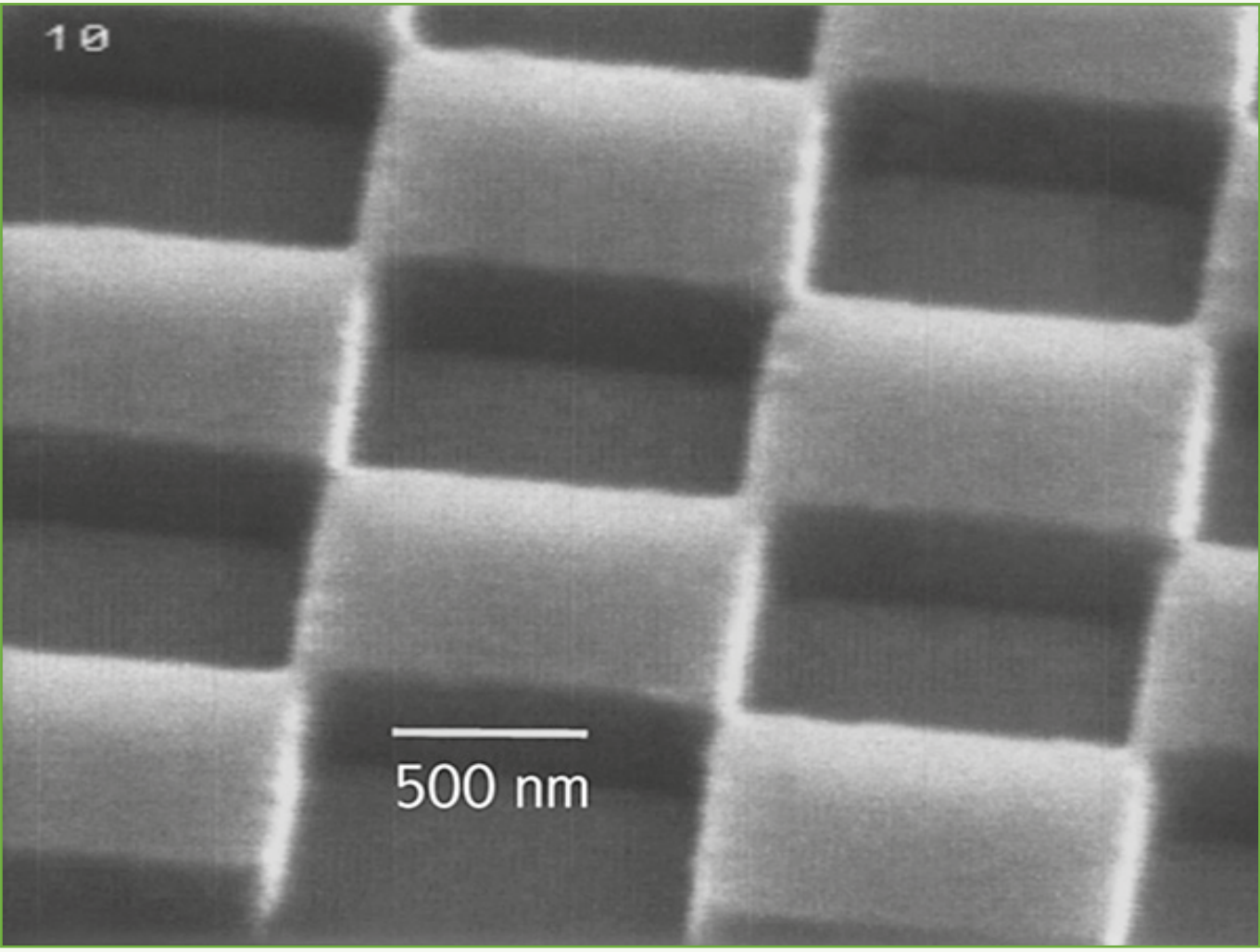


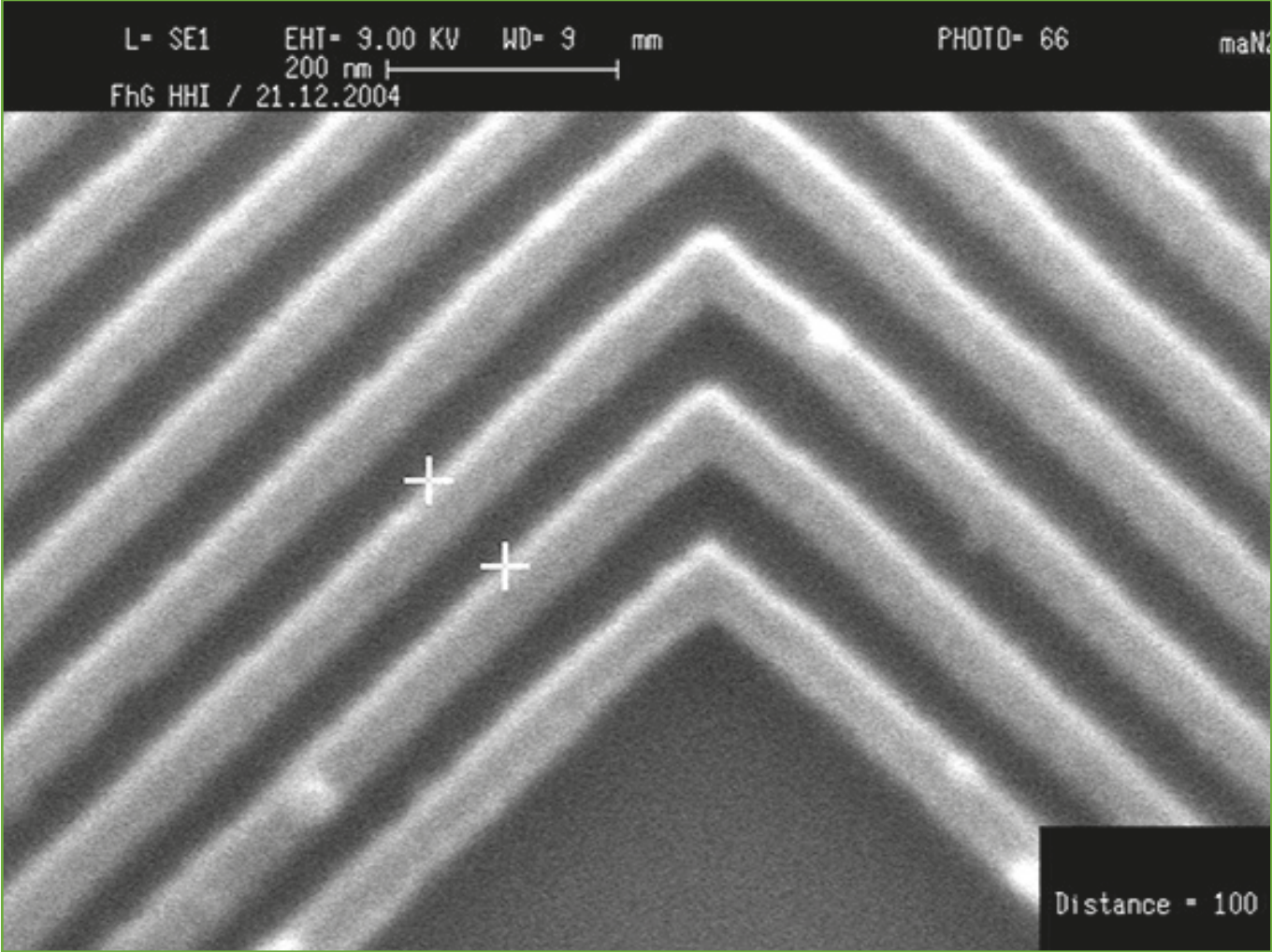
ma-N 2400 — Negative Tone Photoresist Series

