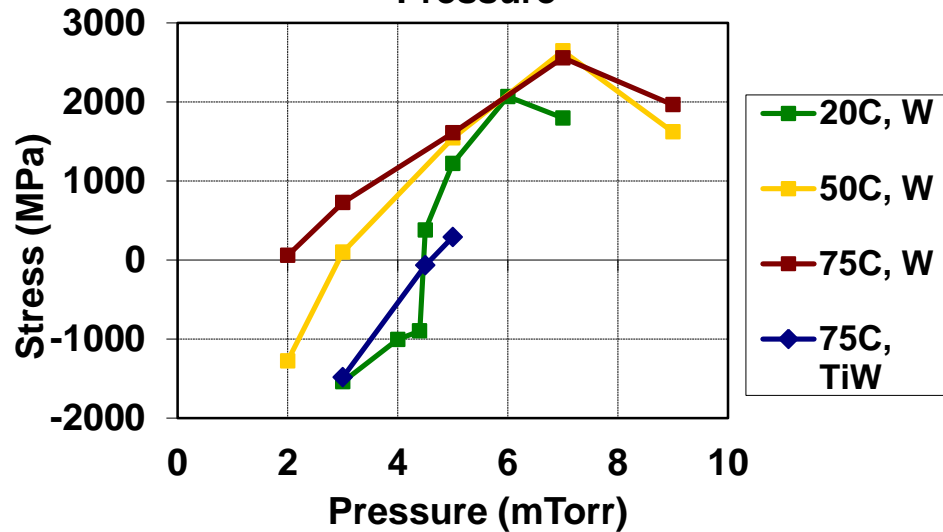
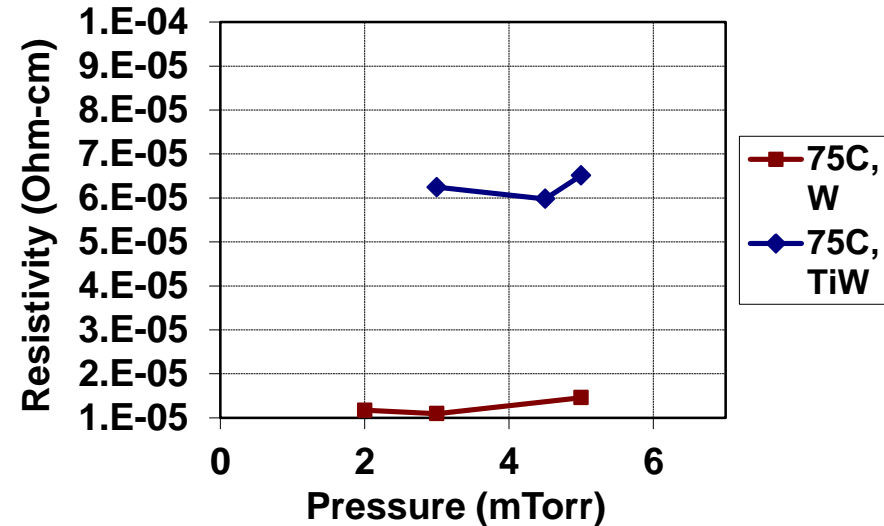


