

**IMPULSE CURRENT BONDING:
ASSEMBLY GLASS TO METAL**

**A DISRUPTIVE INDUSTRIAL
TECHNOLOGY**

About Sy&Se

Sy&Se SA is a Swiss supplier specialized in bonding glasses with metals or ceramics at low temperature.

To ensure our customers' competitiveness through innovation, we develop bonder machines for versatile applications, ranging from semiconductors to an extended variety of industrial components. In order to offer specific bonding services, we are also equipped with "ELLSA", an industrial ICB machine that can be adapted to meet any of your technical requirements.

Tech in focus

ICB is a new low temperature bonding process applicable to a wide range of materials and shaped substrates. Standard glass materials can be bonded with materials showing large mismatches of coefficients of thermal expansion (CTE) and different compositions such as metals (typically stainless steel, aluminium, or titanium) or ceramics (usually AlN, sapphire or spinel).

Shaking up the state of art technology, this versatile, patented process allows working from wafer up to complex industrial shapes. In order to maximize flexibility and minimize product costs, our industrial ICB machine "ELLSA" can work both in a standard Anodic Bonding mode and automatically switch to ICB mode to deliver the next generation of packaging.

Key advantages



Strong, hermetic and durable

Interatomic bonding, ionic/covalent. Stable, permanent and transparent over lifetime.



Low temperature

Takes place from 120°C.
Low constraints on materials.



Economic

High yield, fast process.
Parallelization.

General properties

Pressure ranging from UHV to over-pressurization

Large substrate material compatibility - from insulator to conductor

High mechanical strengths of ionic/covalent bond

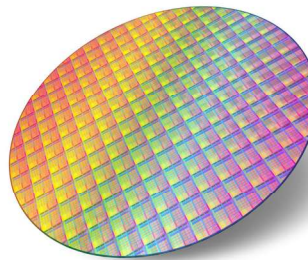
Hermetic sealing

Resistant to radiation and UV

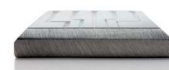
Permanent bonding

Bondable shaped parts

MEMS
Silicon



Microfluidic
Aluminium



Sensor
Titanium

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Partners



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