



**Everlight
Chemical**

Better Chemistry Better Life



**Everlight
Chemical**

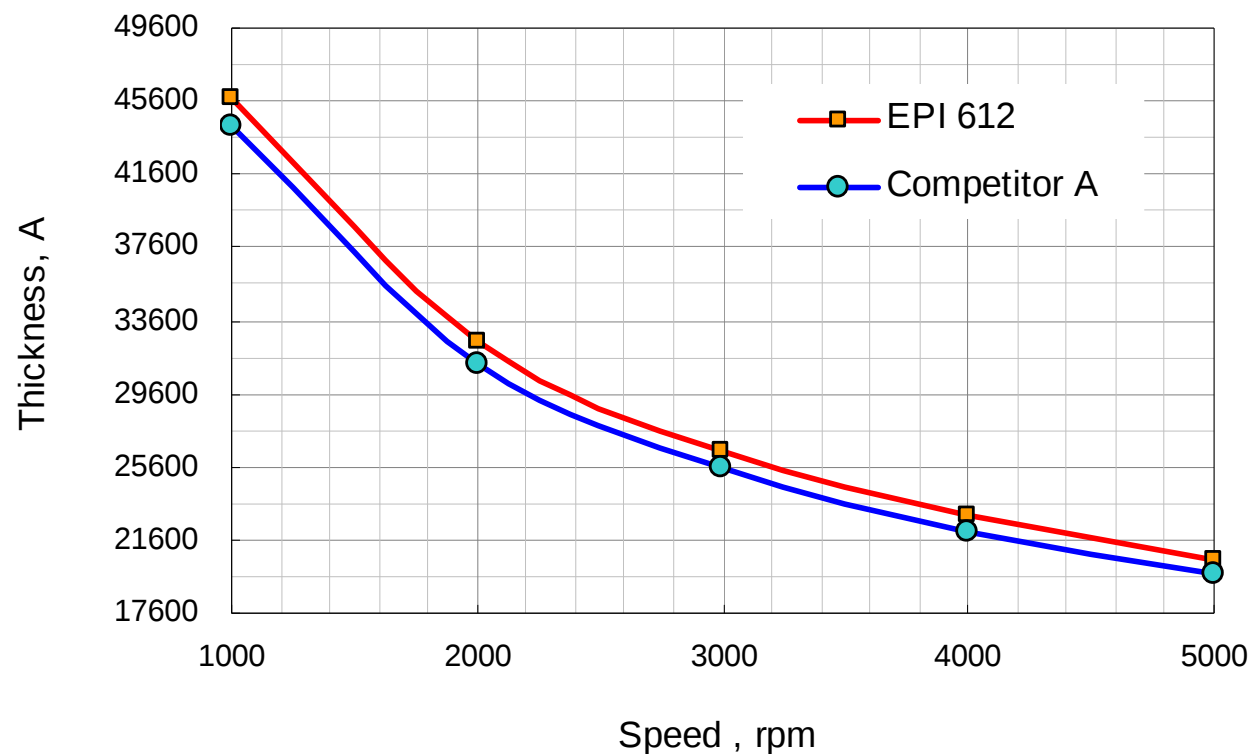
PSS I-line Positive Photoresist

EPI 612 Technical data

Ver. 20140917



Spin Curve



Condition

Substrate : Bare Si (pretreatment with HMDS)

Spin speed : 1000~5000rpm

Pre-bake : 90°C x 60sec

Evaluation Results

PR Name	EPI 612	Competitor A
Viscosity [cP]	45	46
Eth [msec]	218	221
Dark erosion [Å]	1173	1065
Eop(1um) [msec]	310	330
Resolution [um]	0.64	0.58

Condition

Substrate : Bare Si (pretreatment with HMDS)

Thickness : 2.51 um

Pre-bake : 90°C x 60sec

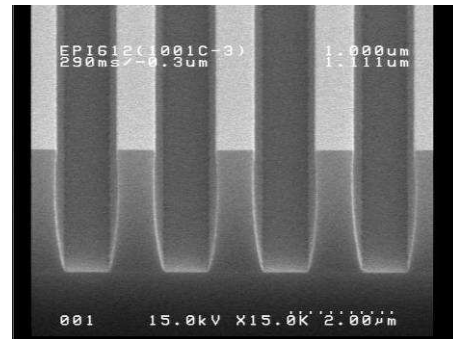
Exposure : Nikon i7a Stepper

PEB : 110°C x 60sec

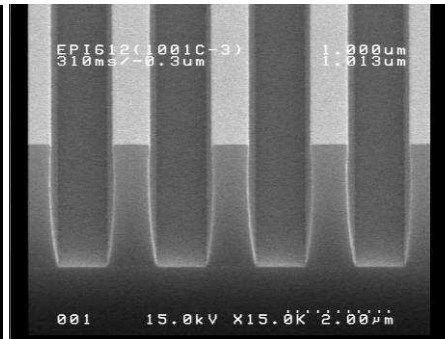
Development : 2.38% TMAH x 60sec

Exposure Latitude (1um L/S)

