Laser Interference Lithography
(1D-Lines, θ=52~35°, Pitch≅206~280nm)

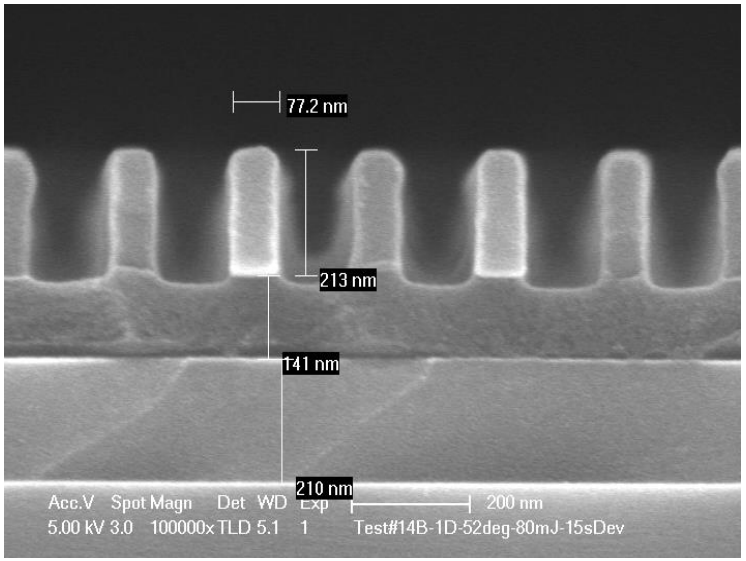


Figure 1: θ=52° and Pitch≅206nm

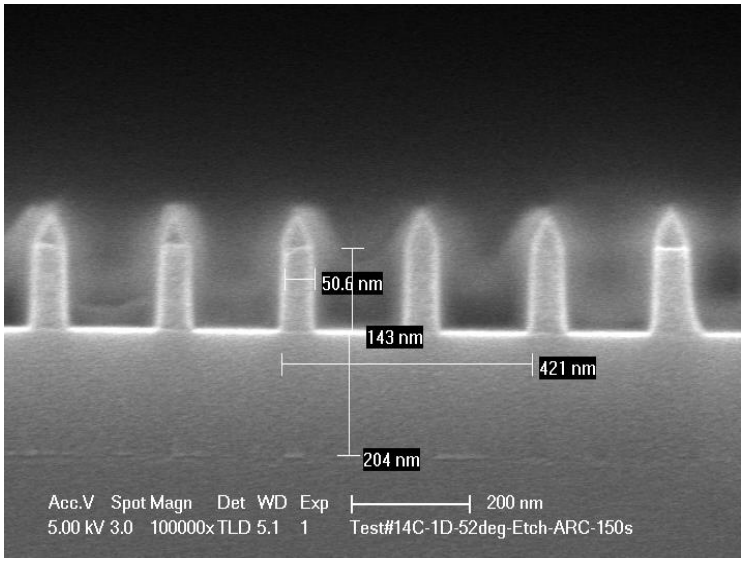


Figure 2: After etching ARC layer (θ=52°; RIE#5: 5mT, 150W, O2=20sccm, and etch time=150s)

