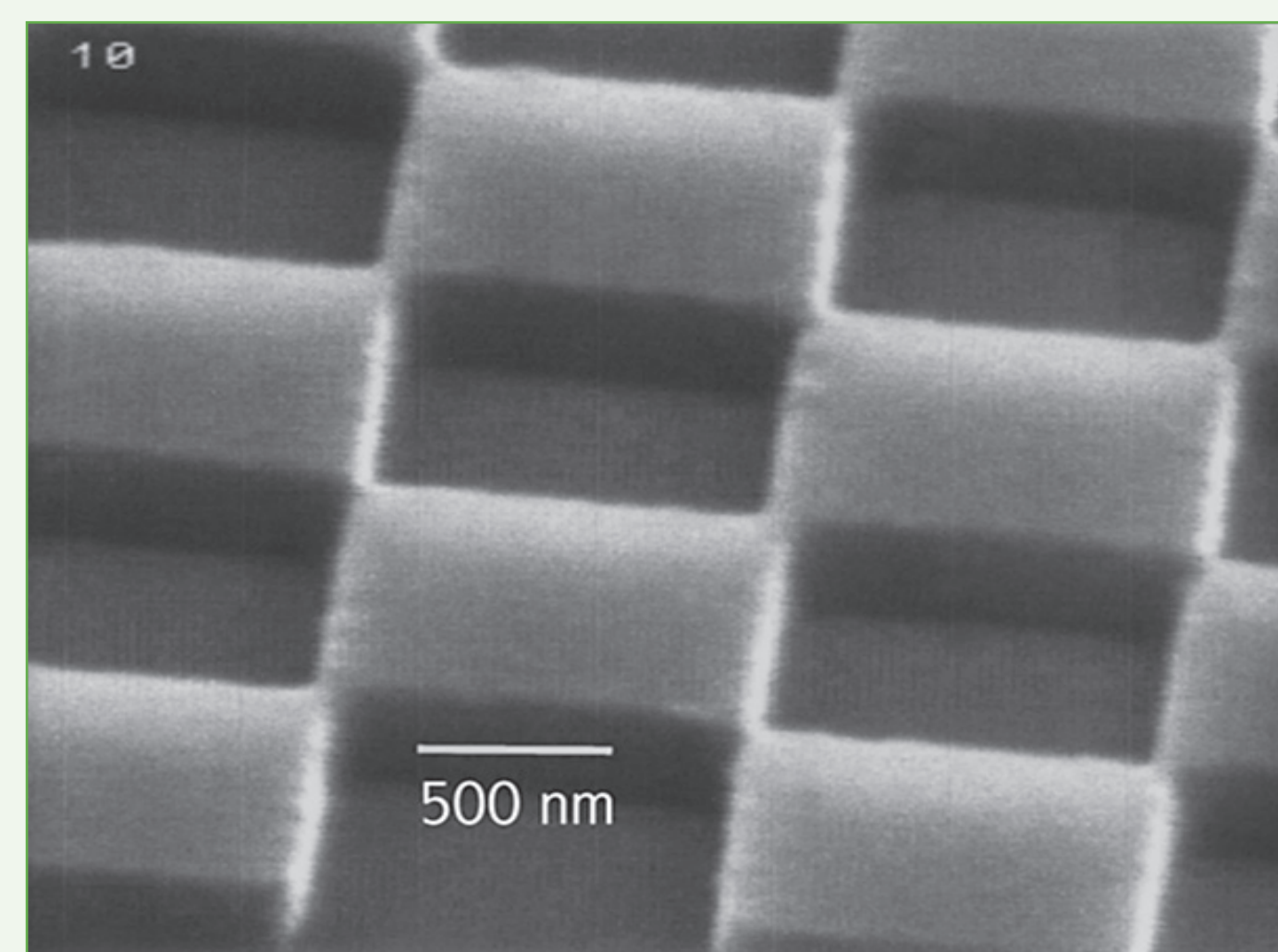
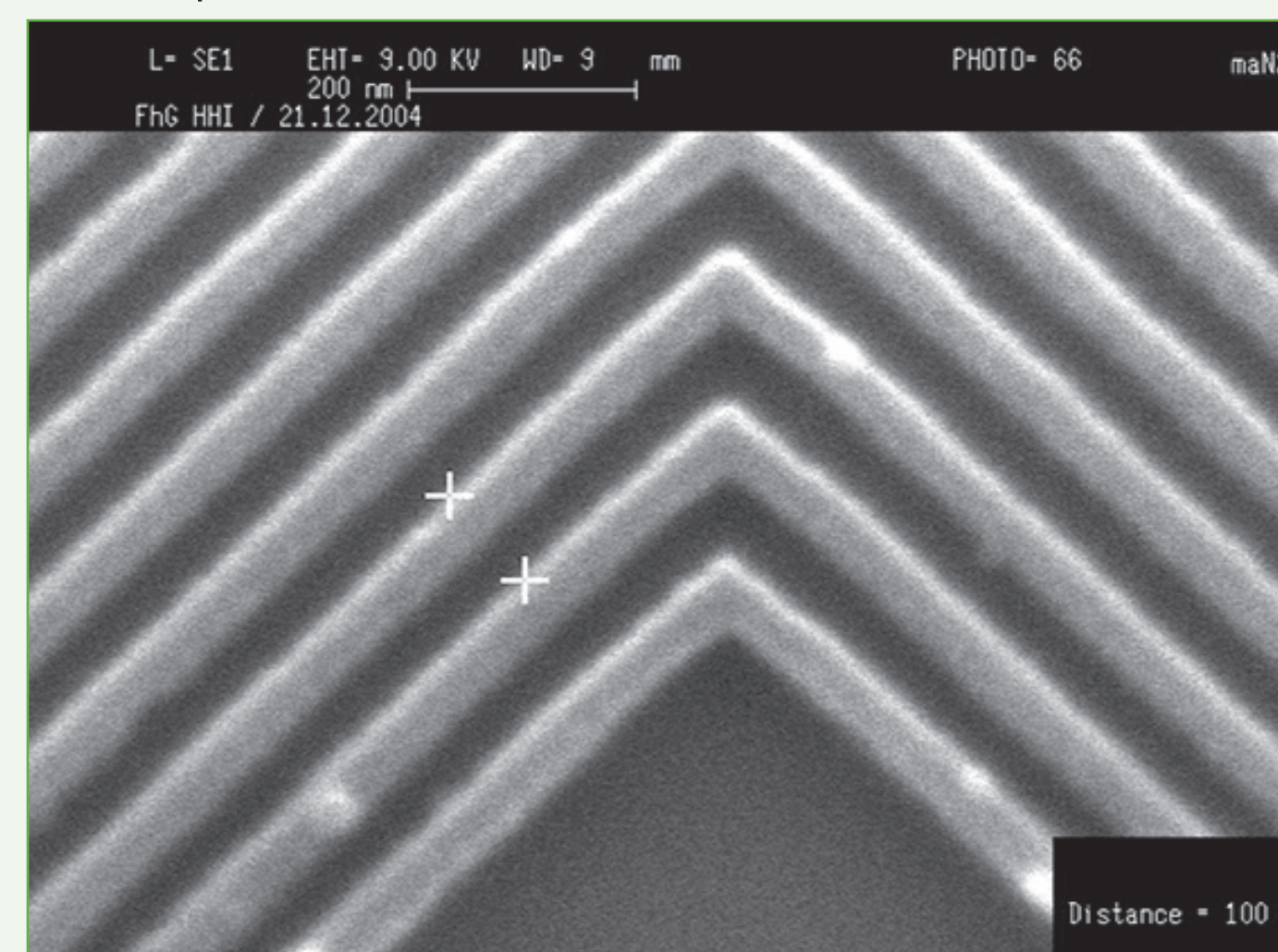


# ma-N 2400 — Negative Tone Photoresist Series

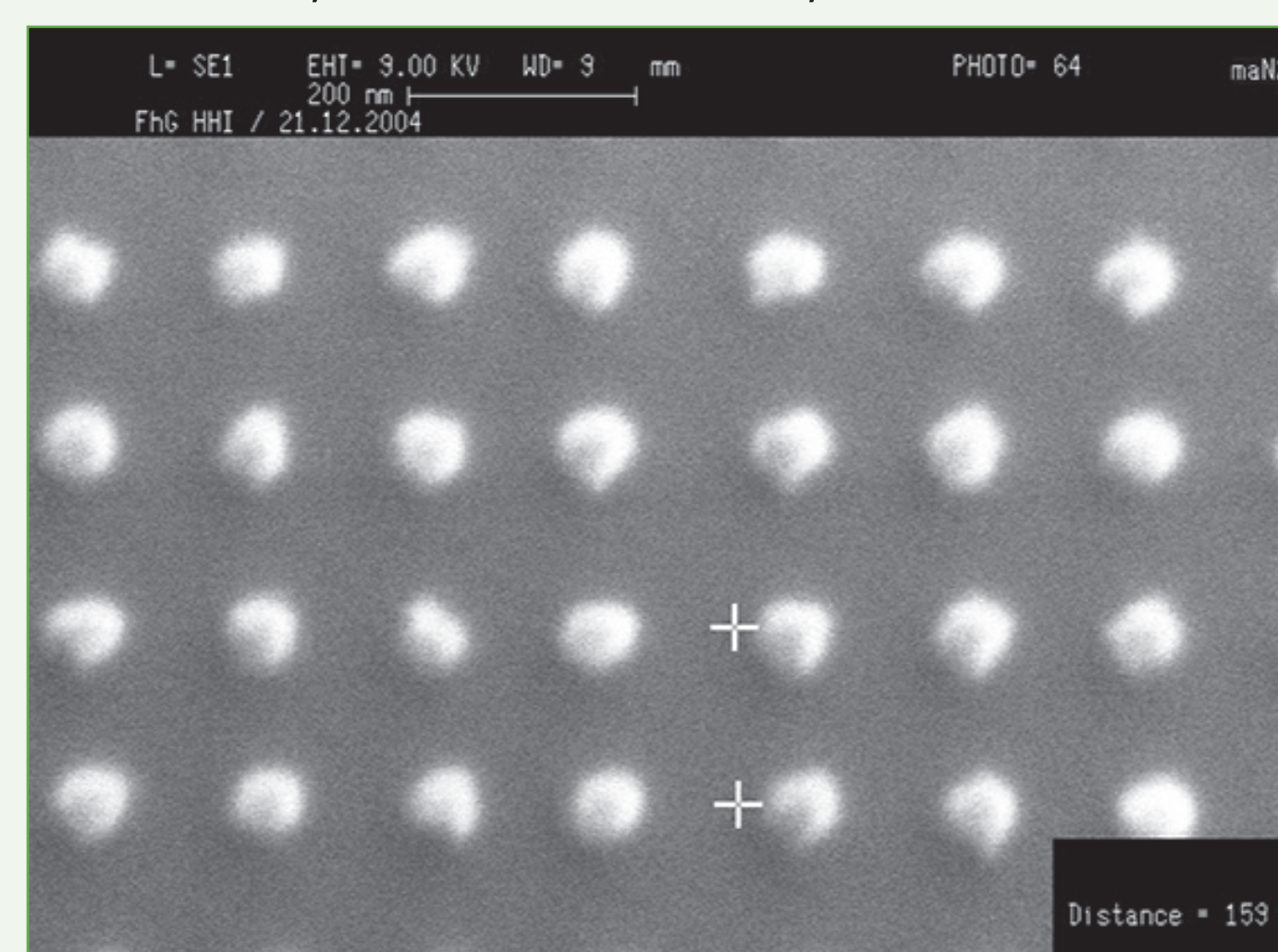
