

nLOF PEB time test June 2019

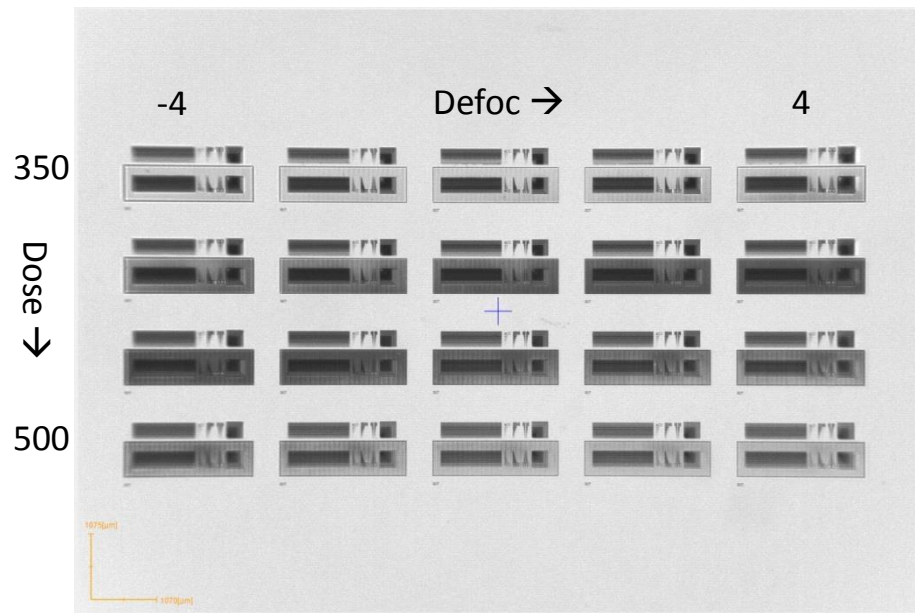
2 μ m nLOF 2020 exposed using
MLA150 (Fast mode)

Processing 27-28/06 2019

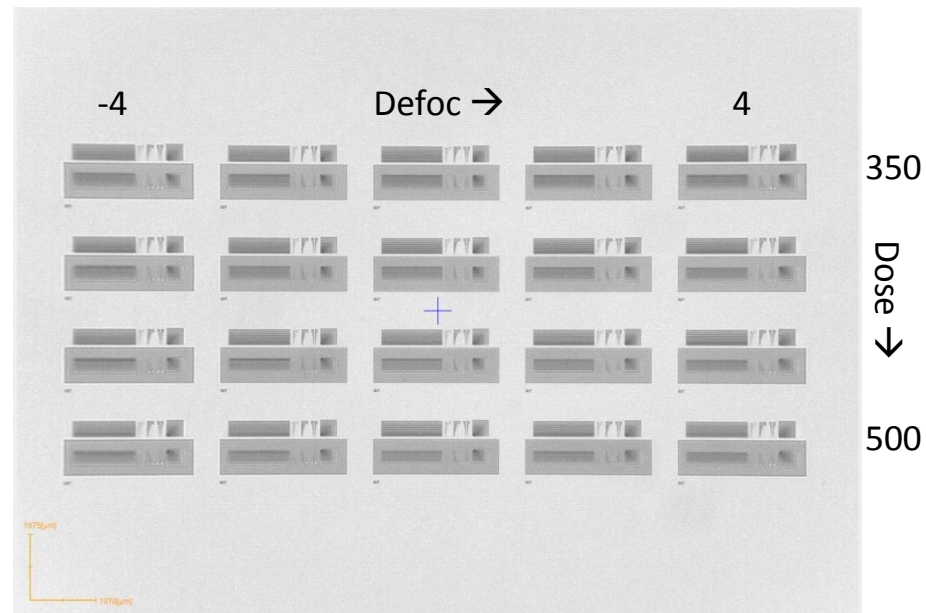
- **Substrates:** clean(ed) dummy wafers
- **Coating:** Gamma UV, sequence 2421
- **Exposure:** Maskless 02, “litho” from HeidelbergTestChip, Fast, 375nm, optical AF
- **Development:** TMAH UV-lithography, sequence 3001 (1min PEB) **or** 3008 (2min PEB)