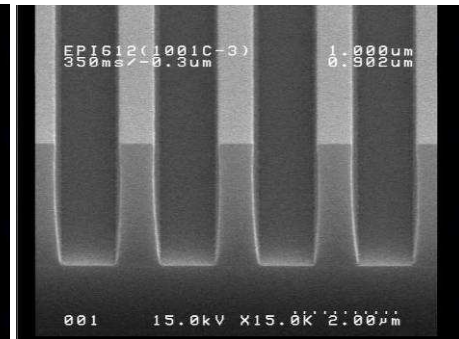
EPI 612
EL=19%



290 msec

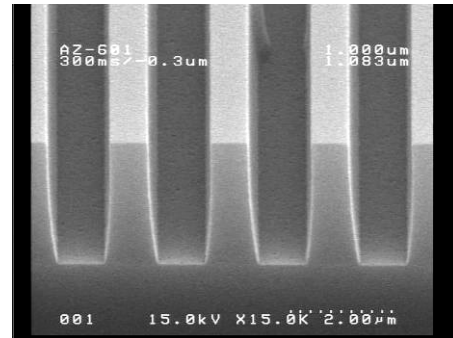


310 msec

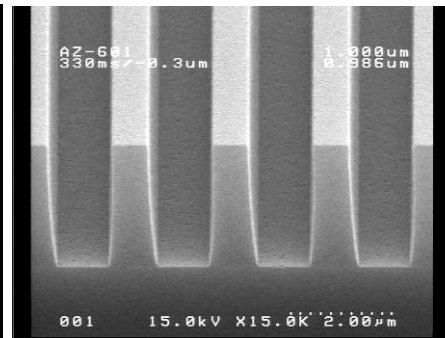


350 msec

