

Usage Policies Notebook for Laurell Photoresist Spinner

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Emergency Plan for Laurell Photoresist Spinner

Standard Operating Procedures for Emergencies

Contact information

Person	Phone number
Lab Manager	Jake Hes, 949-824-8239 (day), 562-522-8328 (alternate)
Director	G.P. Li: 949-824-4194 (day), 949-824-2047 (alternate)
Staff	Mo Kebaili: 949-824-8239 (day), 949-494-5892 (alternate)
Super User	Carlos Ruiz (818) 527-6349 (Anytime, voicemail or text only)

Hazardous chemicals, gases, and conditions

Hazard name	Description of hazard
Isopropyl alcohol	Flammable solvent
Acetone	Flammable solvent
Methanol	Flammable solvent
N ₂ (nitrogen) gas	Asphyxiant

Usage Policies for Laurell Photoresist Spinner

Standard policies for usage

The Laurell spinner is used to distribute photoresist in a thin uniform layer by spinning a substrate. The Laurell spinner is NOT to be used for any materials other than photoresist. Designated Karl Suss spinners can be used for other materials.

Contact information

The INRF staff or the lab manager may be reached at 824-8239 or 824-9831.

Authorized users

Only INRF registered users who have completed the training and passed the certification may use this equipment. Users may only use the portion of the system for which they have been trained.

Training

Users must have received direct training from the staff in order to use this equipment. Users are expected to understand the nature of the system. Training varies slightly, depending on the process to be performed. Contact the staff for details and to arrange for a training session.

Usage logs

Users are required to log all activity in the log sheets provided. All users must log in when they used the Laurell Photoresist Spinner (date and time), which photoresist they used, and when they completed their process in the user log sheets. If users notice anything unusual, they should record it in the user log sheets, and add details in the maintenance log sheets. Any maintenance to the system must be logged in the maintenance log sheets (maintenance staff only).

Safety equipment

There is no specific safety equipment for use on this tool, however, cleanroom gloves and tweezers should be used when handling pieces in the spinner chamber.

Standard equipment and materials

The laboratory provides the following gas: N₂. Other gases must be cleared with the lab manager.

User maintenance

Users are requested to clean the Laurell Photoresist Spinner chamber after use by first, spraying acetone to dissolve and remove the photoresists, then wiping down with a lint-free cloth the inside of the chamber. Dispose of the cloth in a waste container marked for flammable solid waste.

Pollution Control

Dispose of the alcohol soaked wipes in a waste container marked for flammable solid waste.

Scheduling

Reservations can be done online, also, the system can be used on a first come, first served usage if no reservation was made.

Other issues

Users should remain physically present in the cleanroom facility during the entire use of the Laurell Photoresist Spinner.

Users should not modify any standard recipe in the software. New recipes can be created, but once created, they should stay unedited. A modified recipe should be given a new name. This allows us to track down the history of a problem later, if necessary.

At no time should a user adjust a pressure regulator on a gas line. Gas control should be “on” or “off” only, using only the valves appropriate. For most gases, this is usually the valve at the cylinder head.

Non-standard use

Users may not modify any hardware on this equipment. For use of non-standard processes, gases or materials, contact the staff or the lab manager.

Usage Notes for Laurell Photoresist Spinner

Guide for using the Laurell Photoresist Spinner correctly

Equipment Specifications:

Standard Chuck Size: 50 – 150 mm

Maximum RPM: 6000

Inside Chamber size: 8.7" (22cm)

Overall size: 9.0" (23cm)

Operating Instructions:

1. Open the cover and center the wafer on the chuck.
2. Press the VACUUM button on the control panel. This locks the wafer on to the chuck. The display should stop flashing the word "VACUUM," and instead display a number. If this number is not over 12.5, **DON'T** run the spinner. Check to see that the VACUUM SHUTOFF VALVE is turned on (it is on the line that runs from the wall into the spinner). If this valve is already open, contact the staff for support.
3. Select the program you want to run by holding down the "PROGRAM SELECT" button, and using the up/down arrow keys to scroll through the programs (A-T).
4. If none of the available programs are satisfactory, you may make changes to the spin recipe on any of the programs. See the programming instructions for more information.
5. Apply photoresist to the wafer. Close the cover and press the RUN/STOP button. An interlock prevents the same program from running twice unless you lift the lid of the machine between runs, or hit F1 twice to override the interlock.
6. Press the VACUUM button on the control panel. Open the cover, and remove the wafer.
7. Turn off the VACUUM SHUTOFF VALVE.
8. Clean the inside surfaces of the spinner, including the cover with acetone and clean wipes. Old photoresist degenerates into particles and can contaminate wafer surfaces. Clean the chuck also, but do not allow any acetone to leak in to the vacuum chuck.
9. Leave the system with the lid shut and clean up around the area.

Programming Instructions:

1. Place the system in "Programming" mode by pressing the F1 key. The PGM message will appear in the mode area of the display to indicate that the system is in the programming mode.
2. Select the program letter (A-T) to be modified using the PROGRAM SELECT key. The program letter selection will be indicated in the upper right hand area of the display.
3. Use ADD STEP and DEL STEP keys to select the number of steps necessary in the program. Up to 51 steps can be programmed. To delete a step, hit DEL STEP then confirm within 5 seconds by pressing ENTER.
4. Use the CURSOR left and right keys to position the cursor over the value to be changed.
5. Use the VALUE up and down keys to change set point values. Repeat steps 3 and 4 until all parameters for a given step agree with your process recipe. Note: the ACL at the bottom of each step screen stands for acceleration. If desired, the acceleration the chuck undergoes between steps can be modified. There are two numbers shown after ACL – the first is an index number, which you can change with the up/down arrows. The second is the actual acceleration (or deceleration) in rpm/s that the chuck will undergo as it approaches the spin speed specified for this step. Use the STEP key to advance to the next step.
6. Repeat steps 4, 5 and 6 until all steps have been entered.
7. Use the STEP key to step through the program and verify the correctness of all values.
8. Press F1 to return to "Run" mode.