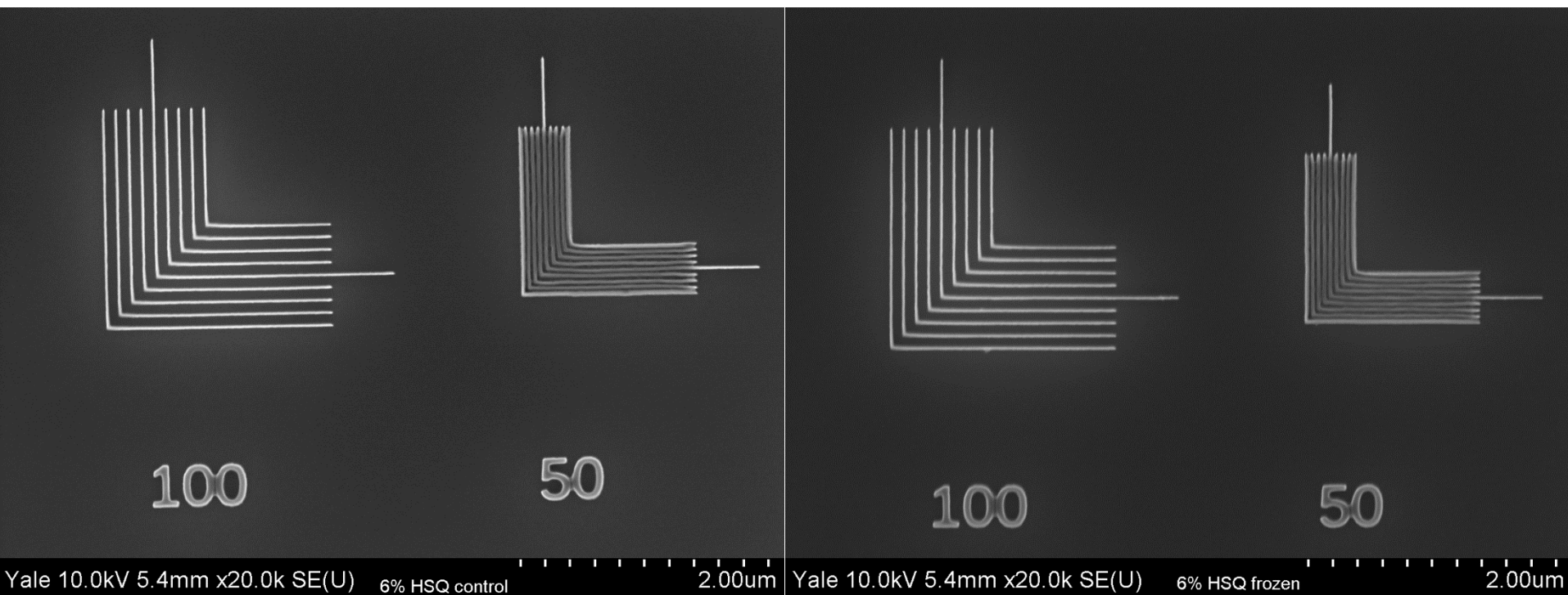


You Can Freeze HSQ

HSQ stored as liquid, -27°C

Stored frozen at -196°C (liquid nitrogen)

