



AZ[®] 125nXT Series

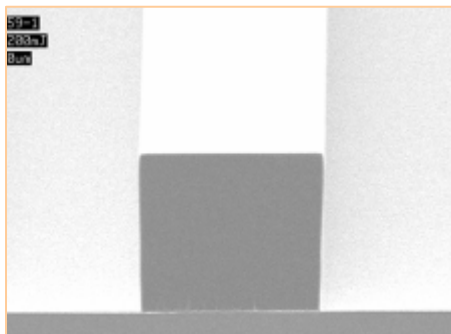
Ultra-thick Negative Photoresist for Advanced Packaging Applications

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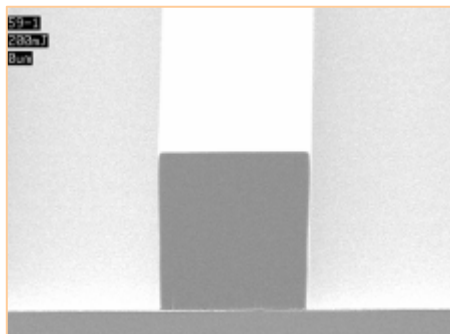
AZ[®] EXP 125nXT-10A

Resolution @ FT = 50 μ m; Line/Space

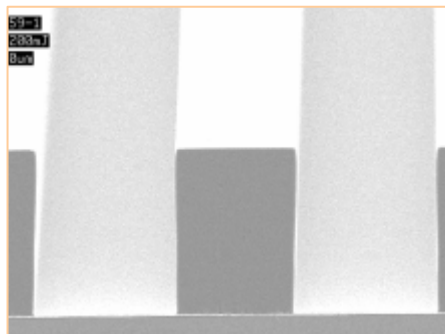
60 μ m



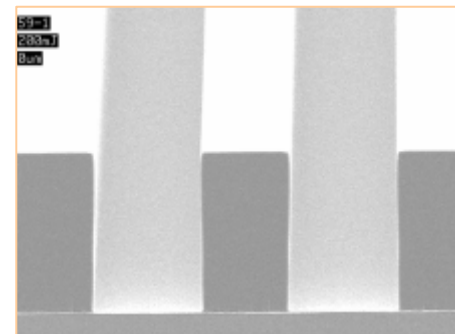
50 μ m



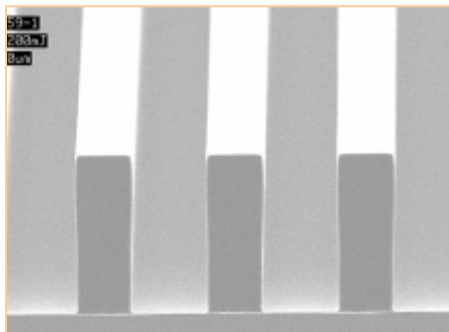
40 μ m



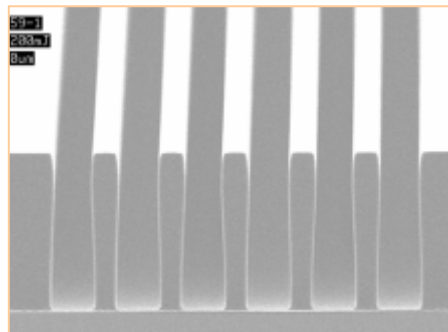
30 μ m



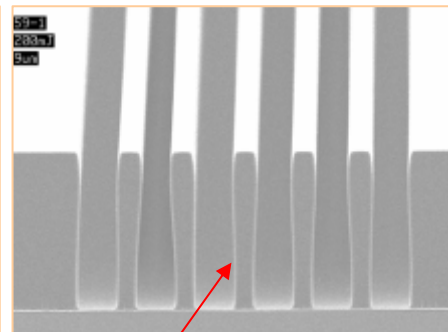
20 μ m



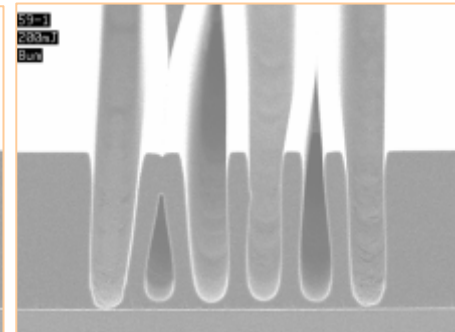
10 μ m



9 μ m



8 μ m



5.5:1 aspect ratio

AZ[®] EXP 125nXT-10A

Resolution @ FT = 50 μm ; Post Images

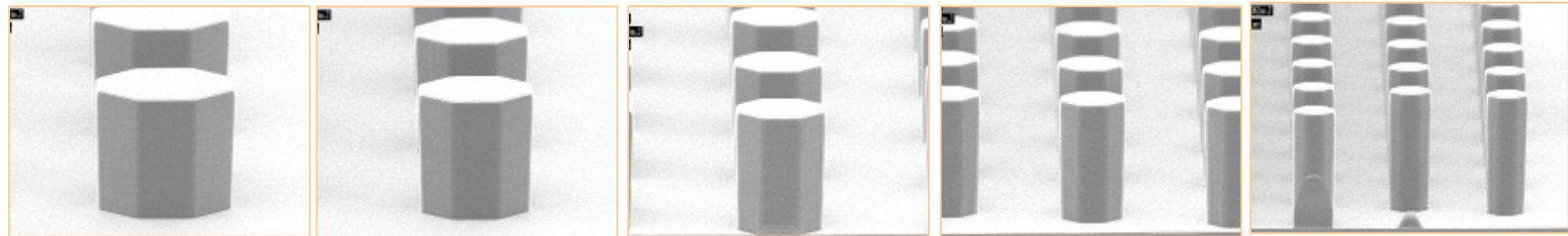
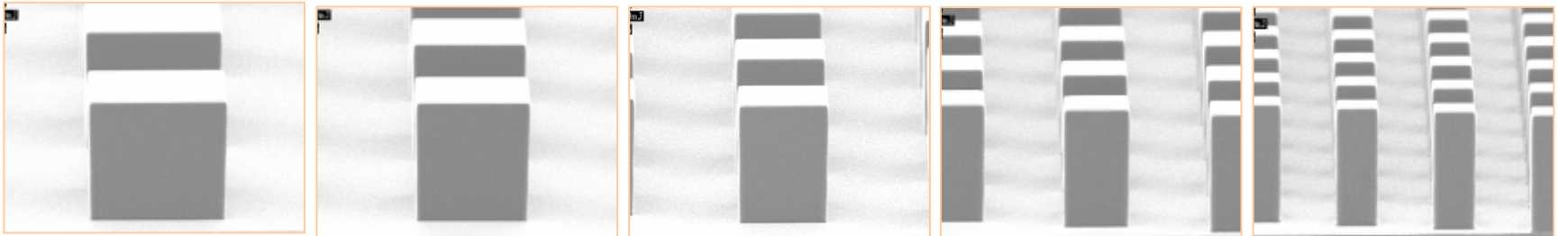
60 μm

50 μm

40 μm

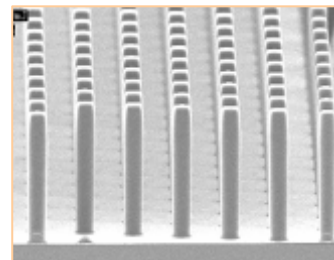
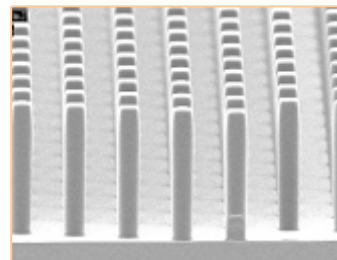
30 μm

