

# University of Minnesota Nano Fabrication Center

## Standard Operating Procedure

**Equipment Name:** Headway resist spinner

**Coral Name:** spinner-1

**Revision Number:** 3

**Model:** AC101E

**Revisionist:** K.Burkland

**Location:** Bay 2

**Date:** 10/24/05

### 1 Description

The Headway spinner is used for applying photoresist or other light sensitive liquids uniformly on a substrate. Spin speed and length of spin time can be altered to achieve desired film thickness. See the posted graph for the Microposit 1805, 1013 1818, 1045 and 1075 photoresist spin curves.

### 2 Safety

a Test the spin cycle starting at 0 Rpm's after loading the sample on the chuck and turning on the vacuum Excessive wobbling may result in the sample flying off the chuck and causing injury.

### 3 Restrictions/Requirements

- a Completed the Photolithography short course.
- b Partial samples or whole substrates.
- c Line the cup with clean room wipes to keep the build up at a minim.
- d Do not program any spin speed higher than 6000 rpms.

### 4 Required Facilities

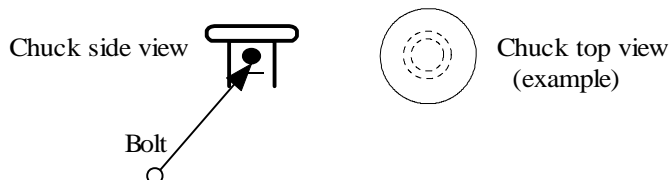
- a Vacuum 25" Hg
- b Spinner exhaust: 1"
- c Drain ¾"

### 5 Definitions

A Chuck metal piece the wafer sits on

### 6 Setup

- a There are 4 chucks available for use. Choose a chuck with a wafer stage that is smaller than the sample.
- b To remove the existing chuck, locate the correct size Allen wrench and insert into the bolt using the mirror to view the location and turn left one or two turns to loosen, do not detach.
- c Pull the chuck STRAIGHT UP until it is off.
- d Place the new chuck on the spindle with the bolt on the flat edge – the spindle is not round. Tighten by turning the bolt right with the Allen wrench until tight.



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- e The vacuum handle is located on the left side of the wet bench, turn it to the ON position and listen for a hissing sound. This could mean that the chuck is not properly installed and needs to be removed and reinstalled.
- f Located above the spinner on the upper panel are the Headway controls  
The parameters may be changed for the spin speed the duration of spin.

### 7 **Operating Instructions**

- a Set the time of the spin on the dial labeled TIME on the control panel.  
The dial is divided into 0, 20,40,60,80,100 and 120 seconds. See the posted table located above the dial to determine the set point vs. the actual spinning time.
- b Place the sample on the chuck using either a tweezers or the 4 or 6 inch whole wafer placement tool.
- c Turn on the vacuum.
- d Test the spin cycle starting at 0 Rpm's after loading the sample on the chuck and turning on the vacuum. To activate the spin, press the foot pedal located under the vacuum ON/OFF lever on the floor. One side of the foot pedal starts the spin, depressing the opposite side stops the spin.
- e Ramp to the maximum spin speed slowly, watching the sample continually checking the sample for wobble, and readjust if necessary. Excessive wobbling may result in the sample flying off the chuck and causing injury.
- f Dispense the material onto the substrate that is to be spun on.
- g Activate the spin cycle by depressing the foot pedal. It will stop automatically after the set time is done.
- h Turn off the vacuum.
- i Remove the sample from the chuck.
- j Remove the wipes from the cup and clean the cup with acetone and clean room wipes.

### 8 **Problems/Troubleshooting**

- a Poor vacuum.
  - 1 The substrate is not placed properly on the chuck. Re-position and re-spin wafer.
  - 2 The screw holding the chuck is not properly installed.
  - 3 The chuck is not placed on the spindle properly.
  - 3 Lack of facilities vacuum. Notify maintenance personnel.