## E-Beam and Deep UV sensitive



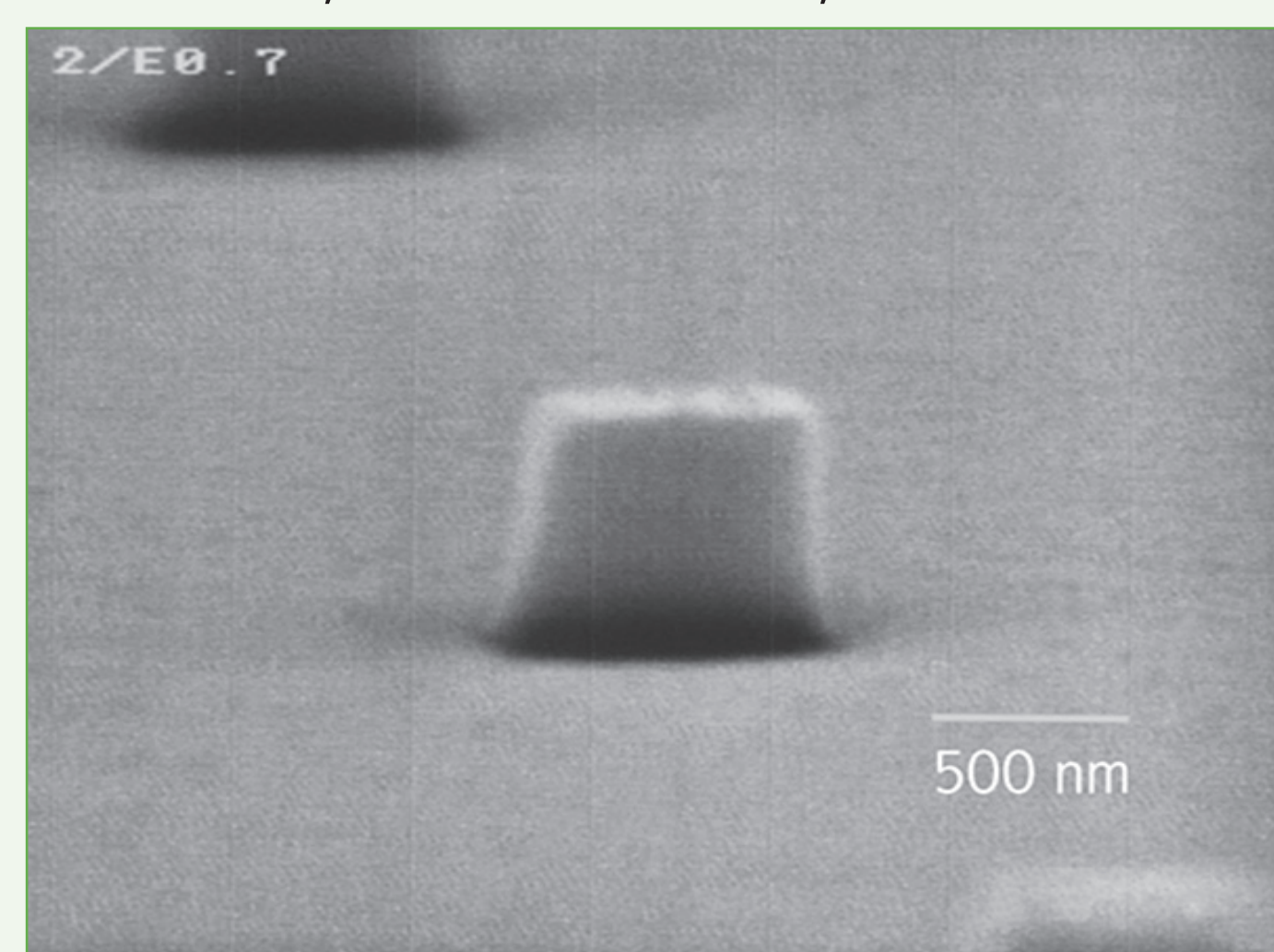
Chess pattern, 300 nm thickness, e-beam



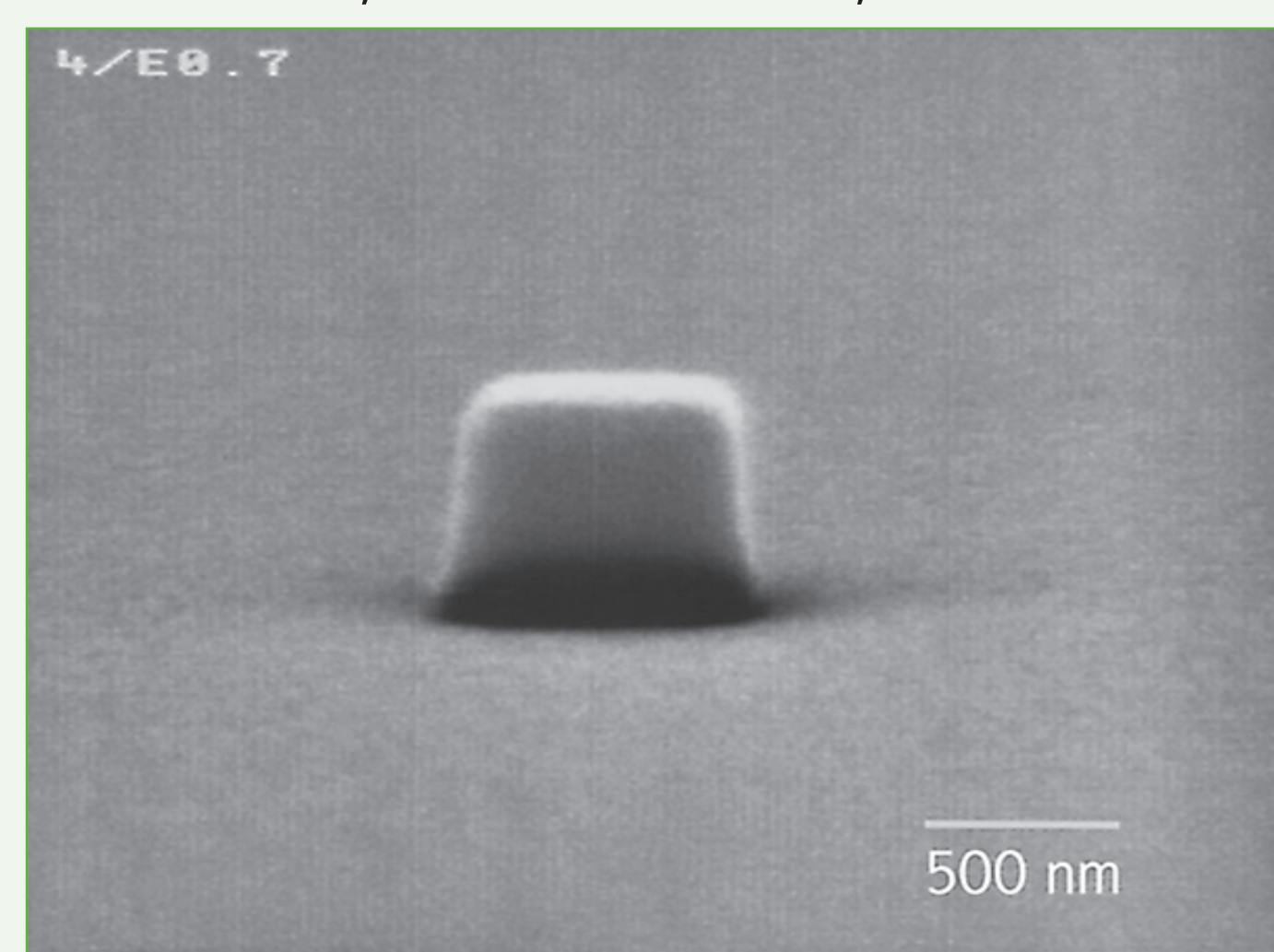
