

## Note for AFM operation

1. Do not change probe only if you need to change operation mode from tapping to contact or vice versa. If you are not comfortable to change probe, ask staff for help.
2. Please clean surface the best you can before test. Avoid measuring contaminated surface or trench with height above 5 $\mu$ m. (**Z piezo**)
3. Avoid measuring surface with large X or Y offset. Instead, withdraw probe, move sample manually and re-position probe on desired spot on sample surface. (**X and Y piezos**)
4. Keep hood down, and keep hands off the AFM while doing hi-resolution imaging.
5. Set initial parameter as follows:
  - Integral gain: 0.6
  - Proportional gain: 1.2 (2 to 5 times Integral gain)
  - X and Y offsets: 0
  - Z-Range: Select appropriate zone for good contrast
6. Check **Trace** and **Retrace** profile:
  - Adjust (**typically reduce**) **Amplitude Setpoint**, (**reduce**) **Scan rate**, (**increase**) **Integral Gain / Proportional Gain** to get better probe tracking on sample surface. Adjust **Drive Amplitude** to get signal bar in correct scale.
7. If you mess up the operation, withdraw tip, and autotune it before engage it on the surface.