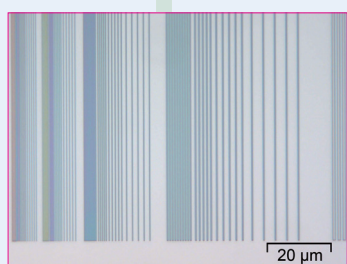


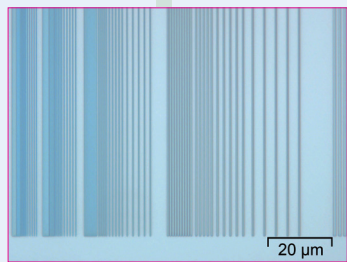
# OrmoStamp

## Inorganic-organic Hybrid Polymer for Transparent Imprint Stamps

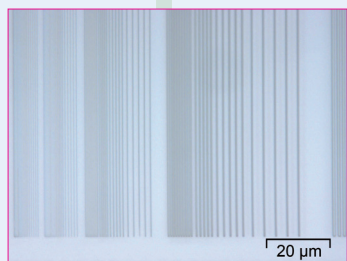
### Imprint using OrmoStamp



**Silicon master stamp:**  
 75, 100, 200, 400 and  
 800 nm spaces

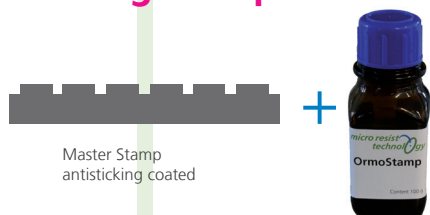


**OrmoStamp working stamp**  
 replica of the master stamp:  
 75, 100, 200, 400 and  
 800 nm lines

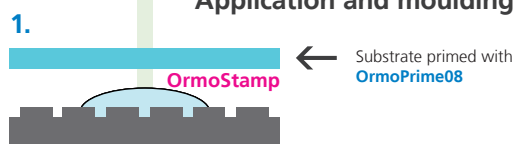


**Imprint** mrUVCur21SF  
 using an OrmoStamp  
 working stamp: 75, 100, 200,  
 400 und 800 nm spaces

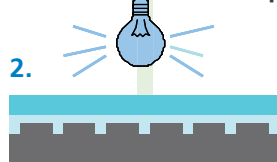
### How to fabricate working stamps?



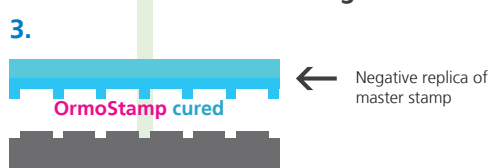
#### Application and moulding



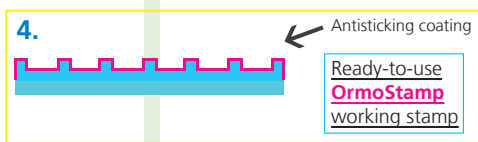
#### UV exposure



#### De-moulding



#### Release treatment



Next steps:

**IMPRINT**  
 UV-based or/and  
 thermal

#### Unique features

- Highly transparent for UV and visible light
- Mechanically and thermally stable
- Excellent pattern transfer down to sub-100 nm features
- Processing with standard lithography equipment

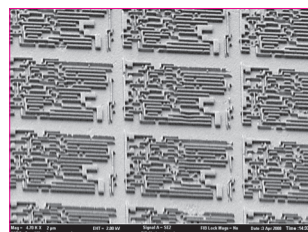
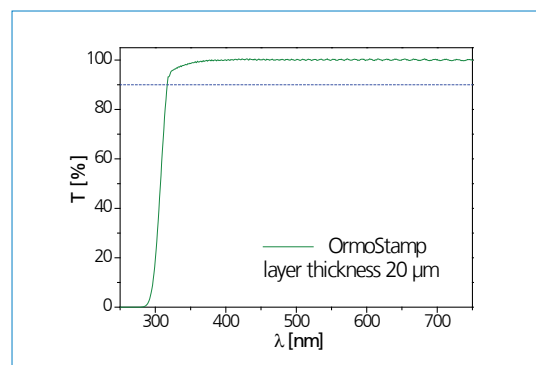
#### Applications

- Working stamp fabrication
- Cost efficient alternative to quartz stamps
- For UV-based and thermal imprinting

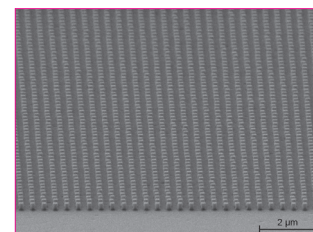
#### Technical data

Thermal stability	up to 270 °C (short term)
Recommended exposure dose @ 365 nm	1000 mJ cm <sup>-2</sup>
Intrinsic rms roughness	2 nm
CTE (20 – 100 °C)	105 ppm K <sup>-1</sup>

#### Transparency



OrmoStamp stamp for SFIL, smallest structures 60 nm (University of Cardiff, UK)



OrmoStamp stamp for the fabrication of nanopore membrane arrays, structures 200 nm x 200 nm (Paul Scherrer Institute, Switzerland)