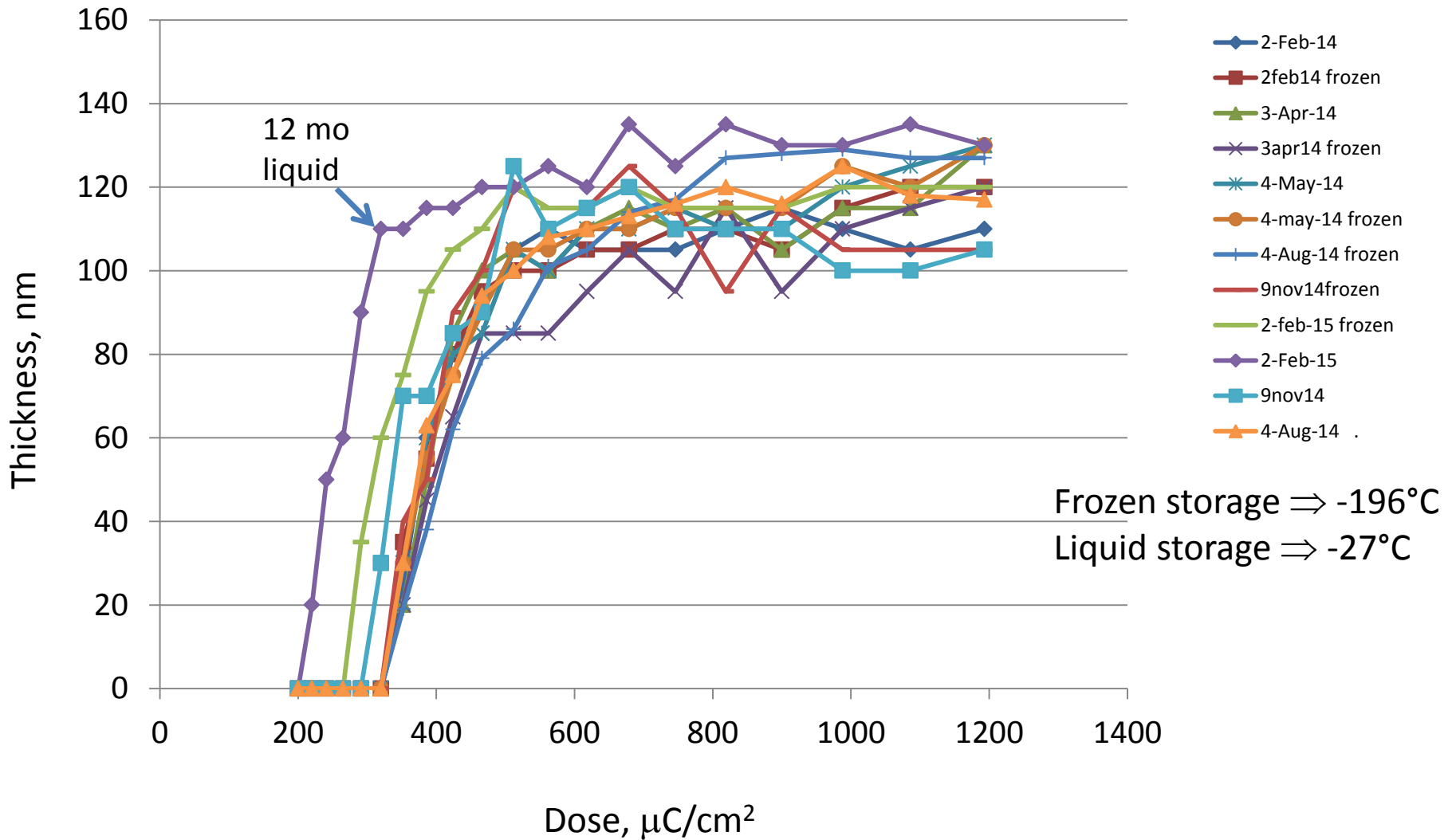


Freezing HSQ has no effect

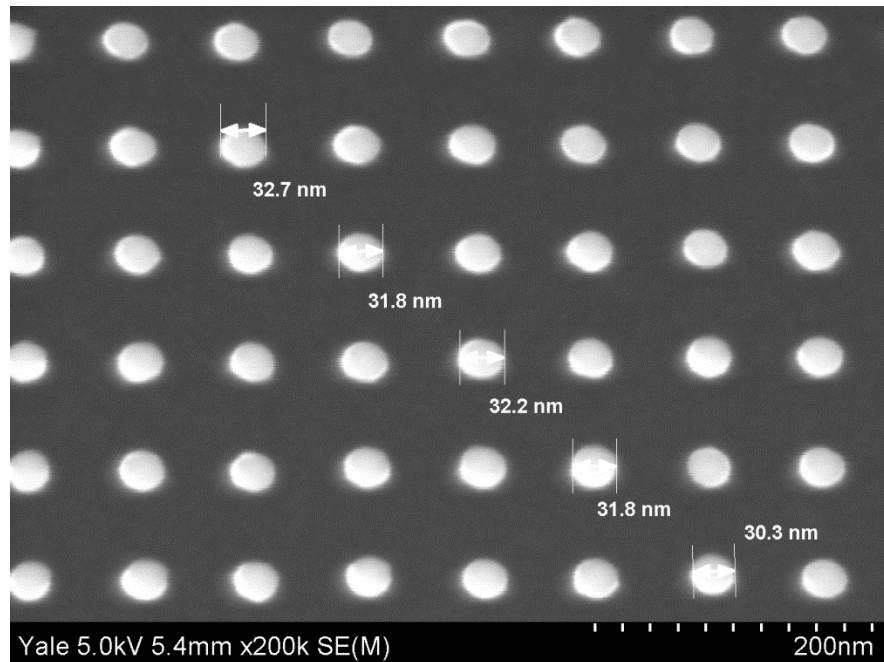
Freezing point of MIBK = -85°C

