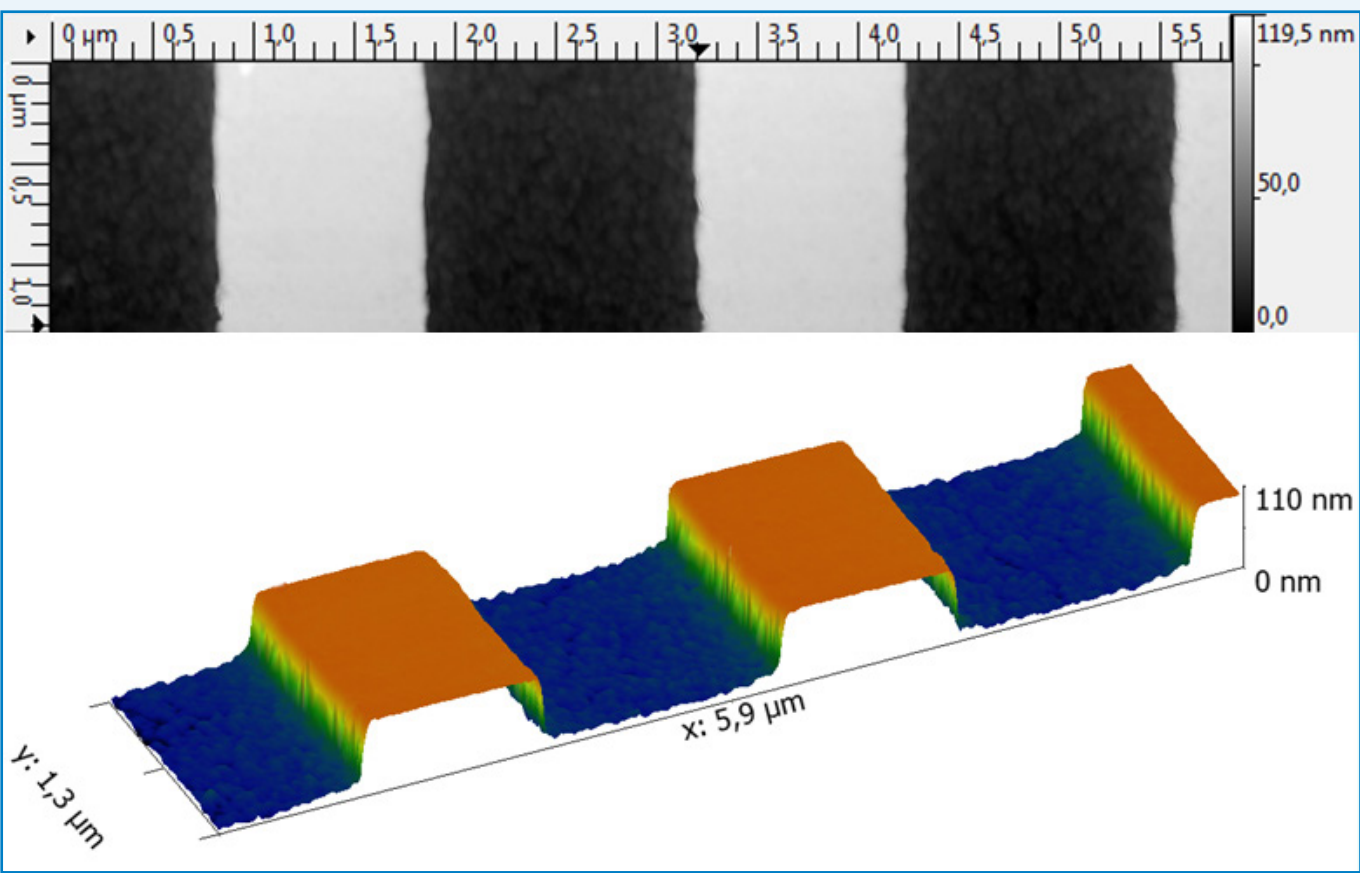
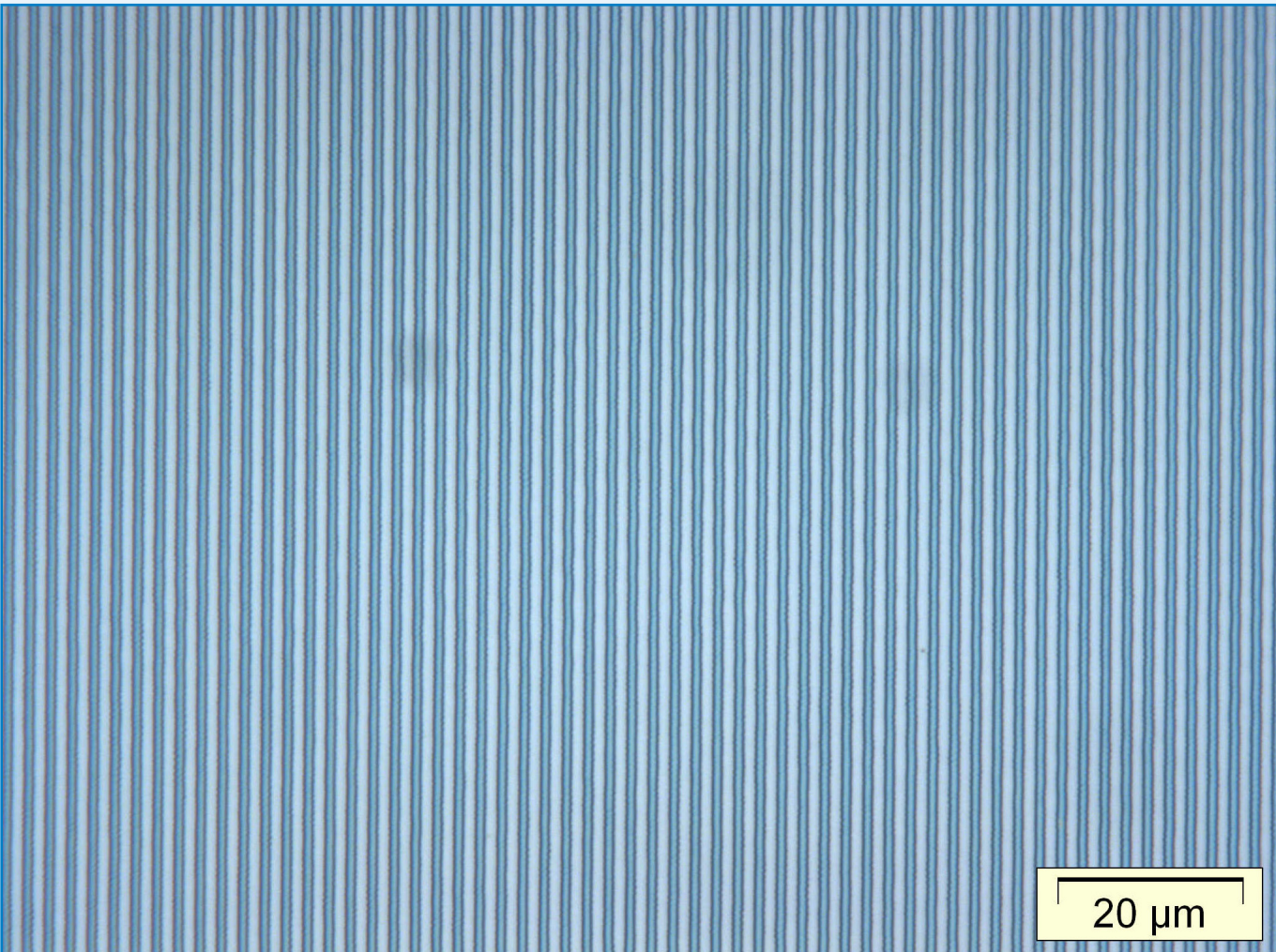