50 nm L&S, 100 nm thickness, e-beam



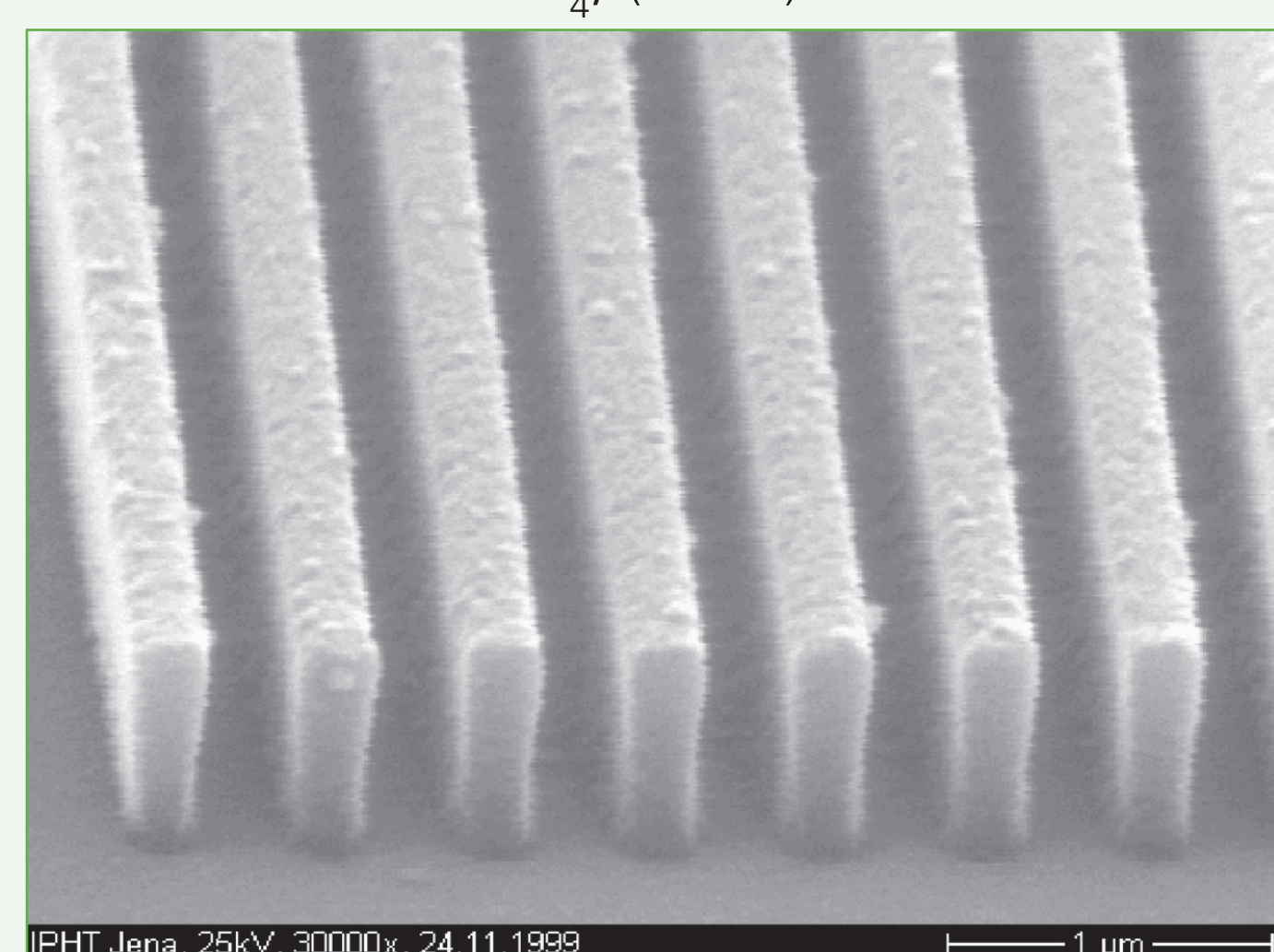
50 nm dots, 100 nm thickness, e-beam



800 nm dots, 750 nm thickness, e-beam



