ALD Operation Instructions

1) Please be aware of the thermal properties of your material.
2) Do NOT use any oil inside the system.
3) Click on SYSTEM, select Pumping.
4) On the left side of the screen, click on STOP then click on VENT.
5) Load wafer. Use carrier wafer for chips and wafers smaller than 5”
6) On the left side of the screen, click on STOP then click on EVACUATE.
7) Screen will prompt to enter wafer name for run. Click on ENTER.
8) Click on PROCESS, select RECIPES.
9) Click on LOAD, screen will prompt to overwrite recipe, select YES.
10) Select desired recipe.
11) Click on step named REPEAT (#) and select REPEAT STEP from selection.
12) Enter desired number of repeat steps based on deposition rate and final thickness desired and click on OK.
13) Click on SYSTEM, select Pumping, Verify loadlock Penning is < 2.0x10-5 torr.
14) Click on PROCESS, select RECIPES.
15) Click on RUN. Wafer will be loaded into the process chamber, the recipe will run, wafer will be unloaded from the process chamber when the recipe is finished.
16) When recipe is complete Screen will prompt Accept Yellow Flag. Click on ACCEPT.
17) WAIT for the wafer to be unloaded from the process chamber.
18) Click on SYSTEM, select Pumping
19) On the left side of the screen, click on STOP then click on VENT.
20) Remove wafer from loadlock, close lid.
21) On the left side of the screen, click on STOP then click on EVACUATE.
22) Note all usage in the logbook.

Basic Recipes for ALD. Change cycle numbers only.

Material	Sub Temp (C)	RecipeName	Rate (A/Cycle)	Index at 633nm
Al2O3	100	Al2O3100	1.41	1.585
Al2O3	300	Al2O3Plasma300C	1.15	1.617
AlN	300	AlN 300C	0.65	1.75
Al2O3	300	Al2O3Water300CSaturated	1.20	1.66
HfO2	100	HfO2100	1.26	1.879
HfO2	300	HfO2300	1.13	2.032
ZrO2	300	ZrO2300	1.32	2.071
SiO2	100	SiO2100	1.12	1.423
SiO2	300	SiO2300	0.85	1.445