

# Cleanliness Levels of NFF (CWB) Equipment

## 1. Thermal Diffusion and Implantation Module

| Process Code             | Location | Equipment                                    | Cleanliness level           | Who operates       | Training type | Cleaning                                |
|--------------------------|----------|--|-----------------------------|--------------------|---------------|---|
| <b>CVD</b>               |          |  |                             |                    |               |   |
| CVD-A2                   | P2-01000 | LPCVD-A2 Doped Amor-Si                       | Clean                       | Staff              | NA            | A3+SRD-A                                |
| CVD-A3                   | P2-01000 | LPCVD-A3 Amor-Si/Poly                        | Clean                       | Staff              | NA            | A3+SRD-A                                |
| CVD-B1                   | P2-01000 | LPCVD-B1 Low-Stress Nitride                  | Clean                       | Staff              | NA            | A3+SRD-A                                |
| CVD-B2                   | P2-01000 | LPCVD-B2 Nitride                             | Clean                       | Staff              | NA            | A3+SRD-A                                |
| CVD-B3                   | P2-01000 | LPCVD-B3 LTO                                 | Clean                       | Staff              | NA            | A3+SRD-A                                |
| CVD-EPI                  | P2-01000 | ET3000 Epitaxy                               | Clean                       | Staff              | NA            | A3+SRD-A                                |
| CVD-A4                   | P2-01000 | LPCVD-A4 Si-Ge / Amor-Si / Poly              | Semi-Clean                  | Staff              | NA            | B1+SRD-B<br>D1(dump-rinser)             |
| CVD-B4                   | P2-01000 | LPCVD-B4 LTO / PSG                           | Semi-Clean                  | Staff              | NA            | B1+SRD-B<br>D1(dump-rinser)             |
| CVD-P3                   | P2-01000 | Oxford PECVD                                 | Semi-Clean                  | Qualified Lab User | Type 1 & 3    | B1+SRD-B<br>D1(dump-rinser)             |
| CVD-P2                   | P2-01000 | STS PECVD                                    | Non-Standard                | Qualified Lab User | Type 1 & 2    | B1+SRD-B/D1(dump-rinser)/F(dump-rinser) |
| CVD-CNT                  | P2-01000 | CNT PECVD                                    | Non-Standard                | Qualified Lab User | Type 1 & 3    | B1+SRD-B/D1(dump-rinser)/F(dump-rinser) |
| CVD-ALD                  | P2-01000 | Oxford ALD                                   | Non-Standard                | Qualified Lab User | Type 1 & 3    | B1+SRD-B/D1(dump-rinser)/F(dump-rinser) |
| <b>Thermal Diffusion</b> |          |  |                             |                    |               |   |
| DIF-C1                   | P2-01000 | Diff. Furnace-C1 FGA Annealing               | Non-Standard                | Staff              | NA            | B1+SRD-B/D1(dump-rinser)/F(dump-rinser) |
| DIF-C2                   | P2-01000 | Diff. Furnace-C2 N Pre-Deposition            | Clean                       | Staff              | NA            | A3+SRD-A                                |
| DIF-C3                   | P2-01000 | Diff. Furnace-C3 P Pre-Deposition            | Clean                       | Staff              | NA            | A3+SRD-A                                |
| DIF-D1                   | P2-01000 | Diff. Furnace-D1 Dry Oxidation               | Clean (Only for gate oxide) | Staff              | NA            | A3+SRD-A                                |
| DIF-A1                   | P2-01000 | Diff. Furnace-A1 Anneal/Oxidation            | Clean                       | Staff              | NA            | A3+SRD-A                                |
| DIF-D2                   | P2-01000 | Diff. Furnace-D2 Dry/Wet Oxidation           | Clean                       | Staff              | NA            | A3+SRD-A                                |
| DIF-D3                   | P2-01000 | Diff. Furnace-D3 Annealing/Dry/Wet Oxidation | Non-Standard                | Staff              | NA            | B1+SRD-B/D1(dump-rinser)/F(dump-rinser) |
| DIF-F1                   | P2-01000 | Diff. Furnace-F1 Annealing/Dry/Wet Oxidation | Semi-Clean                  | Staff              | NA            | B1+SRD-B<br>D1(dump-rinser)             |
| DIF-C4                   | P2-01000 | Diff. Furnace-C4 FGA Annealing               | Semi-Clean                  | Staff              | NA            | B1+SRD-B<br>D1(dump-rinser)             |
| DIF-R1                   | P2-01000 | RTP-600S                                     | Clean                       | Qualified Lab User | Type 1 & 3    | A3+SRD- A                               |
| DIF-R2                   | P2-01000 | AG610 RTP                                    | Semi-Clean                  | Qualified Lab User | Type 1 & 3    | B1+SRD-B<br>D1(dump-rinser)             |
| DIF-R3                   | EC-01000 | AW610 RTP                                    | Non-Standard                | Qualified Lab User | Type 1 & 3    | M1 (dump-rinser) + N2 dry               |
| <b>Implantation</b>      |          |  |                             |                    |               |   |
| IMP-3000                 | P2-01000 | CF-3000 Implanter                            | Clean/Semi-Clean            | Staff              | NA            |   |

