

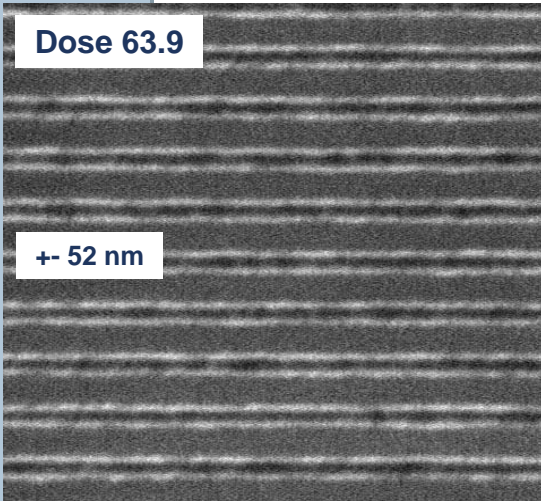
# Comparison of resist performance at LBNL microstepper and PSI interference setup

Roel Gronheid; Frieda Van Roey; Mieke Goethals; Koen van Ingen Schenau (ASML); Cyril Vannuffel (CEA-Leti)

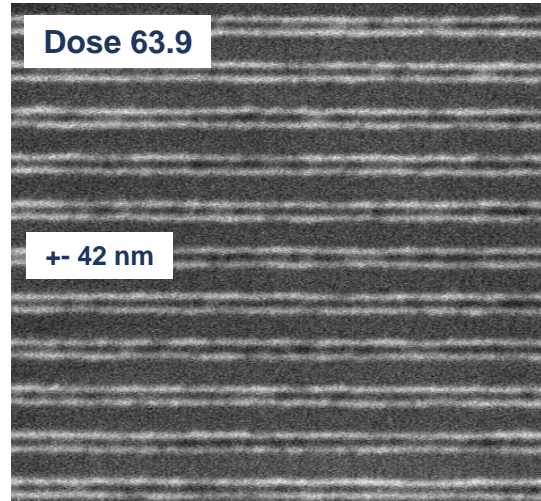


# Resist A @ PSI

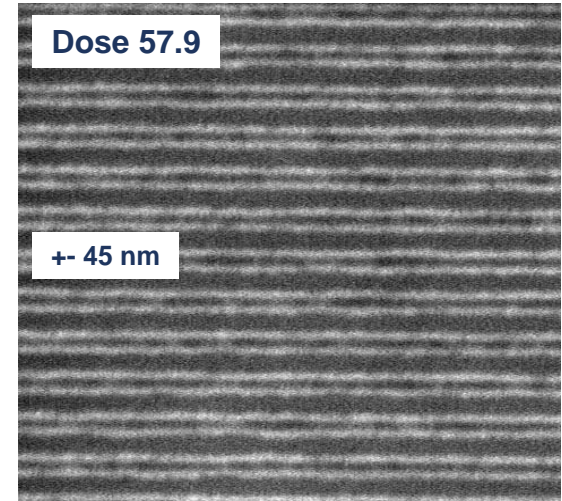
50 nm



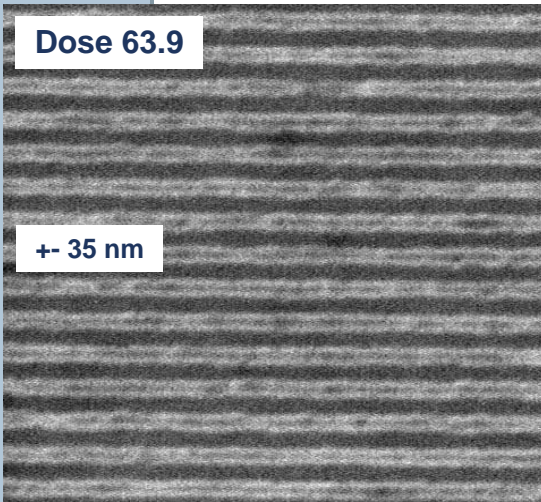
45 nm



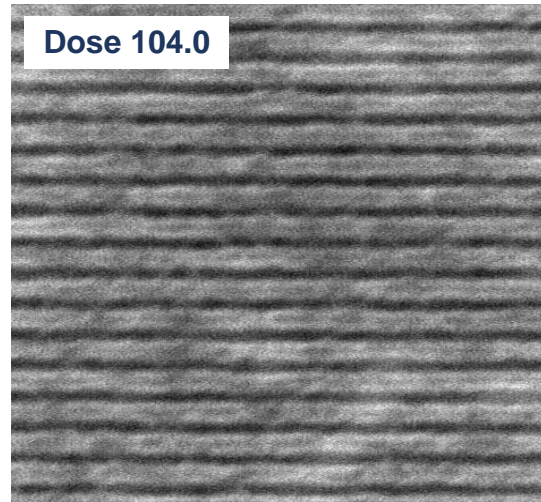
40 nm



