



## SU-8 NEGATIVE PHOTO RESIST

### 1. OVERVIEW

This protocol is developed as a ~50µm thick negative resist recipe for use by Nanofab users.

### 2. PROCEDURE

1. Wafers need to be dehydrated after being cleaned. Wafers are heated to 200°C on a hotplate for 5min. in Aisle 1 fumehood and cooled to room temperature before being coated.
2. SU-8 is spun on the Head-way Resist Spinner in Aisle 1 fumehood.
3. Pour
  - i. Dispense resist so that it completely covers wafer surface. If bubbles are produced, wait 5min before spinning
4. Spread
  - i. Ramp to 500RPM at a rate of 100RPM/sec. Hold for 5sec.
5. Spin
  - i. Ramp from 500PRM to 3000RPM at a rate of 300RPM/sec. Hold for 30sec.
6. Set hotplate to 65°C. Softbake wafer for 3min.
7. Increase temperature to 95°C at a rate of 15°C/min. Hold for 5min.
8. After soft-bake, the wafers are ready to be exposed. The exposure is 520 mJ. To find the number of seconds, use the following formula:

$$ExposureTime(s) = \frac{ExposureEnergy(mJ)}{ExposureFactor\left(\frac{mW}{cm^2}\right)}$$

A SAMPLE calculation for this is:

$$ExposureTime(s) = \frac{730mJ}{60.9\left(\frac{mW}{cm^2}\right)} = 12\text{sec}$$

9. This formula will allow the user to use ANY of the lithography tools and have the same amount of exposure. Just read the Exposure Factor on the Sheets on any of the litho tools.
10. For postbake Set hotplate to 65°C. Postbake wafer for 1min.
11. Increase temperature to 95°C at a rate of 15°C/min. Hold for 4min.
12. The developer used is SU-8 developer found at the lithography station OR in the Developer Storage Cabinet in Aisle 1.
13. Develop in a dish of SU-8 Developer with agitation. Rinse with IPA to quench developing. Inspect under a microscope after 2min of developing and then after each following minute. Depending on agitation developing can be complete in 4-5min.



### 3. TECHNICAL DATA (if applicable)

If applicable, provide your accumulated technical data (pictures, SEM pictures, graphs, tables and appropriate measurements).

### 4. APPROVAL

**QUALIFIED TRAINER:** Jolene Chorzempa

**TRAINING COORDINATOR:** Stephanie Bozic