# AJA Sputter 4 W and TiW Sputtering for Low Stress and Low Resistivity

## W and TiW Stress vs. Temperature and Pressure



## W and TiW Resistivity vs. Pressure

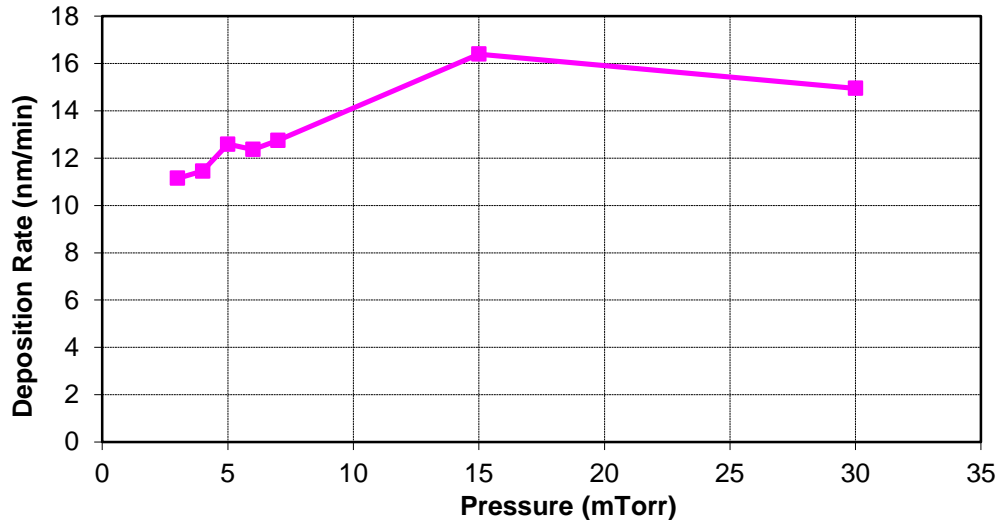


- 300W
- 25 SCCM Ar
- 20 rot/min
- gun angle 5mm
- Z height 2.75
- Silicon Wafers
- 1200-1800s runs

Condition source with dummy sample  
 Wait 30 minutes between runs to allow for sample holder in chamber to cool back to nominal setpoint. Temperature increases with time affecting stress obtained. Do calibration with your actual desired time and thickness

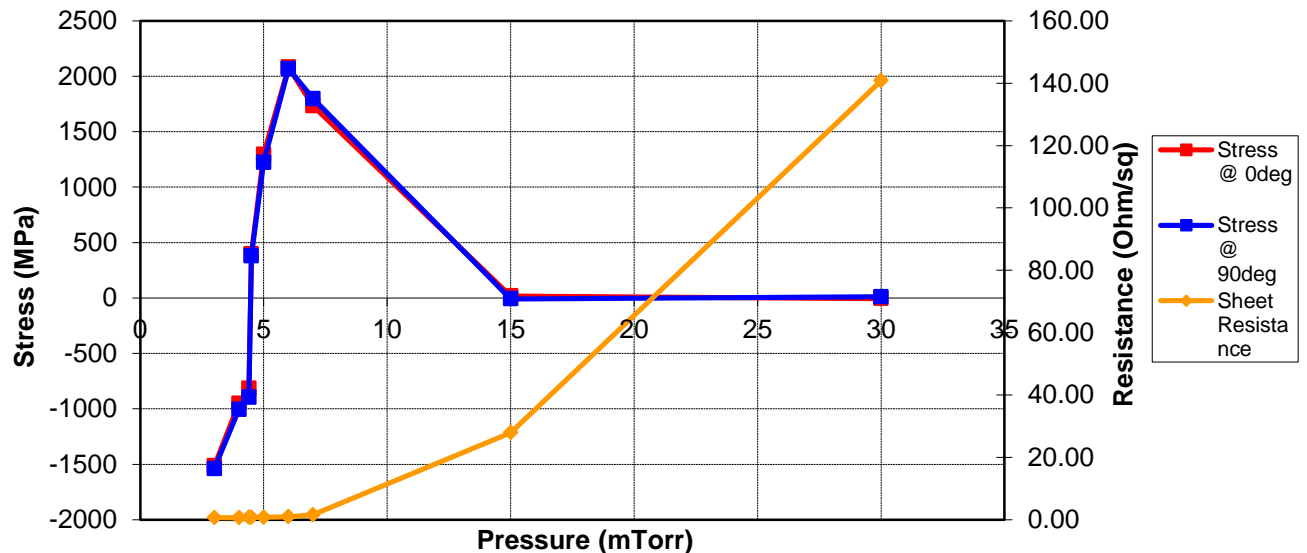
# Deposition Rates and Wider Pressure Dependence

## Tungsten Deposition Rate vs Pressure



- 300W
- 25 SCCM Ar
- 20 rot/min
- gun angle 5mm
- Z height 2.75
- 20degC

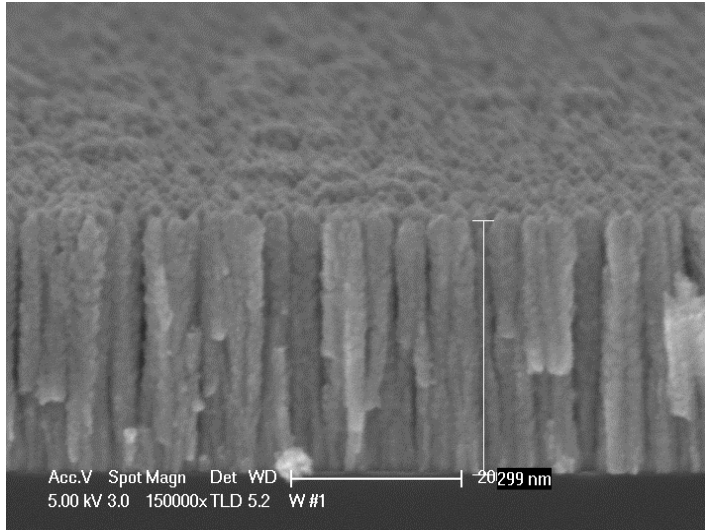
## Tungsten Stress and Sheet Resistance vs Pressure



