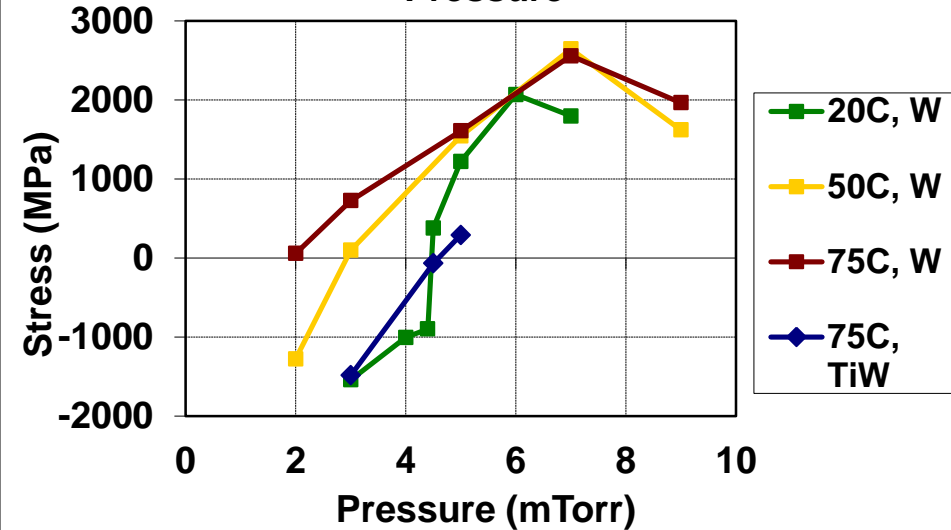
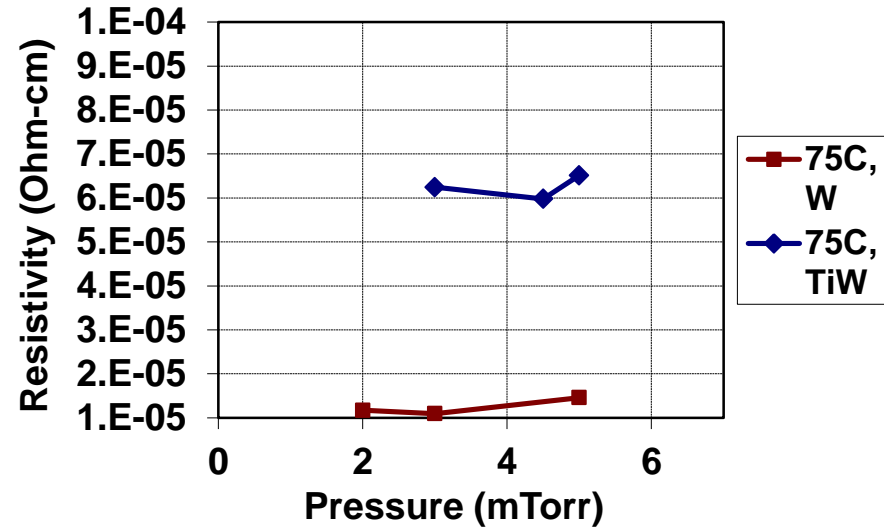


