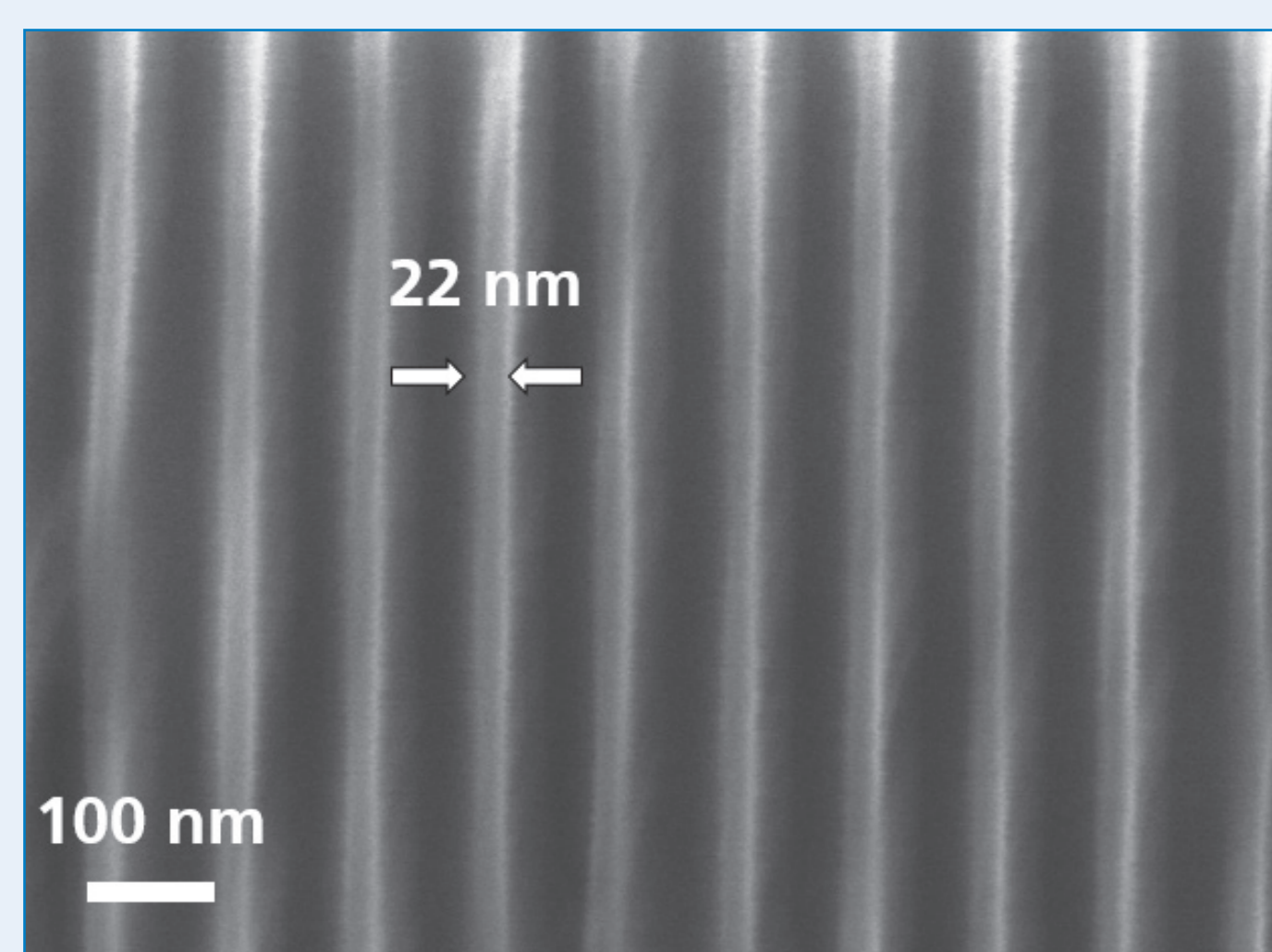
