JOANNEUM RESEARCH MATERIALS

Rapid-prototyping of complex 3D plastic optical components

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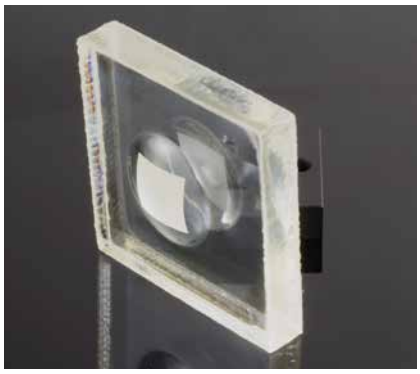
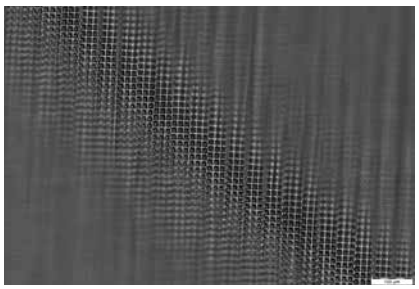
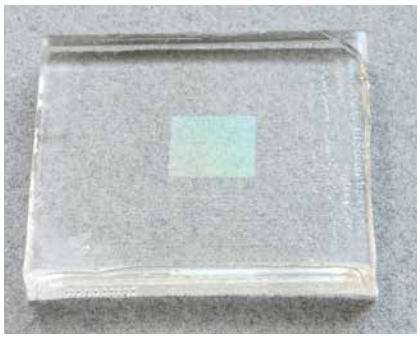
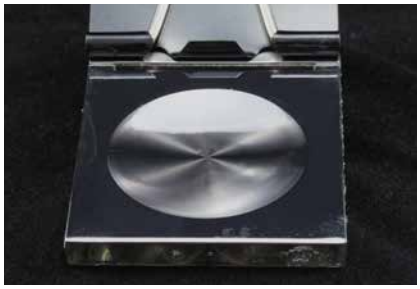
3D OPTIMOLD









With our patented technology we can fabricate sub-microstructures on 3D macro (Planar and non-planar, curved) optics to obtain new optical effects and functionalities. This leads to numerous innovative applications, for example in

- Optoelectronics
- Photonics
- image processing sensors
- machine vision
- robotics
- motion control systems

The combination of different optical functions on one single element can contribute significantly to

- miniaturization of optical components
- better integration into systems
- at lower cost.

We can offer our customers:

1. Modelling: Optical design of one or more novel complex 3D optical components based on the concept of 'micro on 3D macro'.
2. Additive manufacturing of 3D macro elements by 3D-printing
3. Mastering: Efficient fabrication of (sub-) microstructures on top of non-planar surfaces on a centimetre scale by means of mask-less laser lithography
4. Rapid prototyping: low-cost fabrication of a highly precise optical 3D sample (plastic optical element made of only one material with a surface roughness $R_a \sim 5$ nm) by vacuum resin casting for quick and flexible testing and implementing design changes

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