

Patterning of positive process with AZ5214E

- Bake sample at 110 °C on hot plate for 1-2 minutes to dehydrate
- Spin coat AZ5214 with 5000 rpm for 30 s (resist thickness is around 1.2 µm).
- Check uniformity of PR with microscope
- Bake sample for 1 minute at 110 °C on hot plate.
- After mask alignment, expose 18 sec (230 mJ/cm²).
- First develop for 70 sec with 100 % of AZ-327 developer
- Dip sample in DI water tank for 30 seconds
- Blow dry with N₂ gas and check with microscope. If need more development, develop 5 sec more and rinse with DI water for 30 seconds. Keep repeating 5 sec developing until you get good developed pattern. Every time, after dipping the sample in developer, dip in DI water for 30 sec.
- Check the PR thickness with surface profiler (thickness of 1.2 micron), if you need.
- Oxygen asher cleaning for 30 s with 300 V for descum. (parallel plate plasma asher)

Patterning of image reversal process with AZ5214E

- After clean sample, bake sample at 110°C for 1-2 minutes to dehydrate on hot plate
- Spin coat AZ5214 on sample (5000 rpm / 30 sec) ($t_R \approx 1.2 \mu\text{m}$)
- Check uniformity of coating surface under microscope
- Bake sample for 1 minute at 110°C on hot plate.
- For edge-bead removal, expose for 30 sec with edge removal mask and develop with AZ327 developer for 30 sec and clean with Q-tip with acetone.
 - * You can use Q-tip with acetone without exposure and development. (Recommend this method because it can be reduce defects on PR due to contacts of mask during the alignments)
 - * Make sure there is no residue of photoresist at edge bead area. The residue at corner and edge is very thick.
- Check edge-bead removal with microscope.
- After obtaining good alignment of mask, expose for 5 sec (55-60 mJ/cm²).
- Bake for 1 minute at 120°C on hot plate
- Wait for 1-2 minutes for sample to cool down.
- Expose for 35 sec without mask (390-420 mJ/cm²).
- Develop for about 30 sec with 100 % of AZ-327 developer.
- Rinse 30 sec with DI water thank
- Blow dry with nitrogen gas and inspect sample under microscope.
- Keep repeating 3-5 sec developing until good clean pattern is obtained. Make sure all marks are opened clearly.
 - * Development time can be variable every time. Make sure not to overdevelop.
- Check the PR thickness. (thickness of 1.2 micron), if need.