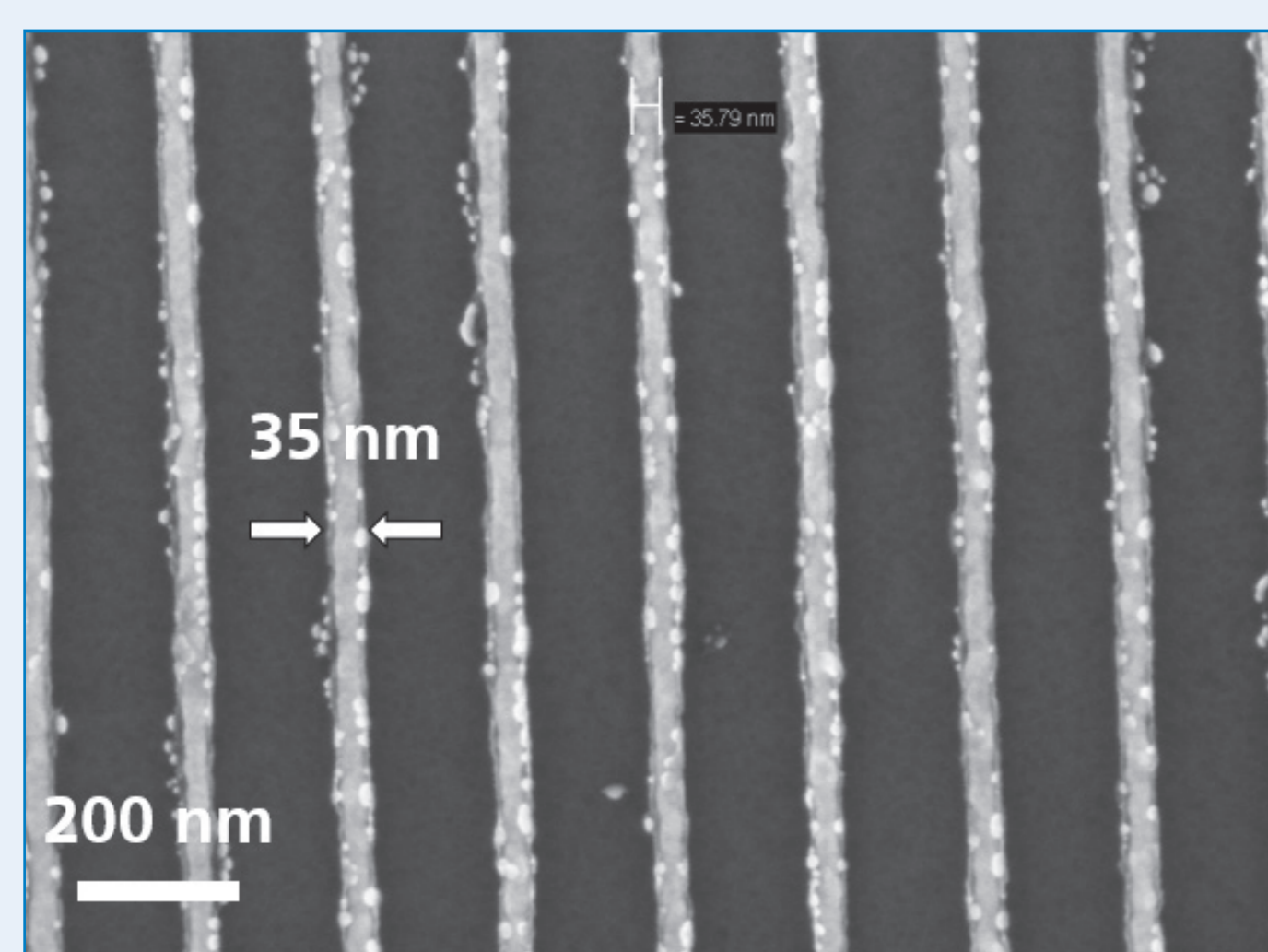


