RCA CLEANING IN NCPRE FABRICATION LAB

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Allowed Chemicals in NCPRE RCA cleaning wet bench:

1) NH_4OH(Ammonium Hydroxide),
2) H_2O_2(Hydrogen Peroxide)
3) HCl (Hydrochloric acid)
4) HF(Hydrofluoric acid)

Training Procedure:

1) Get faculty approval for getting authorization.
2) Read the system operation steps carefully.
3) Get 2 numbers of training runs with AU/SO.
4) Demonstrate 2 numbers of independent runs in presence of AU/SO without looking at the operating steps.
5) Wait for authorization from the concerned person.

Violation Policy:

Those who do not follow the steps properly and do the experiments without precautions will be considered under violation of lab usage policy. Necessary action may be taken by the authority against the user depending on the offence.

Safety:

The chemicals used for RCA cleaning are all dangerous if they are in contact with skin. Please go through MSDS (**M**aterial **S**afety **D**ata **S**heet) of all chemicals before using them. MSDSs are available at the upper self of chemical storage rack. Lab aprons, acid-proof gloves (over the normal clean room gloves), and an acid facemask (with the face shield DOWN) worn over safety glasses, are all required. All "RCA CLEAN" acid gear should be labeled and not used at any other wet bench.

Brief introduction to RCA:

Contaminants present on the surface of silicon wafers at the start of processing, or accumulated during processing, have to be removed at specific processing steps in order to obtain high performance and high reliability semiconductor devices, and to prevent contamination of process equipment, especially the high temperature oxidation, diffusion and deposition tubes. Werner Kern developed the basic procedure in 1965 while working for RCA (Radio Corporation of America)-hence the name. The RCA cleaning procedure has the flowing steps:-

1) **Organic Clean:** Removal of insoluble contaminants [RCA-1or Standard cleaning process 1]
2) **Ionic Clean:** Removal of ionic and heavy metal atomic contaminants[RCA-2 or Standard cleaning process 2]
3) **Oxide Strip:** Removal of a thin silicon dioxide layer which is done after each of the above mentioned processes.[2% HF Dip]