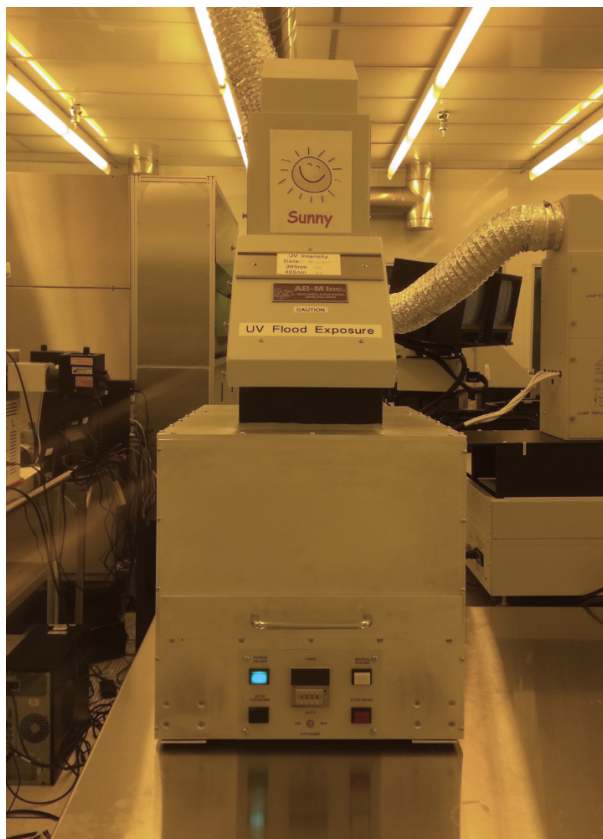## UV Flood Exposure System (Sunny)   2016-10-13

Location: Primary Lithography Area

Primary Trainer: Stephanie Bozic   **Secondary Trainer:**   Scott Munro
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OVERVIEW

The UV Flood Exposure system provides uniform UV exposure over a wide area. It is primarily used for resist stripping: by flood-exposing substrates with positive-tone photoresist, the exposed resist can be removed with developer, rather than using solvents (e.g., acetone, Remover PG). The tool can accommodate substrates up to ~7" × 7", and features manual and automatic timed exposure.
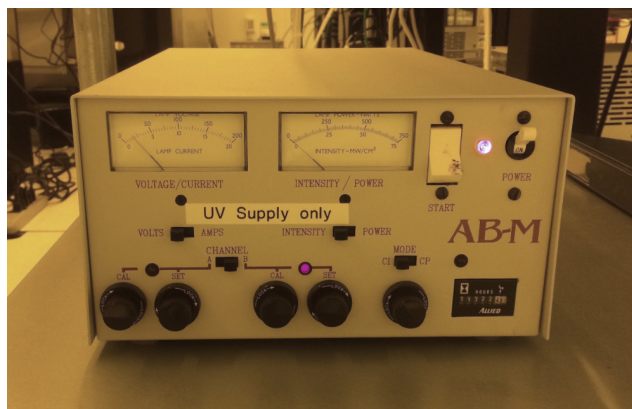
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SAFETY PRECAUTIONS

This system uses intense UV light (250–436 nm wavelength). The system is interlocked to prevent unintentional exposure of UV light—do not attempt to defeat the interlock, as this could cause damage to the eyes and/or skin. The UV lamp bulb contains mercury—do not turn the lamp on and off rapidly, as the resulting thermal shock can cause the bulb to burst, releasing mercury vapour. Mercury is a highly toxic substance that may irritate the skin, eyes, and respiratory tract. Repeated exposure to vapours and liquids may cause mercury poisoning.

Before bringing any new materials into the nanoFAB for processing, it is necessary to fill out a new chemical import request on LMACS.

OPERATING PROCEDURE

1. The UV lamp power supply is located on the shelf below the system. If not already powered on, flip the **POWER** switch to **ON** and press and hold the **START** button until the **INTENSITY / POWER** gauge displays a nonzero reading. Allow the lamp to stabilise for ~20 minutes.

2. Login to the *UV Flood Exposure System (Sunny)* tool on LMACS; Location: **Cleanroom**.

3. Press the **POWER ON/OFF** button on the main system control panel. The button will light.

4. Open the drawer and place the substrate resist side up in the centre. Close the drawer.

5. For manual exposure, press the **MANUAL EXPOSE** button on the control panel to open the shutter and start exposure; the button will light. Press the button again to stop exposure.

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6. For automatic timed exposure, first set the exposure time using the +/− buttons in the four-digit panel under the **TIMER** display. The exposure time is in seconds, with the rightmost, red digit indicating tenths of a second (e.g., for an exposure time of 5.0 s, the panel should read `0` `0` `5` `0`). Press the **AUTO EXPOSURE** button to execute the timed exposure. The exposure can be aborted by pressing the **STOP/RESET** button.

7. When the exposure is finished, open the drawer and remove the substrate.

8. Repeat steps 4–7 for all remaining substrates.

9. When finished, press the **POWER ON/OFF** button on the main system control panel to turn off power to the system.

10. Logout from *UV Flood Exposure System (Sunny)* on LMACS.

11. To avoid unnecessary cycling of the lamp, the lamp power supply does not need to be turned off during business hours: it will be shut off by nanoFAB staff as part of the daily shutdown procedure.

TROUBLESHOOTING

APPROVAL

Qualified Trainers: Stephanie Bozic, Scott Munro

Fabrication Group Manager: Aaron Hryciw

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