mr-P 1200LIL – Positive Photoresists in Laser Interference Lithography

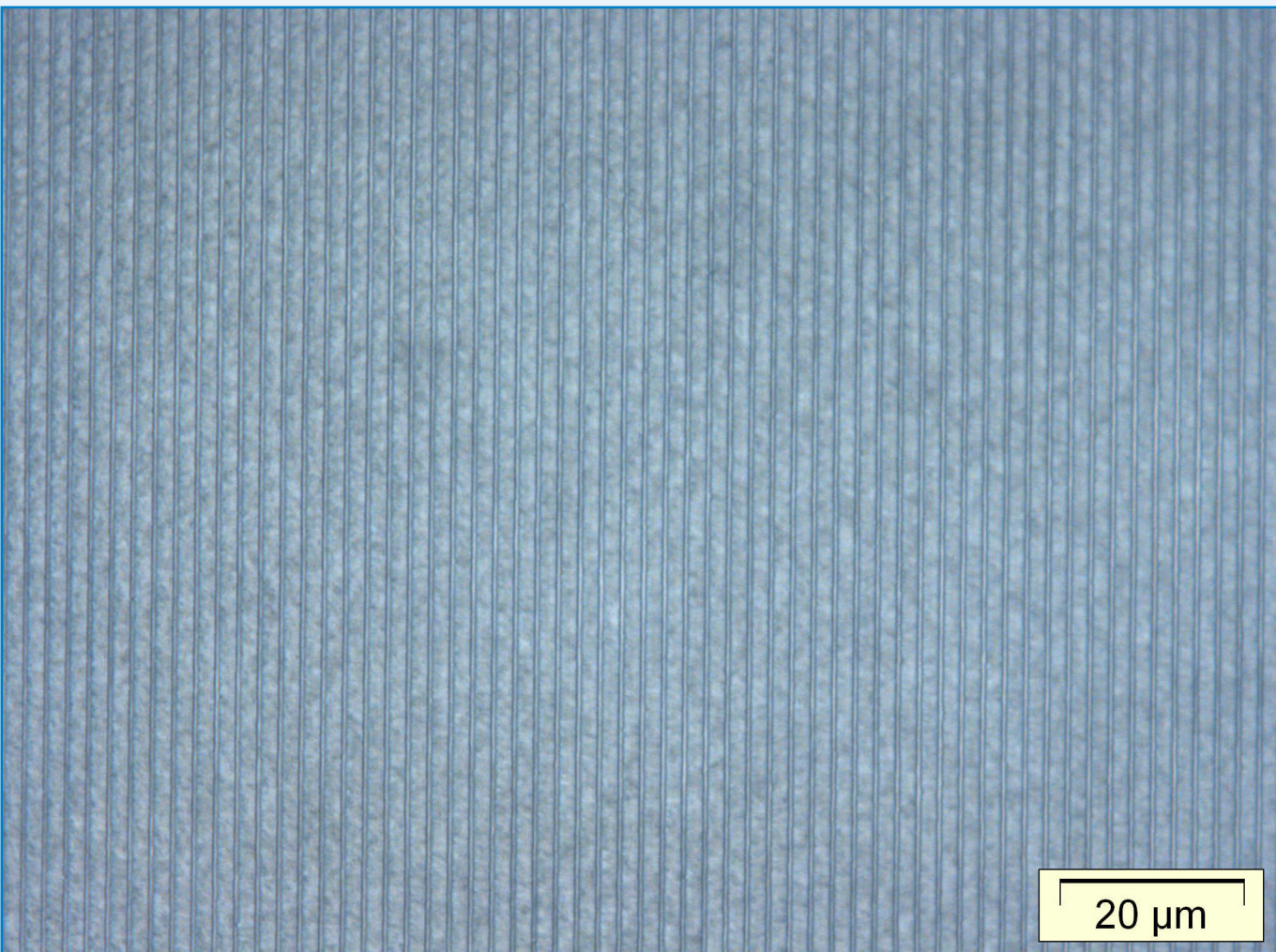
Thin Positive Photoresists in Laser Interference Lithography [λ 405 nm]



