Ning Cao, Staff Engineer, Nano-fabrication Lab, ECE Dept., UCSB

**TiO₂ film using Sputter#4**

1) Film sputtering Condition: Pressure=3mT, RF Power=250 W, O₂/Ar flow-rate=3/45 sccm, z=2.75, Gun tilting=5, rotation=10, and time=1531 s.

2) Ellipsometer Measurement: film thickness=103.55 nm.
3) Sheet Resistance: $R = 23.05 \times 10^6 \ \Omega/sq$, Resistivity$ = 238.7 \ \Omega/cm$. 
4) AFM surface Scan

Figure 1 (a) AFM surface scan of TiO$_2$(103.5 nm)/Si: Ra=0.662 nm; (b) AFM surface scan of Si substrate: Ra=0.208 nm. TiO$_2$ film roughness Ra=0.454 nm.