Oxford Cluster Tool Operating Instructions

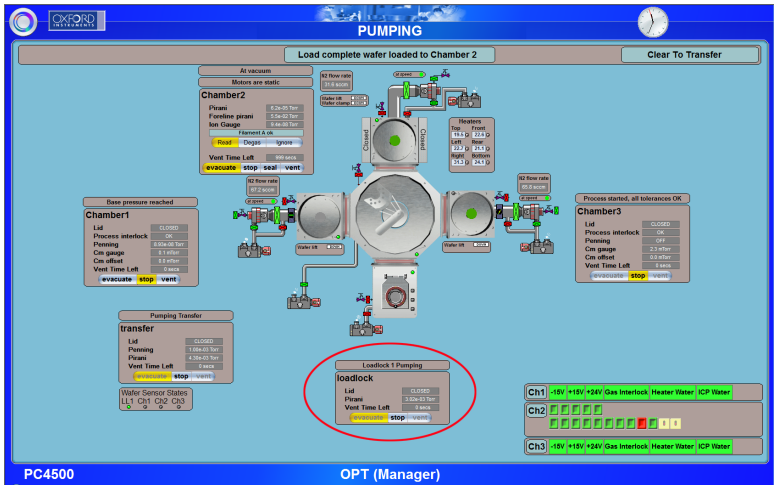
1) Please be aware of the thermal properties of your material.
2) Do NOT use load oil/wax inside the ALD chambers.
3) Click on the Oxford logo, select Pumping.
4) The Loadlock pumping control is at the bottom center of the screen, click on STOP, then click on VENT.
5) Unlatch the 2 loadlock latches but leave them still hooked, so that the lid will not spring open.
6) For ALD processes, place a 6" Si wafer into the loadlock. Place your sample onto the 6" Si wafer.
7) From the pumping screen the Loadlock is at the bottom center, click on STOP, then click on EVACUATE.
8) The screen will prompt you to enter a wafer name for the run. Enter your group/company name – initials. Example: Staff – BL Click on ENTER.
9) Once the loadlock is below 8.0x10-2 torr, click on the green wafer in the load lock, select the destination chamber for the desired process. Wait until the wafer is loaded into the desired chamber.
10) Click on the Oxford logo, select RECIPES.
11) Click on LOAD, select the desired recipe specific to the chamber you are going to use.
12) Click on RUN NOW. Recipe will start.
13) When the recipe is complete, verify the loadlock is empty by **PHYSICALLY LOOKING** into the top of the loadlock lid. Do not trust the wafer location status in the software.
14) Click on the Oxford logo, select Pumping.
15) Click on the green wafer in the process chamber; select the loadlock as the destination. **Wait** until the wafer is loaded into loadlock.
16) The Loadlock is at the bottom center of the pumping screen, click on STOP, then click on VENT.
17) Unlatch the 2 loadlock latches but leave them still hooked, so that the lid will not spring open.
18) Remove your substrate from the loadlock **AND** the 6" Si carrier wafer. Close the lid and fully latch the clips.
19) On the pumping screen the Loadlock is at the bottom center, click on STOP, then click on EVACUATE. Select CANCEL (Do NOT select OK or hit the return key on the keyboard)
20) Note all usage in the logbook.

ALD Notes

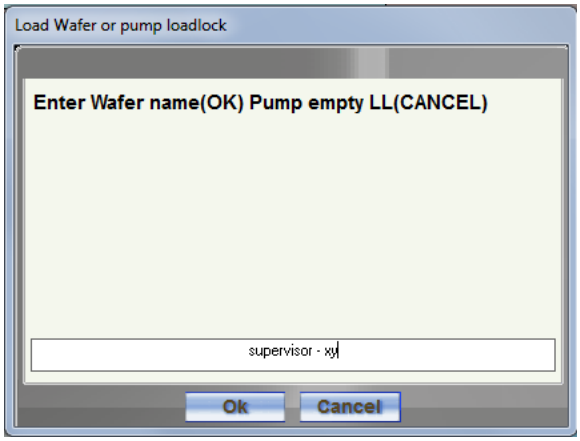
1) Do not use the recipe SAVE button on the recipe screen.
2) Only change the number of repeat steps in a standard recipe.
3) Any user created/saved recipes will be deleted that do not have prior approval from Bill Mitchell or Brian Thibeault.
4) Do not modify or create any recipe steps in the step library.

Standard ALD Recipes

Film	Precusor	Sub Temp (C)	Recipe Name	Rate (A/Cycle)
Al2O3	TMA/O2 Plasma	120	CH3-TMA+O*-120C	
Al2O3	TMA/O2 Plasma	200	CH3-TMA+O*-200C	~1.0A
Al2O3	TMA/O2 Plasma	300	CH3-TMA+O*-300C	~1.0A
Al2O3	TMA/H2O	120	CH3-TMA+H2O-120C	
Al2O3	TMA/H2O	200	CH3-TMA+H2O-200C	~1.0A
Al2O3	TMA/H2O	300	CH3-TMA+H2O-300C	~1.0A
SiO2	TDMAS/O2 Plasma	120	CH3-TDMAS+O*-120C	
SiO2	TDMAS/O2 Plasma	200	CH3-TDMAS+O*-200C	
SiO2	TDMAS/O2 Plasma	300	CH3-TDMAS+O*-300C	~0.9A
TiO2	TDMAT/H2O	120	CH3-TDMAT+H2O-120C	
TiO2	TDMAT/H2O	200	CH3-TDMAT+H2O-200C	~0.6A
TiO2	TDMAT/H2O	300	CH3-TDMAT+H2O-200C	~0.6A
TiN	TDMAT/N2 Plasma	120	CH3-TDMAT+N*/H*-120C	
TiN	TDMAT/N2 Plasma	200	CH3-TDMAT+N*/H*-200C	~0.6 – 0.7A
TiN	TDMAT/N2 Plasma	300	CH3-TDMAT+N*/H*-300C	
HfO2	TEMAH/H20	120	CH3-TEMAH+H2O-120C	
HfO2	TEMAH/H20	200	CH3-TEMAH+H2O-200C	~0.9A
HfO2	TEMAH/H20	300	CH3-TEMAH+H2O-300C	~0.9A
ZrO2	TEMAZ/H2O	120	CH3-TEMAZ+H2O-120C	
ZrO2	TEMAZ/H2O	200	CH3-TEMAZ+H2O-300C	
ZrO2	TEMAZ/H2O	300	CH3-TEMAZ+H2O-300C	



Loadlock Pumping Control



Select OK if loading a wafer & Cancel when finished