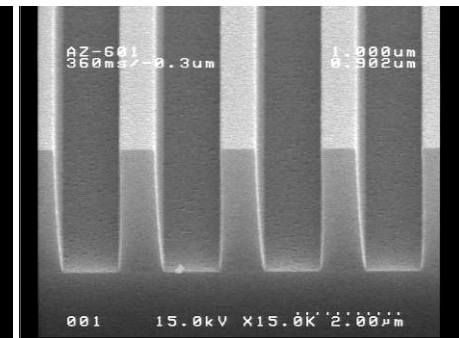
Competitor A
EL=19%



300 msec



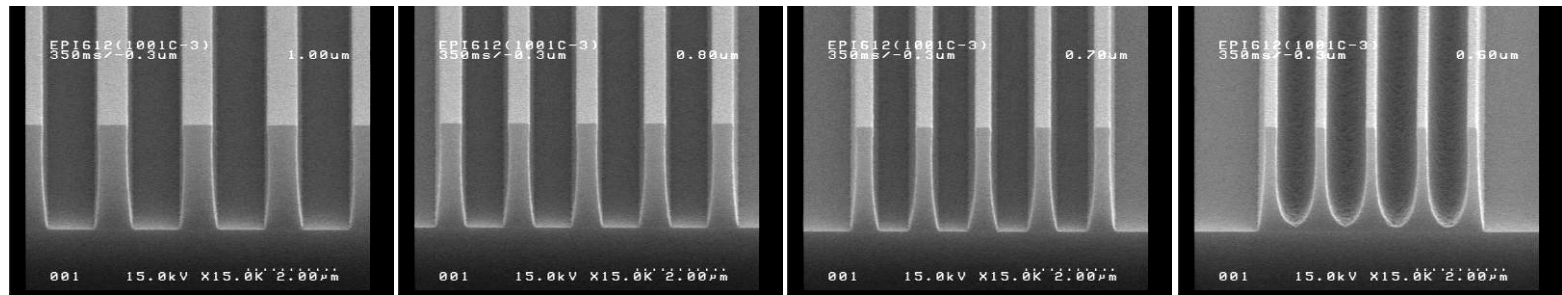
330 msec



360 msec

Resolution

EPI 612