mr-PosEBR – Positive Tone Electron-Beam Resist Series

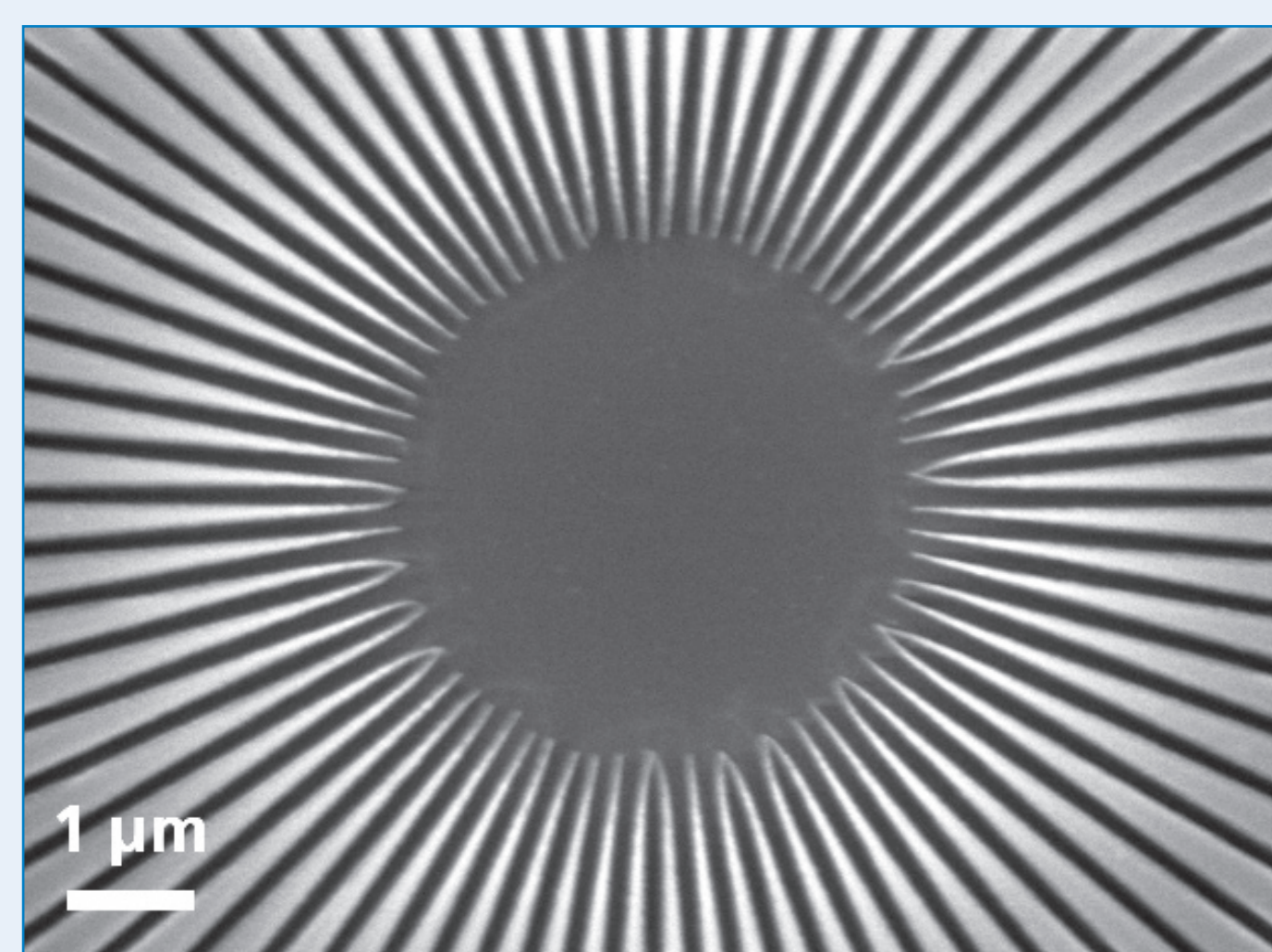
Resists for high resolution electron-beam lithography