20 μm



10 μm

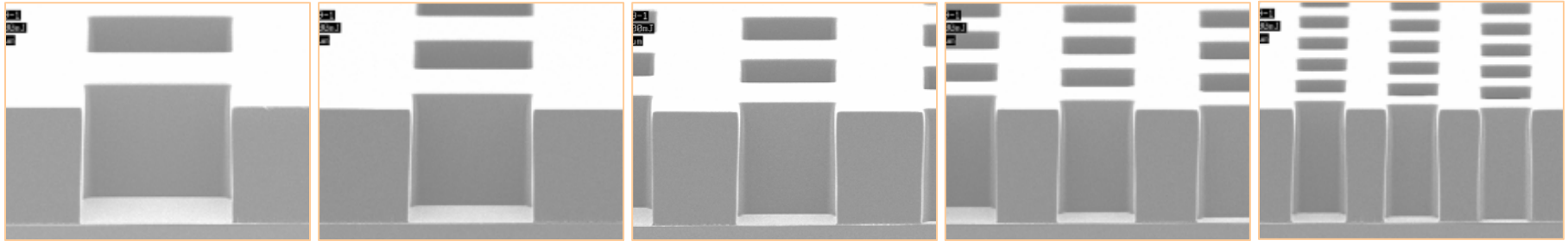
9 μm



5.5:1 aspect ratio

AZ[®] EXP 125nXT-10A

Resolution @ FT = 50 μm ; Contact Holes



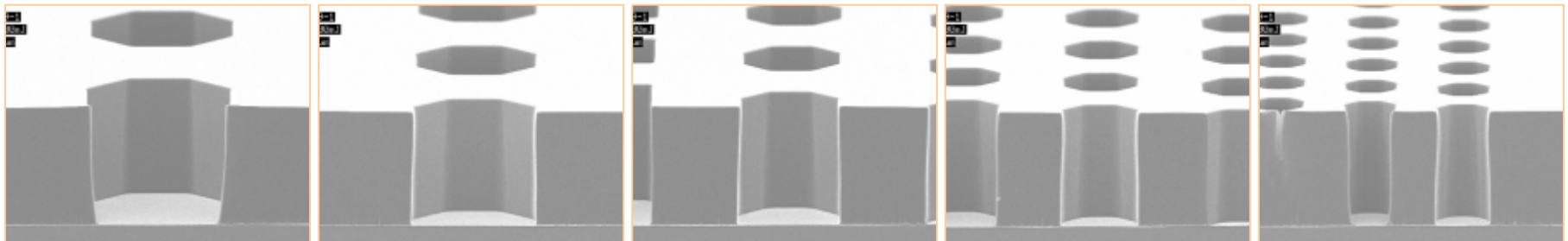
60 μm

50 μm

40 μm

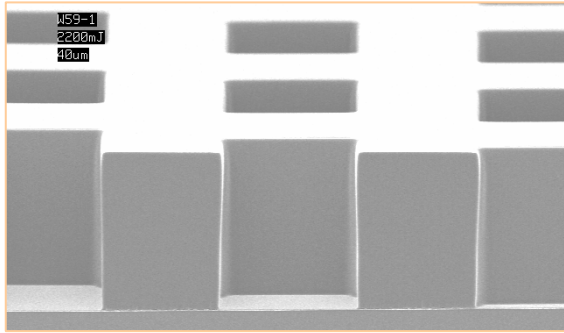
30 μm

20 μm

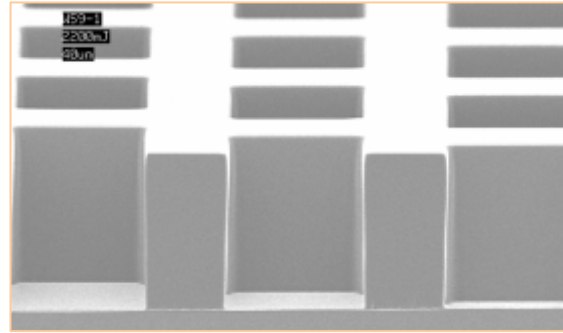


AZ[®] EXP 125nXT-10A

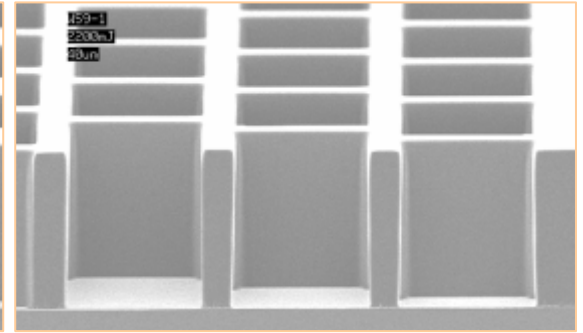
Aspect Ratio, 40 μ m C/H Images; FT = 50 μ m