E-Beam and Deep UV sensitive

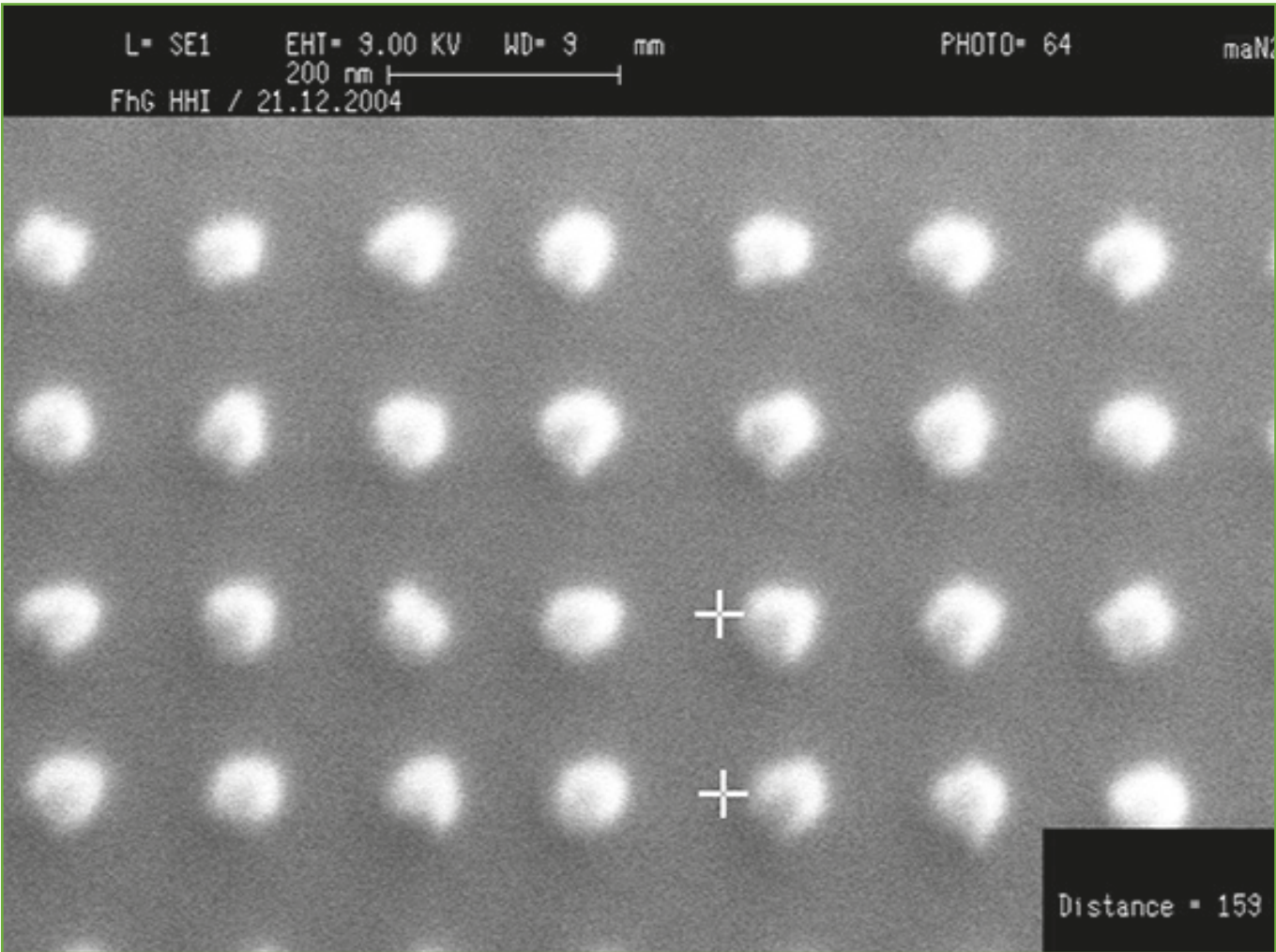
E-Beam



Chess pattern, 300 nm thickness, e-beam

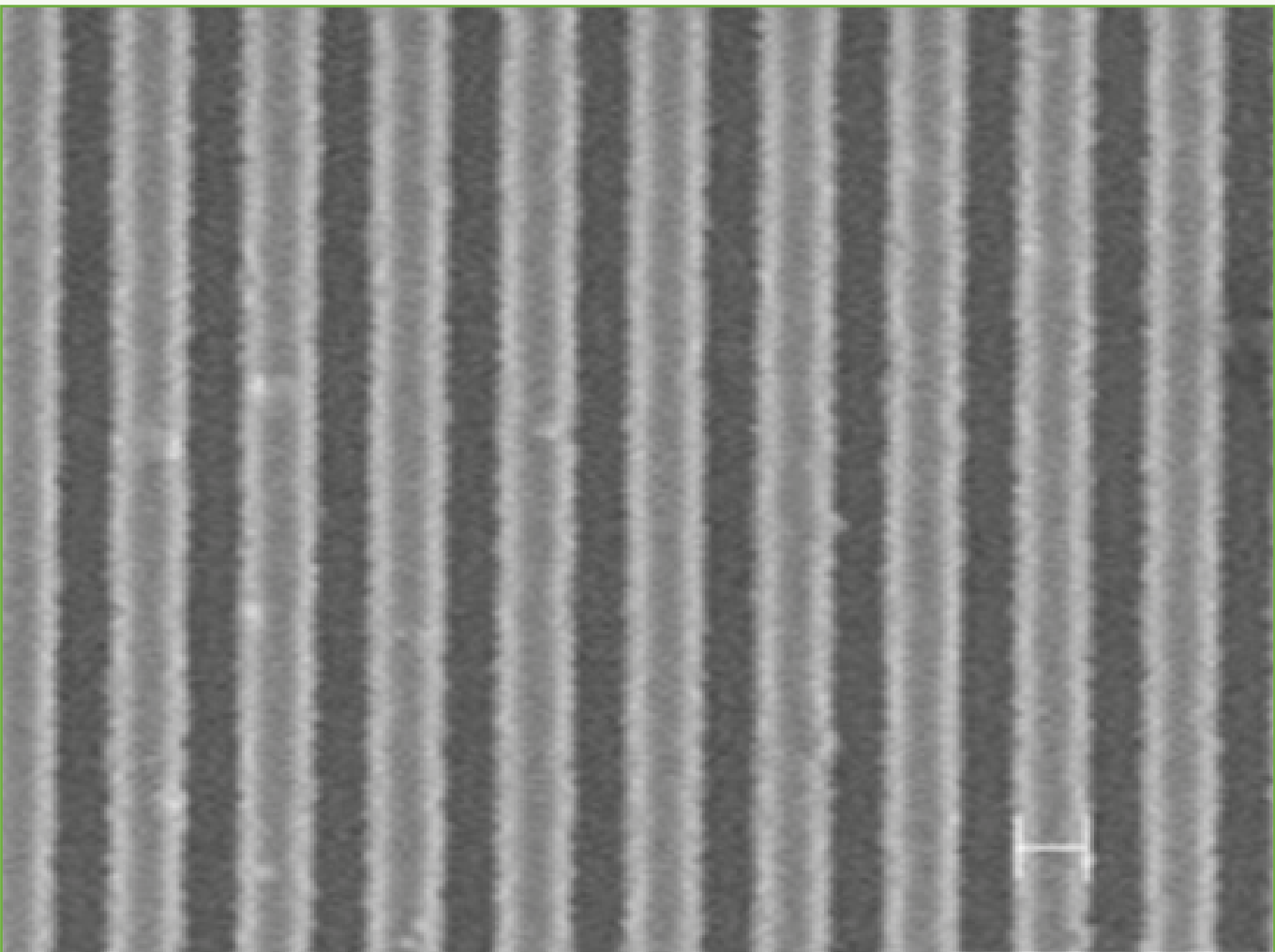