Dose/Defoc test overview

1min PEB

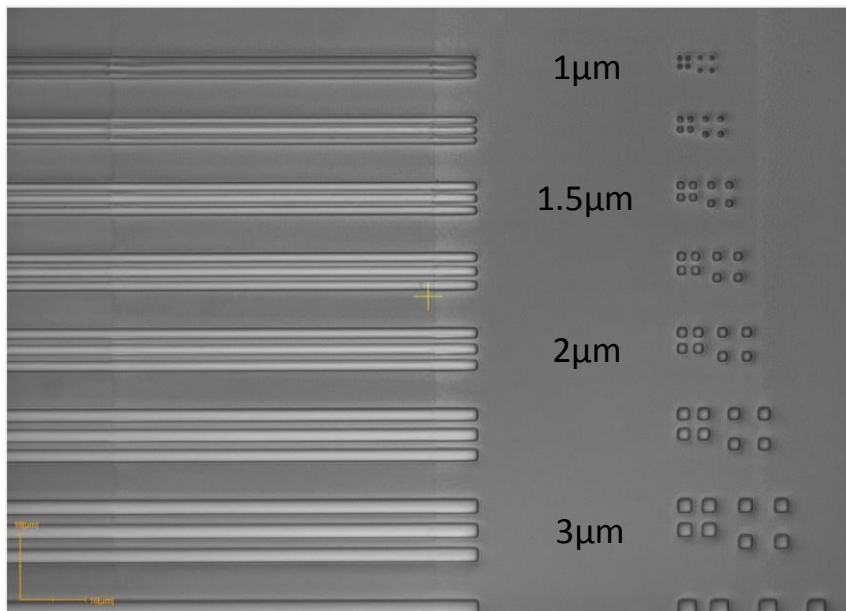


2min PEB

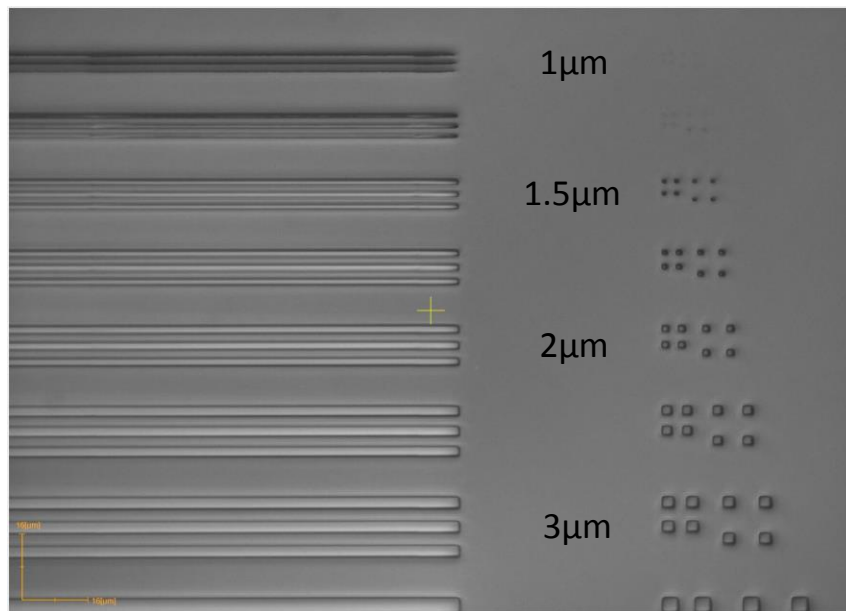


Best Dose/Defoc, trenches/holes

1min PEB, 500;0

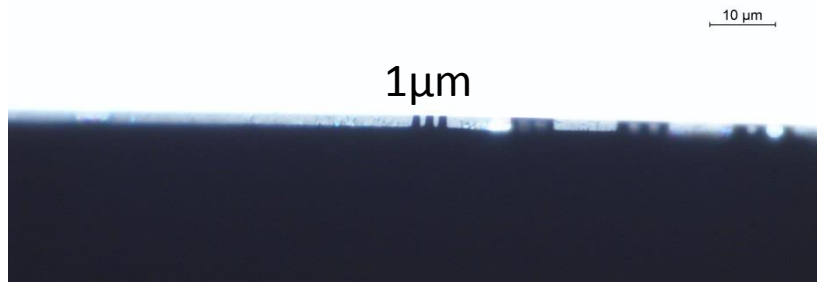


2min PEB, 350;0

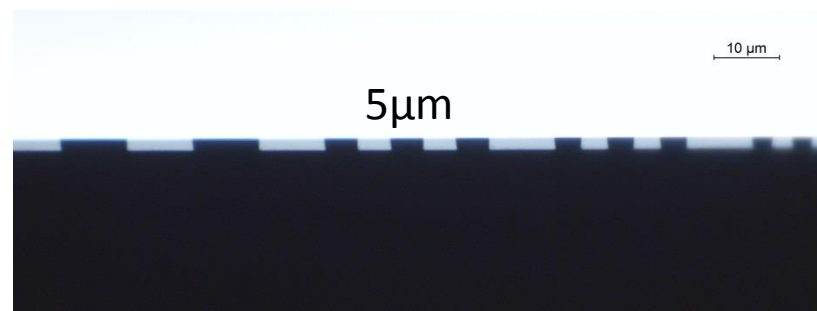
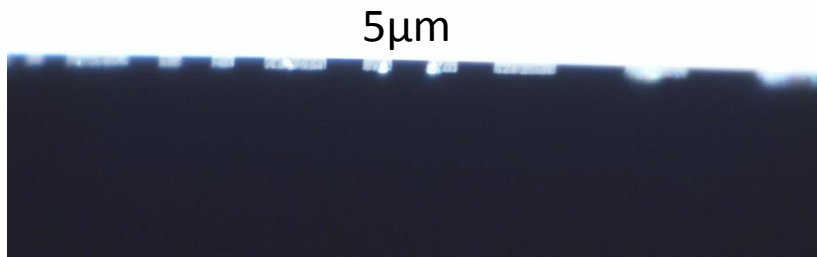
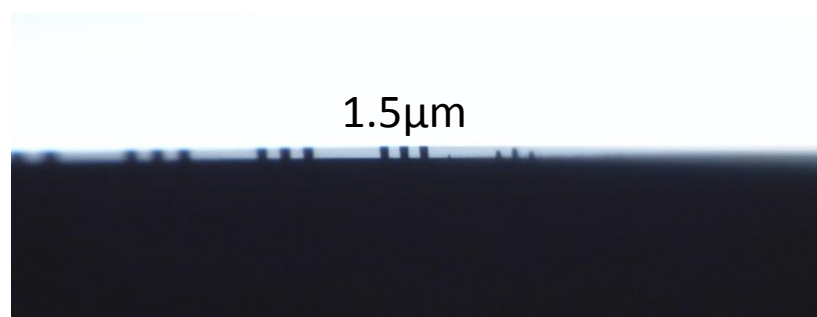