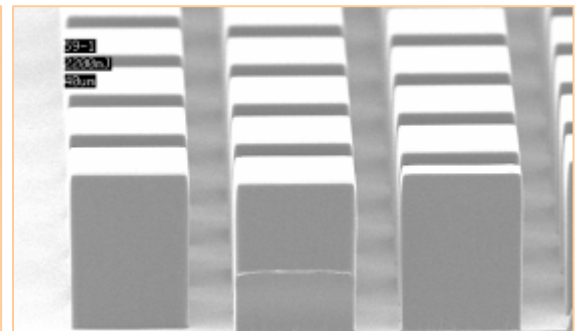
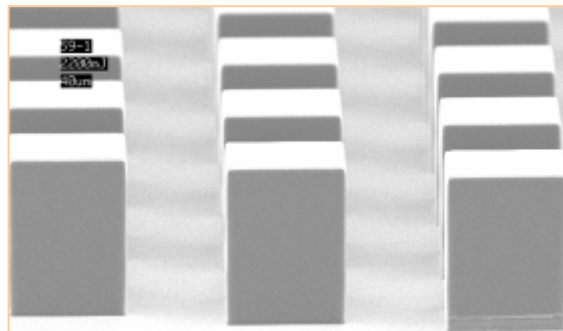
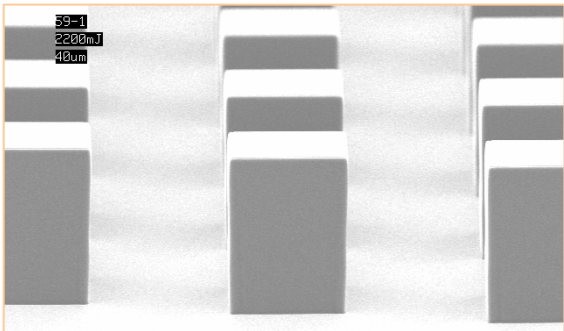
40 μ m/40 μ m



