

# Standard Operating Procedures (SOP)



The following is a list of standard operating procedures used in the nanoFAB. Physical copies of these procedures are also available next to each piece of equipment.

| Equipment                                                      | Process Area     | Location                                |
|----------------------------------------------------------------|------------------|-----------------------------------------|
| <a href="#">ABM Mask Aligner - Bert - SOP</a>                  | LITHOGRAPHY      | W1-062                                  |
| <a href="#">ABM Mask Aligner - Grover - SOP</a>                | LITHOGRAPHY      | W1-062                                  |
| <a href="#">ABM UV Flood Exposure System - Sunny - SOP</a>     | LITHOGRAPHY      | W1-062                                  |
| <a href="#">Alcatel AMS110 ICPRIE SOP</a>                      | PLASMA ETCH      | W1-062                                  |
| <a href="#">Allwin AW610 RTA SOP</a>                           | ANCILLARY        | ECERF W1-062, clean room, dry etch area |
| <a href="#">Aluminum etching SOP</a>                           | Wet-Etch         |                                         |
| <a href="#">AML - AWB-04 Wafer Aligner + Bonder SOP</a>        | PACKAGING        | W1-062                                  |
| <a href="#">Atomic Force Microscope (Dimension Edge) SOP</a>   | CHARACTERIZATION | CME L2-112                              |
| <a href="#">Autosorb iQ SOP</a>                                | CHARACTERIZATION | CME-L2-154                              |
| <a href="#">Autosorb Quantachrome 1MP SOP</a>                  | CHARACTERIZATION | ECERF W1-040                            |
| <a href="#">AW610 RTA - Recipe editing procedure</a>           | ANCILLARY        |                                         |
| <a href="#">Bob Sputtering System SOP</a>                      | DEPOSITION       | W1-060                                  |
| <a href="#">Branson Barrel Etcher SOP</a>                      | Plasma Etch      | W1-062                                  |
| <a href="#">Brewer Spinner and Hotplate SOP</a>                | LITHOGRAPHY      | W1-062                                  |
| <a href="#">Bruker XRD D8 Discover SOP</a>                     | CHARACTERIZATION | CMEB L2-136                             |
| <a href="#">Chrome etching SOP</a>                             | Wet-Etch         |                                         |
| <a href="#">Cold Plate (Stir-Kool Sk-12D) SOP</a>              | LITHOGRAPHY      | Clean room, secondary lithography area  |
| <a href="#">Contact Angle FTA-200 SOP</a>                      | Characterization | CME L2-154                              |
| <a href="#">Critical Point Drier SOP</a>                       | ANCILLARY        | W1-062                                  |
| <a href="#">Denton PM Procedure</a>                            |                  |                                         |
| <a href="#">Denton Sputtering System SOP (For SEM Imaging)</a> | CHARACTERIZATION | ECERF W1-040                            |
| <a href="#">Disco DAD 3240 Dicing Saw SOP</a>                  | PACKAGING        | W1-060                                  |
| <a href="#">Disco DAD 3241 Dicing Saw SOP</a>                  | PACKAGING        | W1-060                                  |
| <a href="#">Doug Sputter System SOP</a>                        | DEPOSITION       | W1-060                                  |
| <a href="#">Dragonfly Software Offline Process SOP</a>         | CHARACTERIZATION | ECERF Open area (outside W1-28)         |
| <a href="#">Dump Rinse Controller Standard Program</a>         | Wet Etch         | W1-062                                  |
| <a href="#">Dymax BlueWave 200 SOP</a>                         | LITHOGRAPHY      | ECERF W1-062                            |

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|---------------------------------------------------------|-------------------------|-----------------------------|
| EBL Mark Alignment Procedure                            | Lithography             |                             |
| Filmetrics F50-UV SOP                                   | CHARACTERIZATION        | W1-062                      |
| Floyd Sputtering System SOP                             | DEPOSITION              | W1-060                      |
| Four-Point Probe (Pro4 4000) SOP                        | CHARACTERIZATION        | ECERF W1-040                |
| Freeze Dryer SOP                                        | CHARACTERIZATION        | ECERF w1-040                |
| FTIR (is-50) SOP                                        | Characterization        | CME L2-132                  |
| GLAD System (Achilles) SOP                              | DEPOSITION              | W1-060                      |
| Gold etching SOP                                        | wet-etch                |                             |
| Gomez E-Beam Evaporation System SOP                     | DEPOSITION              | W1-060                      |
| Headway Resist Spinner SOP                              | Lithography             | W1-062                      |
| Heidelberg MLA150 SOP                                   | LITHOGRAPHY             | Clean room, W1-062B         |
| HF etching SOP                                          | wet etch                |                             |
| Hitachi S-4800 FESEM SOP                                | CHARACTERIZATION        | CME building L2-125A        |
| How-To Request a Dicing Blade Change                    | PACKAGING               | W1-060                      |
| How-To Request an Alternative Approved PVD-75 Material  | DEPOSITION              | W1-060                      |
| IBSS Contamination Control System SOP                   | CHARACTERIZATION        | CMEB-L2 121                 |
| Interfacial Tension SOP                                 | Characterization        | L2-154, CME                 |
| J.A. Woollam VASE Ellipsometer SOP                      | CHARACTERIZATION        | ECERF W1-040                |
| JEOL ARM SOP                                            | CHARACTERIZATION        | CME L2-121                  |
| KJLC 150LX ALD SOP                                      | DEPOSITION              | Cleanroom (W1-062)          |
| KLA - Alpha-Step IQ Profilometer - Characterization SOP | CHARACTERIZATION        | ECERF W1-040                |
| KOH and TMAH Etch SOP                                   | Wet Etch                | W1-062                      |
| Leica EM ACE600 SOP                                     | CHARACTERIZATION        | W1-040, ECERF               |
| Leica RES102-SEM-PlanView SOP                           | CHARACTERIZATION        | CME-L2-120                  |
| memsstar Vapour HF Etcher SOP                           | Dry Etch                | W1-062                      |
| Minibruite Furnace Programming                          | ANCILLARY               |                             |
| Minibruite Furnace SOP                                  | Film Growth, Deposition | W1-062                      |
| Nanoscribe Photonic Professional GT SOP                 | LITHOGRAPHY             | W1-062, Primary lithography |
| Nanoscribe Photonics Professional GT - Standard recipes | LITHOGRAPHY             |                             |
| nGauge AFM SOP                                          | CHARACTERIZATION        | CME-L2 128                  |
| Orbis PC Micro-XRF SOP                                  | CHARACTERIZATION        | ECERF W1-040                |
| Oxford Cobra ICPRIE SOP                                 | PLASMA ETCH             | W1-062                      |

