SOP: Laurell Spin Coater

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Equipment Overview

Notes before use:

- If using resists other than SU-8, please provide an MSDS and check with the trainer
- When cleaning the spinner, do not spray cleaning solvent on the chuck (where the vacuum hole is located)
- If unsure about the process parameters for the resist, refer to the resist datasheet

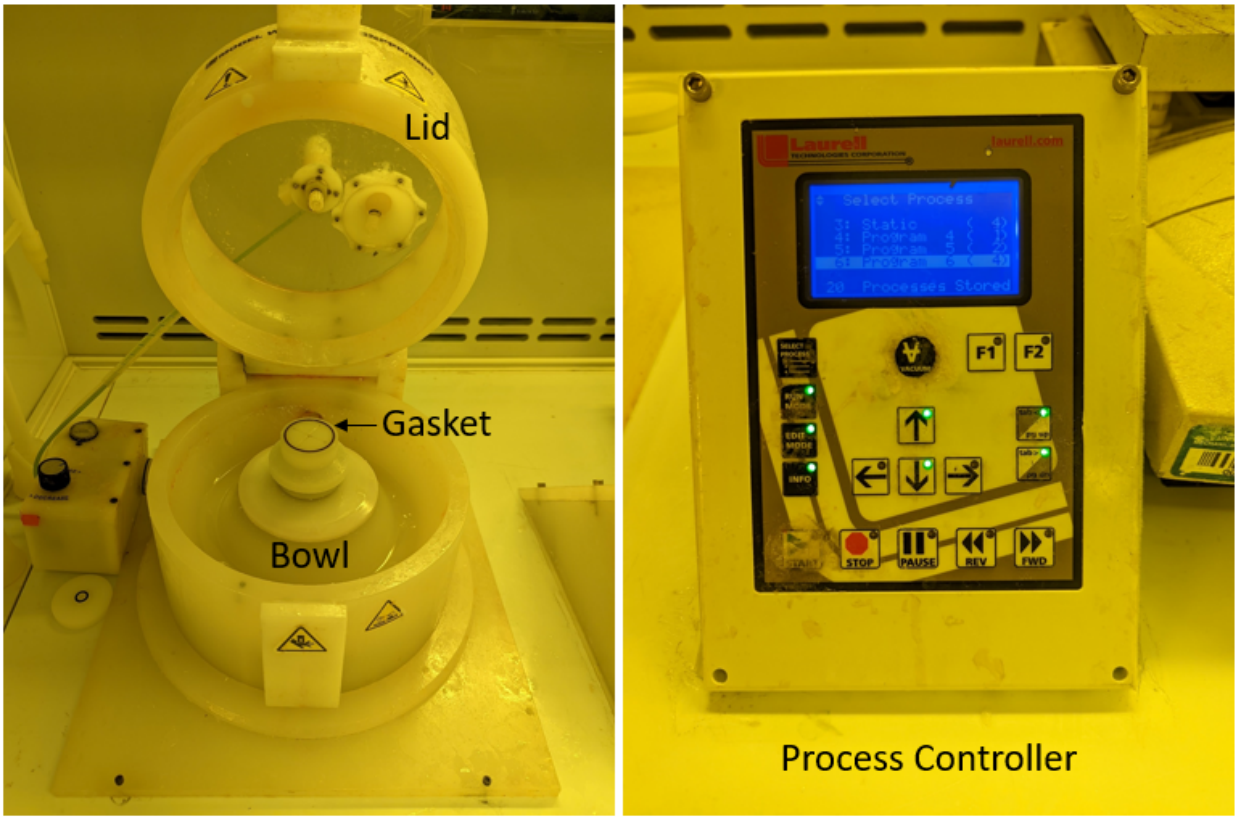

Figure 1: Components of spin coater

Supplies and Reagents

Provided by User:

- Photoresist

- Wafer
- Acetone for cleaning

Method

Setup:

1) Ensure that the bottom of the wafer is clean and dry
2) Ensure that the chuck has no gunk in the grooves and is dry and the gasket is properly seated
3) Ensure that an appropriate chuck size is being used, and that the wafer is always bigger than the chuck.

Procedure:

1. Set the wafer size on the wafer alignment tool (fig.2) and then place the wafer on the wafer alignment tool ensuring the wafer orientation flats are away from the size setting screw