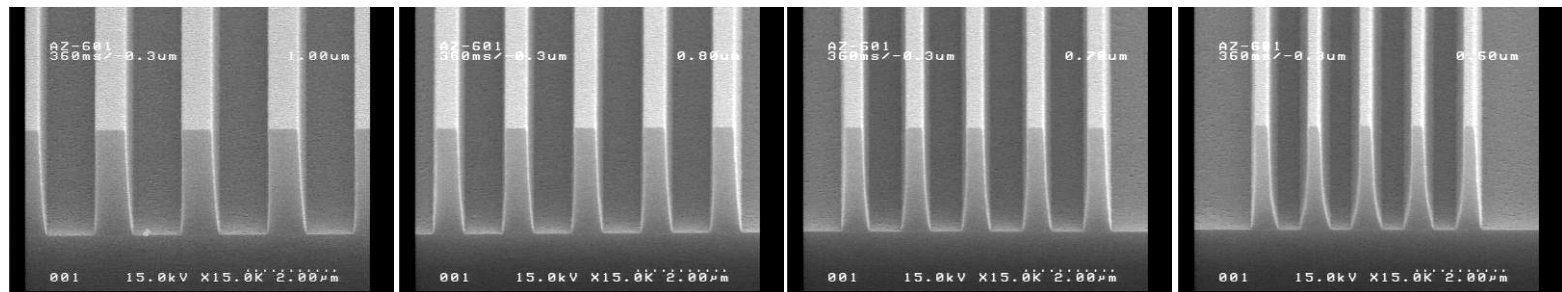
1.0um

0.8um

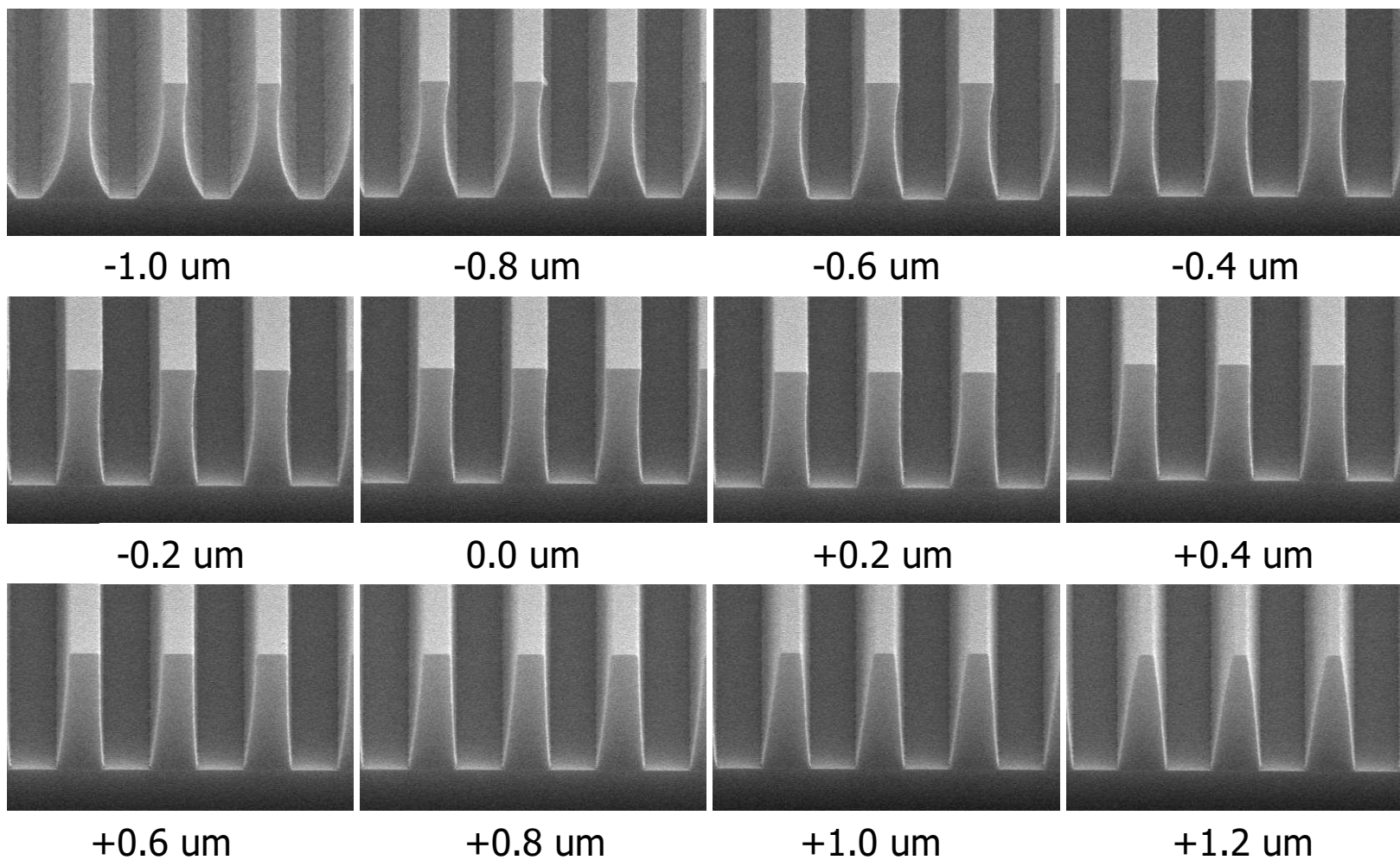
0.7um

0.6um

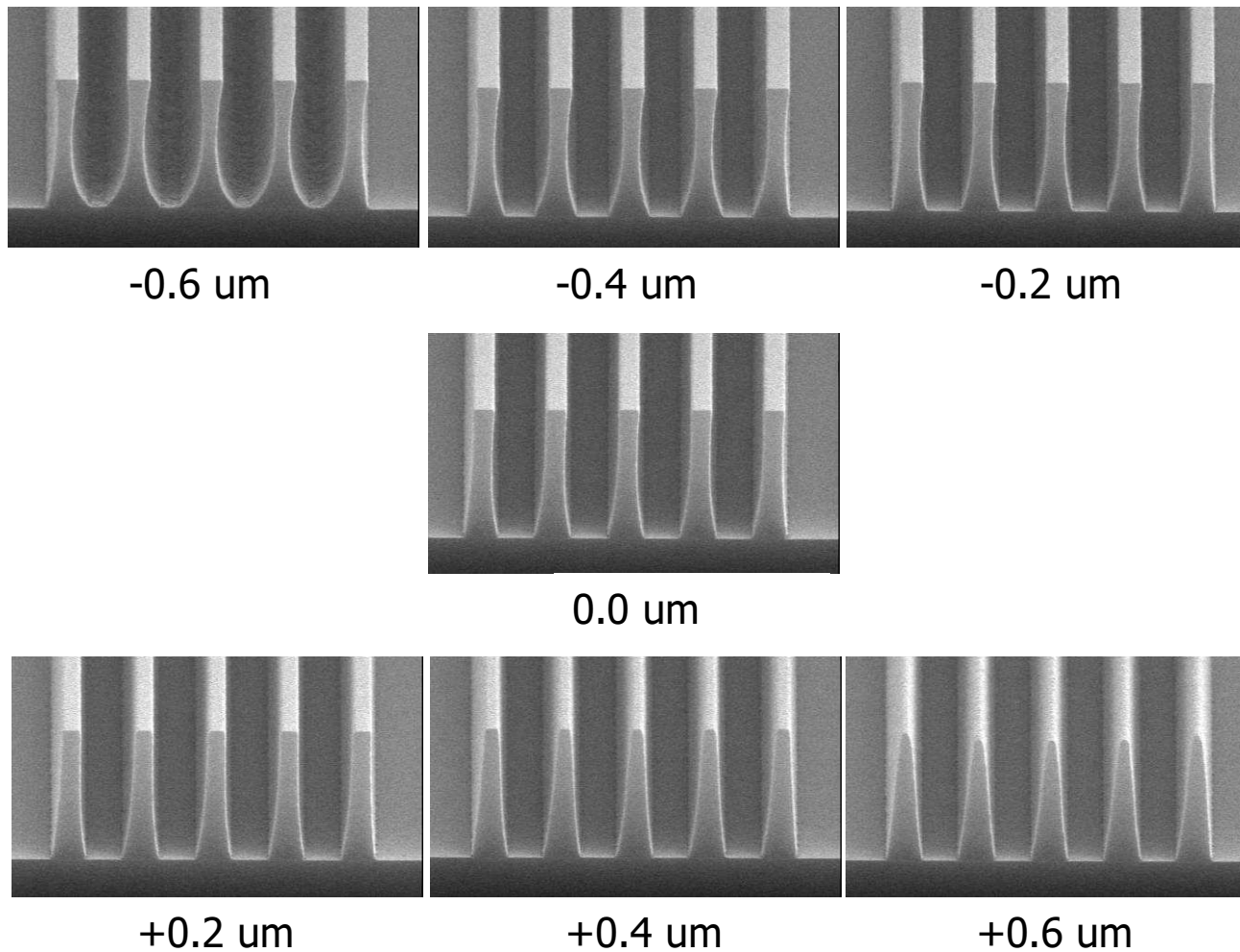
Competitor A



EPI 612 DOF(1.0 μ m L/S)



