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Torrey Pines Scientific Hotplate Calibration

GERALD G. LOPEZ

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

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Torrey Pines Scientific Hotplate Calibration

Summary/Description

This document outlines the standard operating procedure to calibrate the Torrey Pines Scientific hot plates of the University of Pennsylvania Quattrone Nanofabrication Facility.

Keywords

hot plate, hotplate, Torrey Pines Scientific, calibration

Disciplines

Nanoscience and Nanotechnology

|	Standard Operating Procedure	Document No:
QNF QUATTRONE NANOFABRICATION FACILITY		Revision: 2016-02-18
	Torrey Pines Scientific Hotplate Calibration	Authors: Gerald Lopez

Objective: To calibrate the Torrey Pines Scientific Hotplates at the QNF

Materials:
- 4" Si wafer
- Kapton tape

Equipment:
- Torrey Pines Scientific hotplate
- Omega Digital Thermometer HH11B
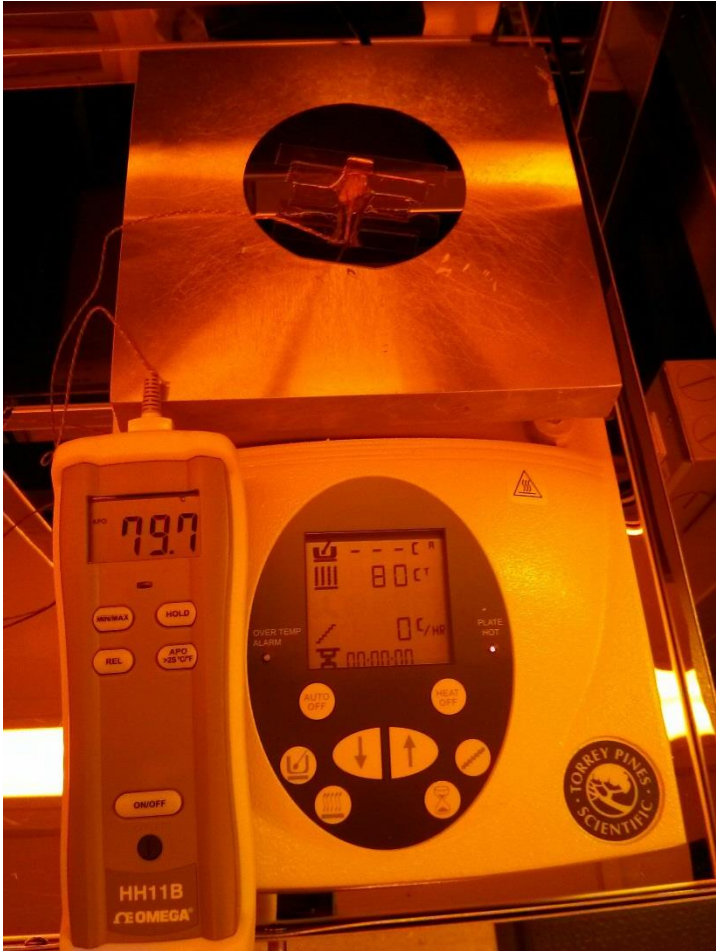- Omega Thermal Coupler
  Part# SC-GG-K-30-36
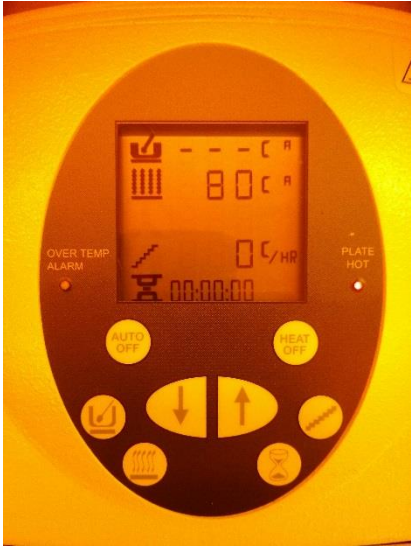
Protocol:
1. Connect the thermal couple to the Omega digital thermometer and affix the thermal couple sensor to the middle of a 4" Si wafer using Kapton tape.
2. Place wafer at the center of the hotplate and allow the thermometer readout to settle. This can take anywhere from 1-2 minutes if the hotplate is already at its set point. See large image to the right.
3. Once the temperature has settled on the digital thermometer, the hotplate is now ready to be calibrated.
4. To reset the actual temperature readout on the hotplate, hold down the AUTO OFF button until the second beep is heard. The second beep means that the hotplate is ready for calibration.

5. Press the hotplate button as shown to the right and adjust the value to the readout of the digital thermometer using the up or down arrow buttons. Press the hotplate button again to confirm the temperature. For example, if the Omega is reading 88°C, but the hotplate says the actual temperature is 80°C, adjust the value to 88°C and press the hotplate button to confirm.
   NOTE: When entering the new hotplate temperature, enter a number 1 or 2 degrees above or below the Omega's readout. For example, a hotplate is set to 100°C, but the Omega reads 105°C. One could enter 103°C or 104°C as the hotplates have a tendency to overshoot.
6. Repeat steps 3-5 until the desired tolerance is reached.