

Lab Assignment: To prepare a spin curve for Shipley 1400 Positive Photoresist

1. Review of lab notebook and attendance
2. Overview of the lab
 - a. Spinning
 - b. Positive and negative resist
 - c. Masks
 - d. Aligners
 - e. Developing
 - f. Inspection
 - g. Measurement and Photoresist thickness
 - h. Photoresist removal
 - i. Wafer and mask carrying
3. Tasks
 - I. Preliminary cleaning:
 - a) Acetone/ Methanol cleaning followed by DI water spray/ rinse (Standard degreasing)
 - b) Base SC-I:(To remove organics and certain metal contaminants)
100 ml DI water/20 ml H₂O₂/ 20 ml NH₄OH 10 min/80⁰C
 - c) DI water rinse: 5min with boat/ 30 sec with spray
 - d) 50:1 HF dip 15 sec
 - e) DI water rinse: 25 sec
 - f) Acid SC-II: (Removes remaining atomic and ionic contaminants)
125 ml DI water/20 ml H₂O₂/ 20 ml HCl 10 min/80⁰C
 - g) DI water rinse: 25 sec
 - h) Blow dry/ spin dry
 - II. Photolithography
 - a) Spin HDMS 15 Sec/3000 RPM
(Keep 15 sec on the wafer then spin)
 - b) Spin Positive resist Shipley 1400 30 Sec/500...3000 RPM
 - c) Pre bake (Hot plate) 1 min/100⁰C
 - d) Align/ expose 45 Sec
 - e) Develop with 352 Dev. 30 Sec
 - f) Inspect
 - g) Post bake (Hot plate) 1 min/150⁰C
 - III. Thickness measurement using Dektac
 - IV. Resist Stripping
 - a) 1110 Stripper 10 min/80⁰C
 - b) Rinse with Isopropyl Alcohol
 - c) DI water rinse
 - d) Spin dryOr
 - a) Acetone/ Methanol treatment 1 min/r.t.
 - V. Spin curve
 - VI. Draw a process flow diagram