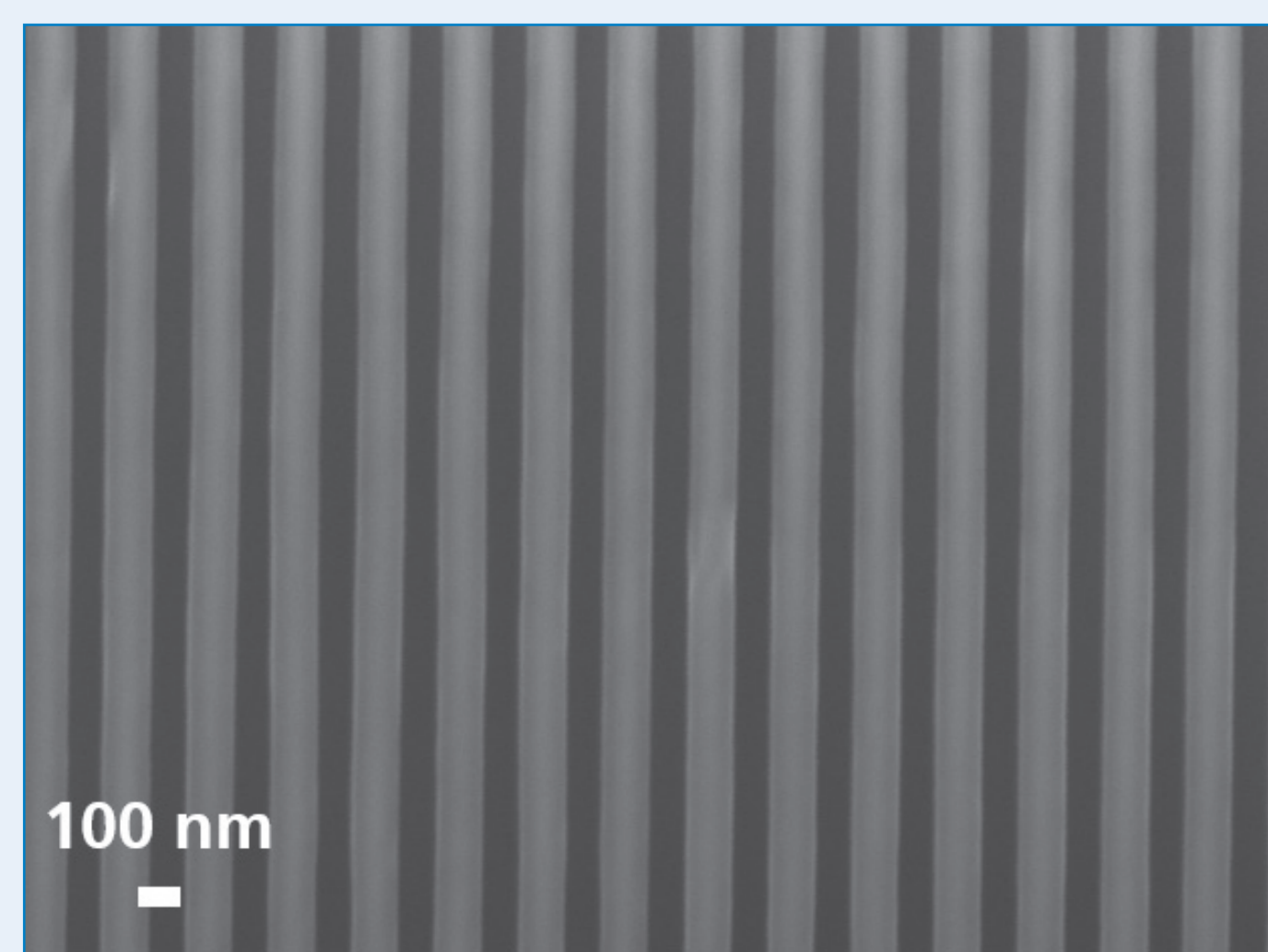
Resist grating pattern, period 100 nm¹



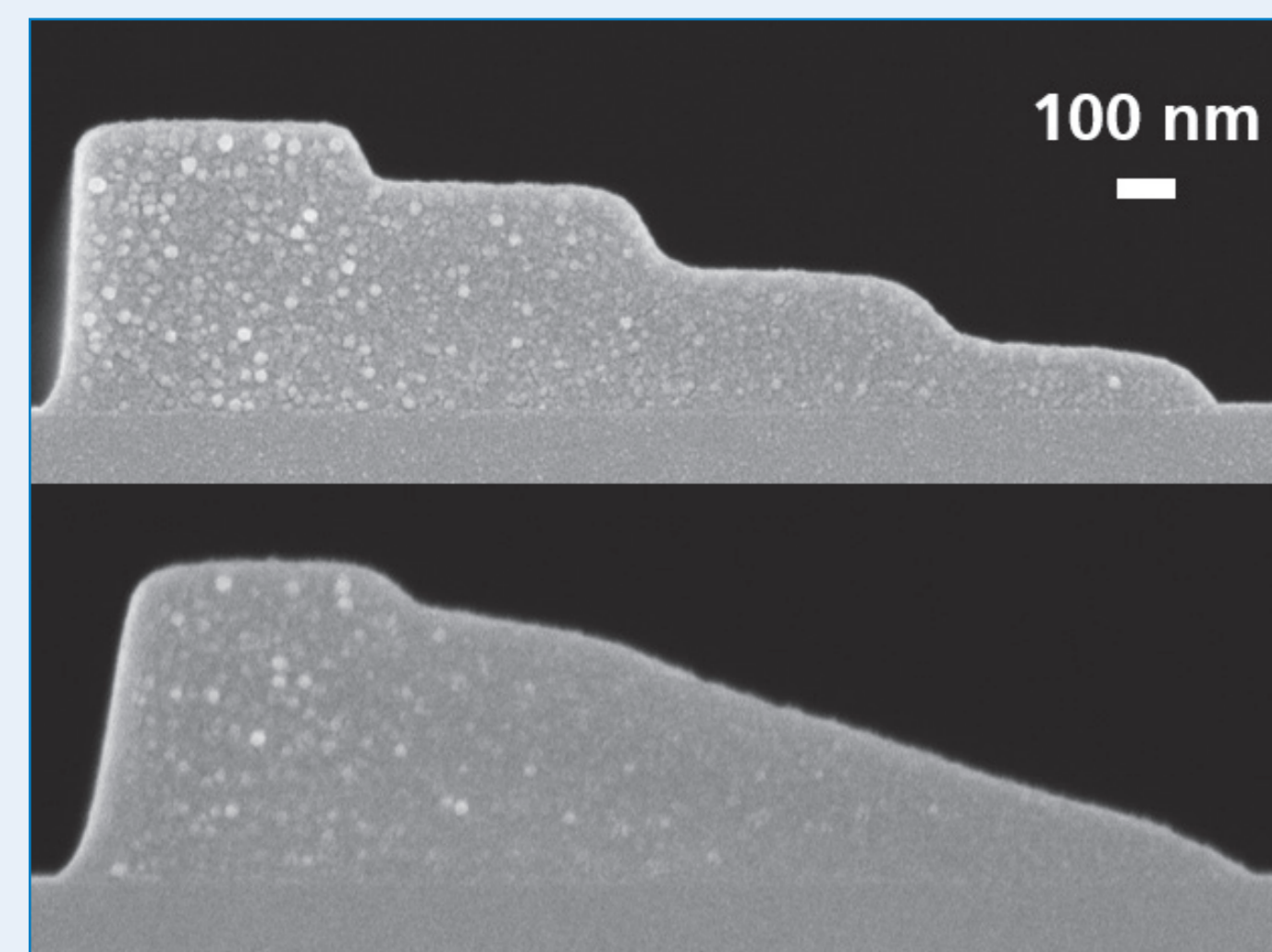
Ti/Au lines via lift-off²



