Operating Instructions for Wet Etching

Wet etching of SiO_2 by BOE (requires two ¼-wafer samples)

1. Immerse a sample in BOE (6:1) for 30 s (without agitation for one of the samples and with agitation for another one). Do not use a magnetic stirrer for agitation in BOE! Instead, gently swirl a sample in the BOE.
2. Take the sample out of the BOE and rinse it in DI water. Use the nitrogen gun to blow dry the sample.
3. Use acetone to strip the PR from the sample and then rinse the sample with isopropanol and DI water. Use the nitrogen gun to blow dry the sample.
4. Measure the step height of etched SiO_2 by Dektak Profilometer and calculate the etching rate of SiO_2 by BOE.

Wet etching of Si by KOH (requires eight ¼-wafer samples)

1. Use the etched SiO_2 as the mask for Si (see Sample Preparation for details).
2. Immerse 4 out of 8 quarter-wafer samples into a KOH solution (KOH:H_2O=1:4) at room temperature (RT), 45°C , 55°C, and 65°C. Keep each sample in KOH for 1 minute.
3. Take the sample out of KOH and rinse it in DI water. Use the nitrogen gun to blow dry the sample.
4. Measure the step height by Dektak profilometer and calculate the etching rate of Si by KOH.
5. Etch other 4 wafer quarters with agitation using a magnetic stirrer at the same temperatures as listed above and compare with the results obtained without agitation.