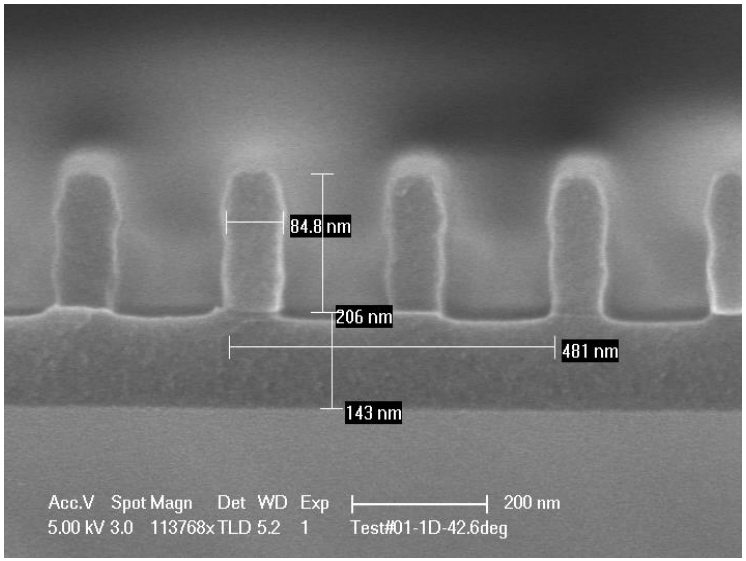


Figure 3: θ=42.6° and Pitch≅240nm

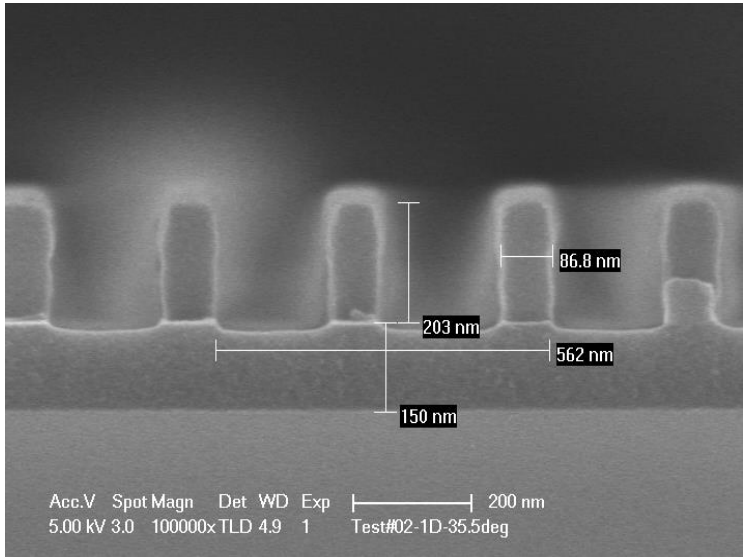
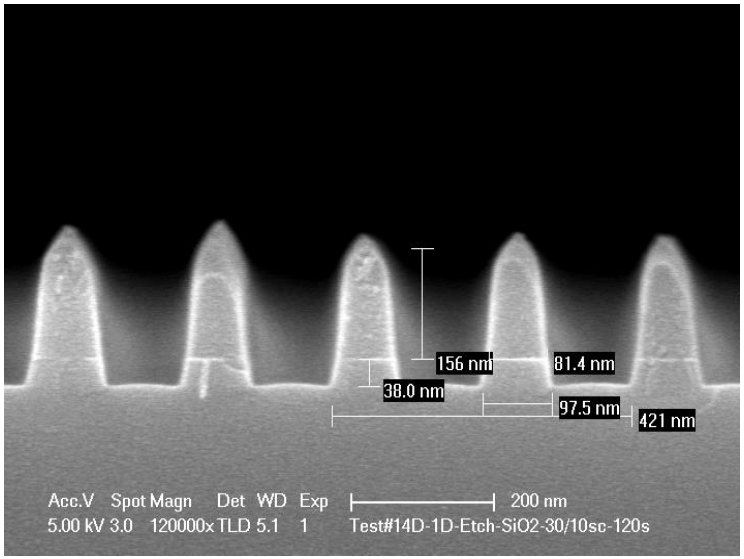
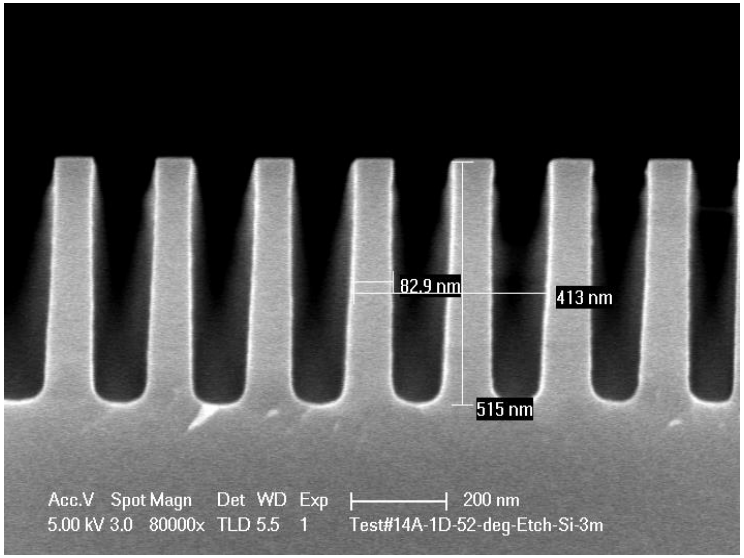


