OAI is a Silicon Valley-based manufacturer of advanced precision equipment for the MEMS, Semiconductor, Nanotechnology, Microfluidics, Micro TAS and Flat Panel industries. The company offers a broad portfolio of field-proven products that include: Mask Aligners, UV Exposure Systems, UV Light Sources, nano imprint modules, wafer bonders, solar simulators, IV testers, UV ozone surface treatment systems, Edge Bead Exposure Systems, and numerous, custom-engineered solutions. These products deliver exceptional performance, high versatility with excellent reliability. Based on a proven platform of modularized subsystems, many of these advanced tools can be custom configured to meet your specific requirements. With over 40 years of experience, and thousands of systems and instruments in use around the world, OAI has earned a reputation for exceptional products and superior customer support.
for R&D and Production

Custom Solutions

By using a modular approach to product development, OAI can customize systems to meet the specific requirements of each individual customer.
Model 200IR Mask Aligner System
Front and Backside IR Mask Aligner System.
- Entry level price point
- Flexible design for easy change of wafer and mask holder
- Accommodates substrate up to 8”
- PLC controlled
- Filter holder and a wide range of filters available

Model 800 FSA/BSA Mask Aligner
Semi-automatic Contact Mask Aligner for R&D as well as low volume production.
- Integrated frame and vibration isolation
- Topside alignment
- Available with Near, Mid and Deep UV
- Accommodates substrates up to 8” square
- Available with 9mm field objective separation for small pieces and substrates
- Optional Nano Imprint Module
AML Wafer Bonder
Activate, align and bond in one system
- Eliminates the need for separate aligner system
- Lower temperature bonding, high bond strength, and higher yields
- Anodic, silicon direct and thermal compression bond tooling available
- In-situ low-temperature bonding

Model 6000 BSA Mask Aligner for Production
Fully Automated Backside Mask Aligner.
- Highly optimized yields (180 WPH in 1st Mask Mode)
- Wide variety of wafer handling
- Wedge Effect Leveling
- Superb process repeatability
- Sub-micron resolution
- Cluster tool integration
- Cognex VisionPro® with customized software
- 1 micron top to bottom alignment accuracy

Any OAI mask aligner system may be configured with an optional OAI Nano Imprint Module

Model 30 Collimated UV Lightsource
Modular unit can be used as a stand alone or integrated into almost any mask aligner or exposure system.
- Available with Near, Mid and Deep UV
- Power up to 10KW
- Pictured with optional stand
Microfluidics and Micro TAS

Model 200 Mask Aligner System
Manual, table top Contact Mask Aligner.
- Flexible - fast, easy change of substrate & mask holder
- Substrates up to 8”
- Entry level price point
- Available with near, mid and deep UV
- Optics and holders available for small substrates
- Can be configured with an OAI CLiPP microfluidic module
- Filter holder and a wide range of filters available

UV Ozone Treatment System
Improves surface adhesion.
- UV Ozone Treatment Systems available for R&D through production
- Super low pressure lamps for improved surface treatment
- Improves bonding for polymer and glass
- Improves yield

Model 30 Collimated UV Lightsource
Modular unit can be used as a stand alone or integrated into almost any mask aligner or exposure system.
- Available with near, mid and deep UV
- Power up to 10KW
- Pictured with optional stand
Contact Liquid Polymer Process (CLiPP)

Designed for microfluidic device production

- Designed for single or multi-dimensional devices
- For use with readily available liquid UV photopolymers
- Controlled hydrophobic or hydrophilic surfaces and channels
- CLiPP modules can be fitted to any OAI mask aligner

Any OAI mask aligner system may be configured with an optional CLiPP Module

CLiPP Fabrication: Methodology for Rapid Prototyping Devices and Production of Microfluidic Devices

- Fill chamber with monomer mixture.
- Add binary photomask.
- Expose with collimated flood exposure source.
- Remove uncured monomer.
- Adjust cavity for subsequent layer.
- Fill channels with sacrificial material.

