



12-16-2016

PMMA A2 and A4 Spin Curves

Gerald G. Lopez Ph.D.

Singh Center for Nanotechnology, lopezg@seas.upenn.edu

Mohsen Azadi

Singh Center for Nanotechnology, azadi@seas.upenn.edu

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Lopez, Gerald G. Ph.D. and Azadi, Mohsen, "PMMA A2 and A4 Spin Curves", *Protocols and Reports*. Paper 34.
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PMMA A2 and A4 Spin Curves

Abstract

This report documents the spin curves for the PMMA A2 and A4 electron beam lithography resists from MicroChem. The aim is to provide a spin curve reference for the A2 and A4 dilutions at the Singh Center for Nanotechnology Quattrone Nanofabrication Facility.

Keywords

PMMA, A2, A4, PMMA A2, PMMA A4, Spin Curves, Curve, Spin, Dilution

Goal:

This report documents the spin curves for the PMMA A2 and A4 electron beam lithography resists from MicroChem. The aim is to provide a spin curve reference for the A2 and A4 dilutions at the Singh Center for Nanotechnology Quattrone Nanofabrication Facility.

Materials:

- PMMA A2 and A4
- Si wafers

Equipment:

- ReynoldsTech Spinner
- Torrey Pines Scientific Hotplate
- Filmetrics F50

Protocol:

Spin Coat and Soft Bake

1. Mount wafer and ensure that it is centered.
2. Spin wafer at a fixed RPM for 60 seconds.
3. Bake wafer at 180 °C for 90 seconds and allow wafer to cool after removal.

Measurement

1. Allow the Filmetrics F50 light to warm up for at least 5 minutes.
2. Click *Baseline...* to calibrate the tool using the SiO₂ and Si standards.
3. Mount wafer and select the *PMMA on Si* recipe.
4. Edit the recipe so that 85 points are measured on the wafer with a 1 cm edge exclusion.
5. Click *Start* to measure the resist thickness of each wafer.

Results:

Spin Speed [RPM]	Thickness [nm]	
	PMMA A4	PMMA A2
500	583	168
1000	407	125
1500	332	102
2000	289	89
2500	260	78
3000	234	72
3500	215	66
4000	202	63
4500	190	59
5000	180	55
5500	175	53
6000	167	52