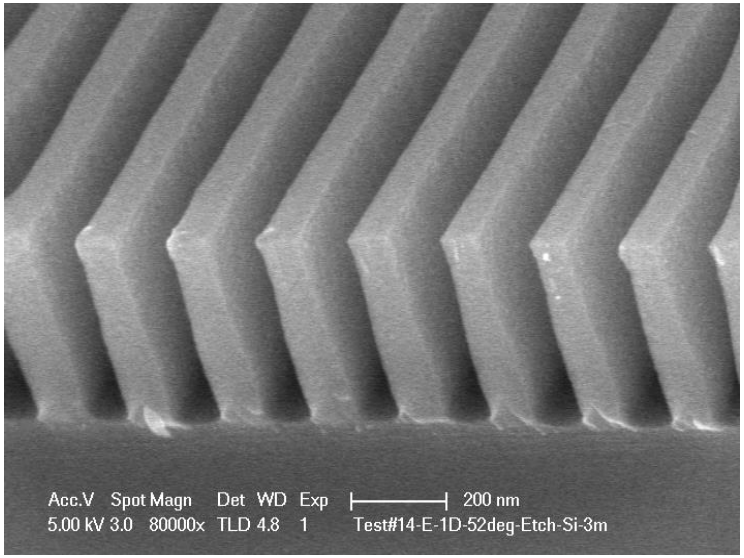
Figure 4: θ=35.5° and Pitch≅280nm

Laser Interference Lithography (1D-Lines, θ=52~35^{o}, Pitch≅206~280nm)



- After Subsequent Processing
- Figure 1 (upper left) θ=52^{o} and Pitch≅206nm. After etching SiO2 with Panasonic ICP#2: 0.5Pa, 50/900W, CF4/CHF3=30/10sccm, and etch time=120s (side-view)
- Figure 2 (lower-left): θ=52^{o} and Pitch≅206nm, After etching into Si with Deep Si RIE: 19mT, 15/900W, C4F8/SF6/Ar=54/26/20sccm, and Δt=180s (side-view)
- Figure 3 (lower-right): the same as Figure 2 (titled 45^{o}-view)





Laser Interference Lithography (2D-Dots, $\theta=35^{o}$, Effects of Process)

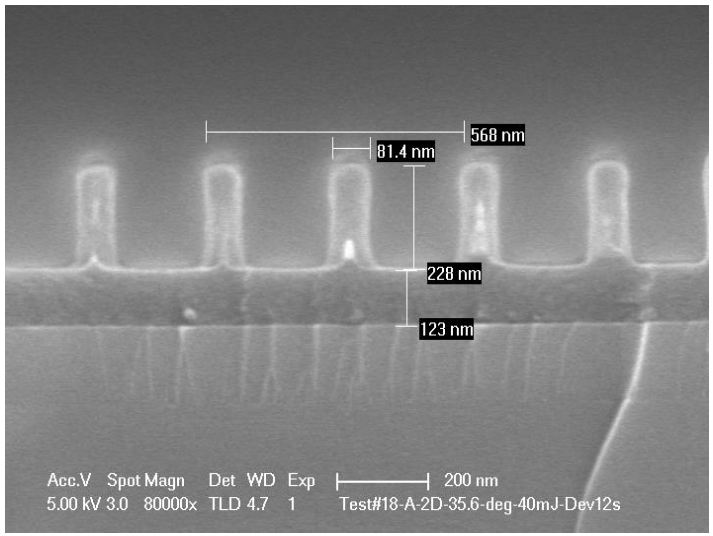


Fig. 1: After the lithography, $\theta=35.5^{o}$ (side-view)

