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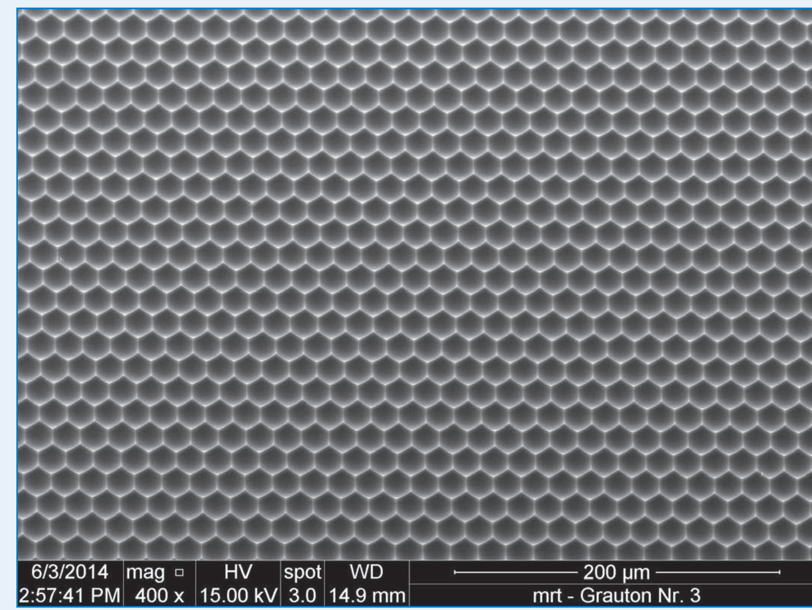
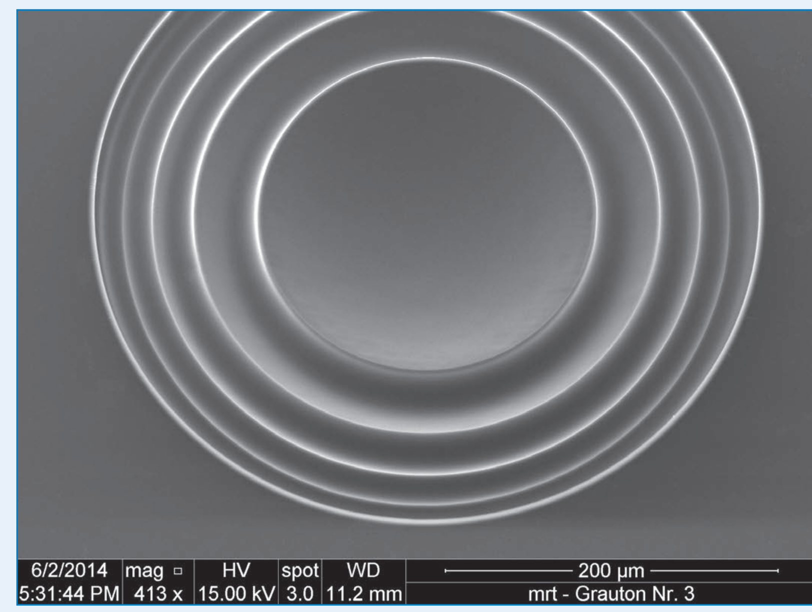
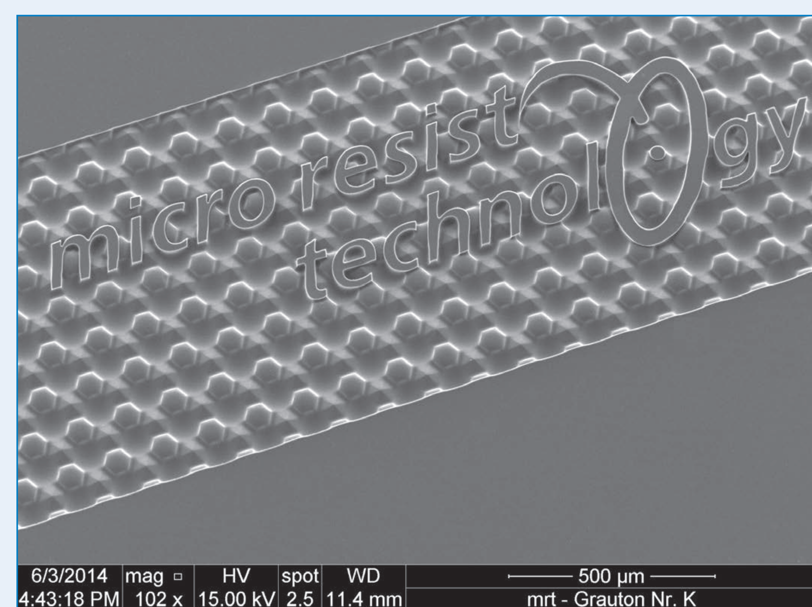
micro resist technology

