UNIVERSITY OF CALIFORNIA
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**Semiconductor Device Processing**

# $O_2$ Plasma Photoresist/Descum Instructions

Plasma descum may be performed after photoresist patterning but before additional processing (etching, evaporation, …).

1. Turn on the AC power toggle switch on the ICP power supply located on top of the reaction chamber enclosure.

2. Open the reaction chamber door and load samples on the flat sample tray. Return the tray with samples and close the door. Note: The door guides are notched and need to be adjusted upward to close the door.

3. Ensure the vacuum purge switch is in the down/off position. Note: This switch is located in the lower left position on the front of the chamber enclosure,

4. Plug in the mechanical pump to one of the wall outlets at the back of the system.

5. Move the 3 position vacuum fast/slow toggle switch from the middle/off position to the up/fast position to evacuate gas and create a vacuum in the reaction chamber. Note: This switch is located next to the purge switch,

6. Turn on the AC power for the RF power supply by placing the AC line toggle switch in the up/on position. The switch is located on the left side of the front panel. Note: This power supply is located on the right side of the reaction chamber on the bench top.

7. Wait for the vacuum level to reach 300 millitorr on the analog vacuum gauge located on top of the reaction chamber enclosure.

8. Place gas #2 ($O_2$) toggle switch in the up position and wait for the vacuum to reach 300 millitorr again.

9. Turn on RF power to the reaction chamber by moving the RF power toggle switch from the down off/remote position to the up/on position.

10. Wait 1 minute and then turn off the RF power by placing the RF power toggle switch back in the down off/remote position.

11. Turn off the $O_2$ gas flow by placing the gas #2 toggle switch in the down off position.

12. Stop pulling vacuum in the chamber immediately after turning off $O_2$ gas flow by moving the 3 position vacuum fast/slow toggle switch to the middle/off position.

13. Turn off the AC line power to the RF power supply on the bench top by placing the AC line toggle switch in the down/off position.

14. Place the vacuum purge toggle switch in the up/on position the vent the reaction chamber. Note: This will take about 30 seconds.

15. Open the chamber door and remove the sample tray and samples.

16. Return the sample tray to the chamber and close the door.

17. Place the vacuum purge switch in the down/off position

18. Unplug the mechanical pump.

19. Turn off the AC line power to the ICP power supply on the top of the reaction chamber.