Cross-section, trenches

1min PEB, 500;0

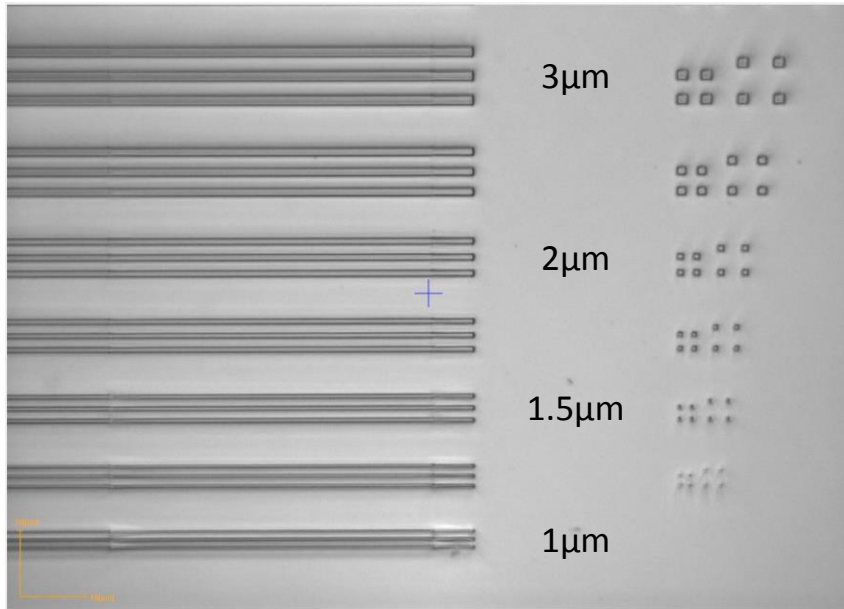


2min PEB, 400;0

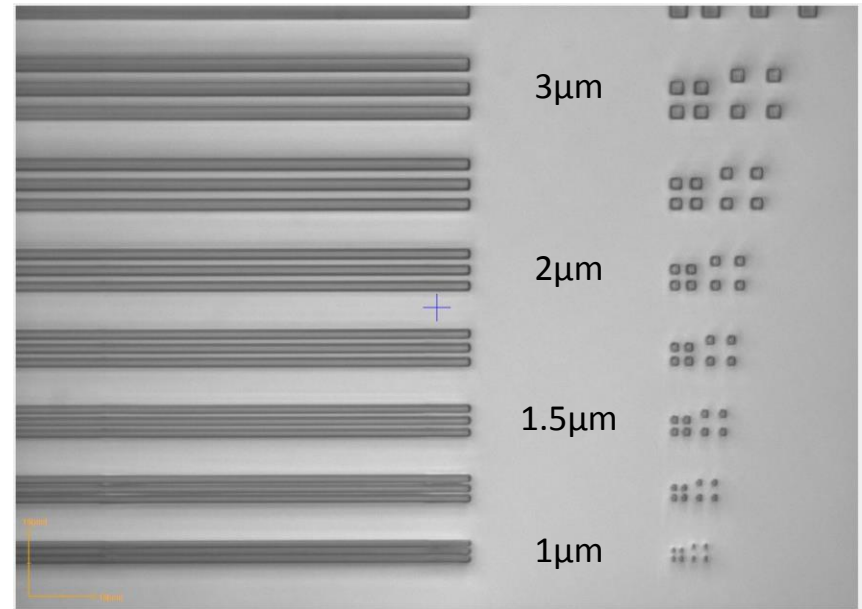


Best Dose/Defoc, lines/dots

1min PEB, 500;0

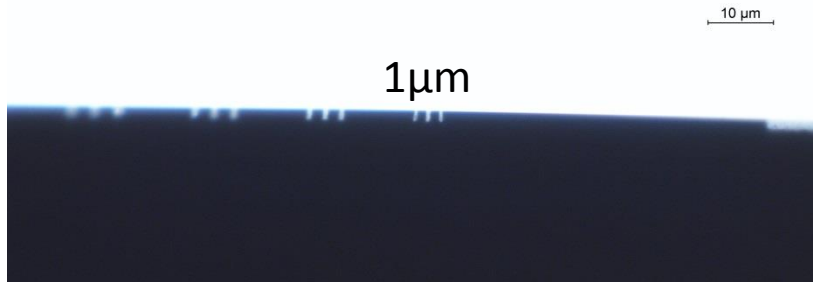


2min PEB, 400;0

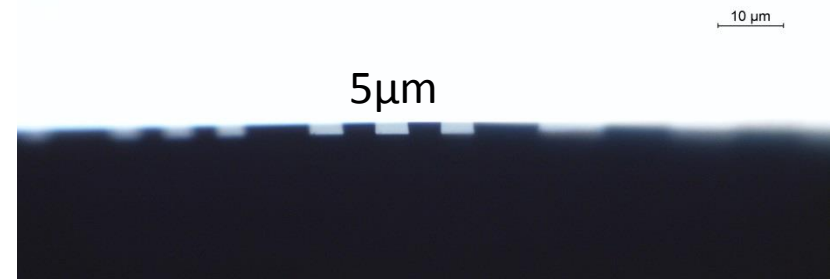
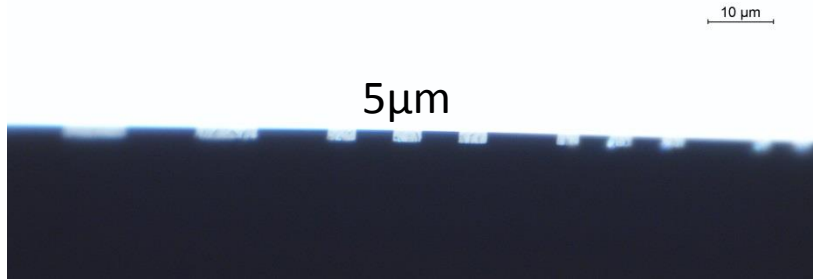
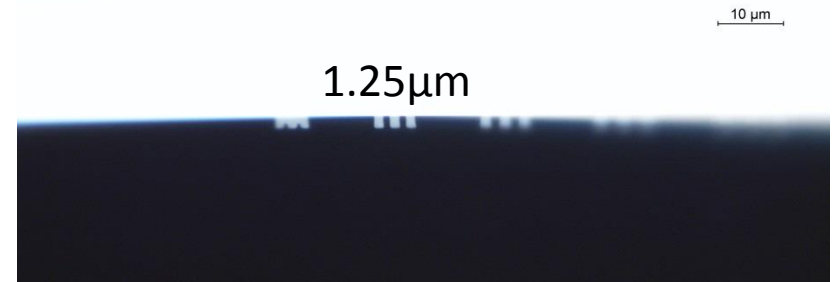


Cross-section, lines

1min PEB, 500;0



2min PEB, 400;0



Acetone strip

1min PEB, one puddle

2min PEB, 3 puddles

- Everything gone



Conclusions

1min PEB

- Macroscopic stitching at all doses
- Microscopic stitching on all structures
- Clear bias (lines are smaller, trenches are wider)
- Undercut not so clear (better at lower dose)

2min PEB

- No macroscopic stitching at all doses
- Microscopic stitching only on smallest structures
- No clear bias, print looks more 1:1 (as designed)
- Undercut looks better
- Lift-off could be slower?