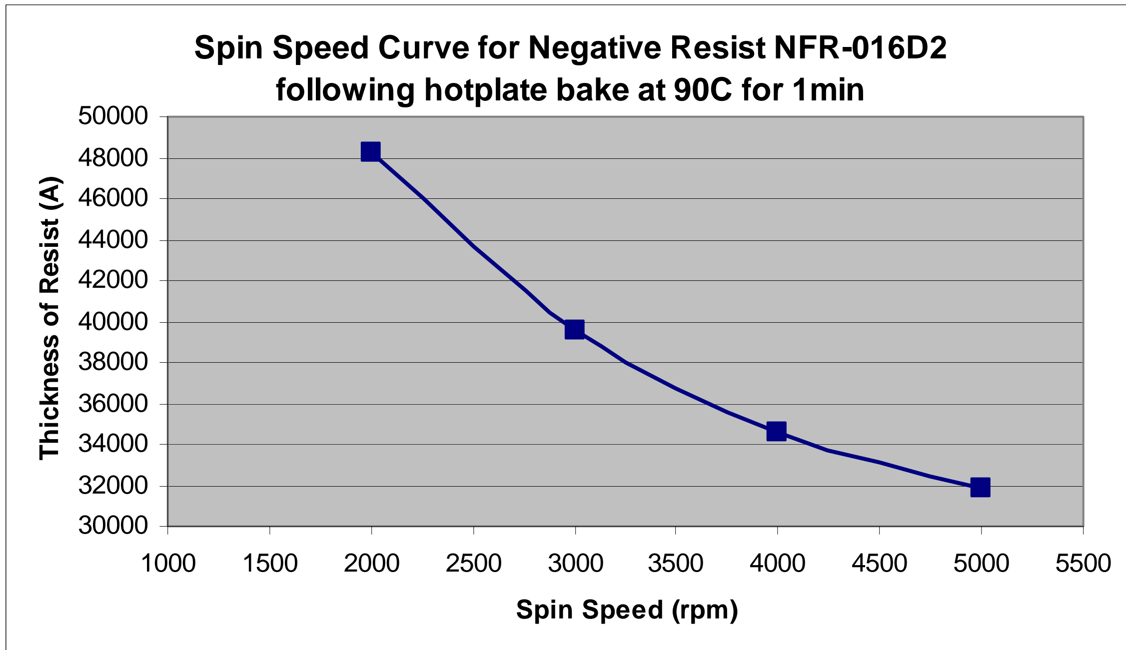
If doing post-metal liftoff:

10. Place beaker filled with Acetone in ultrasonic bath.
11. Soak metallized sample for 5 minutes in beaker with ultrasonics ON.
12. Rinse wafer in beaker filled with IPA for 5 minutes.
13. Dry with N2 gun.

Revision 4
J. Dalton / M. Walters
06/10/2012

Resist Spin Speed Curves





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