EPI 612 DOF($0.7\mu\text{m}$ L/S)



Pitch Profile

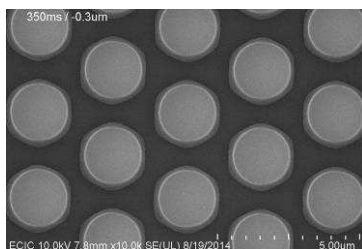
Thickness = $2.51 \mu\text{m}$

$E_{\text{OP}} = 350 \text{ msec}$

Focus = $-0.3 \mu\text{m}$

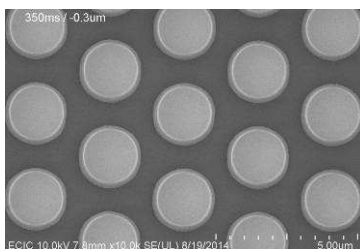
EPI 612
Lot.4004

2.3/0.7



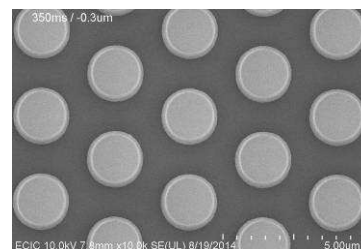
2.32um

2.2/0.8



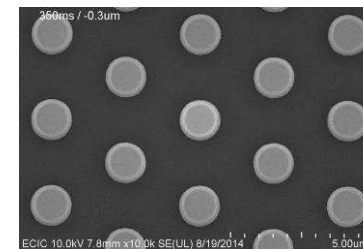
2.23um

2/1

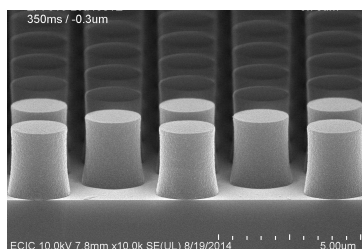


2.00um

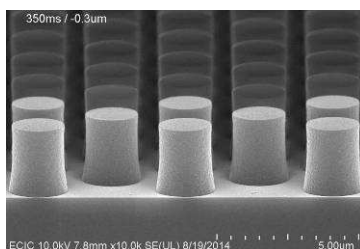
1.5/1.5 (D/S)