40 μ m/28 μ m

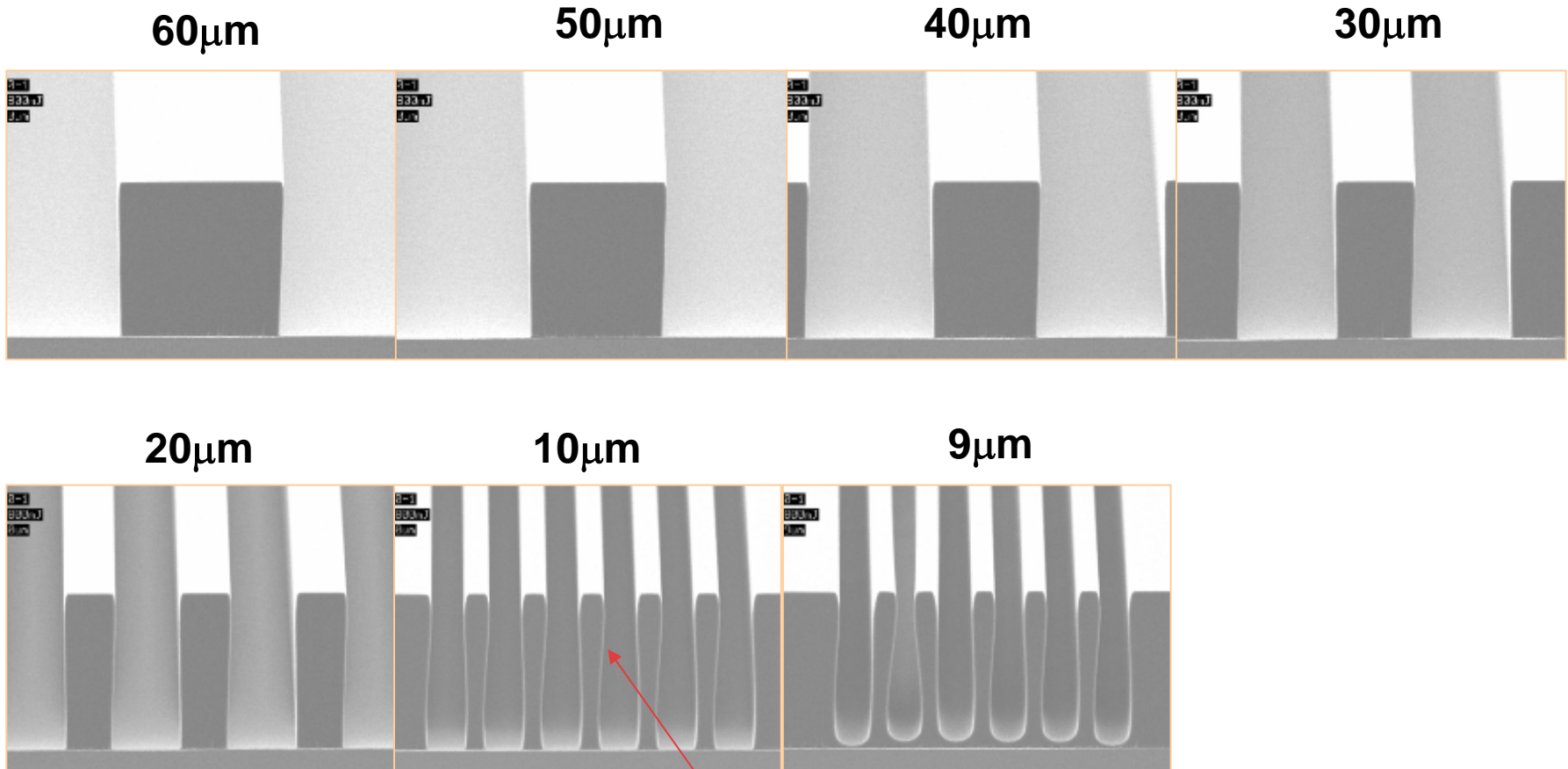


40 μ m/12 μ m



AZ[®] Exp 125nXT-10A

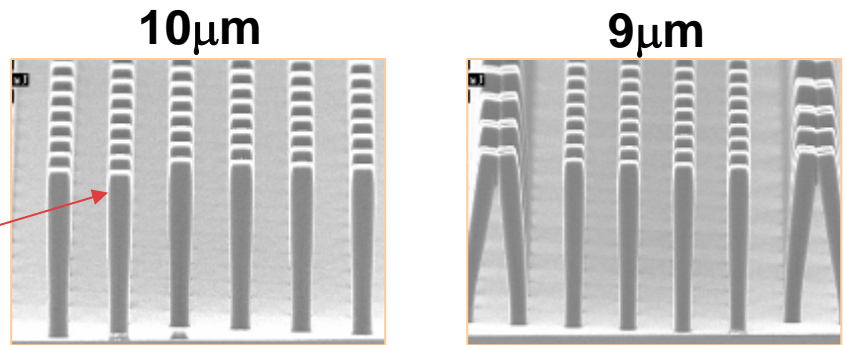
