

MOCVD Sample Loading Procedure

1. Open Load Lock
 - a. Vacuum Exhaust Off
 - b. Entry Chamber Exhaust On
 - c. Vacuum Exhaust On (Sequence ensures equal pressure on both sides of load lock)
 - d. Load Lock Open (Hold switch until yellow lamp lights)
2. Raise Reactor Pressure
 - a. Entry Chamber Exhaust Off
 - b. Vacuum Exhaust Off
 - c. Select set point A on pressure controller
 - d. Turn on Manifold N₂ switch, slowly raise flow rate to 500sccm
 - e. Wait for >700Torr pressure in reactor, lower susceptor while waiting
3. Load sample
 - a. Place sample on platform in entry chamber
 - b. Use vacuum chuck to load sample using the switch on the right hand side of the reactor cabinet to control the chuck vacuum
 - c. Raise susceptor and check growth sample placement, if the sample is not inside the susceptor lip, lower the susceptor and reposition the sample using the vacuum chuck
4. Close Load Lock
 - a. Load Lock Closed (Hold switch until green lamp lights, Manifold H₂ will not flow without load lock fully closed)
 - b. Vacuum Exhaust On
 - c. Set reactor deposition pressure (pressure controller set point C is set to 20Torr)
 - d. Slowly reduce N₂ flow to 0 and turn off Manifold N₂

MOCVD Growth Sample Removal Procedure

1. Turn on Manifold N₂ and slowly adjust flow to 500sccm
2. Open Load Lock
 - a. Vacuum Exhaust Off
 - b. Entry Chamber Exhaust On
 - c. Vacuum Exhaust On (Sequence ensures equal pressure on both sides of load lock)
 - d. Load Lock Open (Hold switch until yellow lamp lights)
3. Raise Reactor Pressure
 - a. Entry Chamber Exhaust Off
 - b. Vacuum Exhaust Off
 - c. Select set point A on pressure controller
 - d. Wait for >700Torr pressure in reactor, lower susceptor while waiting
4. Remove sample
 - a. Use vacuum chuck to remove sample from the reactor chamber using the switch on the right hand side of the reactor cabinet to control the chuck vacuum and place sample on the platform in the entry chamber
 - b. Remove the sample from the entry chamber
5. Close Load Lock
 - a. Load Lock Closed (Hold switch until green lamp lights, Manifold H₂ will not flow without load lock fully closed)
 - b. Vacuum Exhaust On
 - c. Open Control Valve
 - d. Slowly reduce N₂ flow to 0 and turn off Manifold N₂