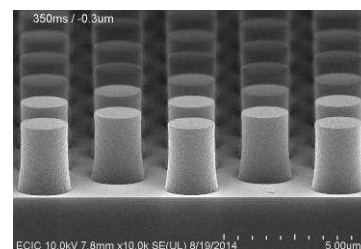
1.45um



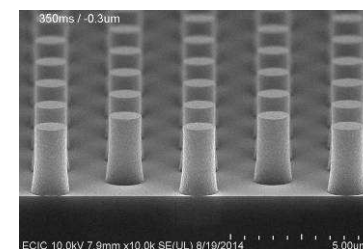
2.21um



2.10um



1.90um



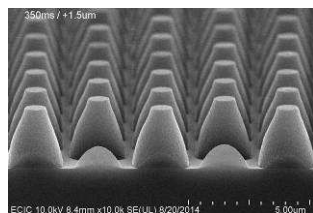
1.39um

Depth of Focus PSS profile

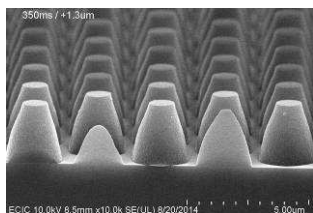
Thickness = $2.51\ \mu\text{m}$

$E_{\text{OP}} = 350\ \text{msec}$

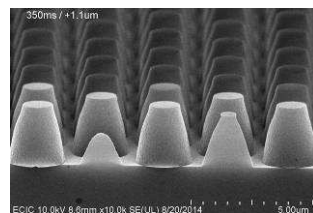
C.D. = $0.7\ \mu\text{m}$



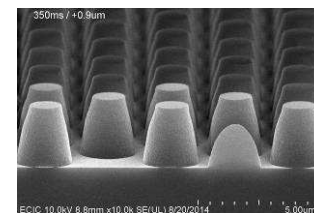
+1.5um



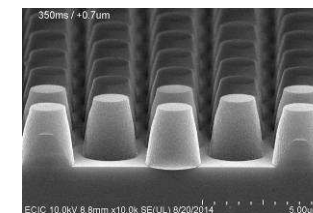
+1.3um



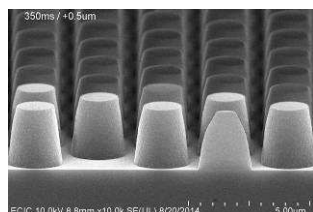
+1.1um



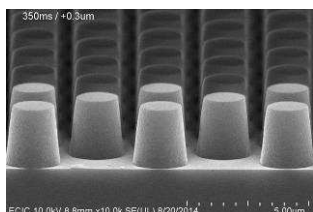
+0.9um



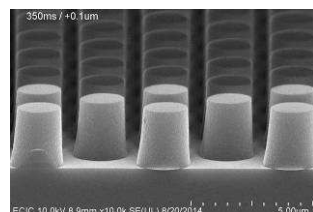
+0.7um



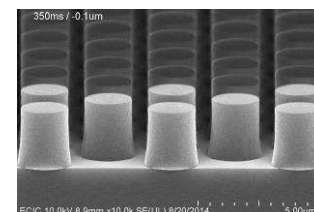
+0.5um



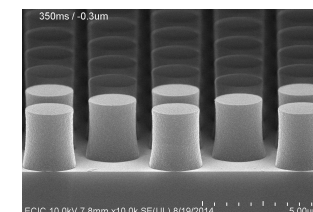
+0.3um



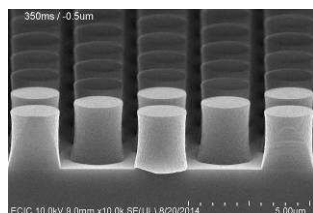
+0.1um



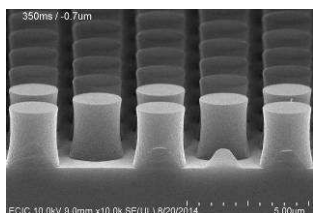
-0.1um



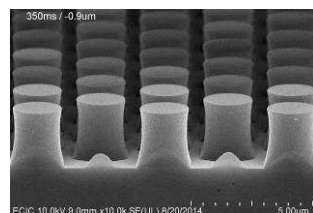
-0.3um



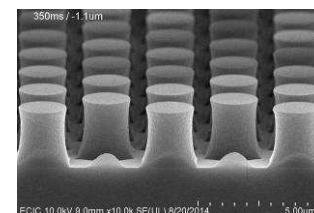
-0.5um



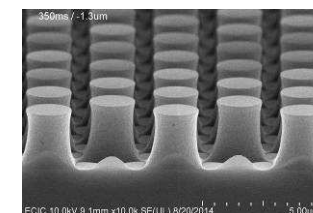
-0.7um



-0.9um

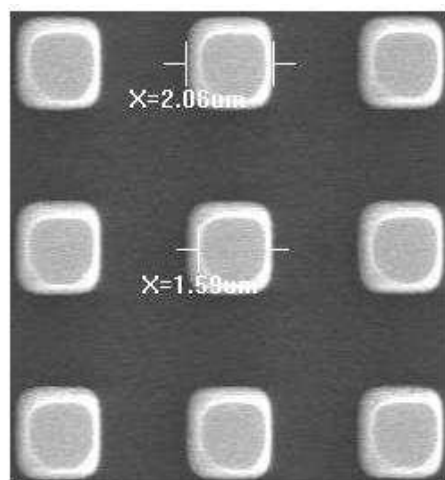
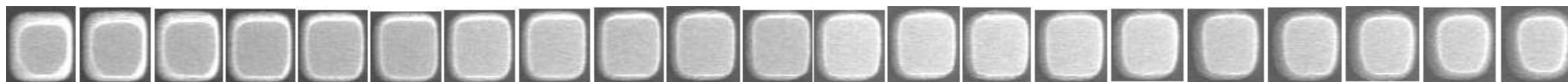


