



ACW's Stamp Resins for Nano Imprint Lithography

Addisoncw.com

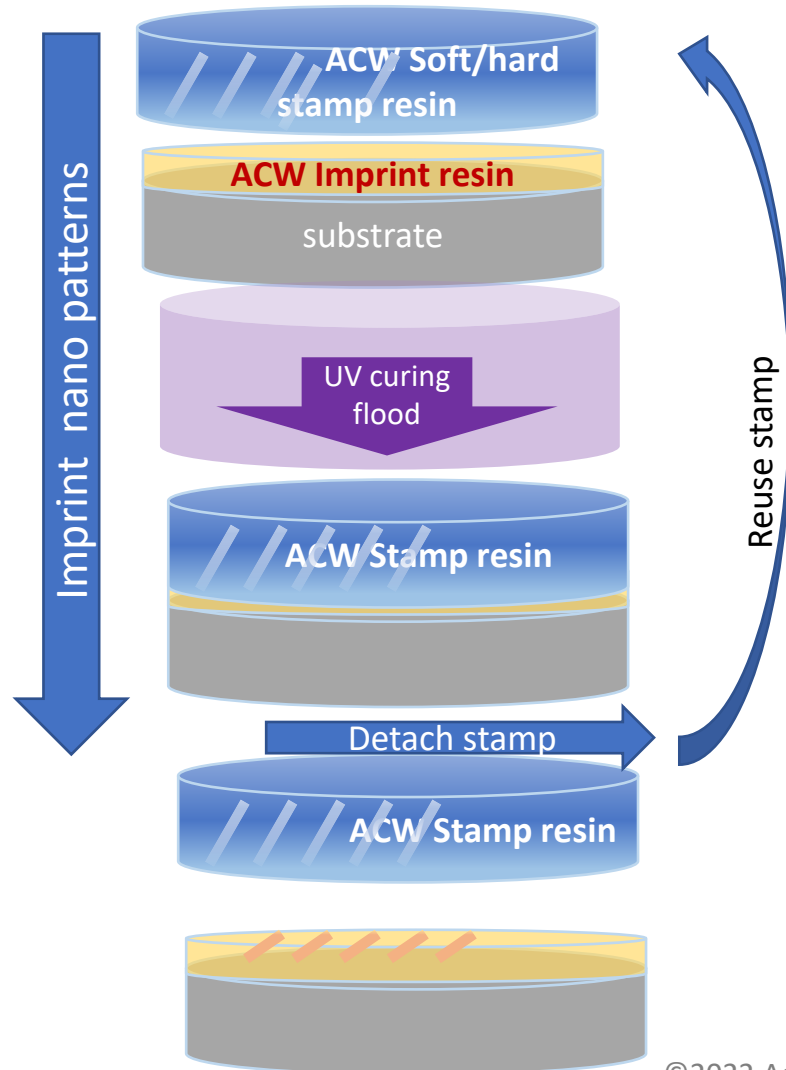
ACW RESINS for NIL Stamps



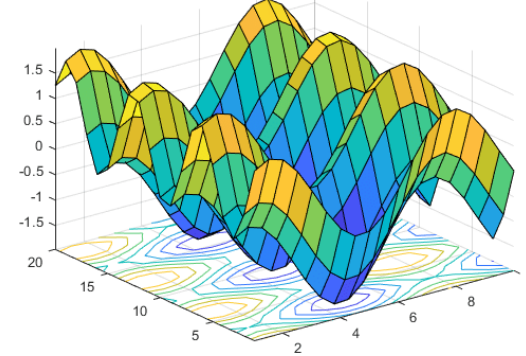
- Optically Clear
- UV-curable
- For hard or soft stamps