## 2. Dry Etching and Sputtering Module

\* Remark: For Semi-Clean process of "Poly Etcher", please contact NFF technicians.  
For Semi-Clean process of "Oxford GaN-InP Etcher ", please contact NFF technicians.

| Process Code                           | Location  | Equipment              | Cleanliness level | Who operates       | Training type | Remark                          |
|--|-----------|------------------------|-------------------|--------------------|---------------|---------------------------------|
| <b>Dry Etching</b>                     |           |                        |                   |                    |               |                                 |
| DRY-AOE                                | P2-01000  | AOE Etcher             | Clean             | Qualified Lab User | Type 1 & 3    | Etch material: SiO <sub>2</sub> |
| DRY-Si-1                               | P2-01000  | DRIE Etcher #1         | Clean             | Qualified Lab User | Type 1 & 3    |                                 |
| DRY-Si-2                               | Rm. 2223  | DRIE Etcher #2         | Clean/Semi-Clean  | Qualified Lab User | Type 3        |                                 |
| DRY-Si-3                               | Rm. 2223  | DRIE Etcher #3         | Non-Standard      | Qualified Lab User | Type 3        |                                 |
| DRY-Poly                               | P2-01000  | Poly Etcher            | Non-Standard      | Qualified Lab User | Type 1 & 3    |                                 |
| DRY-XeF2                               | P2-01000  | XeF2 Silicon Etcher    | Clean/Semi-Clean  | Qualified Lab User | Type 1 & 3    |                                 |
| DRY-Trion                              | P2-01000  | Trion RIE Etcher       | Semi-Clean        | Qualified Lab User | Type 1 & 2    |                                 |
| DRY-Metal-1                            | P2-01000  | AST Metal Etcher       | Semi-Clean        | Qualified Lab User | Type 3        |                                 |
| DRY-Metal-2                            | P2-01000  | Oxford Aluminum Etcher | Semi-Clean        | Qualified Lab User | Type 3        |                                 |
| DRY-GaN                                | P2-01000  | GaN Etcher             | Non-Standard      | Qualified Lab User | Type 1 & 3    |                                 |
| DRY-GaN-2                              | P2-01000  | Oxford GaN-InP Etcher  | Semi-Clean*       | Qualified Lab User | Type 1 & 3    |                                 |
| DRY-RIE-1                              | EC-01000  | Oxford RIE Etcher      | Non-Standard      | Qualified Lab User | Type 1 & 3    |                                 |
| DRY-RIE-2                              | P2-01000  | NFF RIE Etcher         | Clean/Semi-Clean  | Qualified Lab User | Type 1 & 3    |                                 |
| DRY-Cleaner                            | P2-01000  | Diener Plasma Cleaner  | Non-Standard      | Qualified Lab User | Type 1 & 2    | Microfluidic user only          |
| <b>Photoresist O<sub>2</sub> Asher</b> |           |                        |                   |                    |               |                                 |
| DRY-PR-1                               | P2-01000  | PS210 Asher            | Clean             | Qualified Lab User | Type 1 & 2    |                                 |
| DRY-PR-2                               | P2-01000  | IPC 3000 Asher #1      | Semi-Clean        | Qualified Lab User | Type 1 & 2    |                                 |
| DRY-PR-3                               | P2-01000  | IPC 3000 Asher #2      | Non-Standard      | Qualified Lab User | Type 1 & 2    |                                 |
| DRY-PR-4                               | EC-01000  | IPC 3000 Asher #3      | Non-Standard      | Qualified Lab User | Type 1 & 2    |                                 |
| DRY-PR-5                               | P2-01000  | IPC 3000 Asher #4      | Clean             | Qualified Lab User | Type 1 & 2    |                                 |
| <b>Sputtering &amp; Evaporation</b>    |           |                        |                   |                    |               |                                 |
| SPT-3180                               | P2-01000  | Varian 3180 Sputter    | Semi-Clean        | Staff              | NA            |                                 |
| SPT-NSC3000                            | P2-01000  | NSC3000 Sputter        | Semi-Clean        | Qualified Lab User | Type 1 & 3    |                                 |
| SPT-CY1                                | P2-01000  | NFF-CY Sputter #1      | Semi-Clean        | Qualified Lab User | Type 1 & 3    |                                 |
| SPT-EV1                                | NDL-10000 | Cooke Evaporator #1    | Semi-Clean        | Qualified Lab User | Type 1 & 3    |                                 |
| SPT-ARC                                | P2-01000  | ARC-12M Sputter        | Non-Standard      | Qualified Lab User | Type 1 & 3    |                                 |
| SPT-CVC                                | P2-01000  | CVC-601 Sputter        | Non-Standard      | Qualified Lab User | Type 1 & 3    |                                 |
| SPT-EV2                                | EC-01000  | Cooke Evaporator #2    | Non-Standard      | Qualified Lab User | Type 1 & 3    |                                 |
| SPT-AST600                             | EC-01000  | AST 600EI Evaporator   | Non-Standard      | Qualified Lab User | Type 1 & 3    |                                 |
| SPT-AST450                             | EC-01000  | AST 450I Evaporator    | Non-Standard      | Qualified Lab User | Type 1 & 3    |                                 |