50 nm L&S, 100 nm thickness, e-beam

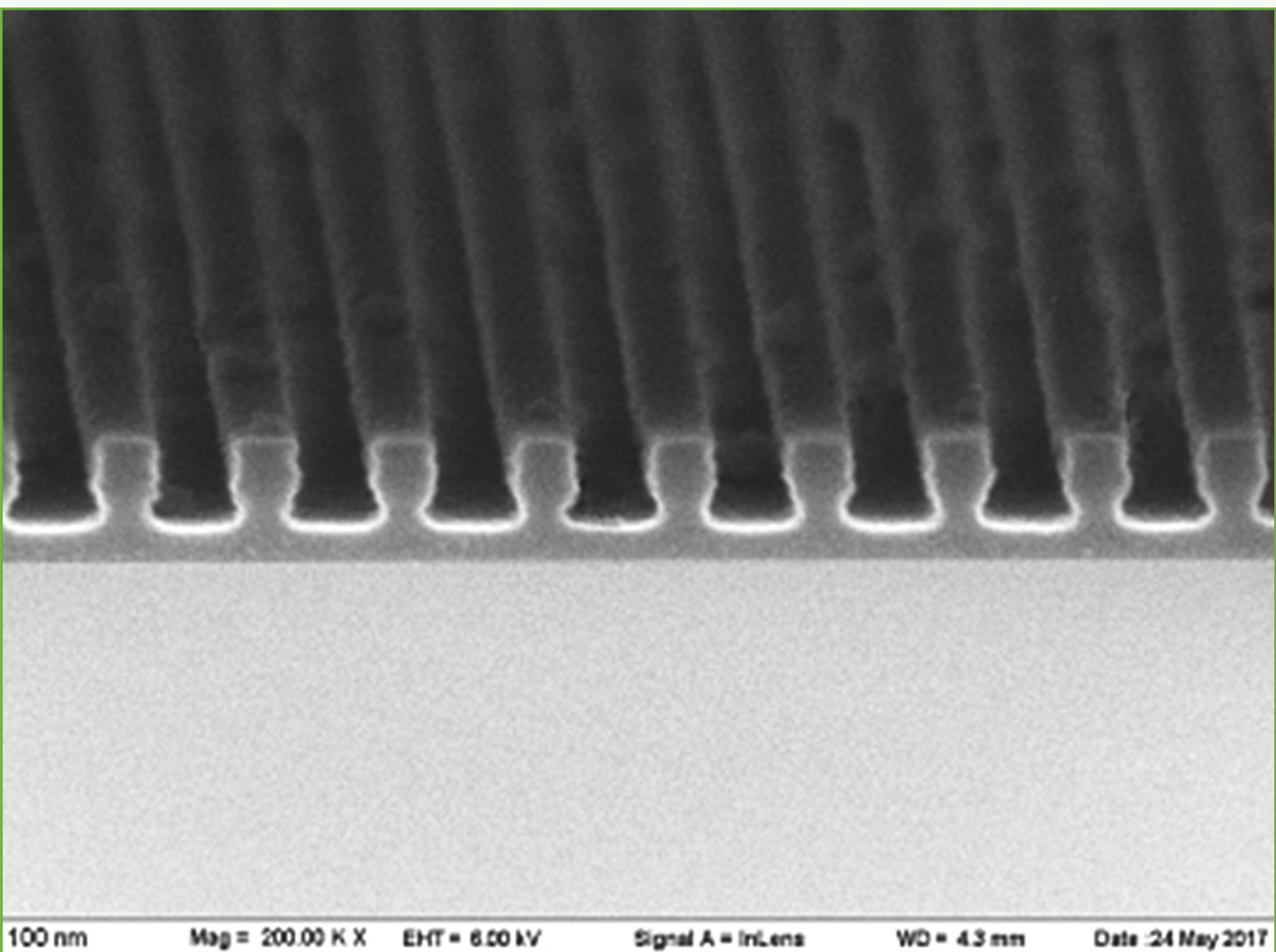


50 nm dots, 100 nm thickness, e-beam

Deep UV



200 nm period patterns, 100 nm thickness, Deep UV @ 266 nm



94 nm CD, 100 nm thickness, DeepUV@266 nm

Pictures by courtesy of IPHT/ Jena & FhG-HHI/ Berlin for e-beam and of EULITHA/ Zurich for Deep UV