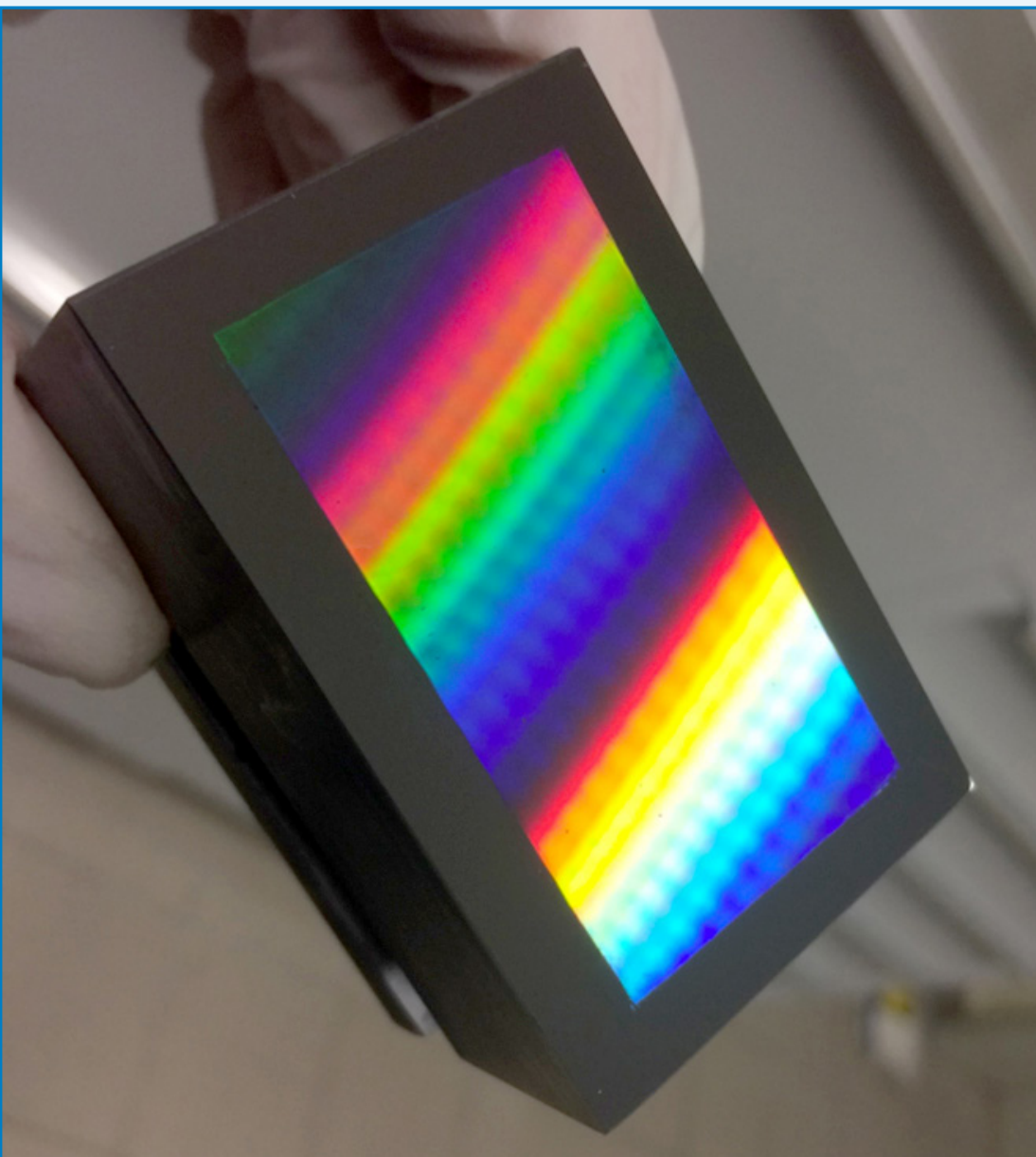
AFN scan of 88 nm thick mr P 1201LIL:
400 lines/ mm, L/ S = 44 : 56
(LIL with 405nm, 17.5 mJ cm⁻²)