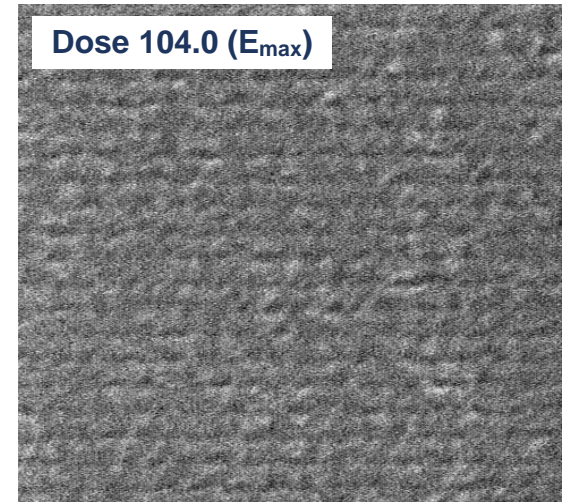
35 nm



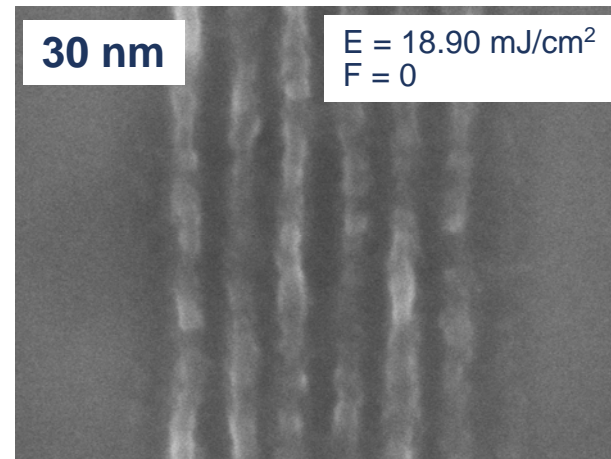
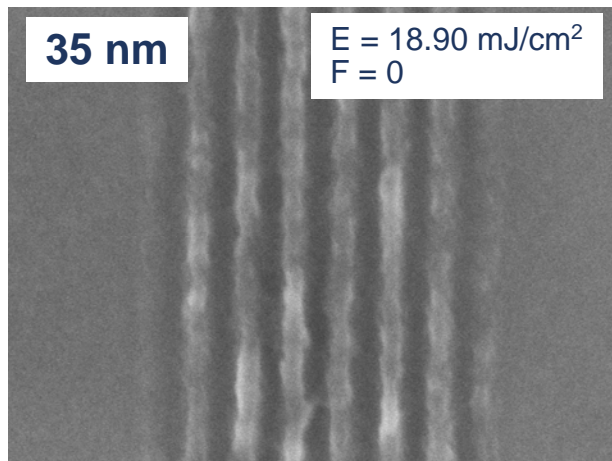
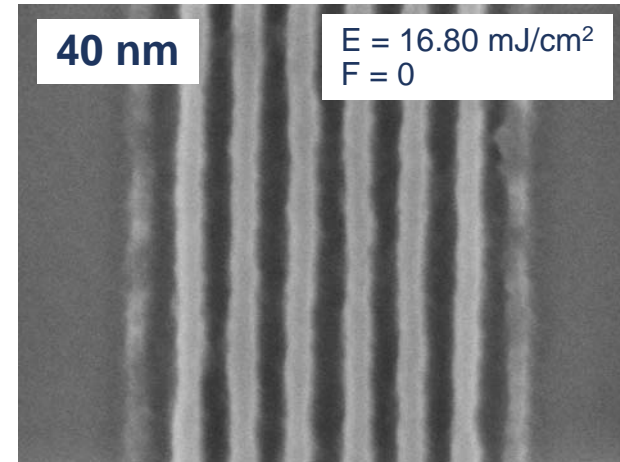
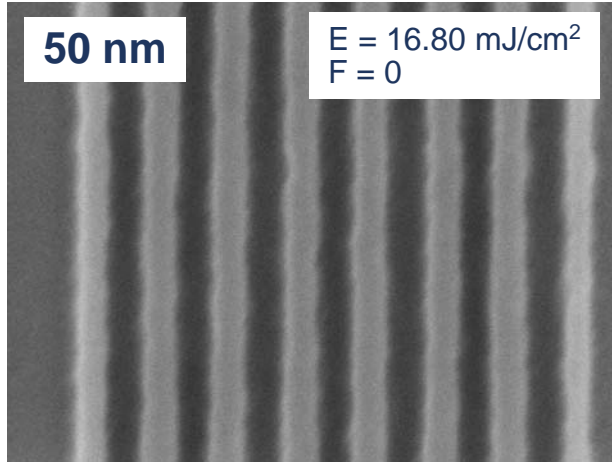
30 nm



