

ICARUS

Solder Bump Indium Deposition System



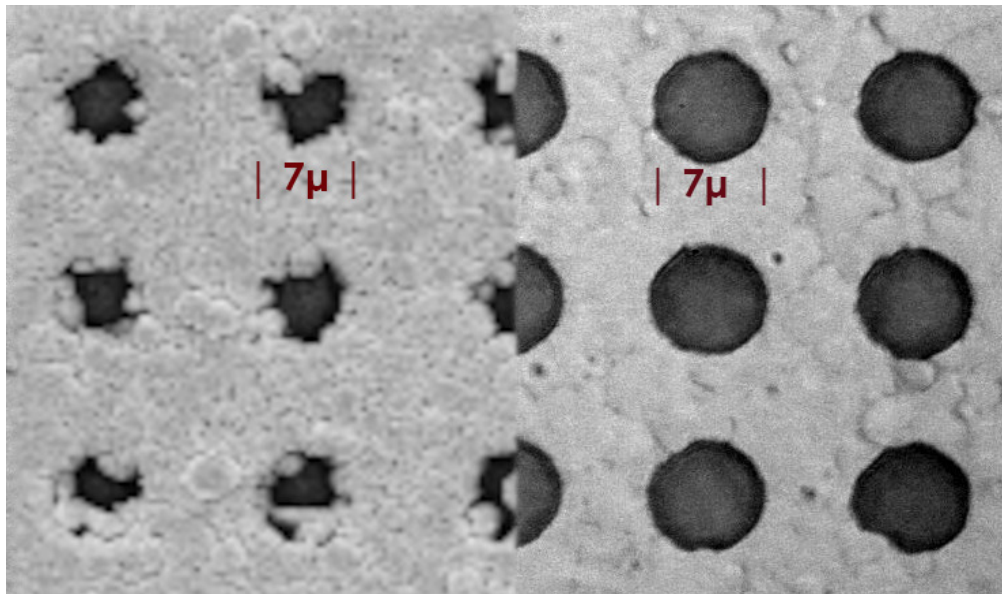
System Features

- Wafer sizes up to 200mm diameter
- Substrates held very low temperature
- High-capacity furnaces
- Suppression of lateral crystalline growth
- Two Indium purification processes
- Hundreds of runs without venting
- Native oxide removal and reduction

ICARUS

The Intlvac ICARUS Indium Bump Deposition System is optimized for high throughput production with low maintenance and quick turnaround on parts. From pushing the “go” button to pulling out a finished wafer with 2 μ of spit-free coating takes less than 90 minutes with our automatic single carrier load-lock design. A load-lock cassette system can reduce this time even more.

ICARUS can handle any size and shape of wafer up to 200mm in diameter iwth custom carriers designed to meet the need of the product. Standard carriers handle 3 x 75mm, 2 x 100mm, 1 x 150mm, with options for witness pieces and 200mm without.



Technology Evolution

AUTOMATIC LOAD-LOCK

The ICARUS system comes equipped with either an automatic or manual load-lock for single and multi-wafer configuration.

The load-lock is designed to transfer and pre-condition single wafers up to 200mm. The load-lock chamber has a wafer cleaning position to facilitate the removal of light surface contamination, oxides and water vapor from the wafer without physically etching it. Once the wafer is cleaned, the carrier transfers it into position



sales@intlvac.com

SOLDER BUMP BONDING EVAPORATOR

SYSTEM CAPACITY

The system has a capacity of hundreds of depositions without the need to open the main chamber. When it is time to refill the indium, it only takes a few minutes to exchange the empty indium crucible with one that is pre-charged.



INTERNAL DEPOSITION SHIELDS

System shield and chamber have been designed to maximize reclamation with strategically positioned and easily removable internal deposition shield. Maintenance is easy with removable liners that can be swapped out and replaced with the spare set that come with the system.