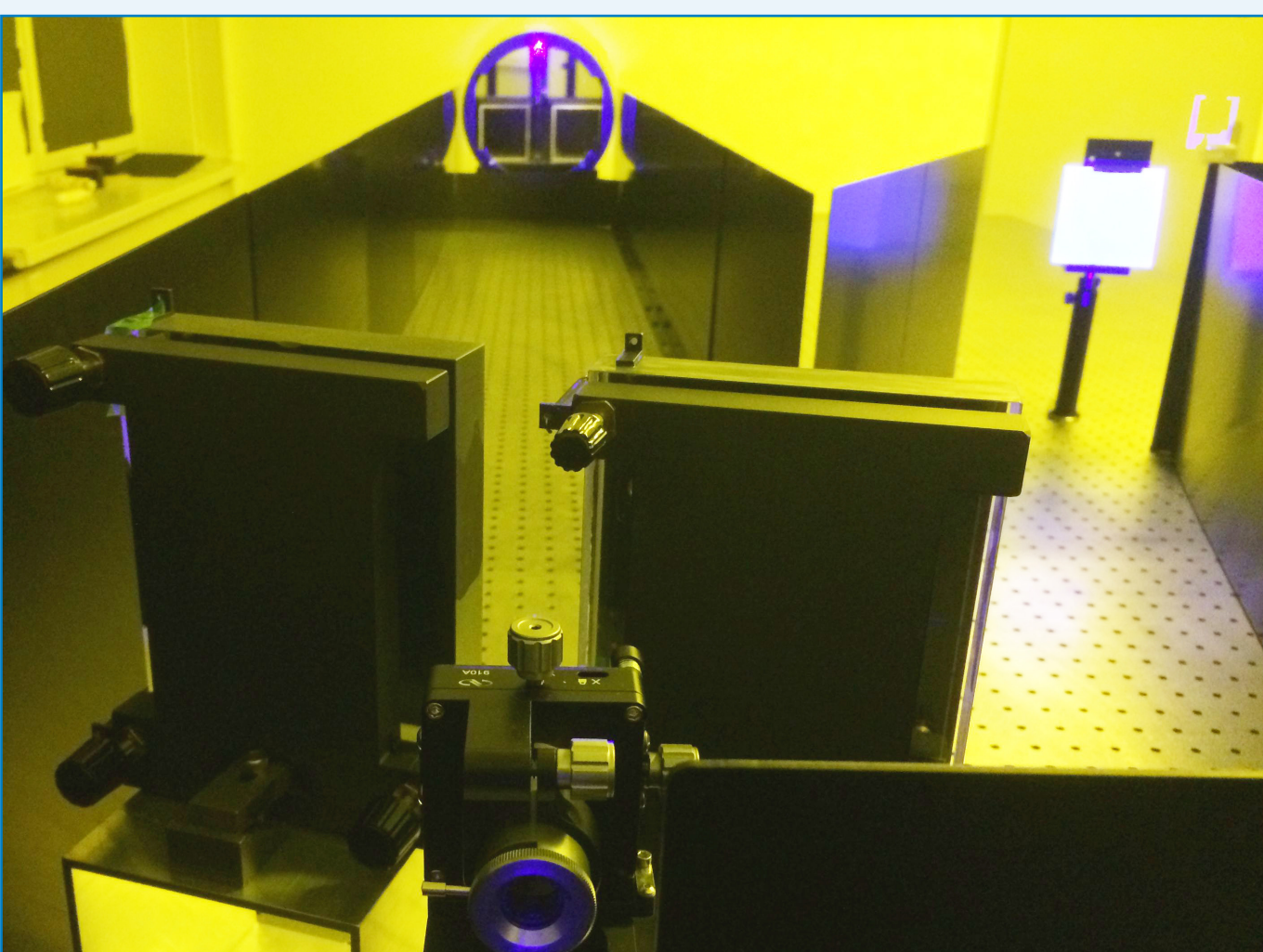
mr-P 1202LIL, 400 lines/ mm



Si pattern after RIE etching, 400 lines/ mm



Diffractive optic: laminar grating (50 x 30 mm)
170 nm thick mr-P 1202LIL, 400 lines/ mm