25 nm

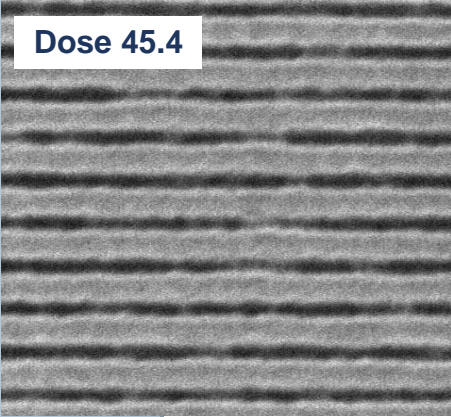


## Brightfield

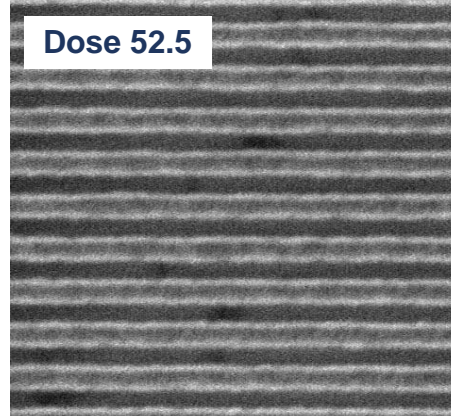


# Resist A @ PSI 50 nm through dose

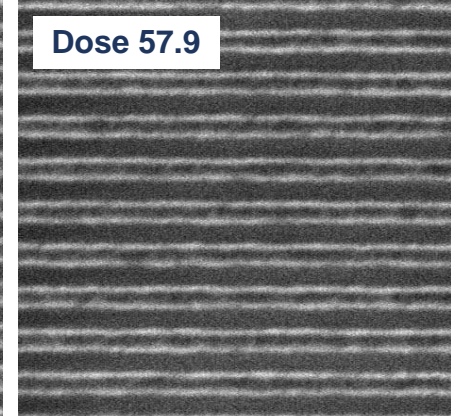
Dose 45.4



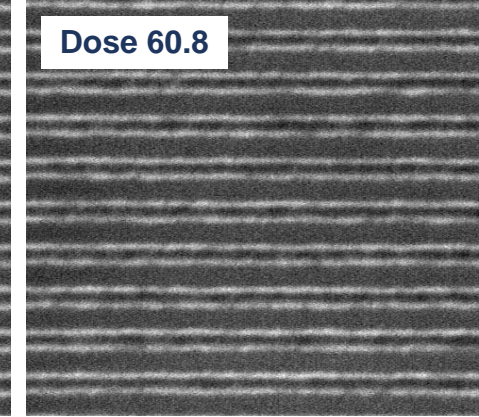
Dose 52.5



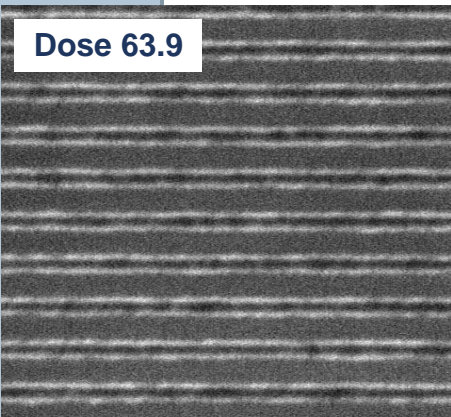
Dose 57.9



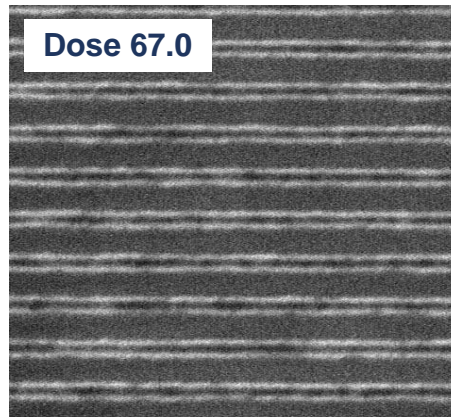
Dose 60.8



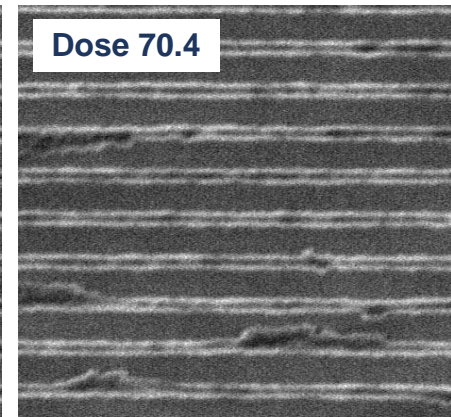
Dose 63.9



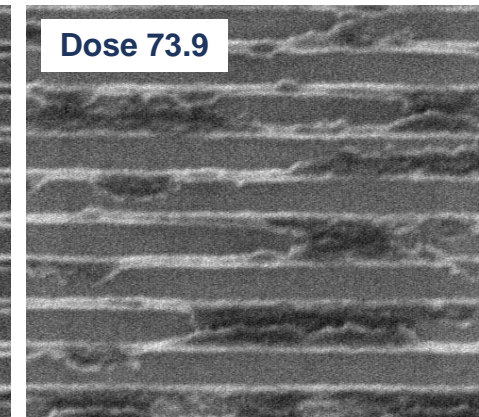
Dose 67.0



Dose 70.4

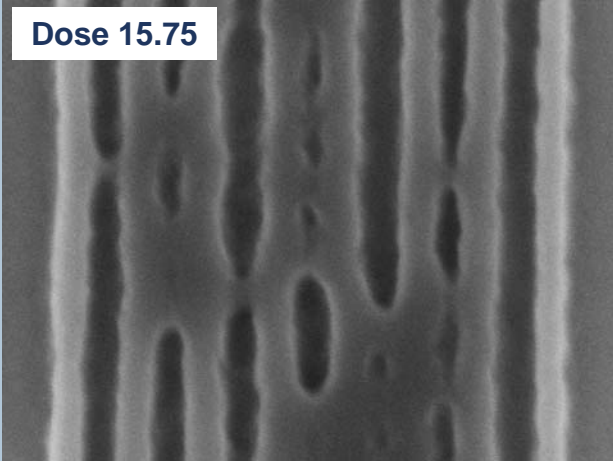


Dose 73.9

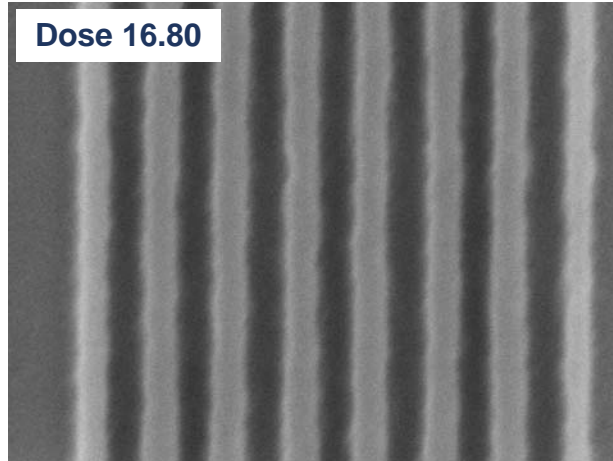


# Resist A @ LBNL 50 nm through dose

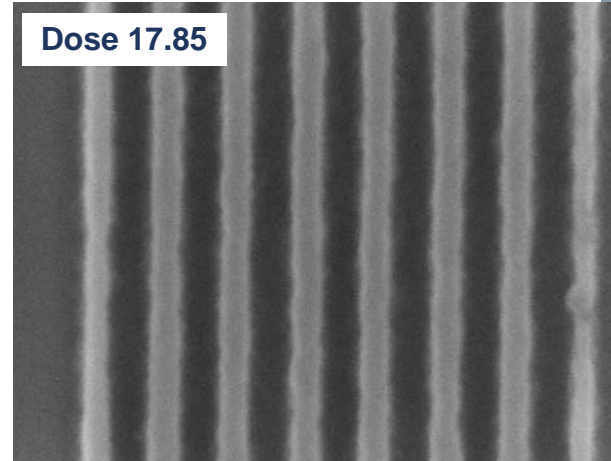