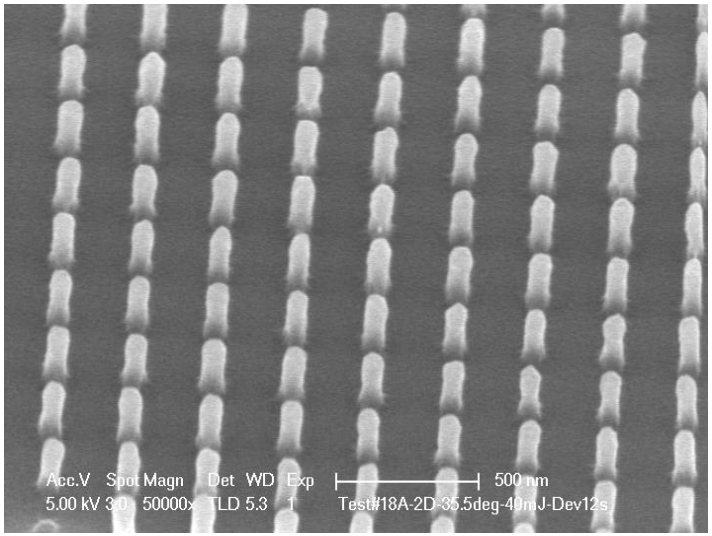


Fig. 2: After the lithography, $\theta=35.5^{o}$ (45^{o}-view)

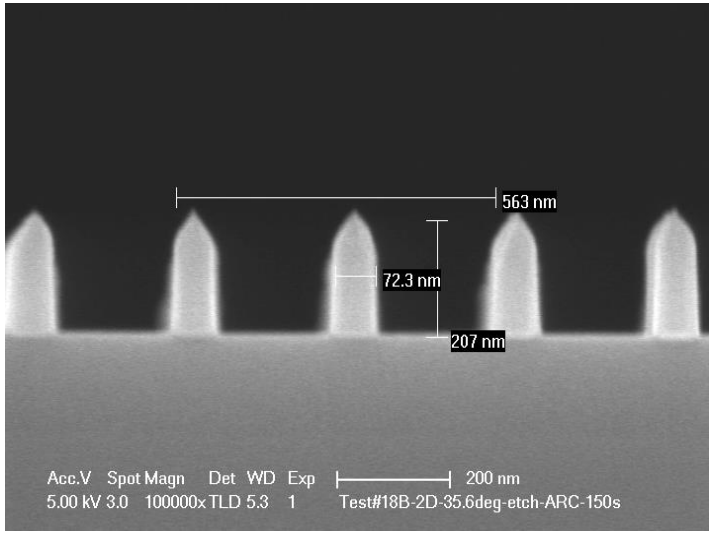


Fig. 3: After etching ARC, $\theta=35.5^{o}$ (side-view)

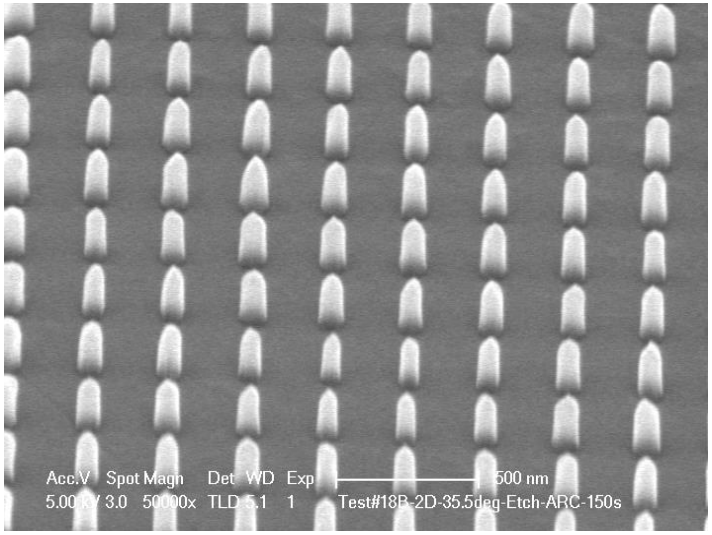


Fig. 4: After etching ARC, $\theta=35.5^{o}$ (45^{o}-view)

Laser Interference Lithography (2D-Dots, θ=35^{o}, Effects of Process)

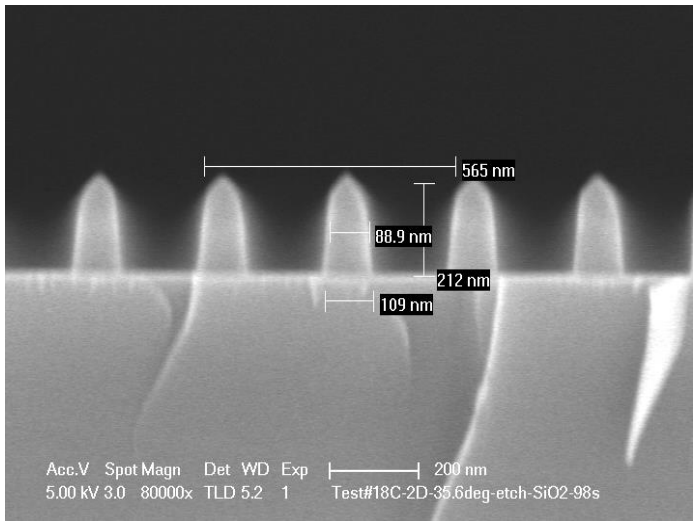


Fig. 1: After etching SiO2, θ=35.5^{o} (side-view)

