Microfluidics Lithography 1: Spin Coating

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Abstract

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Before start

This protocol is derived from

[Reference: Processing guidelines for permanent epoxy negative photoresist SU8 2025, SU8 2035, SU8 2050 and SU8 2075, MicroChem company**]**

Protocol

SpinCoater Instrument adjustment

Step 1.

Dispense 1ml of resist (SU8 2050) for each inch (25mm) of substrate diameter.

Spin at 500 rpm for 10 seconds with acceleration of 100 rpm/second.

Spin at 4000 rpm for 30 seconds with acceleration of 300 rpm/second.

Expected results:

40um film thickness with 4000 rpm spin of SU8 2050

25um film thickness with 4000 rpm spin of SU8 2025

75um film thickness with 2000 rpm spin of SU8 2050

40um film thickness with 2000 rpm spin of SU8 2025

Run the spin coater

Step 2.

Place the wafer in the spin coater and run the device

Microscope slides, Si/SiO2 wafers and glass/PMMA wafers are alternatives

Soft baking of SU8 coated wafer

Step 3.

Soft Baking is done depending on the thickness of the film.

For 25-40 micron thickness; 2 minutes of baking at 65°C and 6 minutes of baking at 95°C are applied.

For 45-80 micron thickness; 3 minutes of baking at 65°C and 6-9 minutes of baking at 95°C are applied.

To use the SU8 coated wafer later

Step 4.

Put the wafer in a petri plate and cover tightly with aluminium foil.

This can be used in a month.

Warnings

* All the related steps must be done in a clean room classD (min) and under yellow or red light.

* All spin coating procedures must be performed inside the fume hood.