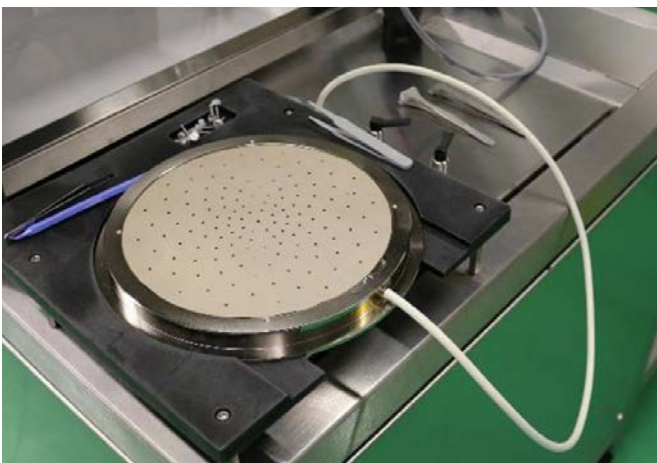
HELIOS* EVAPORATION SOURCE STAGE

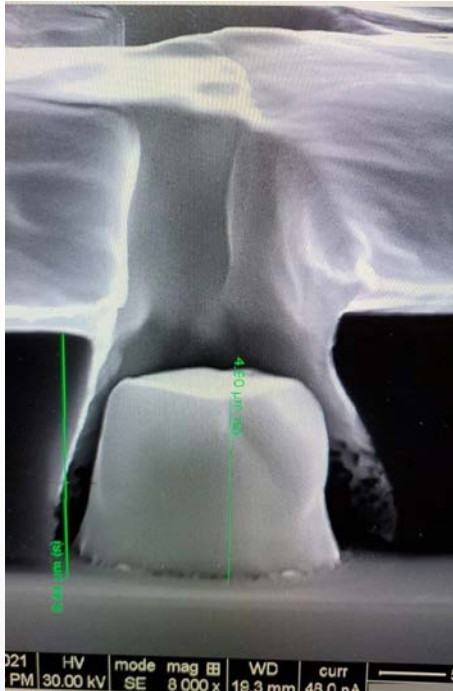
- Proprietary Intlvac evaporation source
- Large molybdenum crucible, thick wall design for long life operation
- Extremely stable evaporation rate
- Crucible may be loaded in place or removed and loaded in an alternate location

** pat. pending*

DRY THERMAL BONDING

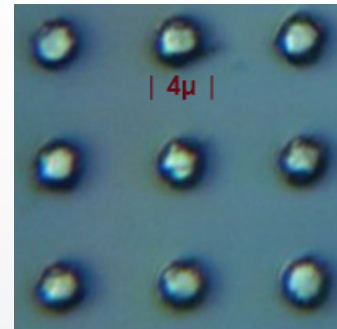
Wafers are mechanically bonded in air using Van der Waals force. Thermal interface is mounted onto carrier and wafers are bonded using vacuum hold down.





SUPERIOR DEPOSITION CONTROL

Our system geometry ensures a very flat and uniform deposition front for superior 'lift-off' capability. This tool provides the environment and deposition control to achieve the thickness, fill and material properties for a variety of successful solder bump designs.



THE NANOCHROME FAMILY OF SYSTEMS ARE USED TO MAKE:

- Indium Bump bonding for fabrication of focal plane arrays
- Ohmic contacts for III-V and II-VI materials with diffusion barriers
- Precision optical coatings by Ion Beam and Magnetron Sputtering
- Optical filters, Gratings
- Anti-reflective and Anti-scratch Coatings for IR optics
- Semiconductors & Dielectric Materials
- Superconductors

PROVIDING TECHNOLOGY SOLUTIONS

At Intlvac, we design and manufacture a wide variety of systems for Thin Film PVD and Etch. Our product line ranges from small R&D/pilot project systems to large production systems utilizing processes such as Ion Beam Etching, Sputtering, E-beam, Thermal Evaporation, Fiber-optic coating, and more! Call today to discuss your specific requirements.