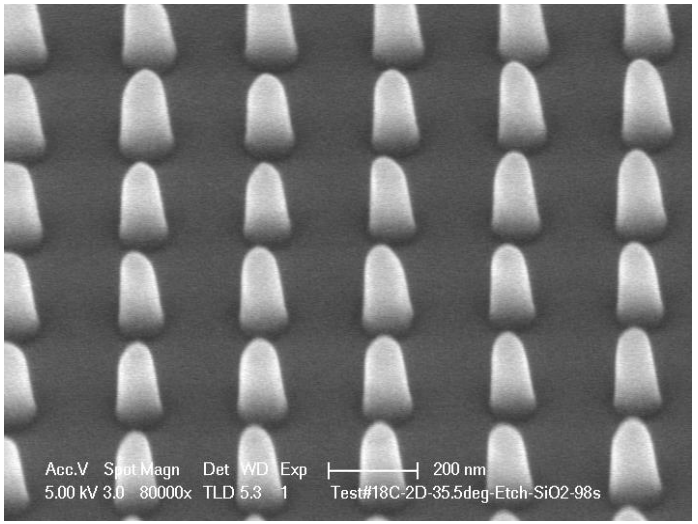


Fig. 2: After etching SiO2, θ=35.5^{o} (45^{o}-view)

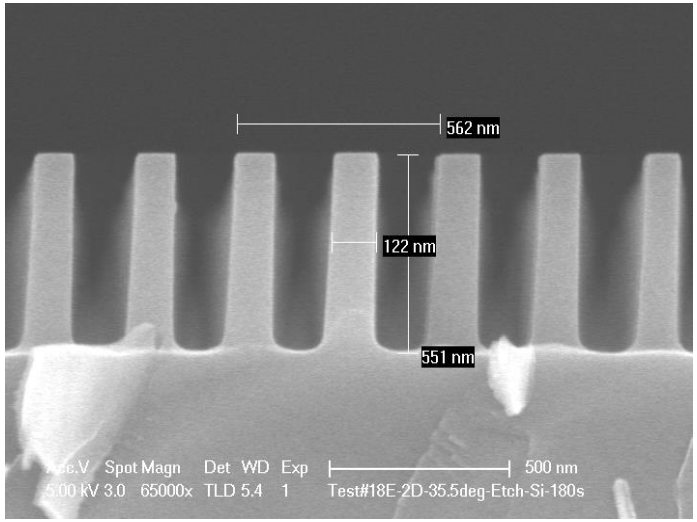


Fig. 3: After etching into Si, θ=35.5^{o} (side-view)

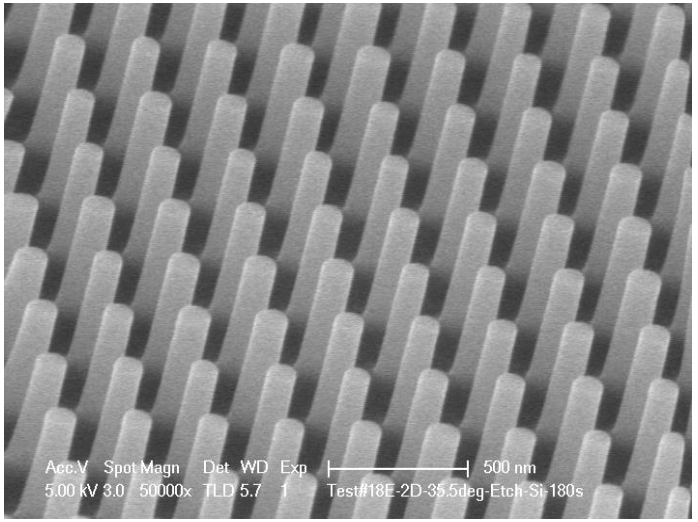


Fig. 4: After etching into Si, θ=35.5o (titled 45^{o}-view)