3. **Wet Etching and CMP Module**

| Process Code  | Location  | Equipment                            | Cleanliness level | Who operates       | Training type | Remark                           |
|---|-----------|--------------------------------------|-------------------|--------------------|---------------|----------------------------------|
| <b>CMP</b>  |           |                                      |                   |                    |               |                                  |
| CMP-2   | P2-10000  | USI Wafer Cleaner                    | Clean             | Staff              | NA            |                                  |
| CMP-3   | Rm. 2227  | Silicon Grinder                      | Semi-Clean        | Qualified Lab User | Type 1 & 2    |                                  |
| CMP-4   | Rm. 2227  | Buehler Polisher #1                  | Semi-Clean        | Qualified Lab User | Type 1 & 2    |                                  |
| CMP-5   | Rm. 2227  | Buehler Polisher #2                  | Non-Standard      | Qualified Lab User | Type 1 & 2    |                                  |
| CMP-6   | NDL-10000 | GnP CMP                              | Clean             | Staff              | NA            |                                  |
| <b>Wet Station</b>  |           |                                      |                   |                    |               |                                  |
| <b>Wetstation A - Sulfuric Cleaning Station</b>                 |           |                                      |                   |                    |               |                                  |
| WET-A1  | P2-01000  | A1: Sulfuric Cleaning (NFF reserved) | Clean             | Qualified Lab User | Type 1 & 2    |                                  |
| WET-A2  | P2-01000  | A2: HF:H2O (1:50)                    | Clean             | Qualified Lab User | Type 1 & 2    |                                  |
| WET-A3  | P2-01000  | A3: Sulfuric Cleaning                | Clean             | Qualified Lab User | Type 1 & 2    | Only for "Clean" furnace and RTP |
| SRD-A   | P2-01000  | Spin Dryer-A                         | Clean             | Qualified Lab User | Type 1 & 2    |                                  |
| <b>Wetstation B - Sulfuric Cleaning/Decontamination Station</b> |           |                                      |                   |                    |               |                                  |
| WET-B1  | P2-01000  | B1: Sulfuric Cleaning                | Clean             | Qualified Lab User | Type 1 & 2    | Not for "Clean" furnace and RTP  |
| WET-B2  | P2-01000  | B2: HF:H2O(1:50)                     | Clean             | Qualified Lab User | Type 1 & 2    |                                  |
| WET-B3  | P2-01000  | B3: Decontamination                  | Clean             | Qualified Lab User | Type 1 & 2    |                                  |
| SRD-B   | P2-01000  | Spin Dryer-B                         | Clean             | Qualified Lab User | Type 1 & 2    |                                  |
| <b>Wetstation C - Oxide/Nitride Etching Station</b>             |           |                                      |                   |                    |               |                                  |
| WET-C1  | P2-01000  | C1: Nitride Strip                    | Clean             | Qualified Lab User | Type 1 & 2    |                                  |
| WET-C2  | P2-01000  | C2: Oxide Deglaze/PSG Removal        | Clean             | Qualified Lab User | Type 1 & 2    |                                  |
| WET-C3  | P2-01000  | C3: BOE                              | Clean             | Qualified Lab User | Type 1 & 2    |                                  |
| SRD-C   | P2-01000  | Spin Dryer-C                         | Clean             | Qualified Lab User | Type 1 & 2    |                                  |
| <b>Wetstation D - Semi-Clean Metal Processing Station</b>       |           |                                      |                   |                    |               |                                  |
| WET-D1  | P2-01000  | D1: Aluminum Etch                    | Semi-Clean        | Qualified Lab User | Type 1 & 2    |                                  |