-1.1um

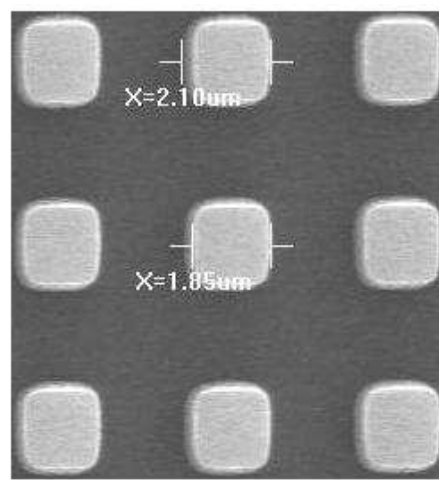


-1.3um

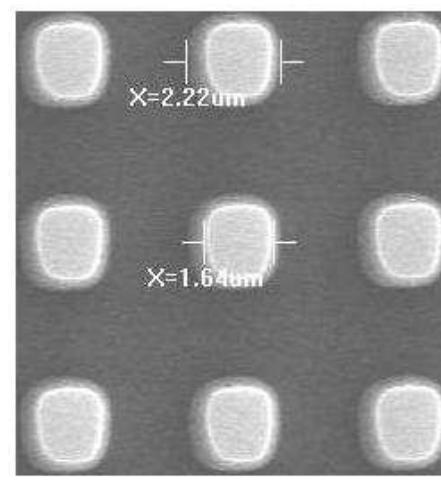
EPI 612 DOF (SEM)



+1.0 Focus

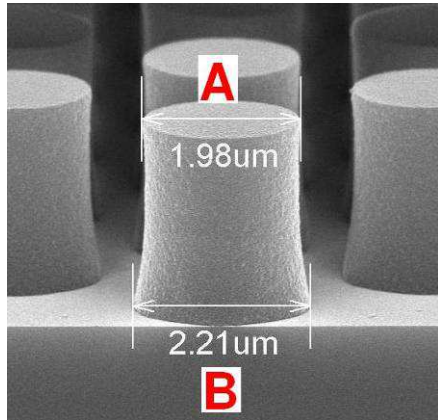


Best Focus



-1.0 Focus

Focus Change (Space)



Dot size	1.5 um	2.0 um	2.2 um	2.3 um
EPI 612 Lot.4004	0.23 um	0.22 um	0.21 um	0.23 um