365 - nm
**Model 200 Mask Aligner System**

Manual, table top Contact Mask Aligner for Universities and R&D.

- Flexible - fast, easy change of substrate and mask holders
- Substrate sizes up to 8”
- Entry level price point
- Available with Near, Mid and Deep UV
- Special optics and holders for small pieces and substrates
- Available with optional back side IR alignment
- Optional Nano Imprint Module available

**Model 800 FSA Mask Aligner System**

Semi-automatic Contact Mask Aligner for R&D as well as low volume production.

- Top side alignment
- Integrated frame and vibration isolation
- Available with Near, Mid and Deep UV
- Accommodates substrate up to 8” square
- Available with 9mm field objective separation for small pieces and substrates
- Optional Nano Imprint Module available

**Model 30 Collimated UV Lightsource**

Modular unit can be used as stand alone or integrated into almost any mask aligner or exposure system.

- Available with Near, Mid and Deep UV
- Power up to 10KW
- Constant intensity & constant power mode
- Excellent uniformity and collimation angle with increased intensities
- High speed electronic shutters for very short, very accurate exposures are available
- Pictured with optional stand

Any OAI mask aligner system may be configured with an optional OAI Nano Imprint Module
**Model 6000 FSA Top Side Mask Aligner for Production**

Fully Automated Mask Aligner System with precision automatic alignment and advanced pattern recognition.

- Highly optimized yields - 180 wph in 1st mask mode
- Advanced beam optics with +3% uniformity
- Wedge Effect Leveling
- Superb process repeatability
- Cluster Tool Integration
- Sub-micron resolution
- Customized Cognex Vision Pro™ software
- Suitable for thin wafers warped wafers, thick and bonded wafers
- 0.5 micron alignment accuracy

**Model 2000 Automated Flood and Edge Exposure System**

- Wafer sizes up to 8”
- Computer controlled Windows® based graphic user interface software
- SEMI S-2 compliant
- Cassette-to-cassette robotic handling

**Model 2012 300MM Edge Exposure System**

300mm Exposure System

- 8” to 300mm wafers
- Automated FOUP loading
- SEMI S-2 compliant
Large Area Exposure Systems

Model 600 Large Area Aligner System
Contact / Proximity Aligner.
- Accommodates substrate sizes up to 20”x20”
- Flexible design allows small to large substrates to use the same tooling
- Uniform exposure area up to 1 meter x 1 meter

Model 5000E Mask Aligner System
Fully automated mask aligner system with precision automatic large area alignment and advanced pattern recognition.
- True proximity, hard, soft & vacuum contact modes
- Stores process recipes
- For substrates measuring from 300mm to 20”x20”
- Computer controlled LED microscope lighting for difficult substrate viewing conditions

Lightsource Grande
Large Area, Collimated UV Lightsource
- Power up to 10KW
- Accommodates a full range of large sizes utilizing collimating mirrors
- Uniform Exposure area up to 1 meter x 1 meter
Nano Imprint Technology (NIL)

Model 800 FSA/BSA Mask Aligner System with Nano Imprint Module
Semi Automated Optical Mask Aligner with Front / Backside Alignment. Configured for use in nano imprint applications.
- Featuring OAI Nano Imprint Module for NIL
- Includes anti-vibration table
- Automated substrate planarization
- Optical 4-camera front and backside alignment
- Flexible design for fast wafer & mask changes
- Touch screen control
- Priced to meet most budgets
- Motorized backside focus
- Motorized auto-leveling and auto gap-setting
- Optional chuck and Z-gap digital display

Any OAI mask aligner system may be configured with an optional OAI Nano Imprint Module.

Nano Imprint Module System
High-yield mold release technology.
- Technology developed at Hewlett Packard
- Low cost solution for R&D
- High yield mold release technology
- Modular add-on for mask aligners

Package includes:
- OAI Aligner Module
- Process controller
- Imprint material
- Mold