| WET-D2  | P2-01000  | D2: HF: H2O (1:100) MILC             | Semi-Clean        | Qualified Lab User | Type 1 & 2    |                                  |
| WET-D3  | P2-01000  | D3: General Purpose                  | Semi-Clean        | Qualified Lab User | Type 1 & 2    |                                  |
| WET-D4  | P2-01000  | D4: Sulfuric Cleaning for MILC       | Semi-Clean        | Qualified Lab User | Type 1 & 2    |                                  |
| SRD-D   | P2-01000  | Spin Dryer-D                         | Semi-Clean        | Qualified Lab User | Type 1 & 2    |                                  |
| <b>Wetstation E - Semi-Clean Non-Metal Processing Station</b>   |           |                                      |                   |                    |               |                                  |
| WET-E1  | P2-01000  | E1: ITO Etch                         | Semi-Clean        | Qualified Lab User | Type 1 & 2    |                                  |
| WET-E2  | P2-01000  | E2: General Purpose                  | Semi-Clean        | Qualified Lab User | Type 1 & 2    |                                  |
| WET-E3  | P2-01000  | E3: HF: H2O (1:100)                  | Semi-Clean        | Qualified Lab User | Type 1 & 2    |                                  |
| WET-E4  | P2-01000  | E4: Resist Strip                     | Clean/Semi-Clean  | Qualified Lab User | Type 1 & 2    |                                  |
| SRD-E   | P2-01000  | Spin Dryer-E                         | Clean/Semi-Clean  | Qualified Lab User | Type 1 & 2    |                                  |
| <b>Wetstation F - Non-Standard Processing Station</b>           |           |                                      |                   |                    |               |                                  |
| WET-F1  | P2-01000  | F1: General Purpose                  | Non-Standard      | Qualified Lab User | Type 1 & 2    |                                  |
| WET-F2  | P2-01000  | F2: General Purpose                  | Non-Standard      | Qualified Lab User | Type 1 & 2    |                                  |
| WET-F3  | P2-01000  | F3: General Purpose                  | Non-Standard      | Qualified Lab User | Type 1 & 2    |                                  |
| SRD-F   | P2-01000  | Spin Dryer-F                         | Non-Standard      | Qualified Lab User | Type 1 & 2    |                                  |
| <b>Wetstation G - TMAH Etching Station</b>                      |           |                                      |                   |                    |               |                                  |
| WET-G1  | P2-01000  | G1: TMAH                             | Clean             | Qualified Lab User | Type 1 & 2    |                                  |
| WET-G2  | P2-01000  | G2: TMAH                             | Clean             | Qualified Lab User | Type 1 & 2    |                                  |
| SRD-G   | P2-01000  | Spin Dryer-G                         | Clean             | Qualified Lab User | Type 1 & 2    |                                  |
| <b>Wetstation J - TMAH/KOH Etching Station</b>                  |           |                                      |                   |                    |               |                                  |
| WET-J1  | P2-01000  | J1: TMAH/KOH Etching                 | Non-Standard      | Qualified Lab User | Type 1 & 2    |                                  |
| WET-J2  | P2-01000  | J2: TMAH/KOH Etching                 | Non-Standard      | Qualified Lab User | Type 1 & 2    |                                  |
| <b>Wetstation M - Non-Standard Organic Solvent Station</b>      |           |                                      |                   |                    |               |                                  |
| WET-M1  | EC-01000  | M1:MS2001 Resist Strip               | Non-Standard      | Qualified Lab User | Type 1 & 2    |                                  |
| WET-M2  | EC-01000  | Branson 5510                         | Non-Standard      | Qualified Lab User | Type 1 & 2    |                                  |