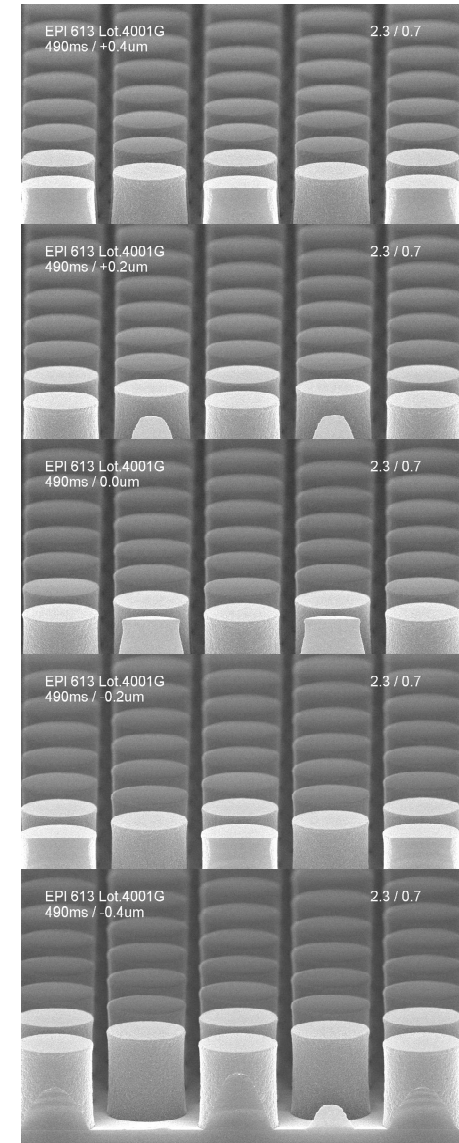
FOCUS : +0.4um

FOCUS : +0.2um

FOCUS : +0.0um

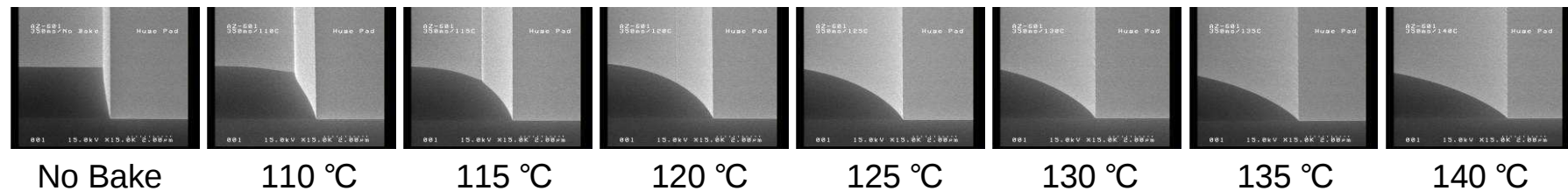
FOCUS : -0.2um

FOCUS : -0.4um

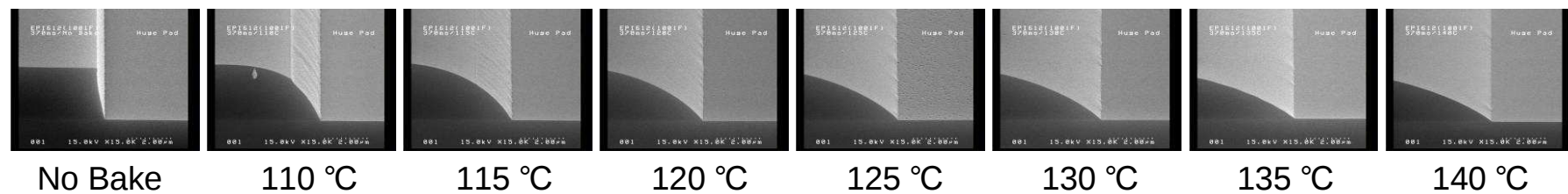


Thermal resistance (Huge Pad)

Competitor A Huge Pad

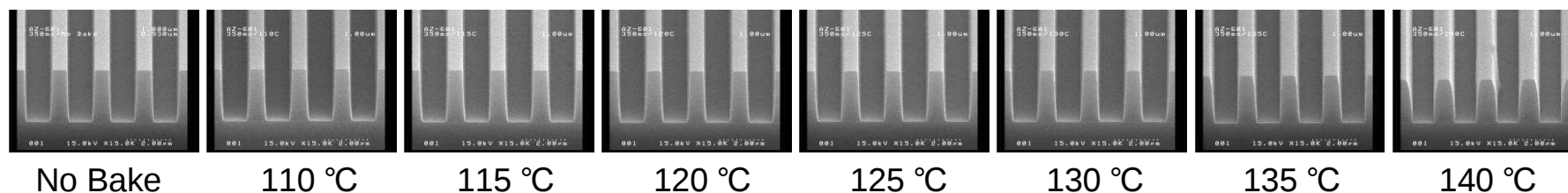


EPI612 Lot.1001F Huge Pad

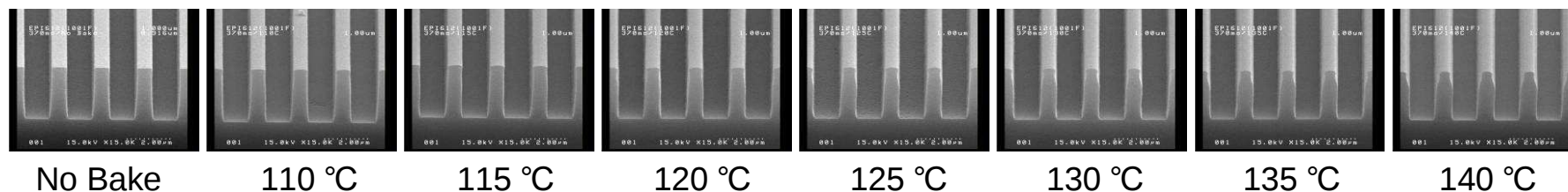


Thermal resistance(1.0 μ m L/S)

Competitor A 1.0 μ m Pad

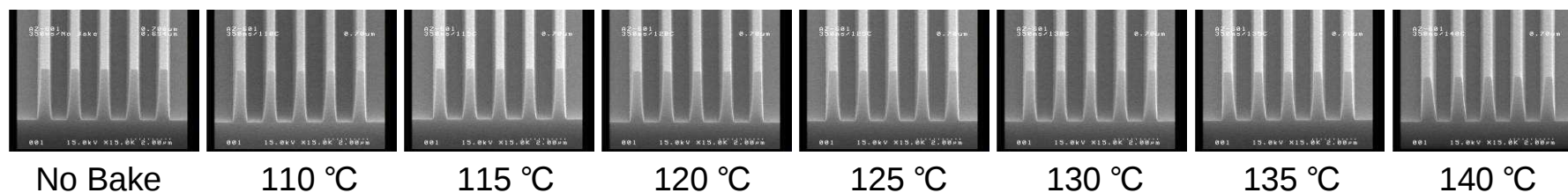


EPI612 Lot.1001F 1.0 μ m Pad



Thermal resistance(0.7 μ m L/S)

Competitor A 0.7 μ m Pad



EPI612 Lot.1001F 0.7 μ m Pad