# AJA Sputter 4 W and TiW Sputtering for Low Stress and Low Resistivity

## W and TiW Stress vs. Temperature and Pressure



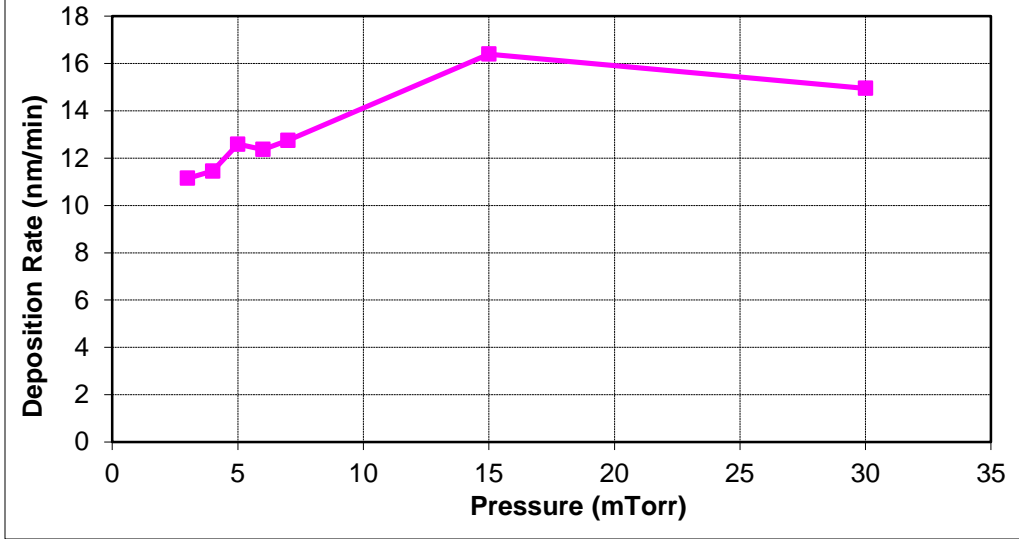
## W and TiW Resistivity vs. Pressure



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

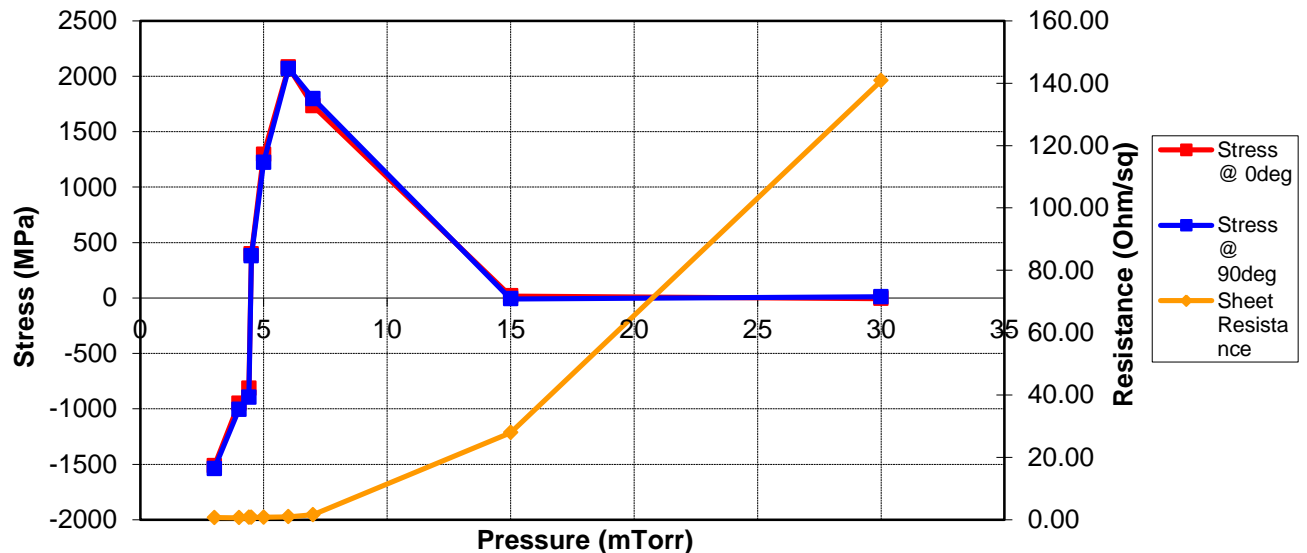
# Deposition Rates and Wider Pressure Dependence

## Tungsten Deposition Rate vs Pressure



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

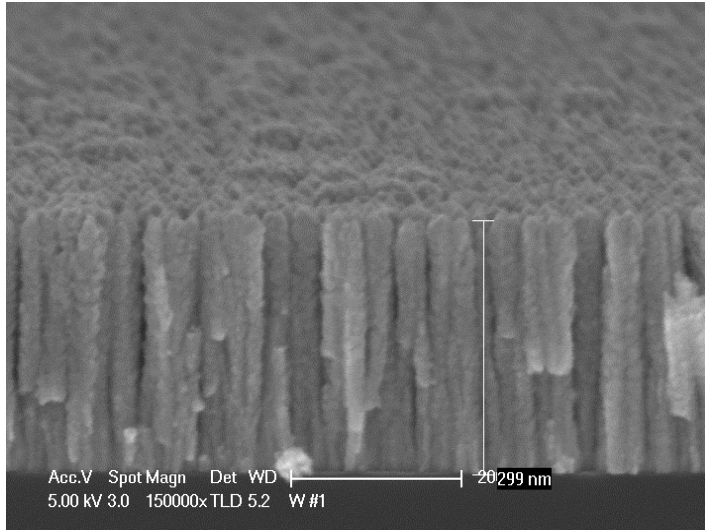
## Tungsten Stress and Sheet Resistance vs Pressure



