

AZ ECI 3007/3012

Tone Positive

Reference http://www.microchemicals.com/products/photoresists/az_eci_3007.html

Spincoat As underlayer HMDS (as primer) or AZ BARLi -II (bottom anti reflection coating) can be used.

HMDS: 3000rpm, bake on hotplate 200°C for 2 minutes, gives a monolayer

BAR: 3000rpm, bake on hotplate 200°C for 1 minute, gives a 200nm thick layer

AZ ECI 3007: 4000rpm 0.7µm, via variation of spin speed approximately 0.5 - 1µm attainable

AZ ECI 3012: 4000rpm 1.2µm, via variation of spin speed approximately 1.0 – 2.2µm attainable

AZ ECI resists baked in oven at 90°C for 15 minutes

Exposure

DMO_ML2 For AZ BARLi -II/AZ ECI 3007: dose 130mJ/cm²

For AZ BARLi -II/AZ ECI 3012: dose 100mJ/cm²

For HMDS/AZ ECI 3007: dose 180mJ/cm²

For HMDS/AZ ECI 3012: dose 180mJ/cm²

Above mentioned values are approximations. Dose slightly depends on laser and quality. Values are found for 405nm wavelength.

HBG_uMLA For HMDS/AZ ECI 3007: dose 240mJ/cm² (pneumatic focussing, defoc -4)

For HMDS/AZ ECI 3007: dose 255mJ/cm² (optical focussing, defoc +4)

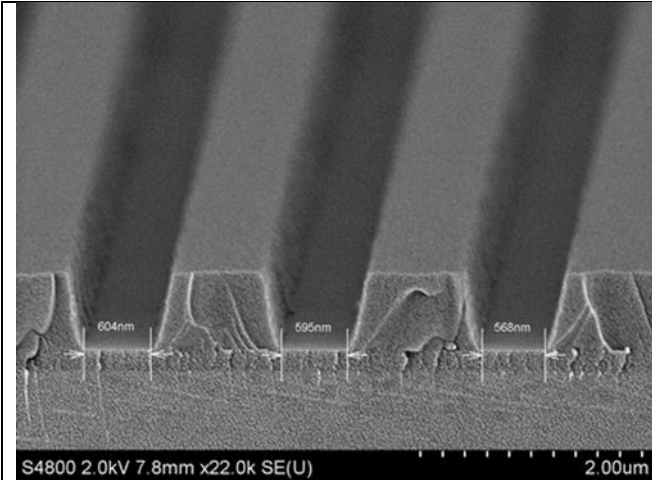
Development MF321 for 45s (3007) or for 60s (3012)

Rinse water

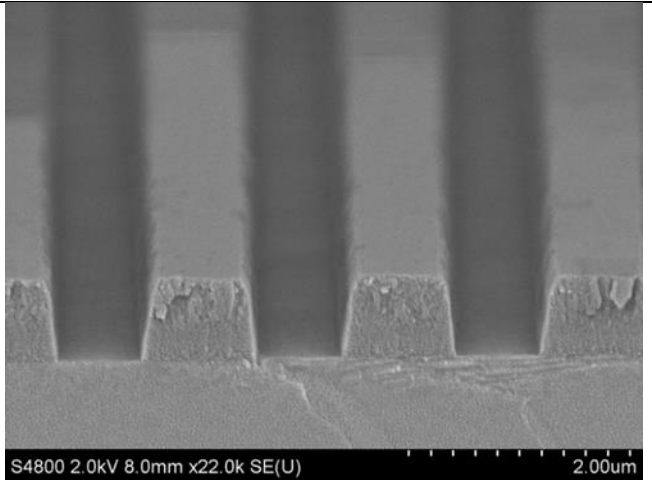
Etching AZ BARLi-II in F2: 20sccm O₂, 40W, lowest pressure, 4 minutes (incl. 10% overetch).

For high resolution and/or smoother sidewalls AZ BARLi –II is needed in stead of HMDS.

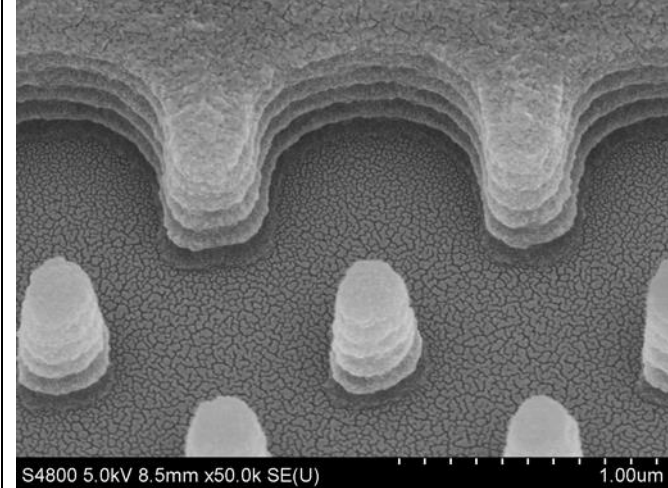
0.6 and 1µm lines and spaces can be created in AZ BARLi-II/AZ ECI 3007:



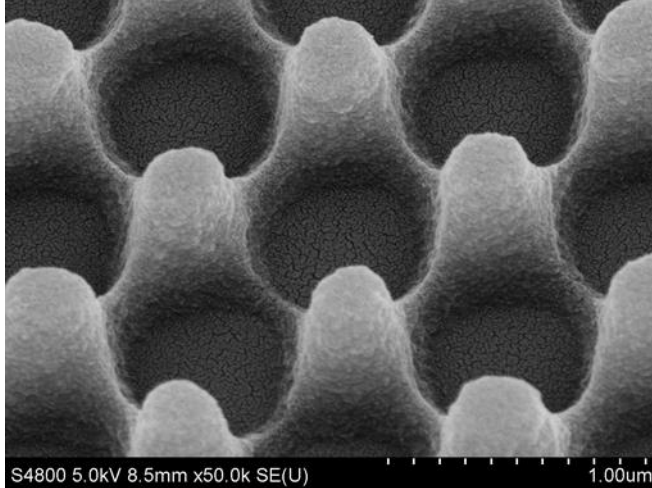
After development



After O2 etch



Without BARLi-II



With BARLi-II