|   |           |                         |                         |                    |            |  |
|---|-----------|-------------------------|-------------------------|--------------------|------------|--|
| WET-M3  | EC-01000  | M3:MS2001 Mask Cleaning | Non-Standard            | Qualified Lab User | Type 1 & 2 |  |
| <b>Wetstation O - Non-Standard Hydrochloric Acid Etch Station</b>     |           |                         |                         |                    |            |  |
| WET-O1  | EC-01000  | O1: HCl                 | Non-Standard            | Qualified Lab User | Type 1 & 2 |  |
| <b>Wetstation W - Non-Standard Organic Solvent Station</b>            |           |                         |                         |                    |            |  |
| WET-W1  | P2-00100  | W1:MS2001 Resist Strip  | Non-Standard            | Qualified Lab User | Type 1 & 2 |  |
| WET-W2  | P2-00100  | W2: FHD-5               | Non-Standard            | Qualified Lab User | Type 1 & 2 |  |
| SRD-W   | P2-00100  | Spin Dryer-W            | Non-Standard            | Qualified Lab User | Type 1 & 2 |  |
| <b>Wetstation X - Clean Organic Solvent Station</b>                   |           |                         |                         |                    |            |  |
| WET-X1  | P2-00100  | X1: General Purpose     | Clean                   | Qualified Lab User | Type 1 & 2 |  |
| WET-X2  | P2-00100  | X2: General Purpose     | Clean                   | Qualified Lab User | Type 1 & 2 |  |
| <b>Wetstation Y - Semi-Clean Organic Solvent Station</b>              |           |                         |                         |                    |            |  |
| WET-Y1  | P2-00100  | Y1:MS2001 Resist Strip  | Semi-Clean              | Qualified Lab User | Type 1 & 2 |  |
| WET-Y2  | P2-00100  | Y2:MS2001 Mask Cleaning | Semi-Clean              | Qualified Lab User | Type 1 & 2 |  |
| SRD-Y   | P2-00100  | Spin Dryer-Y            | Semi-Clean              | Qualified Lab User | Type 1 & 2 |  |
| <b>Wetstation Z - Semi-Clean/Non-Standard Organic Solvent Station</b> |           |                         |                         |                    |            |  |
| WET-Z1  | P2-00100  | Z1: FHD-5               | Semi-Clean              | Qualified Lab User | Type 1 & 2 |  |
| WET-Z2  | P2-00100  | Z2: Dump Rinser         | Semi-Clean/Non-Standard | Qualified Lab User | Type 1 & 2 |  |
| <b>Critical Point Dryer</b>   |           |                         |                         |                    |            |  |
| CPD-1   | NDL-10000 | Critical Point Dryer    | Semi-Clean              | Qualified Lab User | Type 1 & 3 |  |
| <b>Electroplating</b>   |           |                         |                         |                    |            |  |
| EP-1  | Rm. 2227  | Copper Electroplating   | Non-Standard            | Staff              | NA         |  |

