

Synchronicity Microfluidics

Technological advantages

- Lower-cost compared to existing micro-machining or photo mask processes
- Higher quality and smoother cleaner features
- Batch processing capability allows for product design flexibility
- Wide range of applications

Applications

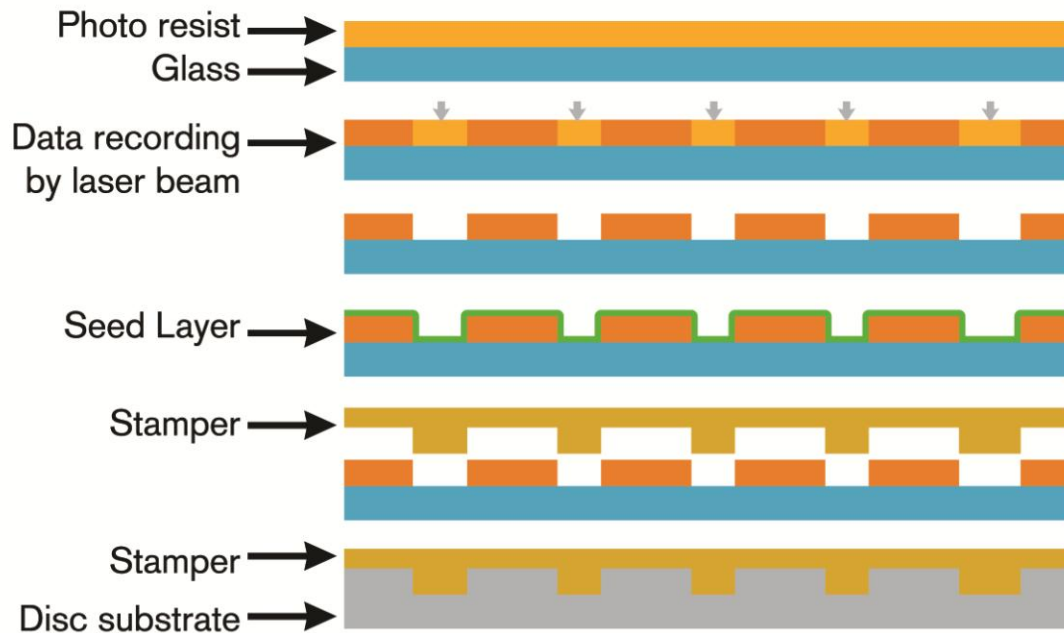
- Microfluidics
- Lab on a chip
- Liquid Biopsy
- Bio-MEMS devices
- Solar panel components,
- Gratings

Capability

- Max. aspect ratio : 30:1
- Pattern depth : 10nm -200 μ m
- Pattern width : 250nm- Max only limited by customer specs
- Multiple layers (3D) available

Microfluidic Mastering-Replication

Process of Optical Disc Substrate



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Product Process Steps

- Customers provide Specifications and layout design as a cad drawing (GDSII, Oasis, or .DXF)
- The file is converted a .BMP to master the pattern
- The pattern is then mastered on Silicon to create the pattern image in photo resist process
- The exposed image is then developed creating a patterned master
- The master is the etched into the silicon to the desired depth where the pattern was exposed
- The Photo resist is then removed
- For 3D we repeat the process using manual and auto alignment
- Optional- The silicon master is then Ni plated to create a stamper for molding
- Customer then injection molds, embosses, or web 2 web replication. from the stamper
- Customer then cuts out the chip and packages to customer specifications