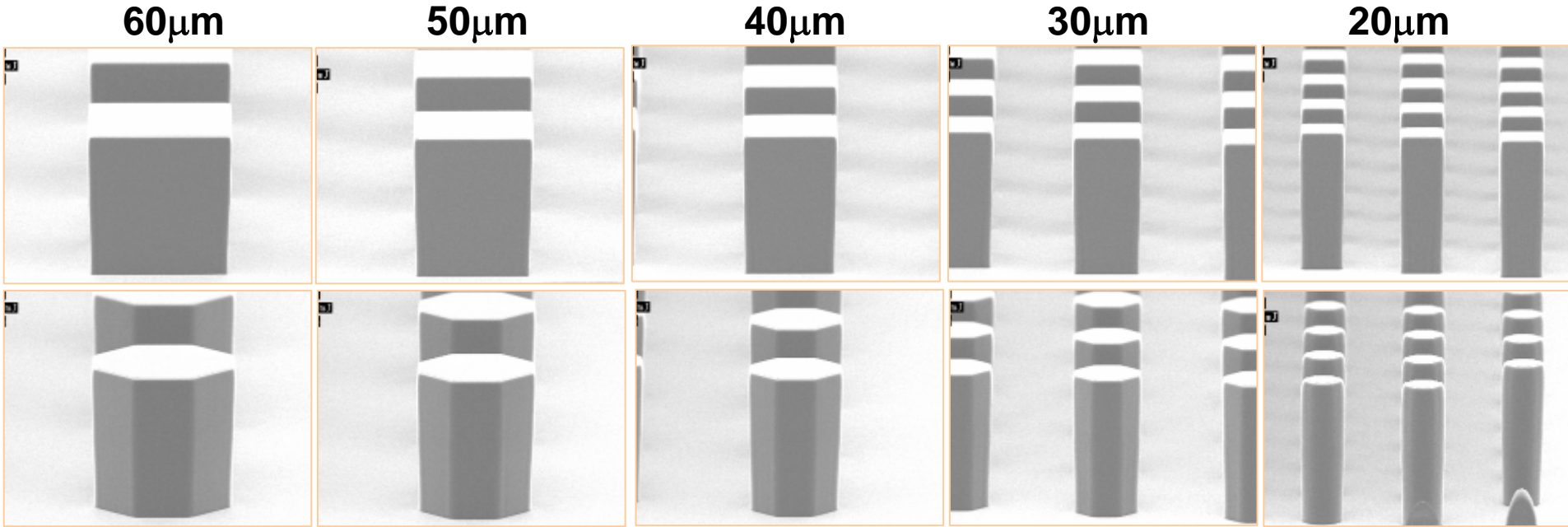
Linearity for FT = 60 μ m; Line/Space @ 1800 mJ/cm²



6:1 aspect ratio on an aligner!

