1. PA II Qual
2. Procedure for the Qual.
   1. Reading list; Book chapter, papers, MSDS, Datasheet
   2. Q&A with SU.
   3. Demonstration with SU.
      1. Operation procedure.
      2. Whole system cleaning is required. If the accumulated film thickness is less than 5um, the cleaning may be hard.
3. What are the reading materials?
   1. Manual in \\touch\public\committee\equipment\manual\Thin film\Parylene II
   2. Papers, data sheet in \\touch\public\committee\equipment\manual\Thin film\Parylene II\Reading
   3. Book chapter
4. Three trainings.
5. Are your gloves clean? What is the possible uncleanness of your gloves?
6. Did you clean your wafer?
7. Why do we use tweezer to handle the wafers and chips during the process?
8. Is the oven clean enough to dry your wafer?
9. How do you check pump oil? What is a good condition and bad condition? What should we do if pump oil is dirty? (dark brown to black or milky)
10. On the front panel, there are four controllers. What the numbers mean?
11. What is the Pirani gauge and how it works? Why do we heat up the whole gauge with external heater? How do we set a base pressure? Sometimes, why pressure reading goes to below 0?
12. What is the proper starting condition for PA II? Pressure, temperature?
13. Which vacuum cleaner is for PA machine cleaning?
14. What should we do if the furnace temperature doesn't go up?
15. What should we do if the pressure cannot reach the base pressure?
16. Would you describe deposition process? For example, what happens in the evaporator, the furnace, the pirani gauge, the chamber and on the cold trap?
17. Would you draw a graph of the pressure in the chamber, the temperature of furnace and evaporator? Please, make it sure, when the process begins, when the chamber pressure rises, what happens for the pressure and the evaporator temperature during the deposition and what happens at the end of the process?
18. Have you ever recorded and madden a graph for the chamber pressure and the temperature of furnace and evaporator? If not and if you think you couldn’t make a good answer for the former question, this is the time to do it. Please, record the data.
19. How A-174 works. Can you describe the molecular roughly (but specify the functional groups) structure and how the functional group works?
20. What is the required condition for the surface of Si wafer that makes A-174 can bind on.
21. Does A-174 work on metal surface? Explain for the case of Cr, Ti, Al, Au and Pt.
22. Does A-174 work with glass or polymer surface?
23. Why do we need wait at least 2 hours after preparing of A-174 solution? And why we cannot use A-174 solution after 1~2 day?
24. How do you improve the adhesion between bottom parylene layer and 2nd parylene layer?
25. What is the typical deposit condition for PA-C, PA-N and PA-D?
26. What is the Parylene-C, Parylene-N and Parylene-D? Draw the molecular structure of each dimer, monomer and polymer.
27. How do we measure the thickness of deposited film using P15, WYKO and nanospec? What is the limitation of the each measurement equipment?
28. What is the concentration of soap solution? What is the proper soap?
29. Where is the liquid nitrogen Dewar bottle and how to use it? How do you know it is full or empty? If it is empty how do you change and where do you order from? What should we care about?
30. Why do you use an ultra high vacuum aluminium foil not a cheap kitchen foil?