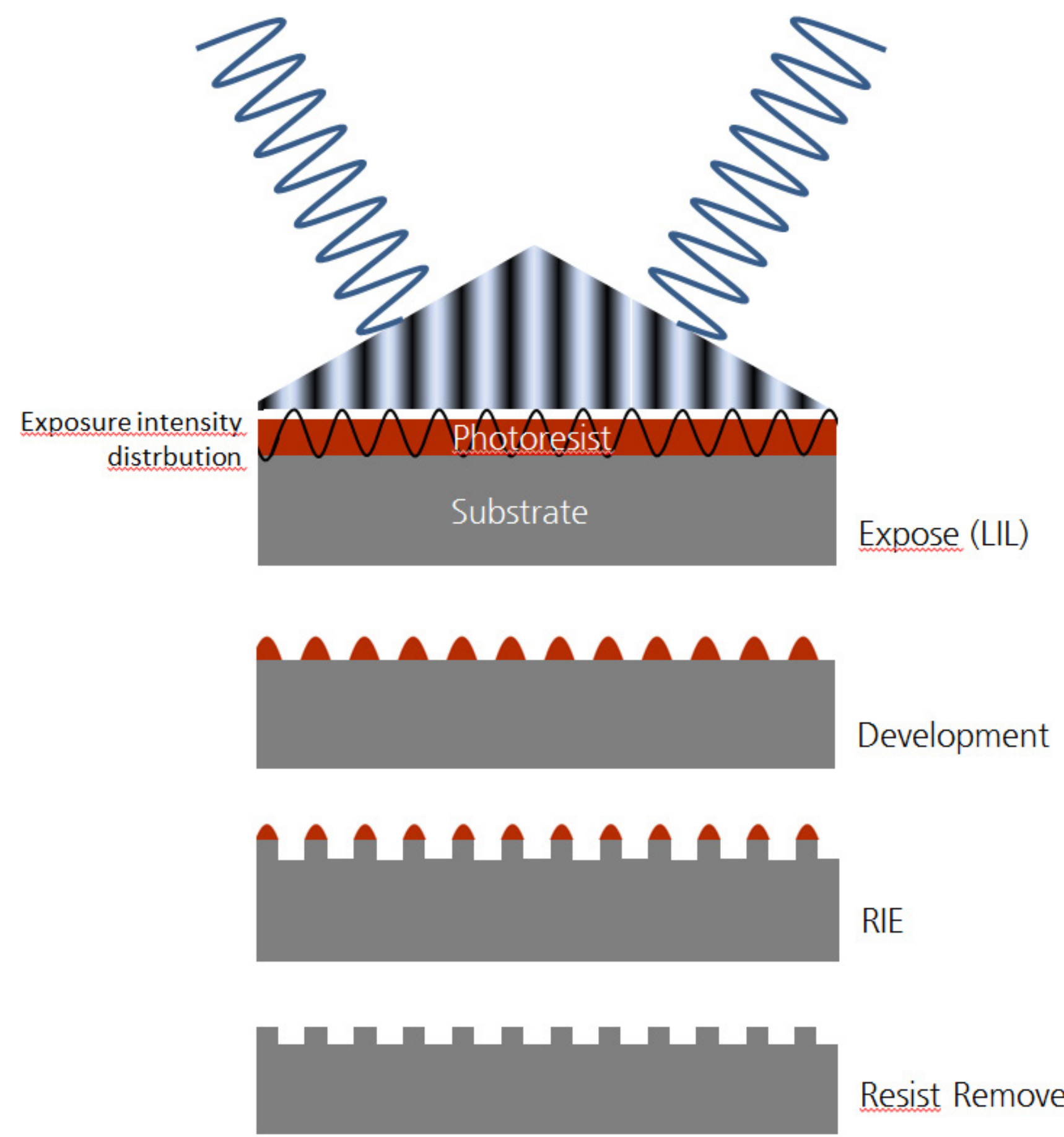
LIL exposure set up
All exposures with 405 nm diode laser

Unique features

mr-P 1200LIL is a series of thin positive tone photoresists for high resolution applications. It is excellently suited for laser interference lithography.