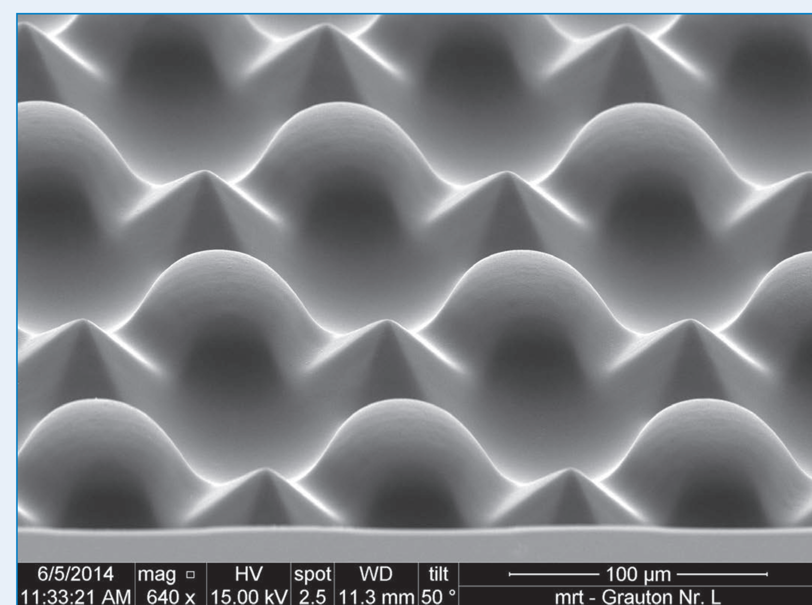
ma-P 1275G — Positive Greyscale Photoresist

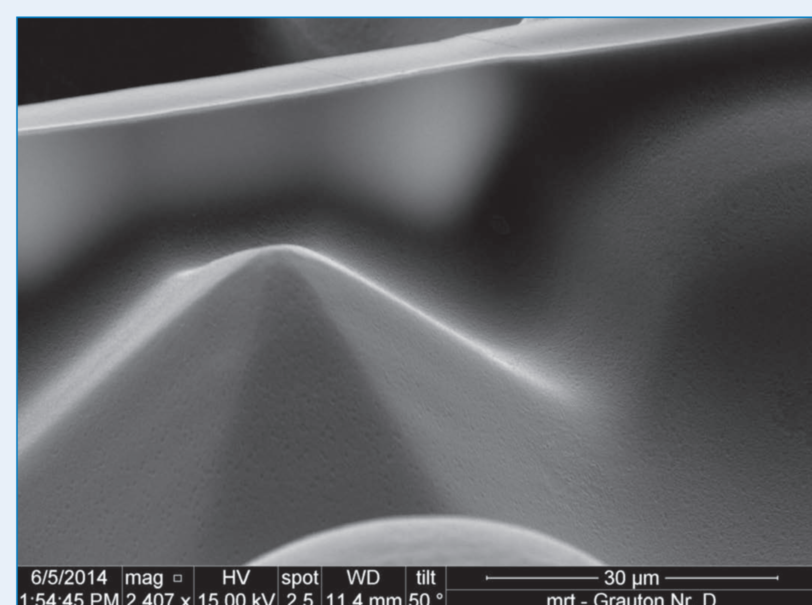
Thick Positive Photoresist for Greyscale lithography


Hexagonal concave lenses, ~ 17 µm width


Fresnel lens


Convex and concave hexagonal lenses, 60 µm diameter


Convex and concave hexagonal lenses, 60 µm diameter – detailed view


Straight line among greyscale patterns

All exposures with DWL66+ at 405 nm at Heidelberg Instruments

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Unique features

ma-P 1275G is a thick positive tone photoresist specifically designed for the requirements of greyscale lithography.