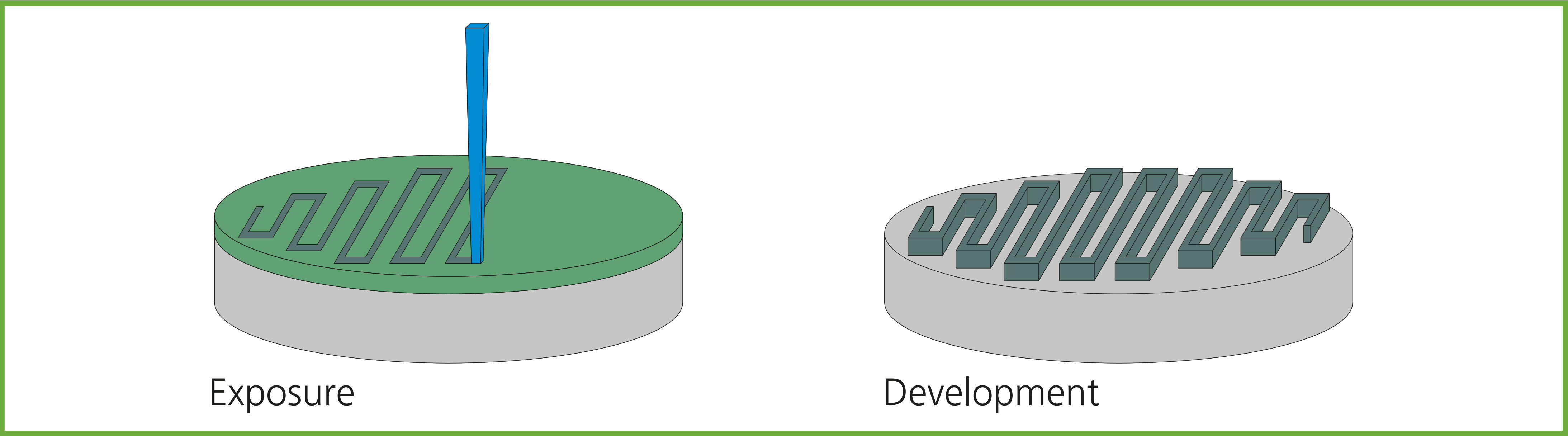
Unique features

- High wet and dry etch resistance
- Good thermal stability
- Excellent pattern resolution - down to 30 nm
- Aqueous alkaline development
- Easy to remove
- Resists available in a variety of viscosities

Applications

- Manufacturing of semiconductor devices
- Use in micro- and nanoelectronics
- Mask for etching, e.g. Si, SiO₂, Si₃N₄ or metals
- Mask for ion implantation
- Stamp fabrication for NIL

Process flow



Technical data

Resist			ma-N 2401	ma-N 2403	ma-N 2405	ma-N 2410
Film thickness		nm	100	300	500	1000
Spin coating		rpm; s	3000; 30			
Exposure dose - E-beam 20 keV		μC cm ⁻²	120 - 200	170 - 235	170 - 250	- (D ₀ = 80) ¹
Exposure dose - E-beam 50 keV		μC cm ⁻²	120 - 260	120 - 300	150 - 350	-
Exposure dose - Deep UV		mJ cm ⁻²	20	260	330	420
Pattern resolution	E-beam	nm	< 50	50	100	150
	Deep UV	nm	-	200	300	500

¹ clearing dose