Process Flow Chart

Customer Pattern



Pattern Mastering



Electroforming



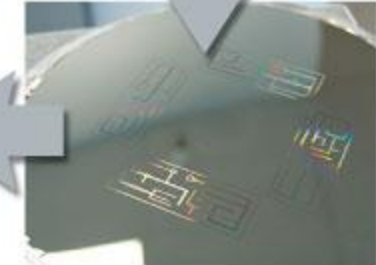
Substrate



Injection Molding

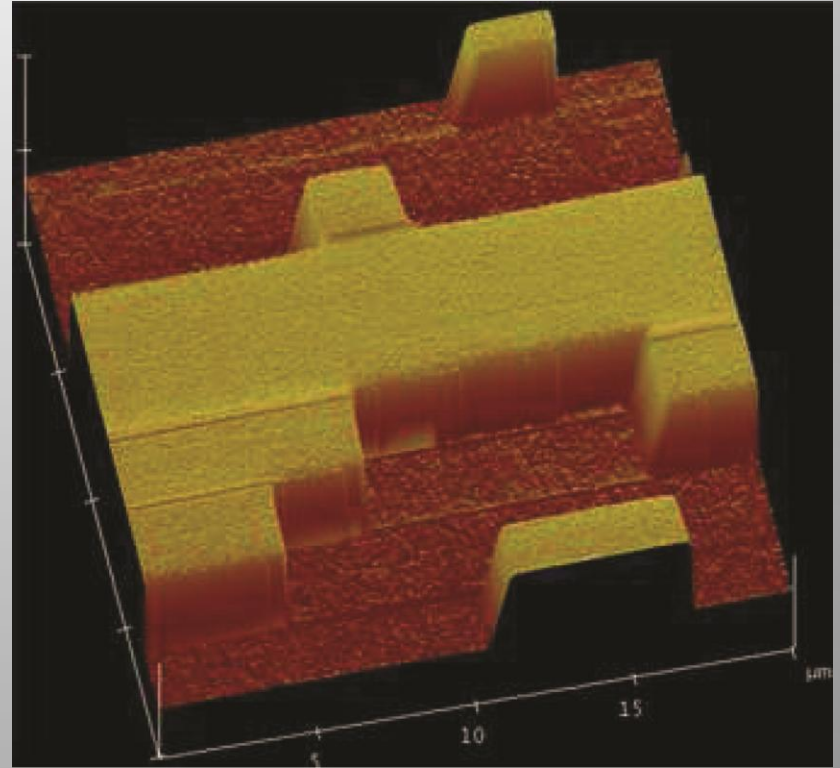
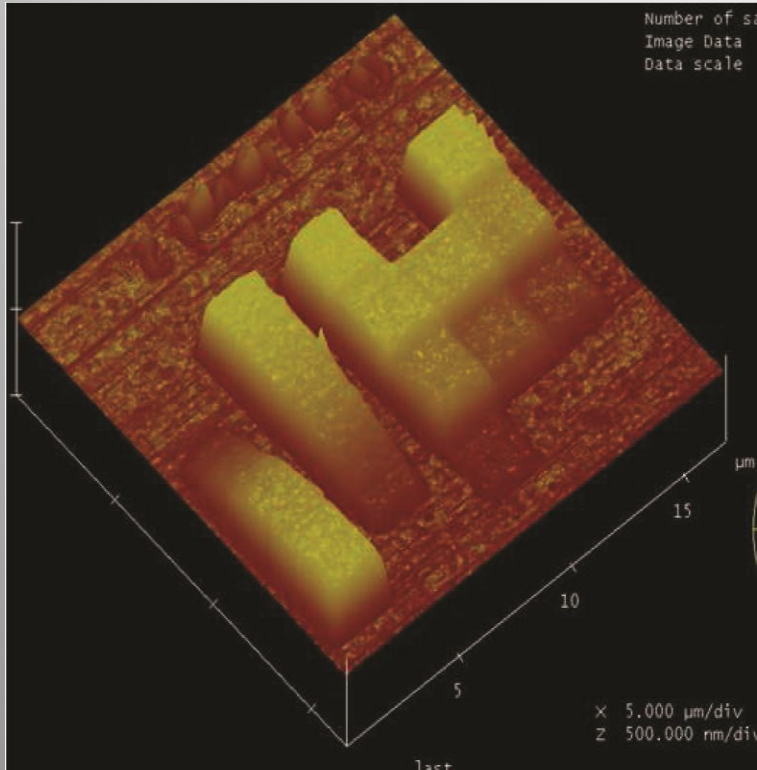