Dose 15.75



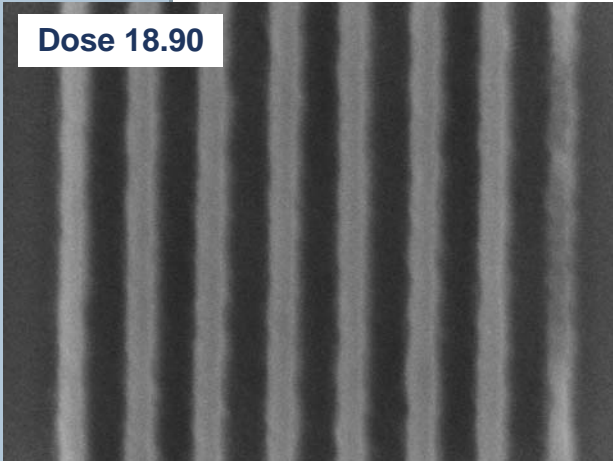
Dose 16.80



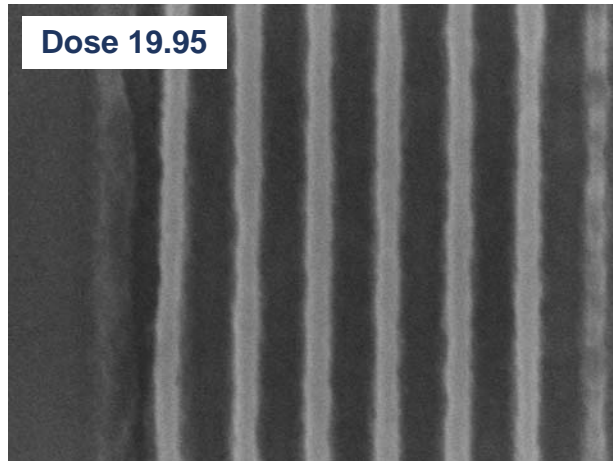
Dose 17.85



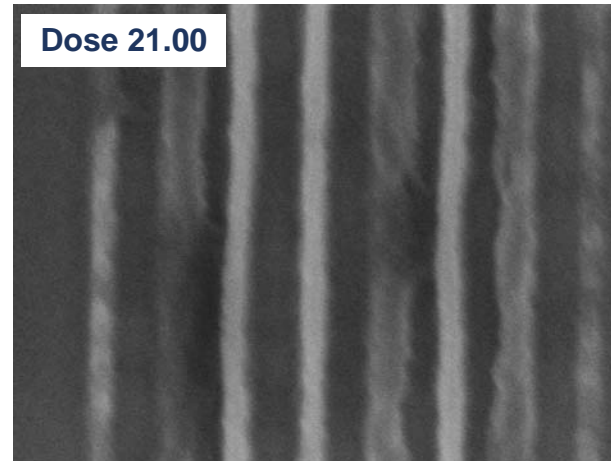
Dose 18.90



Dose 19.95



Dose 21.00



# Resist A @ LBNL 50 nm through dose

Dose 14.95

A darkfield micrograph showing vertical interference fringes. The fringes are relatively sharp and well-defined, indicating a high degree of order in the resist structure.

Dose 16.10

A darkfield micrograph showing vertical interference fringes. The fringes are slightly less sharp than at 14.95 dose, but still clearly visible.

Dose 17.25

A darkfield micrograph showing vertical interference fringes. The fringes are noticeably blurred and less distinct compared to the previous doses.

Dose 18.40

A darkfield micrograph showing vertical interference fringes. The fringes are very blurred and the contrast is significantly reduced.

Dose 19.55

A darkfield micrograph showing vertical interference fringes. The fringes are extremely blurred and the overall image quality is poor.

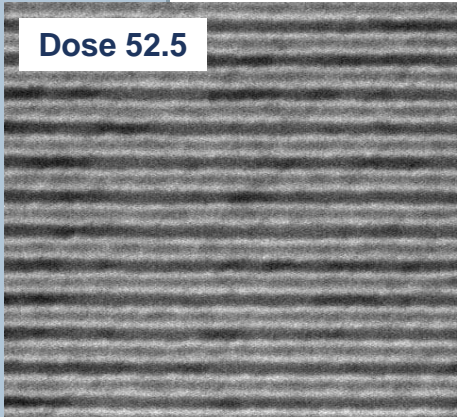
Dose 21.85

A darkfield micrograph showing vertical interference fringes. The fringes are almost completely washed out, and the image is very blurry.