#### 4. Photolithography Module

| Process Code                      | Location  | Equipment                                 | Cleanliness level       | Who operates       | Training type | Remark |
|-----------------------------------|-----------|---|-------------------------|--------------------|---------------|--------|
| <b>Ultrasonic Bath</b>            |           |   |                         |                    |               |        |
| PHT-U1                            | P2-00100  | Branson 5510                              | Semi-Clean              | Qualified Lab User | NA            |        |
| PHT-U2                            | P2-00100  | Branson 3510                              | Non-Standard            | Qualified Lab User | NA            |        |
| <b>Stepper/Aligner and Bonder</b> |           |   |                         |                    |               |        |
| PHT-A7                            | P2-00100  | Karl Suss MA6 #2                          | Clean/Semi-Clean        | Qualified Lab User | Type 1 & 2    |        |
| PHT-S1                            | P2-00100  | ASML Stepper                              | Clean/Semi-Clean        | Staff              | NA            |        |
| PHT-A1                            | NDL-10000 | AB-M Aligner #1(UV)(DUV)                  | Semi-Clean/Non-Standard | Qualified Lab User | Type 1 & 2    |        |
| PHT-A2                            | P2-00100  | AB-M Aligner #2(UV)                       | Semi-Clean/Non-Standard | Qualified Lab User | Type 1 & 2    |        |
| PHT-A5                            | EC-01000  | Karl Suss MA6 #1                          | Non-Standard            | Qualified Lab User | Type 1 & 2    |        |
| PHT-B2                            | P2-00100  | Karl Suss Bonder XB8                      | Non-Standard            | Staff              | NA            |        |
| PHT-B3                            | P2-00100  | SET ACC $\mu$ RA100 Flip-Chip Bonder      | Non-Standard            | Staff              | NA            |        |
| EMW-1                             | EC-01000  | JEOL JBX-6300FS E-Beam Lithography System | All Level               | Staff              | NA            |        |
| PHT-P1                            | P2-01000  | Nanoscribe 3D printer                     | All Level               | Qualified Lab User | Type 3        |        |
| <b>Coater and Track</b>           |           |   |                         |                    |               |        |
| PHT-T1                            | P2-00100  | SVG88 Coater Track                        | Clean/Semi-Clean        | Qualified Lab User | Type 1 & 2    |        |
| PHT-T2                            | P2-00100  | SVG88 Developer Track                     | Clean/Semi-Clean        | Qualified Lab User | Type 1 & 2    |        |
| PHT-SC3                           | P2-00100  | CEE Coater                                | Clean/Semi-Clean        | Qualified Lab User | Type 1 & 2    |        |
| PHT-SC1                           | P2-00100  | SUSS Coater                               | Semi-Clean/Non-Standard | Qualified Lab User | Type 1 & 2    |        |
| PHT-SC2                           | P2-00100  | Desktop Coater                            | Non-Standard            | Qualified Lab User | Type 1 & 2    |        |
| PHT-SC5                           | P2-00100  | EVG Spray Coater                          | All Level               | Qualified Lab User | Type 1 & 2    |        |

