



## Available In-situ Aligned Wafer Bonding Techniques:

- Anodic
- Eutectic
- Direct (High & Low Temperature)
- Glass Frit
- Thermo-compression
- Adhesive: thermal & UV cure
- Also – Aligned Hot Embossing
- Surface Activation for low temperature bonds (in-situ RAD & ex-situ plasma)

**Class 10  
bonding  
environment  
2" to 8" wafers**



## Associated Pre & Post Bond Services:

- Wafer Cleaning: Wet megasonic & dry UV ozone
- Wafer Metrology e.g. Profiling, TTV & Surface Roughness (AFM-Ra)
- Wafer Structuring: e.g. Channels, Holes & Conducting Vias (TSV)
- Wafer Processing: e.g. PVD & PECVD Deposition
- Electroplating: eutectic & metal layers for bonding and vias (Au, In, Ni, Cu)
- Powder blasting: Glass, Silicon, Quartz, Ceramics, III-V's
- Wafer Preparation: Surface Finish – Planarisation (CMP)
- Inspection of bonded assemblies – SAM & IR
- Screen printing: Adhesives and glass frits



Also access via long term collaboration with the Rutherford Appleton Laboratory to:

PHOTOLITHOGRAPHY  
WAFER SAW

DEPOSITION – PVD & CVD & FURNACES  
WIRE & BUMP BONDING

ETCHING – DRY & WET  
METROLOGY: THIN FILM, LINE WIDTH, SEM

## AML BOND CENTRE,

Unit 8, Library Avenue,  
Harwell Campus, Didcot, Oxfordshire, OX11 0SG, UK  
Tel: +44 (0)1235 833 934 Fax: +44 (0)1235 833 935  
[bonds@aml.co.uk](mailto:bonds@aml.co.uk) [www.aml.co.uk](http://www.aml.co.uk)



## Wafer bonding has found many applications in the field of MST, MEMS, III-V, ICs & Optical devices:

- MEMS devices: e.g. Pressure Sensors, Accelerometers, Microfluidics
- Vacuum encapsulation (absolute pressure, IR detectors...)
- 1st Level Packaging to isolate package-induced stresses
- Wafer-scale Packaging – MEMS & IC, eg. cameras for mobile phones
- III-Vs, e.g. high-performance LEDs bonded reflector – heat sink
- 3D interconnects
- Temporary bonds for handle wafers (interlayer & direct)
- Advanced bonded substrates, e.g. Si on Glass (SOG)
- Smart cut – Layer transfer



## BOND CENTRE SERVICES OFFERED

- Wafer Bonding Process Development, e.g. bond parameters for novel materials
- Wafer Bonding Process selection & design for your application
- Wafer Bonding Service
- Wafer Bonding Technology Transfer & Training
- Associated Processes (Pre & Post Bond)
- Applications knowledge for: **MEMS** **Smart cut layer transfer**  
**Chip-To-Wafer Packaging** **Wafer-Level Packaging** **3D Integration**  
**Vacuum Encapsulation** **Temporary Bonding** **TSV** **LEDs**
- Advanced Substrates: silicon on glass (SOG), silicon on sapphire (SOS), silicon on quartz (SOQ), bonded silicon (100) / (111), conducting via arrays (silicon and glass) – custom layouts.

Part of the **UK MNT Open access facilities Network**