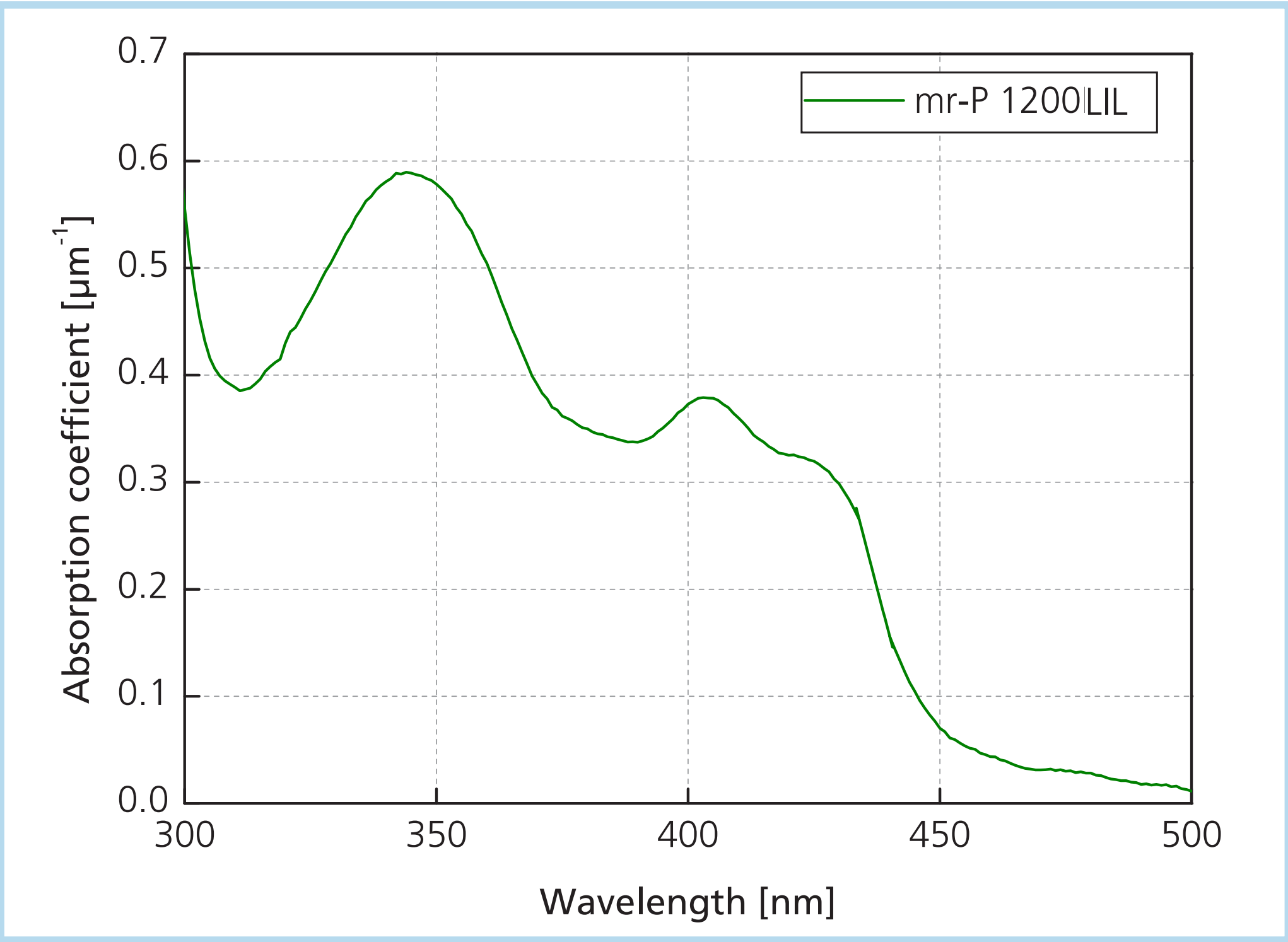
- Steep sidewalls due to high contrast enable high quality etched patterns
- Etch resistant
- Approximately 100...500 nm film thickness

Process flow



Technical data

Resist	mr-P 1201LIL	mr-P 1202LIL
Film thickness [nm] @ 3000rpm	100	200
Spectral sensitivity	320...460 nm	