Dot after RIE with CF<sub>4</sub>, (60 W)



250 nm L&S, 800 nm thickness, e-beam

(Courtesy of FHG - HHI / IPHT Jena)  
 15.06.18

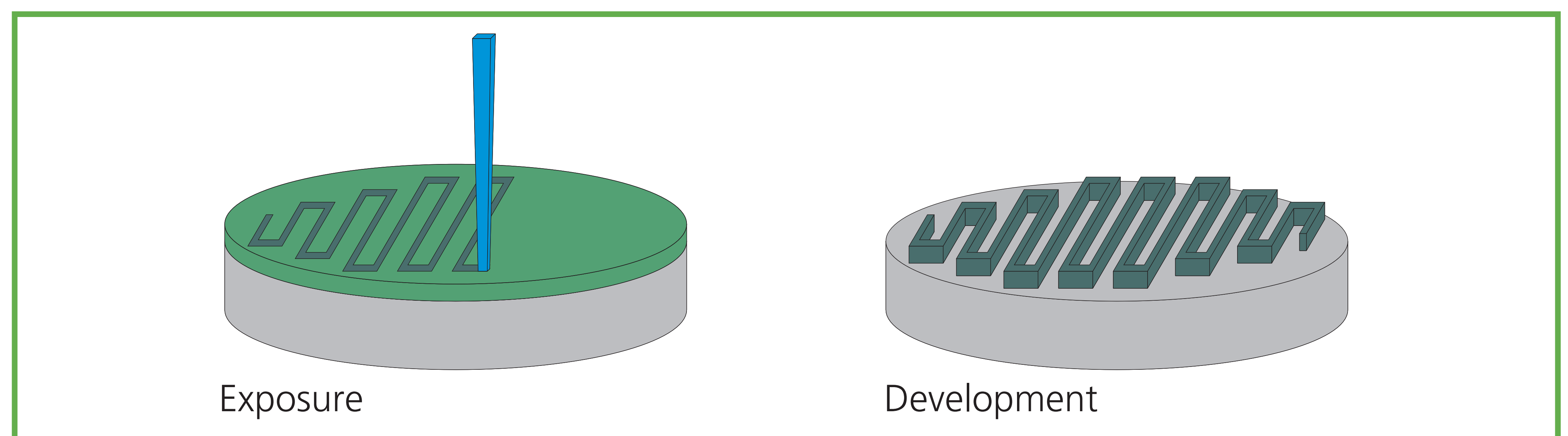
### Unique features

- 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, SiO<sub>2</sub>, Si<sub>3</sub>N<sub>4</sub> 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 <sup>-2</sup>	120 - 200	170 - 235	170 - 250	- (D <sub>0</sub> = 80) <sup>1</sup>
Exposure dose - E-beam 50 keV		μC cm <sup>-2</sup>	120 - 260	120 - 300	150 - 350	-
Exposure dose - Deep UV		mJ cm <sup>-2</sup>	-	260	330	420
Pattern resolution	E-beam	nm	< 50	50	100	150
	Deep UV	nm	-	200	300	500

<sup>1</sup> clearing dose