HSQ contrast, comparison of frozen to liquid storage

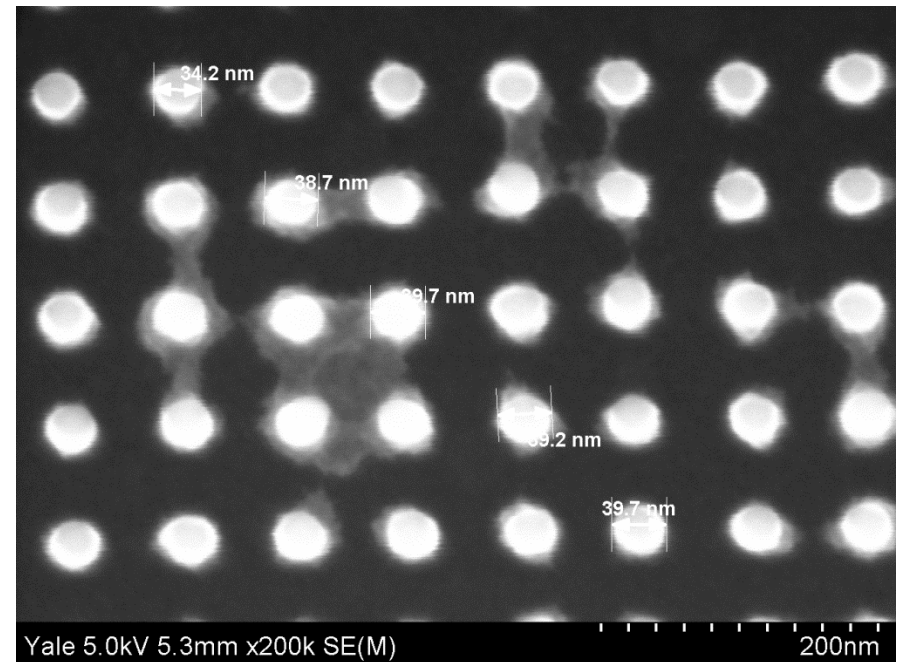
Critical dose drops after 12 months of storage as liquid.



