

# EV 801 Wafer Bonding System

***Operating Procedures [LINK](#)***



### ***Process Description:***

Wafer bonding is a common fabrication step in manufacturing MEMS devices. There are three basic types of bonding: eutectic, anodic and thermo-compression. The success of bonding two wafers is dependent on the materials compatibility, surface treatment, and mechanical and electrical properties. The process includes clamping of the two wafers, temperature and vacuum.

### ***Equipment Description:***

The EV 801 system is actually two separate units. One side is the wafer cleaning station that has programmable steps for spin and DI water dispense with megasonic excitation. The bonding unit has interchangeable chucks for 2-, 3-, and 4-inch wafers. The bonding unit can be operated manually or with programmed processes to control the heating, cooling, electrode force, voltage, and bonding time. Both the top and bottom heaters have a range up to 550°C. The electrode force is 1-7000 Newtons depending on the bonding method used. Voltage for anodic bonding is up to 1200 volts.

<b><i>Materials Allowed</i></b>	<b><i>Materials Not Allowed</i></b>
GaAs	Metals
Glass	Photoresists
Polysilicon	Polymers
Quartz	
Silicon	
SiO <sub>2</sub>	
Si <sub>3</sub> N <sub>4</sub>	