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|------------------------------------------------|---------------------|------------------------------------|
| Oxford Estrelas - Chamber Vent Procedure       | PLASMA ETCH         | W1-062                             |
| Oxford Estrelas ICP-RIE SOP                    | PLASMA ETCH         | W1-062                             |
| Oxford NGP80 RIE SOP                           | PLASMA ETCH         | W1-062                             |
| Parylene Deposition System SOP                 | DEPOSITION          | W1-060                             |
| PDMS Process Area SOP                          | Polymer Processing  | W1-060                             |
| Perkin Elmer Spectrophotometer SOP             | Characterization    | W1-040                             |
| Photomask Cleaning Station SOP                 | lithography support | W1-062                             |
| PlasmaLab $\mu$ Etch SOP                       | Plasma Etch         | W1-062                             |
| Plasma-Therm Versaline PECVD SOP               | DEPOSITION          | W1-062                             |
| Processing on the Oxford Estrelas              | PLASMA ETCH         |                                    |
| Processing on the Oxford NGP80                 | PLASMA ETCH         |                                    |
| PVA TePla Ion 10Q SOP                          | PLASMA ETCH         | Cleanroom (W1-062)                 |
| PVD-75 Evaporation System SOP                  | DEPOSITION          | W1-060                             |
| RAITH150 Two EBL System SOP                    | LITHOGRAPHY         | Clean room, ECERF W1-062A          |
| RAITH Voyager EBL System - SOP                 | LITHOGRAPHY         | ECERF W1-060, Clean room           |
| RCA cleaning SOP                               | WET PROCESSING      | Cleanroom - wet aisle 1            |
| Renishaw InVia Raman Microscope SOP            | Polymer Processing  | W1-060                             |
| Rigaku XRD SOP                                 | CHARACTERIZATION    | CME L2-112                         |
| Signatone Four-Point Probe (Cleanroom) SOP     | ANCILLARY           | W1-062                             |
| Sitek - Semitool 870-S SRD - SOP               | WET PROCESSING      | Aisle 2                            |
| SonoTek ExactaCoat Spray Coater SOP            | LITHOGRAPHY         | 10K Lithography                    |
| Spectrophotometer UV/VIS (Hitachi U-3900H) SOP | CHARACTERIZATION    | ECERF w1-040                       |
| Spin Bake Stations #1 and #2 SOP               | LITHOGRAPHY         | Clean room, Primary lithography    |
| Sputtering System #4 (Moe) SOP                 | DEPOSITION          | 10K                                |
| Suss CB6L Bonder SOP                           | Bonding             | W1-062                             |
| SUSS MA6/BA6 Mask Aligner - SOP                | LITHOGRAPHY         | W1-062                             |
| Tescan Vega3 SEM SOP                           | Characterization    | ECERF W1-040A                      |
| Thin Film Stress Measurement - Flexus 2320 SOP | CHARACTERIZATION    | W1-062                             |
| TPT HB16 Wire bonder SOP                       | PACKAGING           | Characterization Lab, ECERF W1-040 |
| Trion PECVD SOP                                | DEPOSITION          | W1-062                             |
| Trion RIE SOP                                  | PLASMA ETCH         | W1-062                             |
| Tystar General Anneal SOP                      | ANCILLARY           | ECERF W1-062                       |

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|----------------------------------------------------|------------------|---------------|
| Tystar LPCVD SOP                                   | DEPOSITION       | ECERF W1-062  |
| Tystar Tube 7 (Oxidation) SOP                      | DEPOSITION       | ECERF W1-062  |
| University of Alberta HSE Ladder Safety Guidelines | DEPOSITION       | W1-060        |
| UV Ozone Bonder SOP                                | PDMS             | W1-062        |
| Wet Process - KOH/TMAH - Wet Deck 2C SOP           | WET PROCESSING   | W1-062        |
| Xenon Difluoride (XeF2) Etch System SOP            | Dry Etch         | W1-062        |
| YES - YES3TA HMDS Oven - SOP                       | LITHOGRAPHY      | W1-062        |
| Zeiss EVO SEM EDX SOP                              | CHARACTERIZATION | ECERF W1-060A |
| Zeiss EVO SEM SOP                                  | CHARACTERIZATION | ECERF W1-060A |
| Zeiss Sigma FESEM EBSD SOP                         | CHARACTERIZATION | CME L2-125    |
| Zeiss Sigma FESEM EDX SOP                          | CHARACTERIZATION | CME L2-125    |
| Zeiss Sigma FESEM SOP                              | CHARACTERIZATION | CME L2-125    |
| Zeiss Zeiss Versa Xradia 620 SOP                   | CHARACTERIZATION | CME L1-125    |
| Zygo Optical Profilometer SOP                      | Characterization | W1-040        |