Frozen at 77°K 12 months

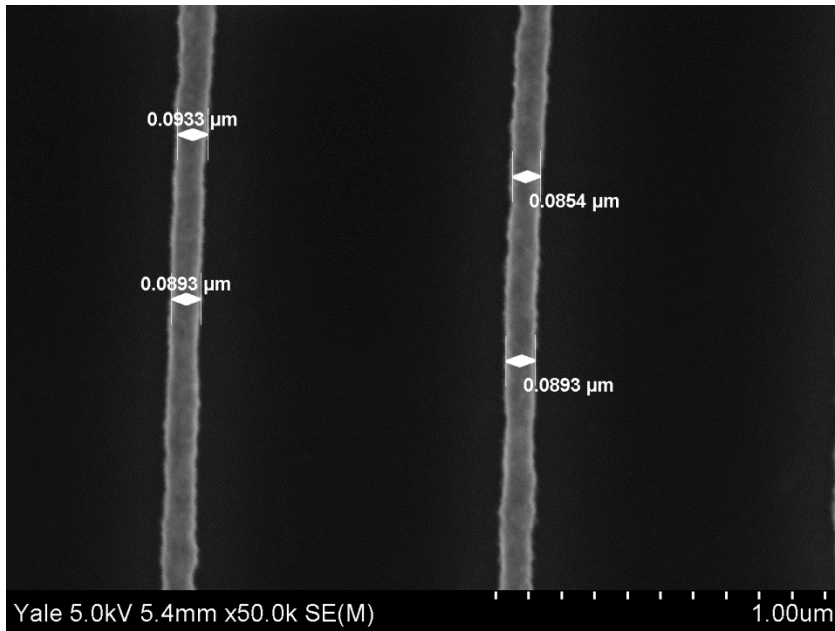


Liquid at -27°C for 12 months

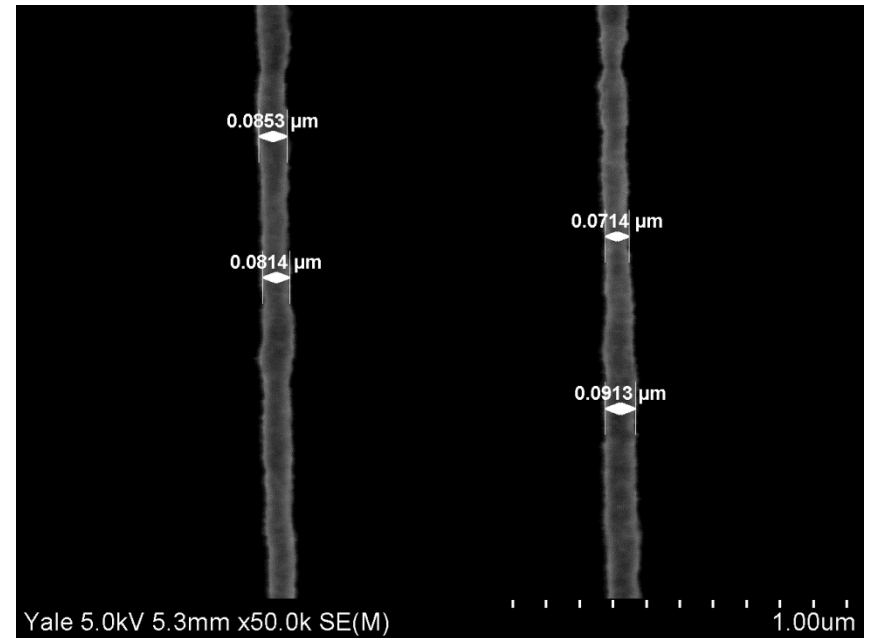


When HSQ goes bad, the first sign is a drop in dose (increased sensitivity). Also, scum between features becomes more pronounced.

Frozen at 77°K 12 months



Liquid at -27°C for 12 months

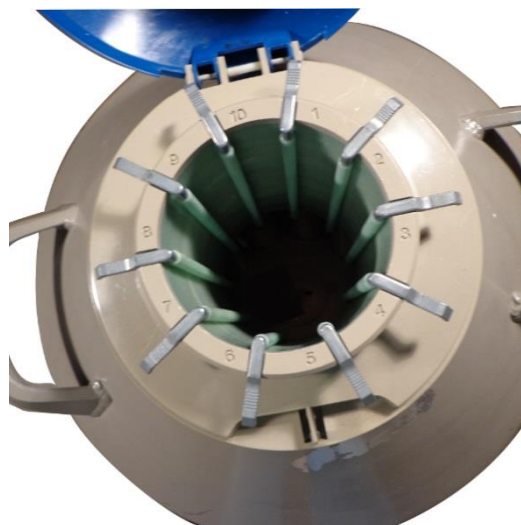


Line edge roughness increases as HSQ deteriorates.

HSQ shelf life is ~ 9 months when stored at -27°C

HSQ shelf life at 77°K is indefinite.

Liquid nitrogen storage units are relatively inexpensive.



\$751 from Amazon

Uses < 0.5 liter/day
= 0.16 \$/day



4 ml HDPE bottles
VWR cat. #414004-151

Dispense the resist into 4 ml bottles
then warm them up one at a time.