AZ[®] Exp 125nXT-10A

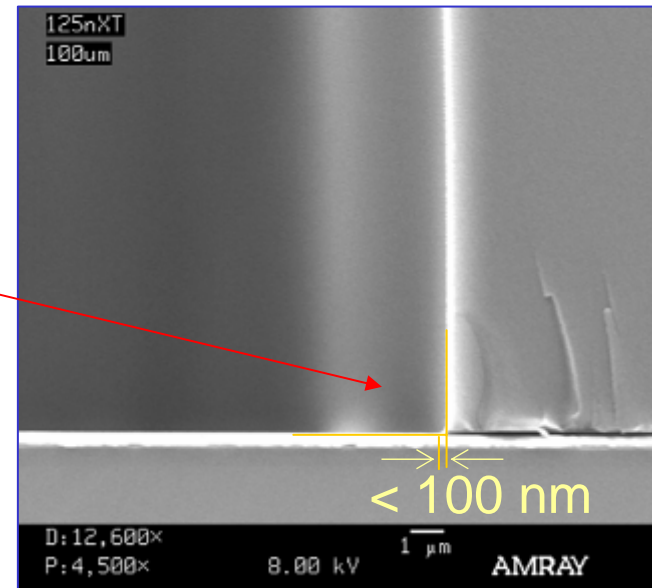
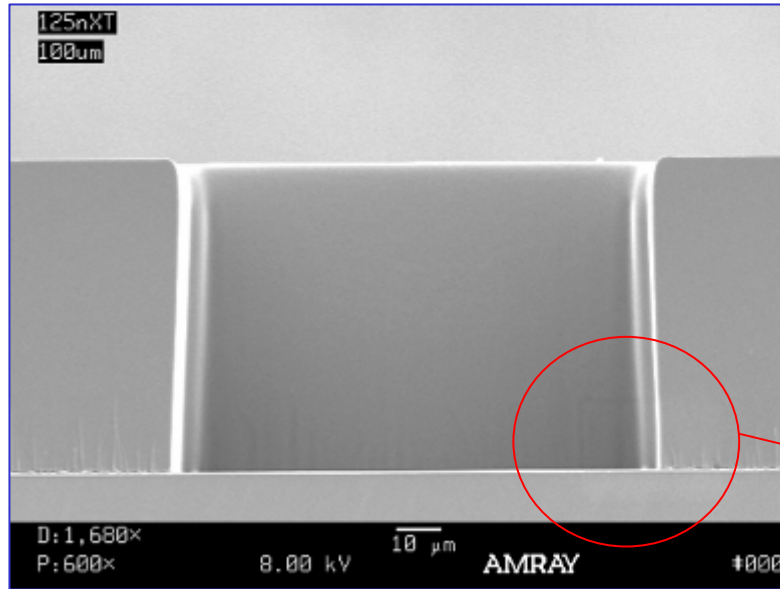
Linearity for FT = 60 μ m, Post Images @ 1800 mJ/cm²



6:1 aspect ratio on an aligner!

AZ[®] Exp 125nXT-10A

100 μ m Contact Hole, Foot Analysis #1



Exposure tool:
Suss MA-200 Aligner

AZ[®] Exp 125nXT-10A

Resolution Comparison, Line/Space, FT = 70 μ m

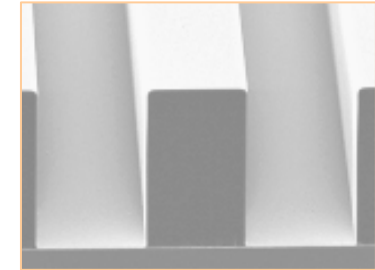
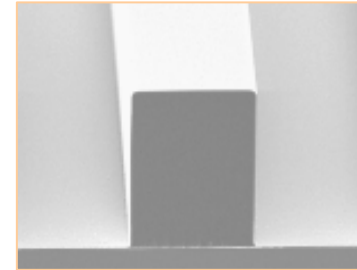
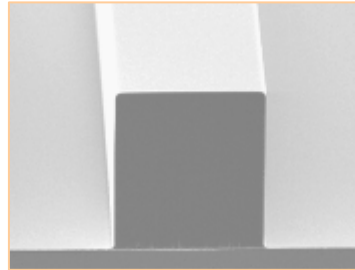
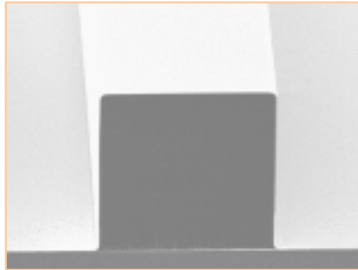
100 μ m