- Film thickness up to 60 µm and higher
- High intensity laser exposure possible without outgassing
- 50 - 60 µm depth range of the patterns possible
- Aqueous alkaline development with TMAH based developers
- High stability in plating baths

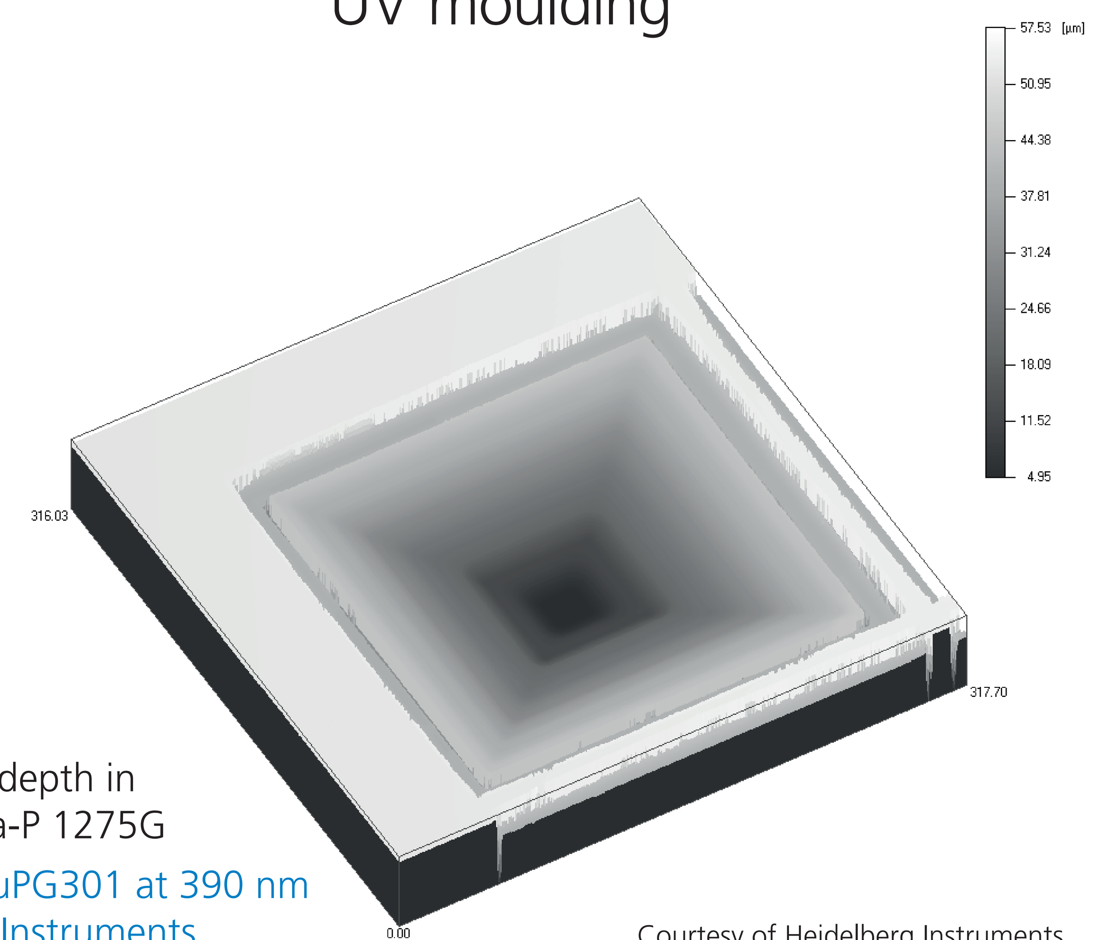
Applications

Use of manufactured 3D patterns in micro-optics, MEMS and MOEMS, displays

Pattern transfer by
- Electroplating
- Etching
- UV moulding

Technical data

Film thickness	µm	20	30	60
Spin coating	rpm	900	500	1000
Spin time	s	60	60	4


~ 53 µm pattern depth in
~ 58 µm thick ma-P 1275G
Exposure with µPG301 at 390 nm at Heidelberg Instruments
Courtesy of Heidelberg Instruments

Process flow