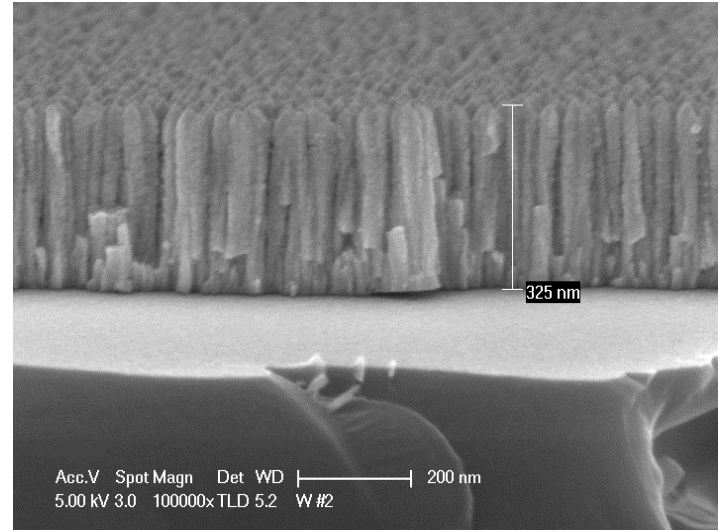
High pressure leads to columnar growth leading to low stress, but very poor lateral resistivity

Data by Jeremy Watcher

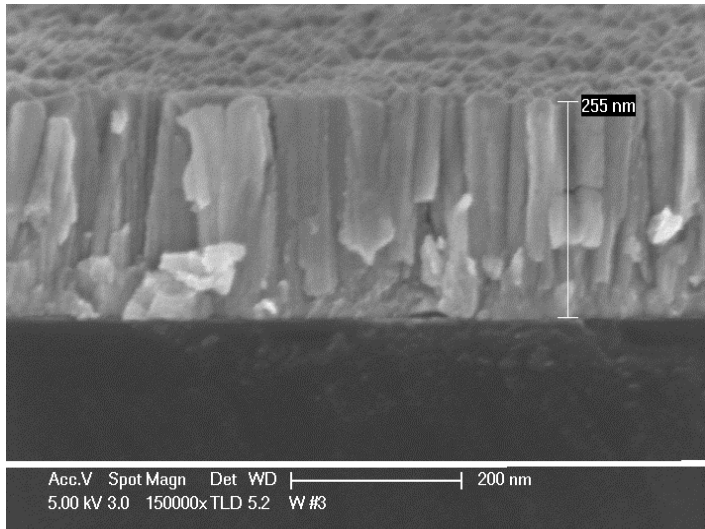
# W Morphology with Pressure



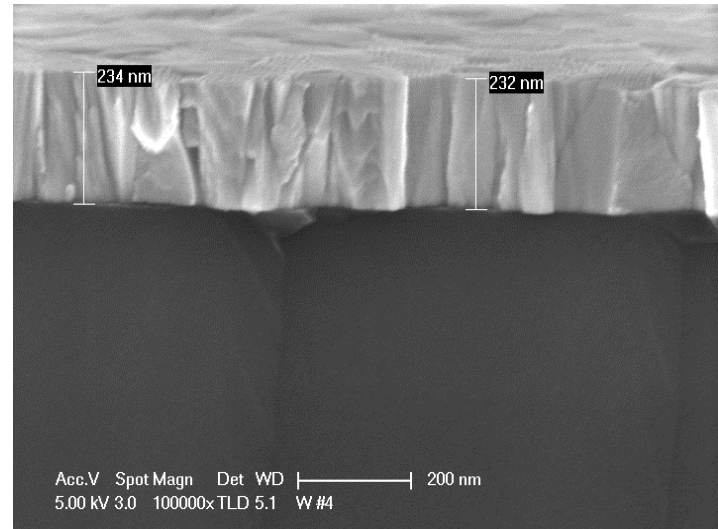
30mT



15mT



7mT



3mT