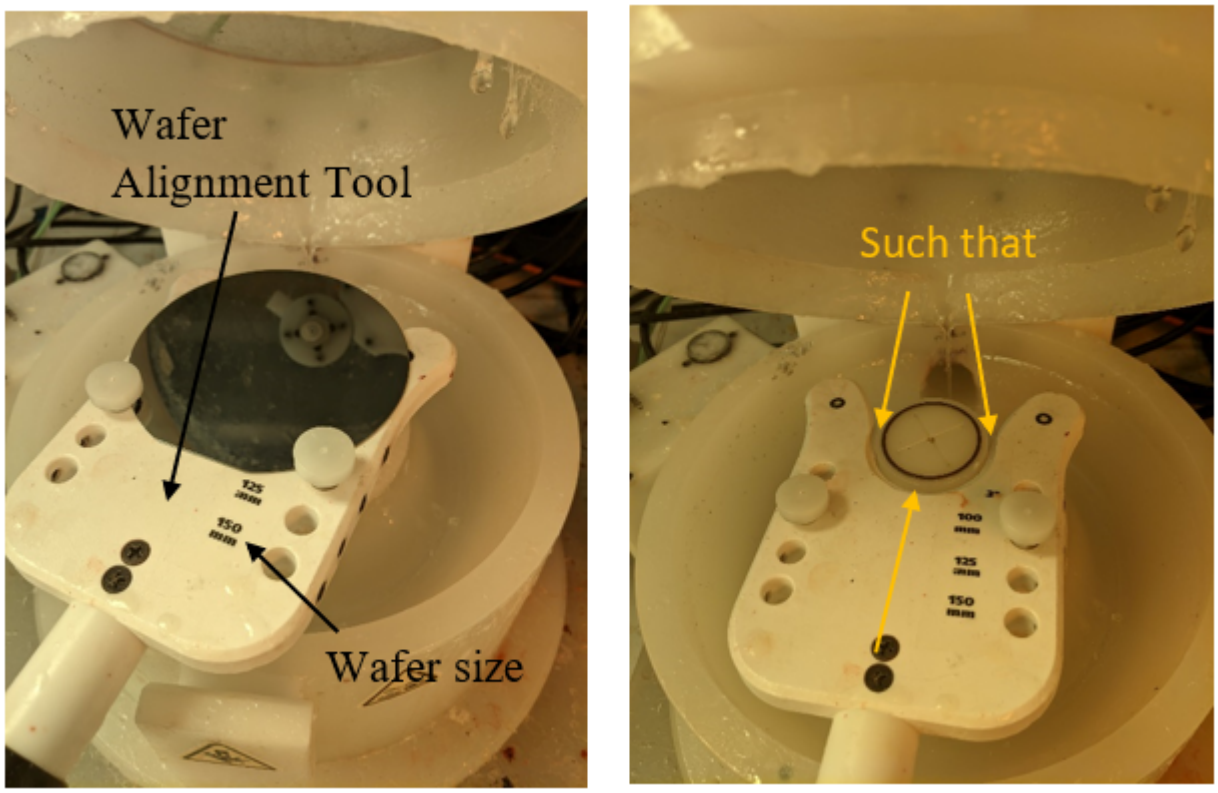

Figure 2: Wafer alignment usage

2. Place the wafer on the chuck using the alignment tool
3. Turn ON the vacuum pump by pressing vacuum on the control panel and confirm that the wafer is securely held on the chuck
4. Close the lid
5. Program the process recipe using the control panel on the process controller (fig.3)

Figure 4: Control Panel Process

6. Press 'Select process' and then use the arrow keys to toggle through the recipes
7. In order to edit and/or verify the recipes press 'edit mode'. Edit the recipe using the up and down arrows to increase or decrease the numbers and side arrows to move through the number positions. Use the tab buttons to jump through the parameters.
8. Press the 'Run Mode' button in order to save and exit the editing process.
9. It is recommended to verify the alignment and clamping of the wafer using a short dry run. This can be tested by either defining a separate program for a shorter duration or stopping/pausing the planned program after satisfactory verification. The program can be reset by exiting the 'run mode'
10. Press 'start' to start the process recipe and observe if there is significant vibration of the wafer (not properly aligned). If so, reseat the wafer.
11. Open the lid and dispense the photoresist in the center of the wafer. For less viscous resists use a dropper and for viscous resists pour the resist either by transferring a small quantity into a secondary container or directly from the bottle.

    Edge bead removal process can be carried out using the nozzle provided on the lid (Fig.5): Fill a syringe with the developer and lock it onto the luer of the nozzle. Aim outwards to begin with and slowly tilt the syringe to bring the developer jet closer to the outer edge of the wafer. Optimisation may be required to identify the appropriate developer dispense volume required for the target photoresist thickness.

12. After the status reads 'Done', press vacuum button to stop the vacuum at the chuck and retrieve the wafer.

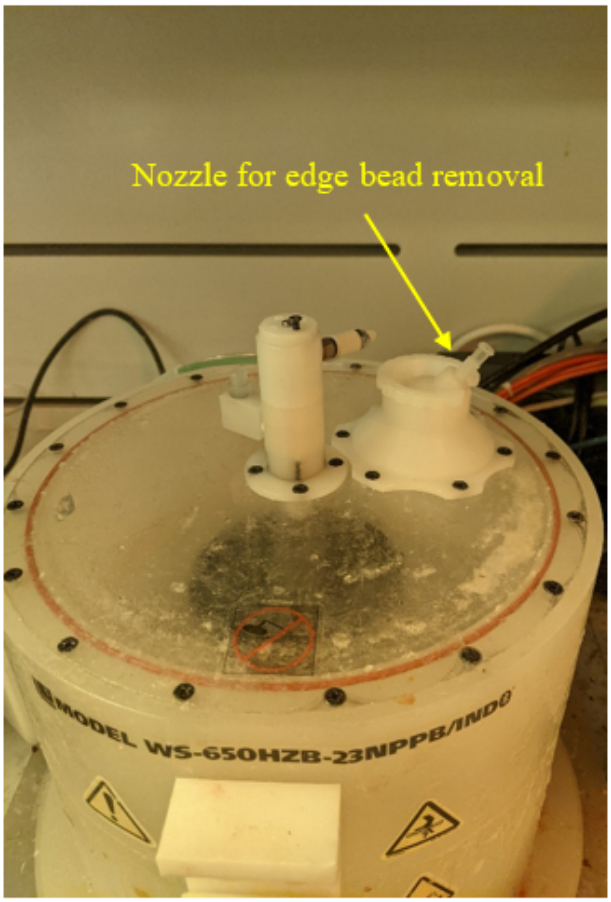

Figure 5: Edge Bead Removal location

3) Cleanup:

1. Spray SU8 developer around the bowl and wipe down the lid and the chuck with wipes from provide by CRAFT
2. **All photoresist must be removes. You should be able to feel the Teflon bowl underneath**