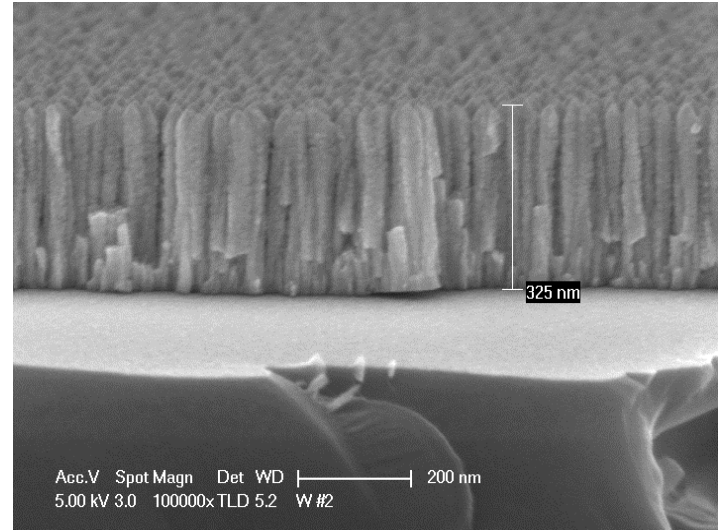
High pressure leads to columnar growth leading to low stress, but very poor lateral resistivity

Data by Jeremy Watcher

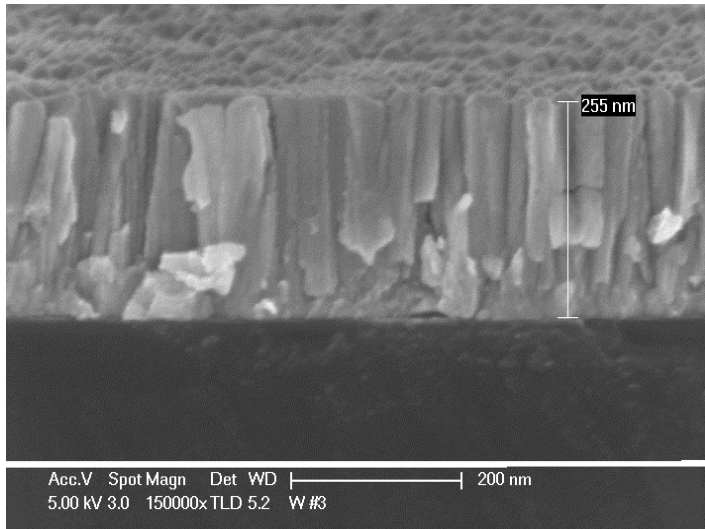
# W Morphology with Pressure



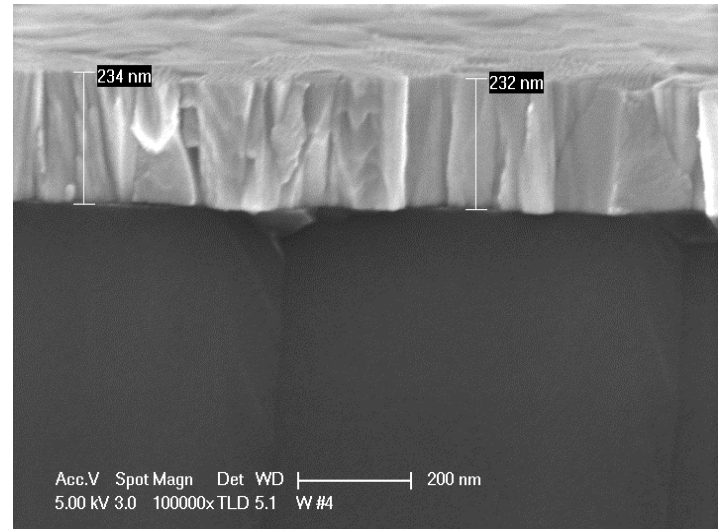
30mT



15mT



7mT



3mT