Siemens star structure, etched into Si via RIE (SF₆/CF₄)¹



L&S pattern, period 200 nm, etched into Si via RIE (SF₆/CF₄)¹

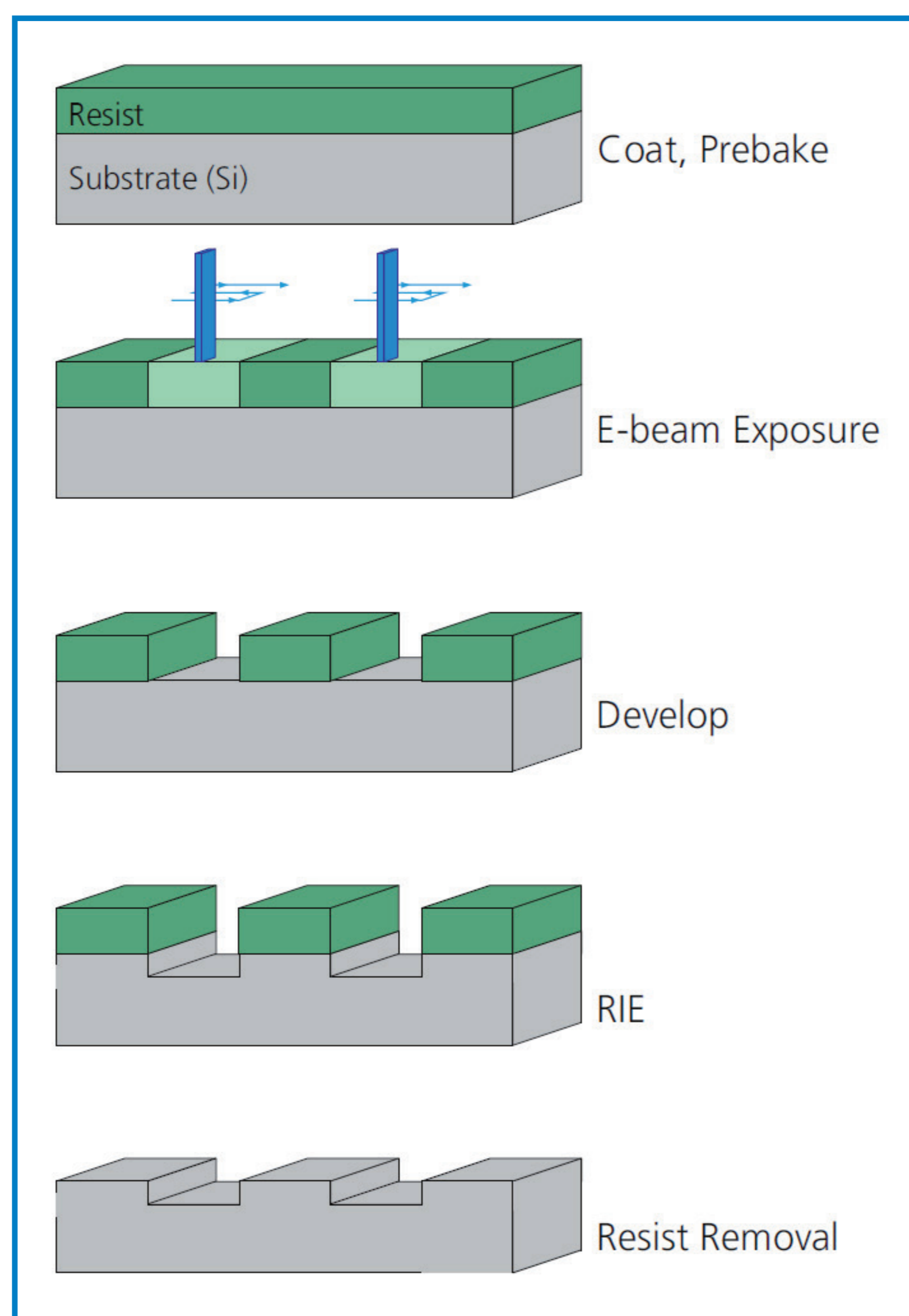