70 μ m

60 μ m

50 μ m

40 μ m



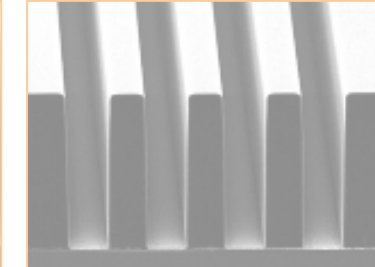
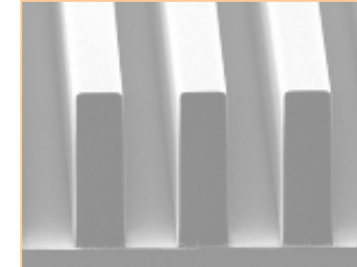
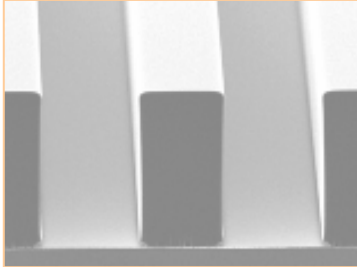
35 μ m

30 μ m

25 μ m

20 μ m

15 μ m



Copper Substrate
Focus = -15 μ m
DTP = 2000 mJ/cm²
Ultratech AP 300 Stepper

AZ[®] Exp 125nXT-10A

Resolution Comparison, Contact Hole, FT = 70 μ m

100 μ m

70 μ m

60 μ m

50 μ m

40 μ m

35 μ m

30 μ m

25 μ m

20 μ m

15 μ m

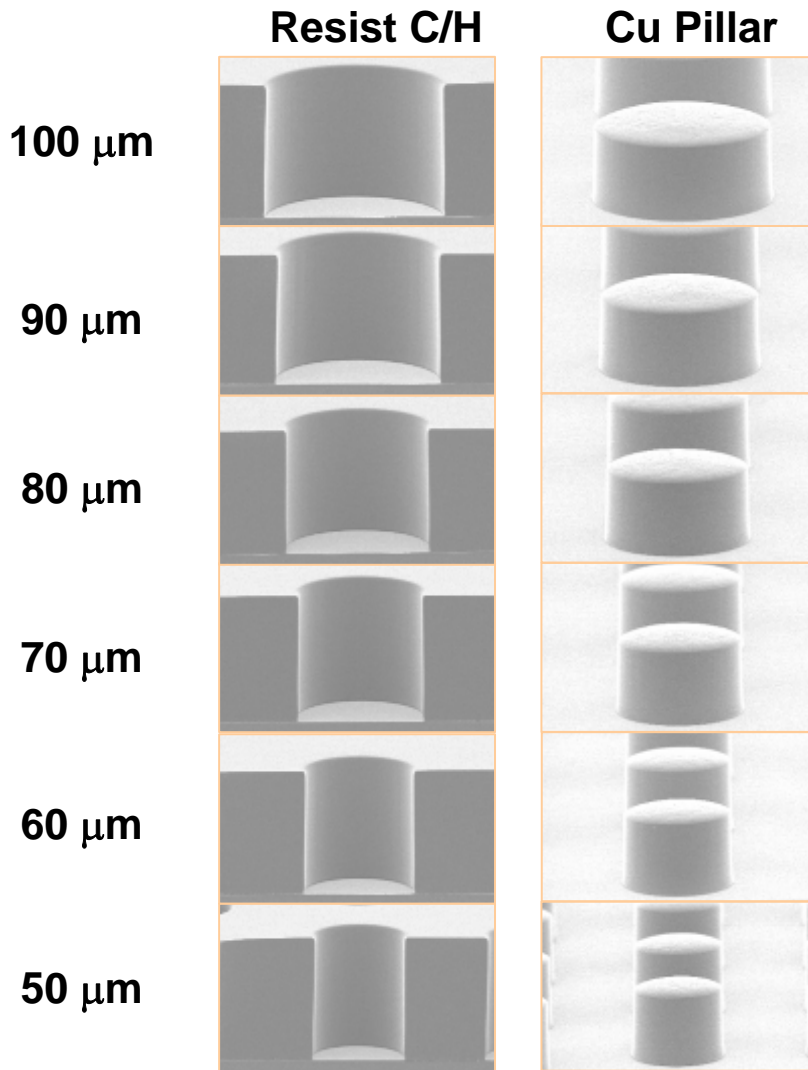
Copper Substrate

Focus = -15 μ m

DTP = 2000 mJ/cm²

Ultratech AP 300 Stepper

AZ[®] Exp 125nXT-10A Cu Plating Test, FT = 60 μ m



Descum: 10 min / 300W,
Plasma Start AXIC Equipment

Cu solution: Intervia 8540

Tool: Semitool CFD 2 Reactor

Process conditions:

30 °C, flow rate, 5 GPM

Wafer rotation, 60 rpm

Deposition rate: 0.4 - 0.8 μ m/min

Stripper: AZ[®] 400T at 75 °C for 20 min

Tool: Semitool Solvent Spray Chamber

AZ[®] Exp 125nXT-10A

Resist and Cu Plate Images

75 μm Vias

8 μm Vias

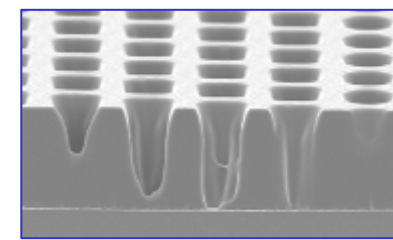
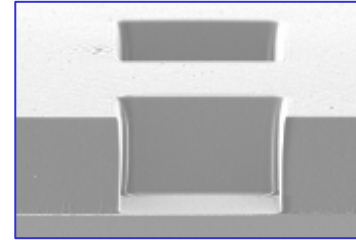
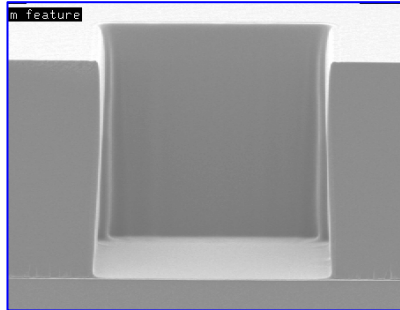
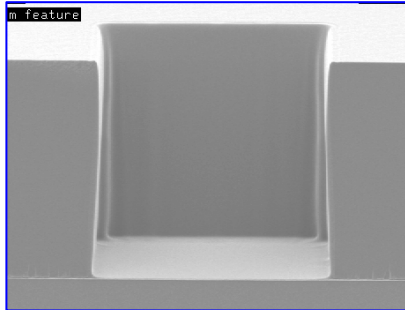
100 μm FT

75 μm FT

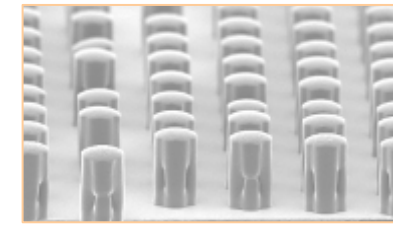
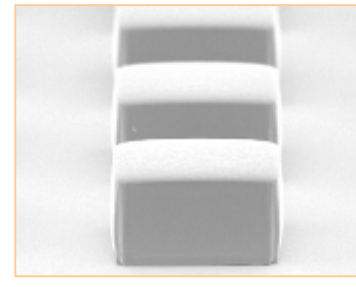
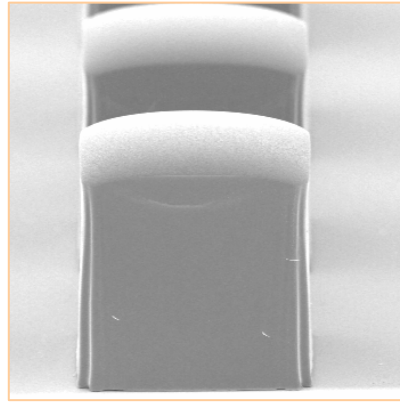
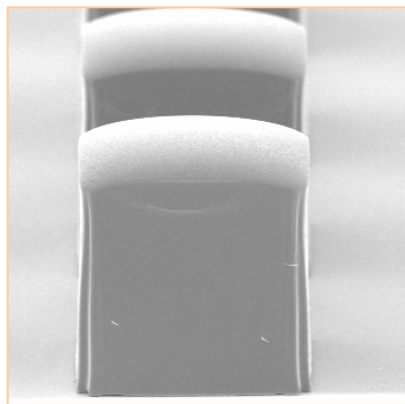
50 μm FT

25 μm FT

Resist
Pattern



Cu
Plate



Dose: 3400 mJ/cm²
Develop: 3 x 46 Sec Puddles

Dose: 2200 mJ/cm²
Develop: 3 x 35 Sec Puddles

Dose: 1200 mJ/cm²
Develop: 3 x 25 Sec Puddles

Dose: 1200 mJ/cm²
Develop: 2 x 15 Sec Puddles