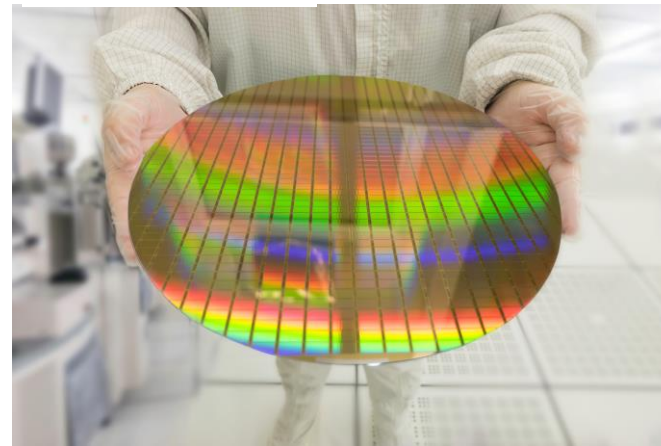
Substrate Conformal Imprint Lithography



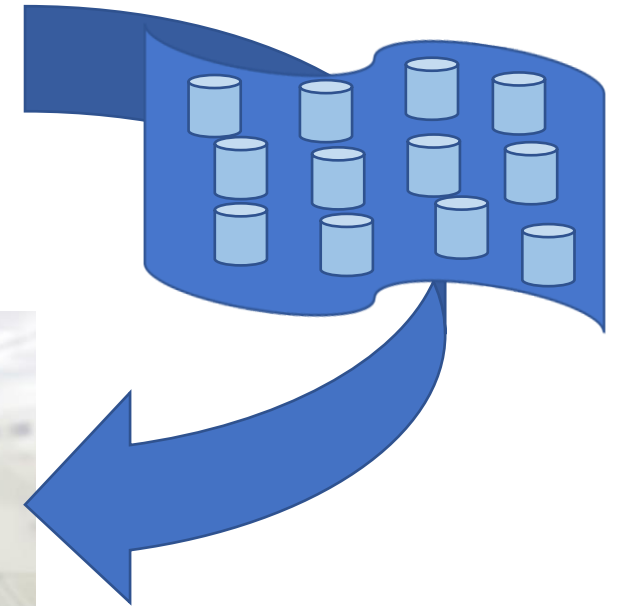
nano pattern design



nano imprint



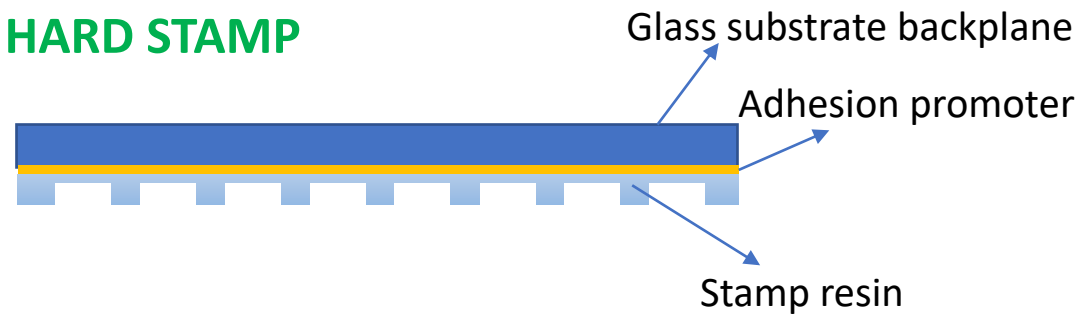
ACW soft/hard stamp by 2P



ACW Stamp Resins:



HARD STAMP

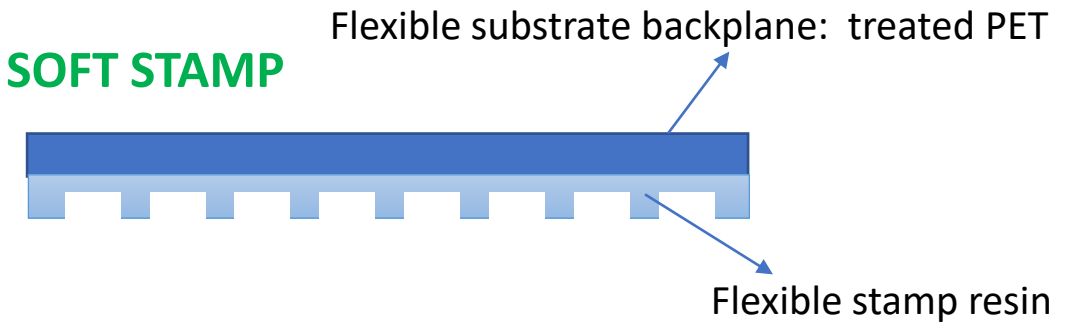


Advantage of UV cure versus heat: Low cost and high replication accuracy.

WORKING STAMP RESIN: UV cure types

- HS-110
- FS-200

SOFT STAMP



- Advantages of soft stamp versus hard: Low cost
- Advantages of UV versus heat (PDMS): Low cost and high replication accuracy