Stamper



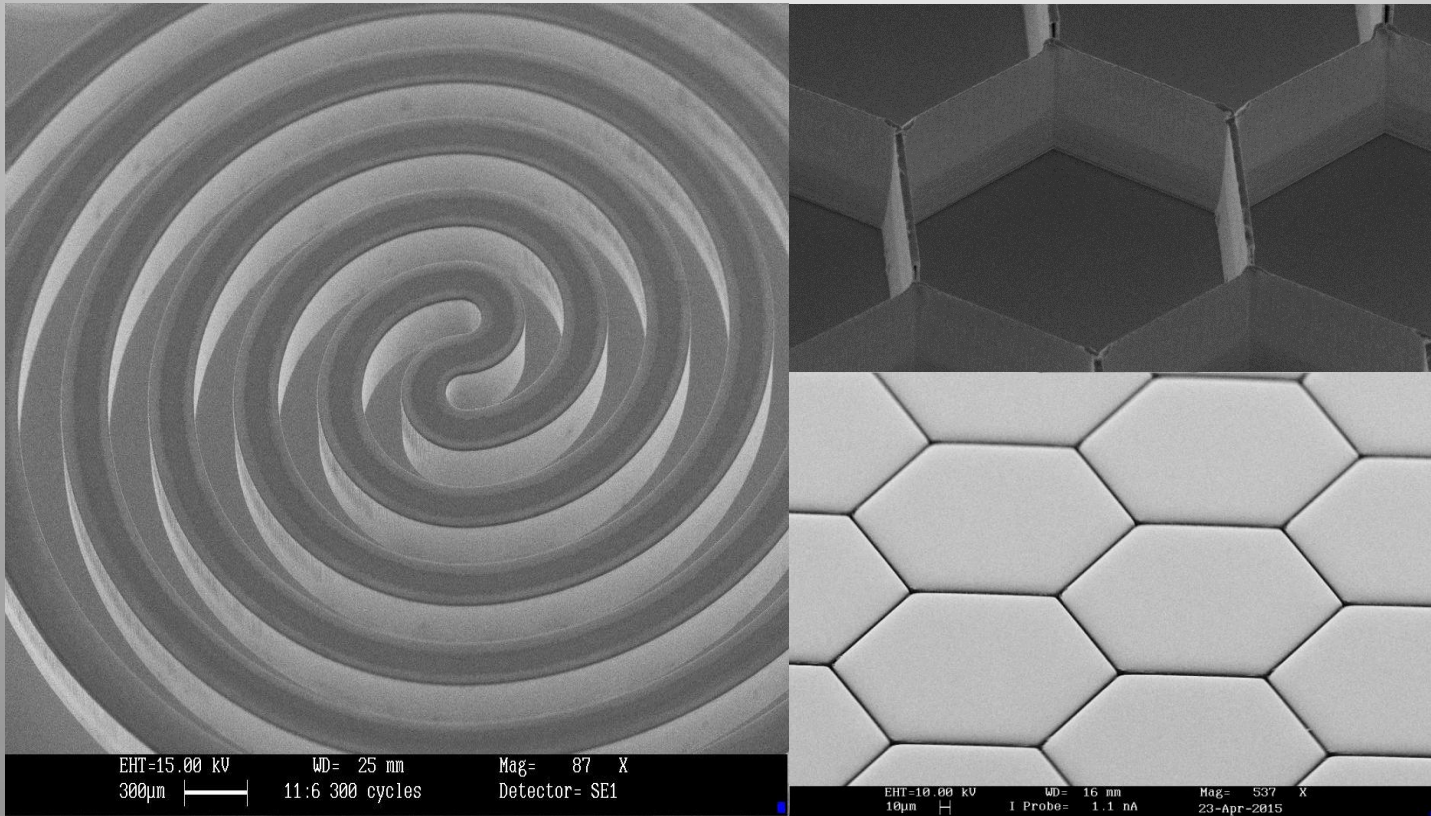
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AFM Pictures



SEM Pictures

- Cell Trapping for Breast Cancer detection



SEM Pictures