|                    |          |                             |                  |                    |            |                        |
|--------------------|----------|-----------------------------|------------------|--------------------|------------|------------------------|
| PHT-SC4            | EC-01000 | Solitec Coater #1           | Non-Standard     | Qualified Lab User | Type 1 & 2 |                        |
| PHT-SC6            | P2-01000 | Laurell PDMS Coater         | Non-Standard     | Qualified Lab User | Type 1 & 2 | Microfluidic user only |
| PHT-MX1            | P2-01000 | Kurabo PDMS Mixer/Deaerator | Non-Standard     | Qualified Lab User | Type 1 & 2 | Microfluidic user only |
| <b>Oven</b>        |          |                             |                  |                    |            |                        |
| PHT-O3             | P2-00100 | Imperial V (105C)           | Clean/Semi-Clean | Qualified Lab User | NA         |                        |
| PHT-O4             | P2-00100 | Oven-C (120C)               | Clean/Semi-Clean | Qualified Lab User | NA         |                        |
| PHT-O6             | P2-00100 | Oven-A (180C)               | Clean/Semi-Clean | Qualified Lab User | NA         |                        |
| PHT-O7             | P2-00100 | Oven-B (80C)                | Clean/Semi-Clean | Qualified Lab User | NA         |                        |
| PHT-O1             | P2-00100 | Grieve                      | Non-Standard     | Qualified Lab User | NA         |                        |
| PHT-O2             | P2-00100 | Shellab (120C)              | Non-Standard     | Qualified Lab User | NA         |                        |
| PHT-O5             | P2-00100 | Vacuum Oven                 | Non-Standard     | Qualified Lab User | Type 1 & 2 |                        |
| PHT-O8             | EC-01000 | Oven-D (120C)               | Non-Standard     | Qualified Lab User | NA         |                        |
| PHT-O9             | EC-01000 | Oven-E (105C)               | Non-Standard     | Qualified Lab User | NA         |                        |
| PHT-O10            | P2-01000 | Oven-F (80C)                | Non-Standard     | Qualified Lab User | NA         | Microfluidic user only |
| PHT-O11            | P2-01000 | Unitemp Reflow Oven         | Non-Standard     | Qualified Lab User | Type 1 & 2 | Flip Chip user only    |
| <b>Hotplate</b>    |          |                             |                  |                    |            |                        |
| PHT-HP1            | P2-00100 | Sawatec Hot Plate           | Clean/Semi-Clean | Qualified Lab User | NA         |                        |
| PHT-HP2            | P2-00100 | SUSS Hot Plate              | Clean/Semi-Clean | Qualified Lab User | NA         |                        |
| PHT-HP9            | P2-00100 | CEE Hot Plate #1(110C)      | Clean/Semi-Clean | Qualified Lab User | NA         |                        |
| PHT-HP3            | P2-00100 | Hot Plate-C                 | Non-Standard     | Qualified Lab User | NA         |                        |
| PHT-HP4            | P2-00100 | Hot Plate-D                 | Non-Standard     | Qualified Lab User | NA         |                        |
| PHT-HP5            | EC-01000 | EMS Hot Plate #1 (50C)      | Non-Standard     | Qualified Lab User | NA         |                        |
| PHT-HP6            | EC-01000 | CEE Hot Plate #2 (90C)      | Non-Standard     | Qualified Lab User | NA         |                        |
| PHT-HP7            | EC-01000 | Hot Plate (110C)            | Non-Standard     | Qualified Lab User | NA         |                        |
| PHT-HP8            | P2-00100 | EMS Hot Plate #2 (50C)      | Non-Standard     | Qualified Lab User | NA         |                        |
| <b>HMDS Primer</b> |          |                             |                  |                    |            |                        |
| PHT-HM1            | P2-00100 | HMDS Primer #1              | Non-Standard     | Qualified Lab User | NA         |                        |
| PHT-HM2            | P2-00100 | HMDS Primer #2              | Clean/Semi-Clean | Qualified Lab User | NA         |                        |
| PHT-HM3            | EC-01000 | HMDS Primer #3              | Non-Standard     | Qualified Lab User | NA         |                        |

**Remark:**

- Equipment in NFF-EC (EC-01000)
- Equipment in NFF-Phase 2 (P2-01000 and P2-00100)
- Equipment in TSV Process Laboratory (Rm. 2227)
- Equipment in Deep RIE Process Center (Rm. 2223)
- Equipment in NFF-Phase 2 for Microfluidic Process (P2-01000)
- Equipment in Nanofabrication Demonstration Laboratory (NDL) (Rm.3114)

Training type 1: Peer-to-peer training

Training type 2: Self-learning with practice

Training type 3: Training class

Updated on 16<sup>th</sup> July 2024