multistep grayscale pattern before and after thermal reflow²

Unique features

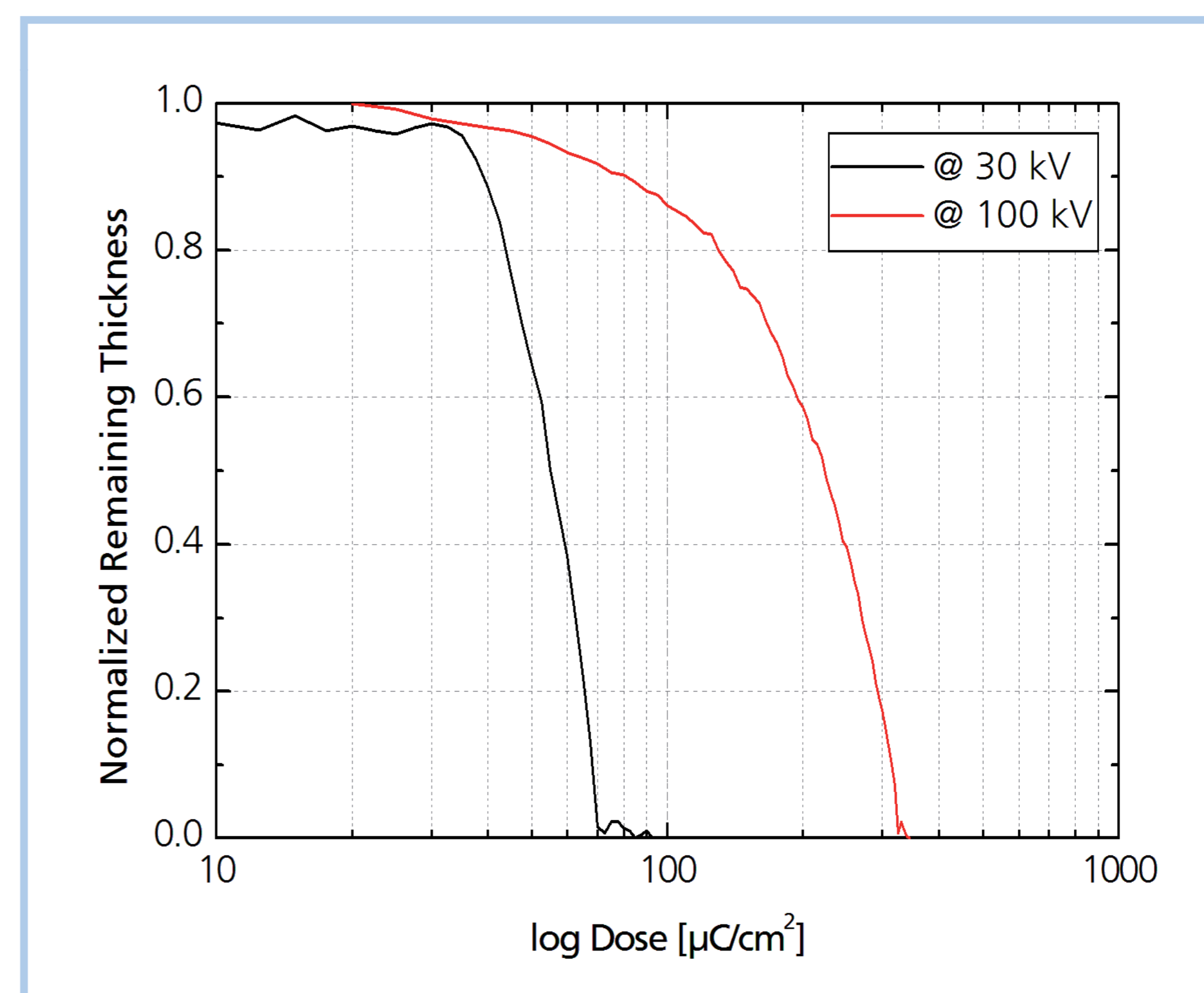
- Highly sensitive
- High resolution capability
- Generation of sub 50 nm patterns
- Excellent dry etch stability
- Good pattern transfer fidelity
- Development in organic solvents
- Safer solvent anisole

