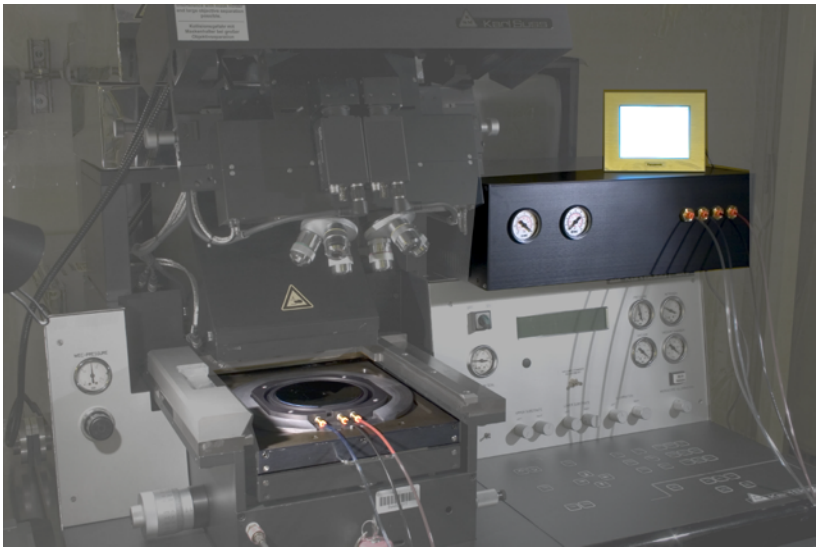
Nanolithography Made Simple!

NanoImprint Module
for Research and Development

Nanolithosolution provides a revolutionary one-step, Auto Release™ nanoimprint lithography solution with sub-10 nm resolution and accurate overlay alignment. This technology is built on years of research at HP Labs. Our technology is so simple to implement, essentially everyone with a microlithography process can upgrade to nanoscale lithography with no disruption to their regular process flow and facility. And our solution is the most cost-effective in the industry. Our process has been proven by some of the world leading institutes in state-of-the-art nanotechnology research to develop many ground-breaking applications



EQUIPMENT

Nanolithosolution's equipment consists of a nanoimprint module and a controller module. When combined with a conventional optical mask aligner, our solution provides a semiautomatic nanoimprint with precision alignment capability for anyone using a traditional photolithography process. Our equipment is compatible with most widely available optical aligners in microfabrication facilities around the world

Nanoimprint module: AR-NIM-100

The nanoimprint module is a set of equipment that fits into an aligner like a typical wafer holder and mask holder. It precisely holds the imprint mold and wafer and accurately performs nanoimprinting and separation of the imprint mold with one easy step.

Nanoimprint controller: AR-IMC-100

The nanoimprint controller provides semiautomatic control of the imprinting process. The program directs the user through a series of simple and straightforward steps to complete the entire procedure.

Advantages

- Simple and Robust process: proven through the research of world-leading institutions.
- Precision alignment: mask alignment is limited only by optical aligner capability.
- Easy to use: a person familiar with semiconductor processes can be trained in a few hours.
- No disruption with existing process: No extra equipment footprint required.

APPLICATIONS

optical devices, displays, data storage, biotech, semiconductor ICs, chemical synthesis, and advanced materials.

NLS NanoLithoSolution
1902 wright place, suite 200, carlsbad, ca 92008
Tel: 760 918 5505 Fax:760 918 5505

Technical Specification

General Configuration

Process is controlled by a programmable PLC with touch screen user interface.
User can customize process parameters.
Wafer and Mold are held by vacuum chuck
UV curable imprint polymer compatible with traditional photolithography process.

Process specification

Wafer size	4 in
Imprintable wafer area	2 in
Imprint pressure	0 - 25 PSI
Mold substrate size	5 x 0.090 in
Typical imprint throughput	< 5 minutes/wafer

Physical properties

	Controller	Module
Dimension	5.8 x 16.5 x 12 in	12 x 16 x 1.5 in
Weight	18.5 LB	6.5 LB
Environment	10 - 35 C, 65%	

Facility requirements

Photolithography aligner compatible with Suss, Canon, and other aligners

Filtered Pressure source	70 - 100 PSI
Vacuum source	<-14 PSI
Power	110-220V, 2A, 50/60 Hz
Clean-room	class 1000 or better

Ordering Information

Nanoimprint module: AR-NIM-100

The nanoimprint module for 4 inch wafers

Nanoimprint controller: AR-IMC-100

The process controller for managing and controlling the imprint process.

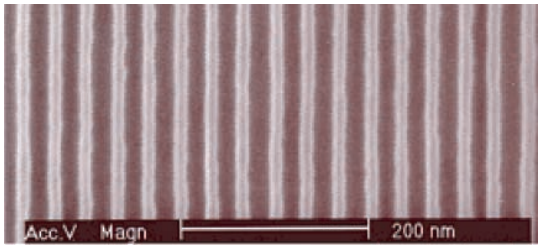
Nanoimprint Under Layer Polymer: AR-ULP-100

100ml under layer polymer used in nanoimprint process.

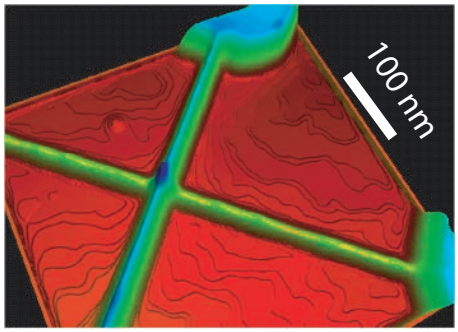
Nanoimprint UV Polymer: AR-UVP-100

100ml UV polymer used in nanoimprint process.

Technical Capability



Nanoscale molecular devices / circuits fabricated by Auto Release™ Nanoimprint Lithography



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