WORKING STAMP RESIN: UV cure types

- FS-200
- FS-300



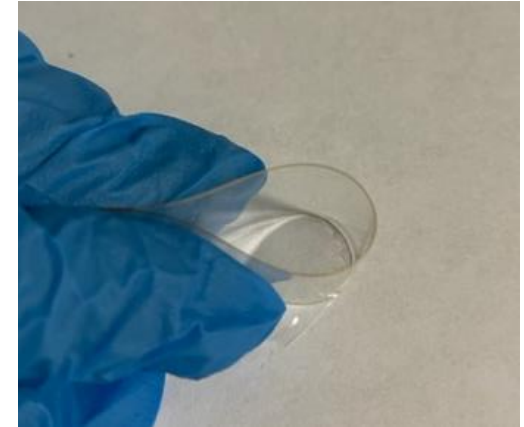
ACW Hard Working Stamp Resins

- HS-110 and FS-200 are now commercially available
- FS-200 is flexible and can be used as a soft stamper

| Property | Polycarbonate reference | HS-110 | FS-200 |
|---------------------------------------|-------------------------|---------------|-----------|
| Viscosity (cps) | | 1,000 – 1,400 | 400 – 500 |
| LED 365 nm dose (mJ/cm ²) | | 2,000 | 2,000 |
| Young's Modulus (GPa) | 2.0 | 3.0 | 1.7 |
| Tg (°C) | 140 | 145 | 133 |

ACW Soft Working Stamp Resins

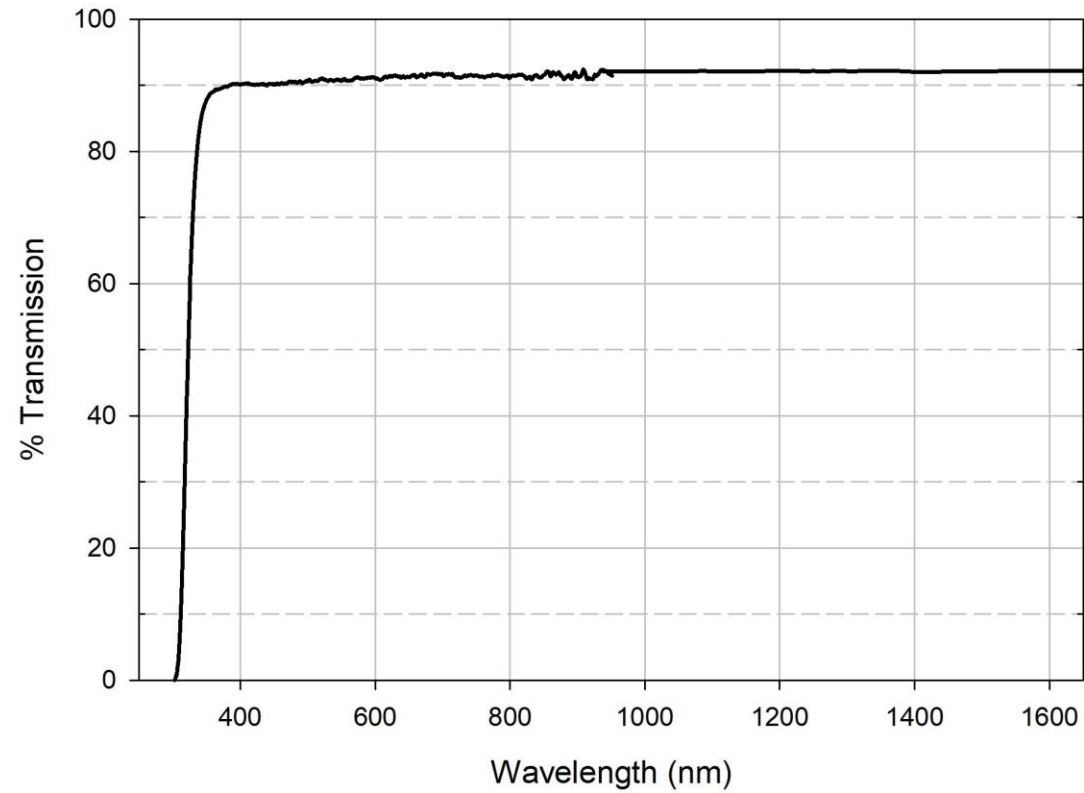
- FS-200 and FS-300 are now commercially available
- Both have high Tg and high flexibility



| Property | PDMS reference | FS-200 | FS-300 |
|---------------------------------------|----------------|-----------|-----------|
| Viscosity (cps) | | 400 – 500 | 300 – 400 |
| LED 365 nm dose (mJ/cm ²) | | 2,000 | 2,000 |
| Young's Modulus (GPa) | 0.001-0.004 | 1.7 | 1.2 |
| Tg (°C) | -125 | 133 | 122 |