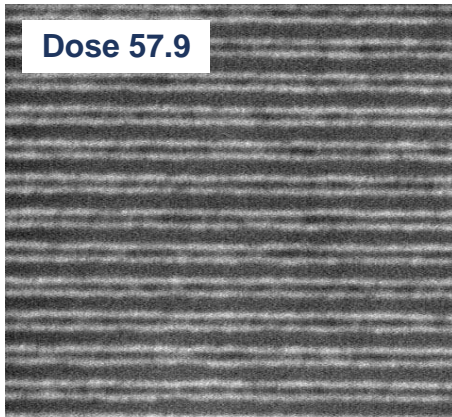
# Resist A 40 nm through dose

PSI

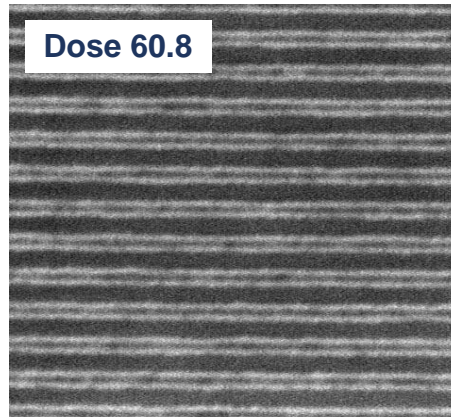
Dose 52.5



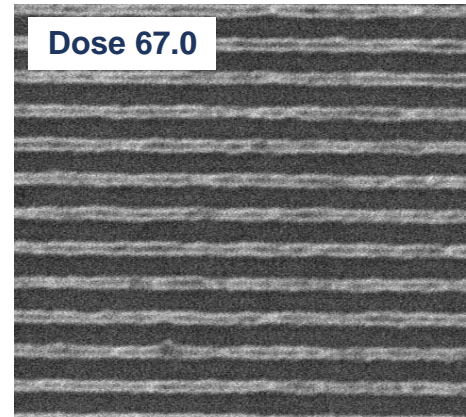
Dose 57.9



Dose 60.8

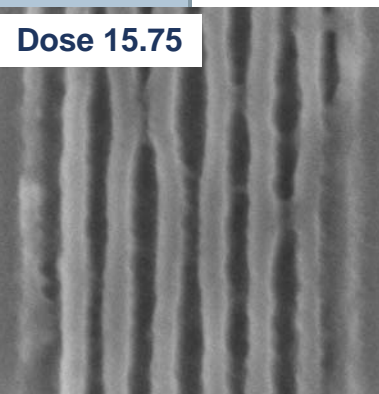


Dose 67.0

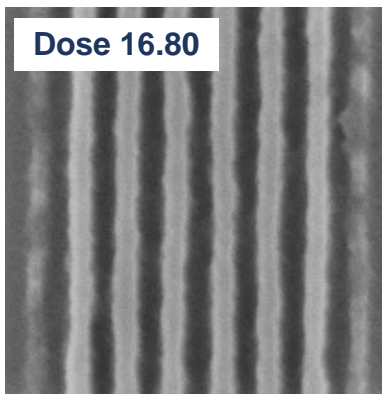


LBNL Brightfield

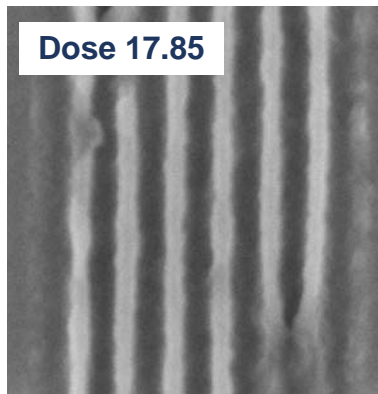
Dose 15.75



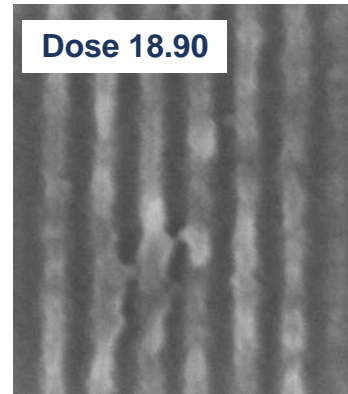
Dose 16.80



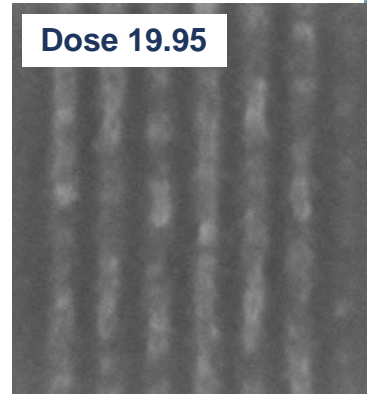