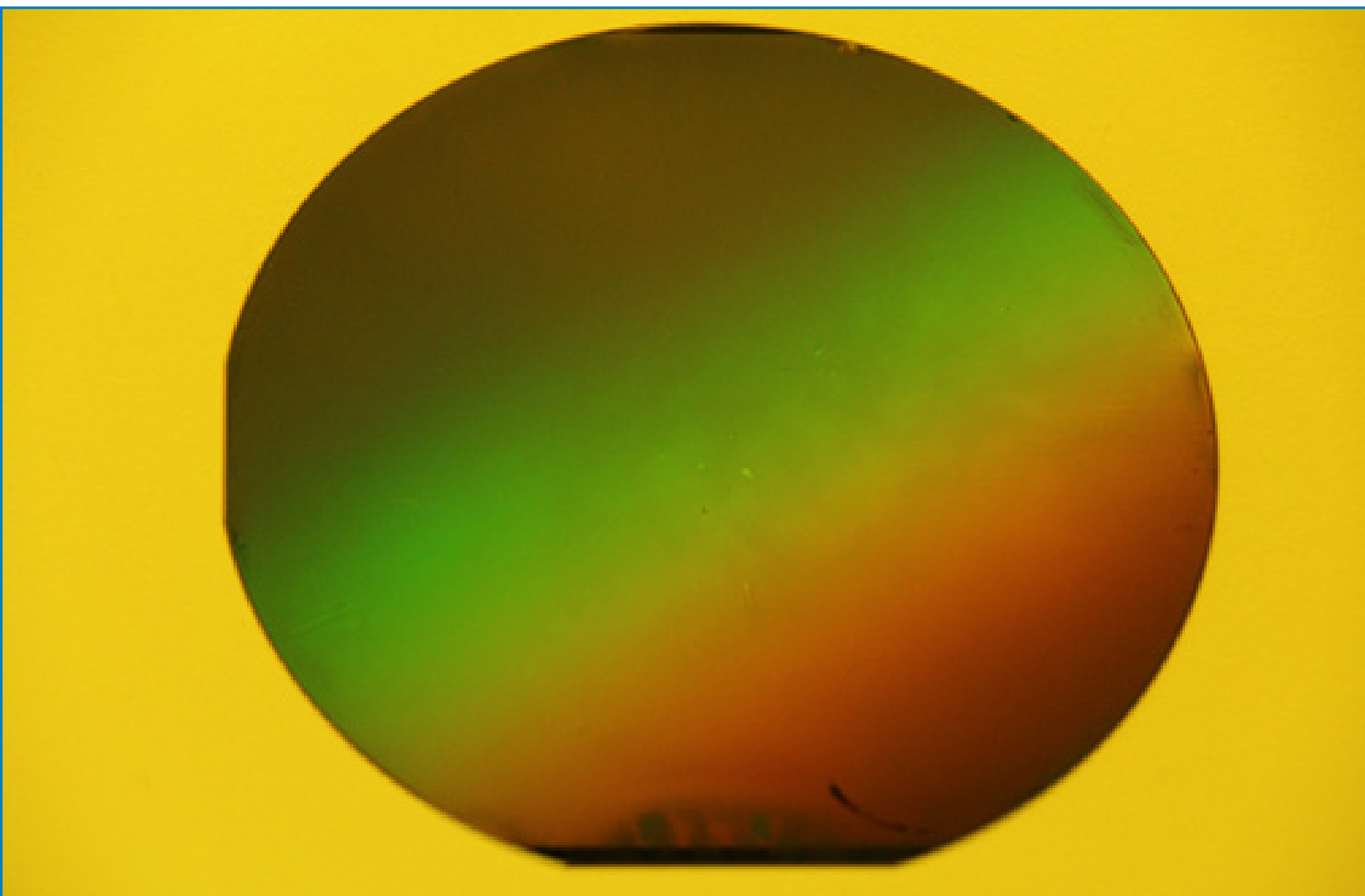


UV/vis absorption spectrum

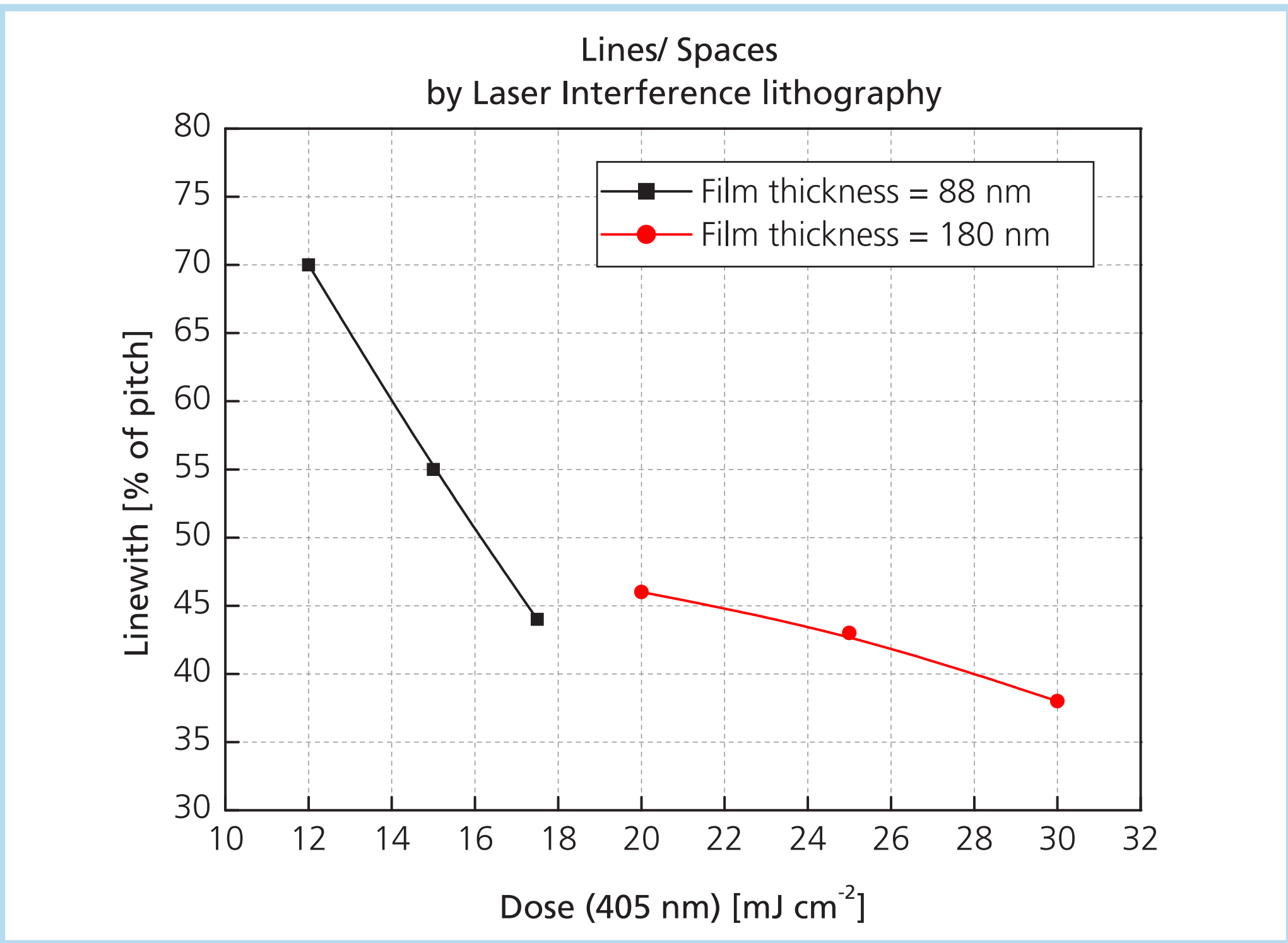
Applications

Masking of substrate surfaces during fabrication of steep-edged nano structures for diffractive optics:

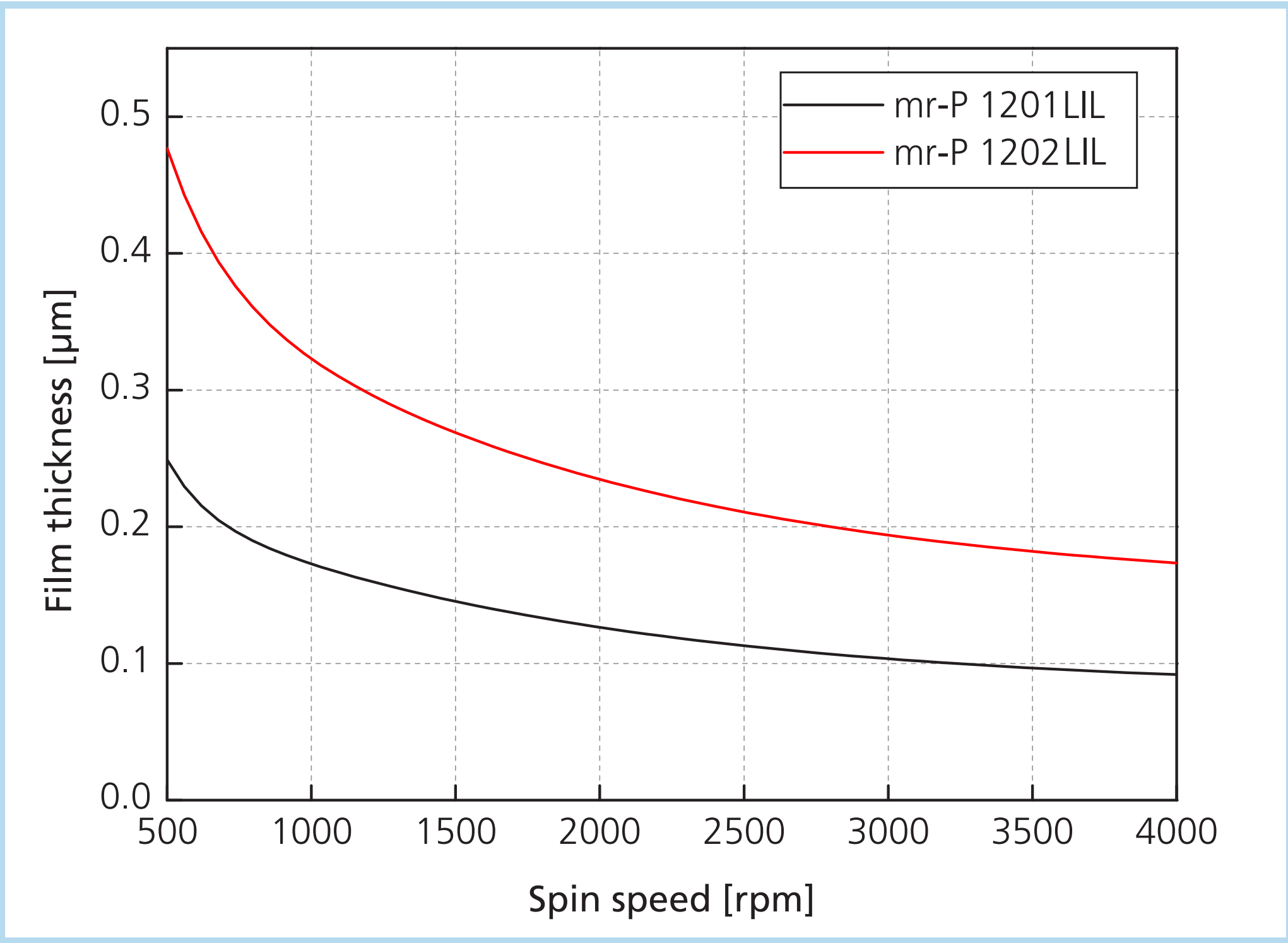
- Laminary gratings
- VLS gratings



4'' Si wafer (diffractive optics): 100 nm thick mr-P 1201LIL, 1200 lines/ mm



Linewidth in L/S pattern vs. dose



Spin curves