Futurrex
Productivity Tools

Futurrex NR9-3000PY Lift-Off Photoresist

Exposure Characterization

product overview

- Negative Resist NR9-3000PY is a negative tone photoresist designed for 365 nm wavelength exposure, using tools such as wafer steppers, scanning projection aligners, proximity printers and contact printers.

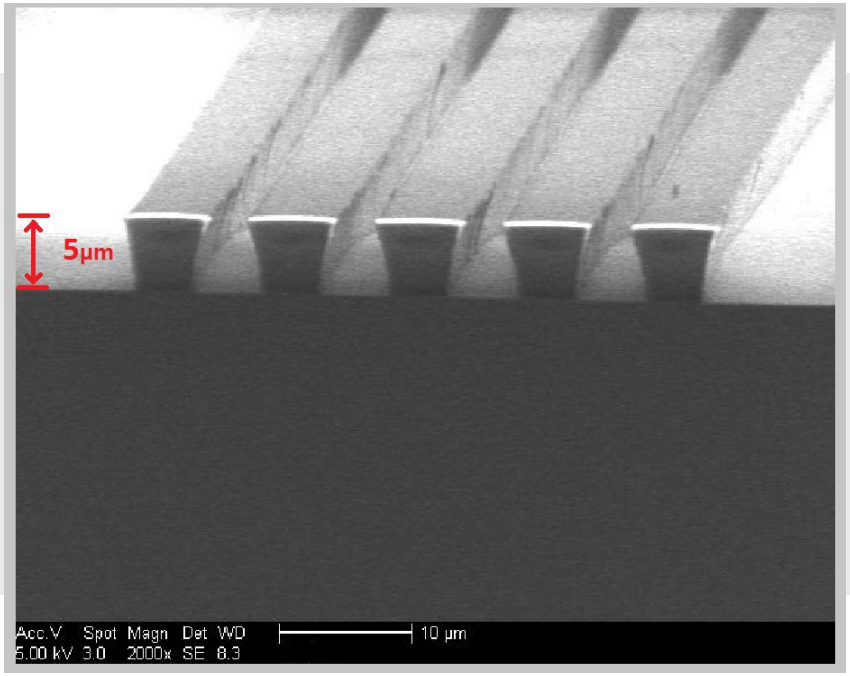
- After resist development NR9-3000PY exhibits a negative-sloping resist sidewall profile, which facilitates a simple resist lift-off process.

- These are advantages of NR9-3000PY over other resists:
  - superior resolution capability
  - fast develop time
  - easy adjustment of the degree of resist undercut as a function of exposure energy
  - temperature resistance of up to 100°C
  - easy resist removal in Resist Remover RR5
  - shelf life exceeding 3 years at room temperature storage

- The formulation and processing of NR9-3000PY were designed with regard to occupational and environmental safety. The principal solvent in NR9-3000PY is cyclohexanone and development of NR9-3000PY is accomplished in a basic water solution.

application(s)

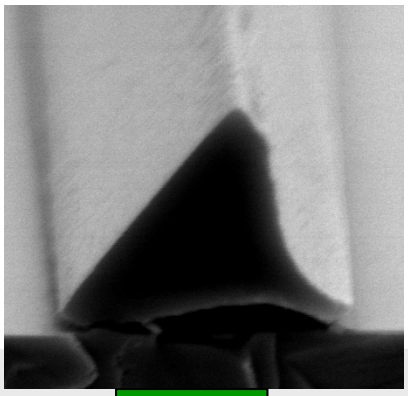
- Futurrex NR9-3000PY is used for lift-off purposes for any metallization deposition process below 100°C.
- The following SEM image is of NR9-3000PY geared for thicker lift-off applications at approximately 5µm thickness:

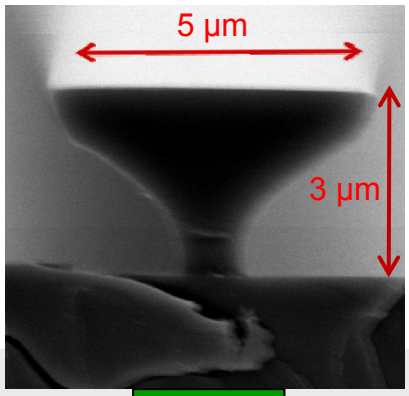


characterization test conditions

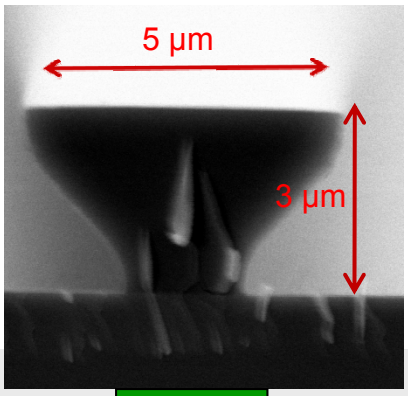
- Futurrex Negative Lift-Off Photoresist NR9-3000PY
  - 3 µm thickness
  - Spin Coat at 3000 rpm
  - Post Coat Bake 120°C / 60 s
- ASML / 80 i-line Stepper at 0.48 NA
  - Energy – 0 to 1000 mJ, steps 100 mJ
  - Focus – 0.0 µm, constant
- Futurrex RD6 Developer
  - Post Exposure Bake 120°C / 60 s
  - Develop time 30 s, immersion with mild agitation
  - DI rinse & air dry
- Bare Silicon Wafers

NR9-3000PY exposure matrix

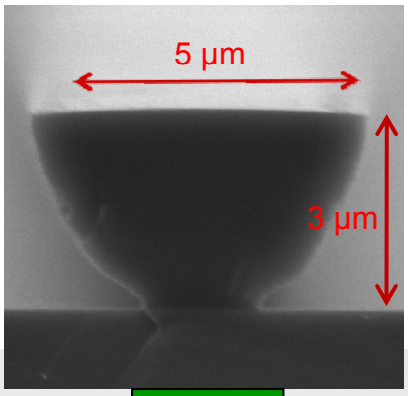

220mj



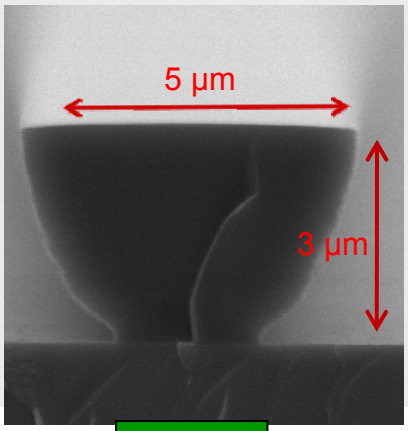
240mj



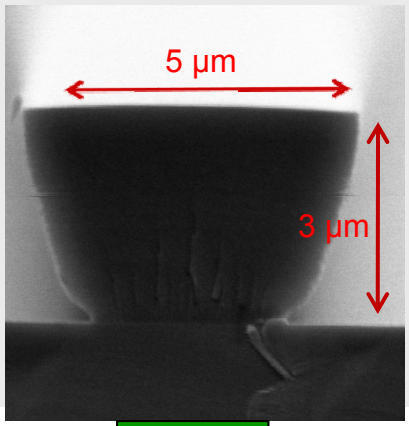
260mj



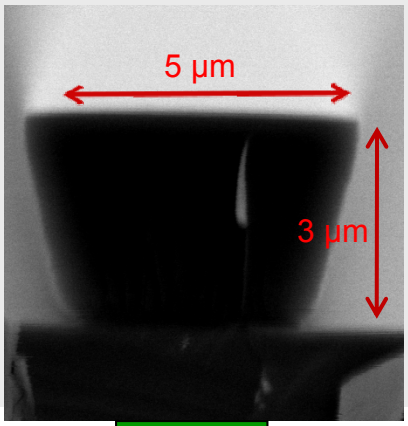
280mj



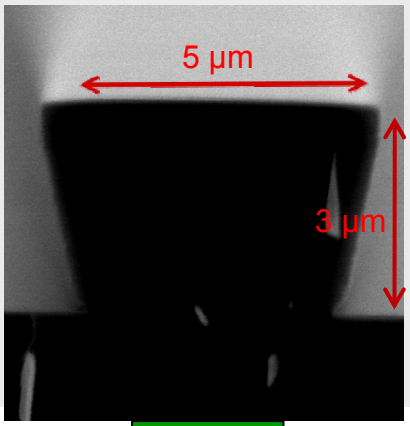
300mj



320mj



340mj



360mj

linewidth control

- Futurrex Negative Lift-Off Photoresist NR9-3000PY
- Linewidth Control: 360mJ/cm² to 280mJ/cm²