Dose 17.85



Dose 18.90



Dose 19.95



# Resist A @ PSI 35 nm through dose

Dose 55.2

Dose 57.9

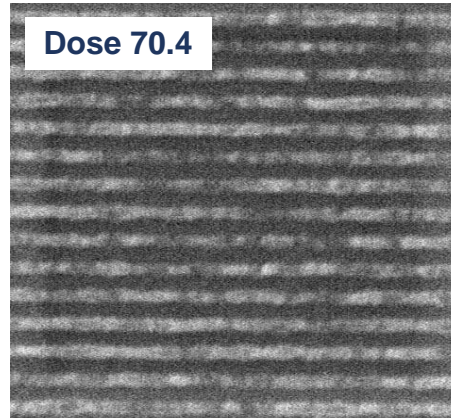
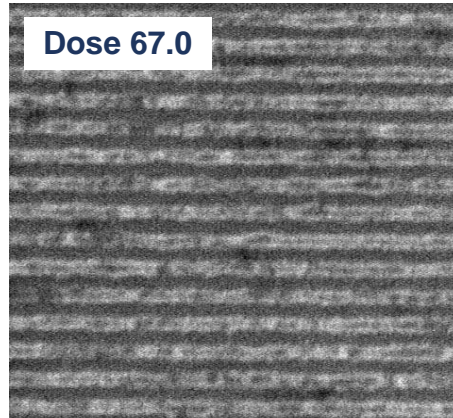
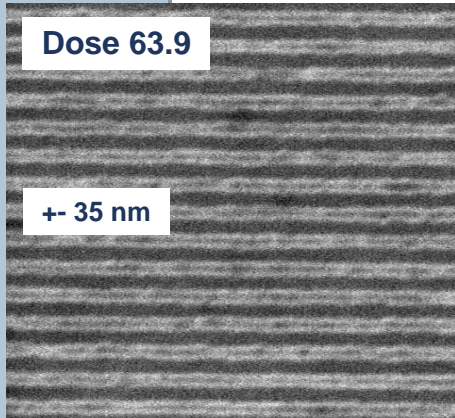
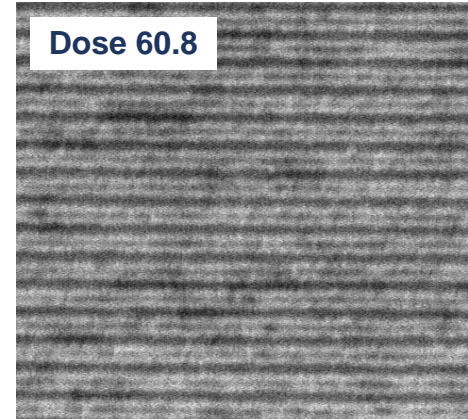
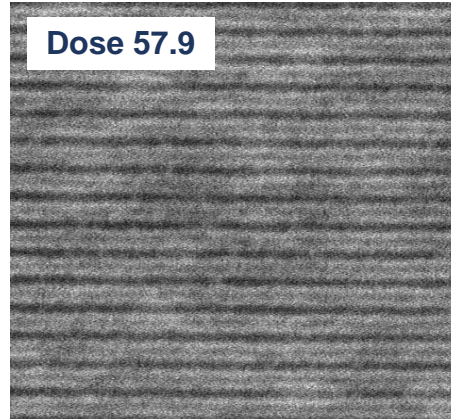
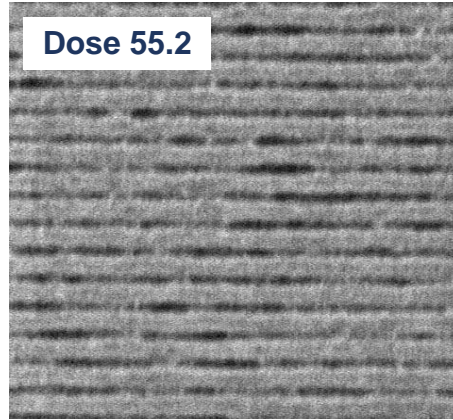
Dose 60.8

Dose 63.9

Dose 67.0

Dose 70.4

+/- 35 nm





SEEDS FOR TOMORROW'S WORLD **IMEC**NOLOGY