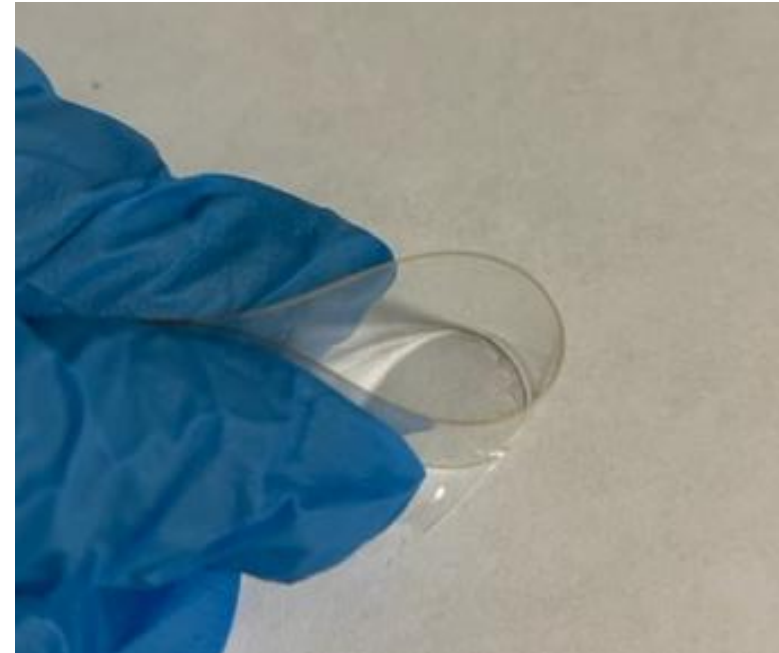
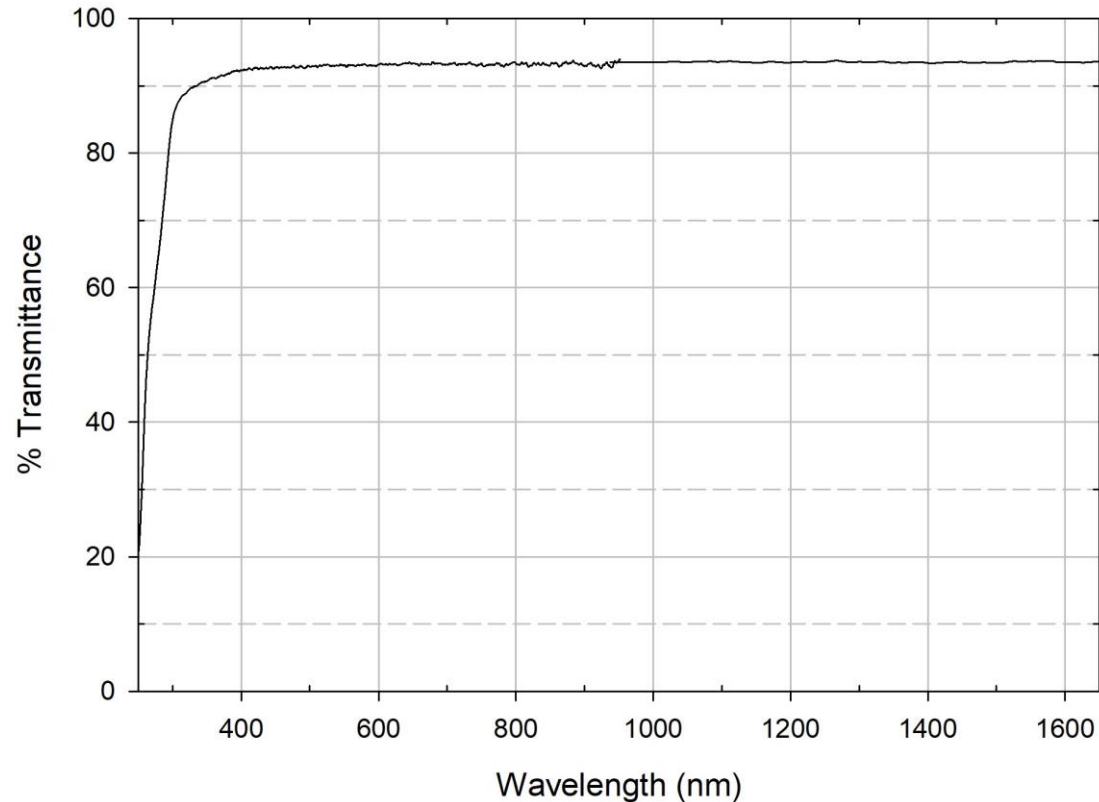
HS-110: optically clear

HS-110 100 micron film on glass
no correction for surface reflection



FS-200: optically clear, very flexible

FS-200 30 micron free-standing film
no correction for surface reflections



FS-300: optically clear, very flexible

FS-300 30 micron free-standing film
no correction for surface reflections