Process flow

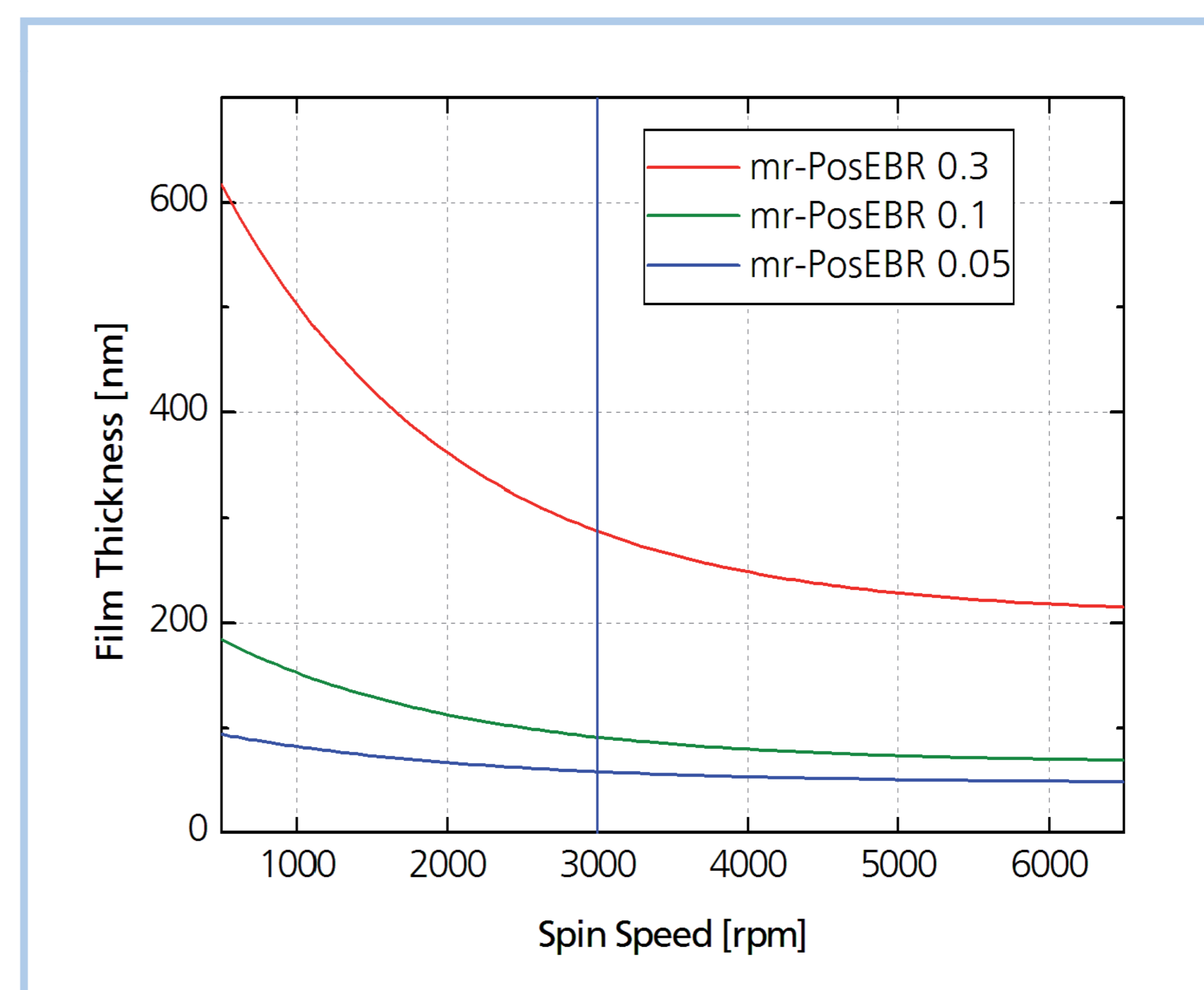


Applications

- Use in micro- and nanoelectronics
- Manufacture of semiconductor devices
- Etch mask for pattern transfer, e.g. into Si, SiO₂, Si₃N₄ or metals
- Mask for lift-off patterning
- Suitable for 3D surface patterning



Contrast curves of mr-PosEBR at different electron energies (film thickness 300 nm).



Spin curves of mr-PosEBR solutions.

Technical data

Resist	mr-PosEBR 0.05	mr-PosEBR 0.1	mr-PosEBR 0.3
Film thickness (@ 3000 rpm) [nm]	50	100	300
Exposure dose			
30 keV [μC cm ⁻²]	75 – 200	75 – 200	75 – 200
100 keV [μC cm ⁻²]	340 – 500	340 – 500	340 – 500
Dry etch selectivity vs. Si (SF ₆ /CF ₄ process)			~2.5

¹Exposure: RAITH150 Two (30 kV), Courtesy of MPL Erlangen, Germany
²Exposure: Vistec EBPG 5000+ (100 kV), Courtesy of PSI Villigen, Switzerland