Smart Equipment Technology

SÜSS MicroTec

PRESS RELEASE

Partnership between SUSS MicroTec and SET to develop a combined equipment solution for 3D chip integration

SUSS MicroTec and SET announce a partnership in sequential die-to-wafer (D2W) hybrid bonding, a die-based interconnect technology, to provide a fully automated, customizable, highest-yield equipment to customers. This solution will accelerate the industry's path towards advanced 3D multi-die solutions such as stacked memory and chiplet integration.

Saint-Jeoire, France and Garching, Germany - September 1st, 2021 - SUSS MicroTec -leading supplier of equipment and process solutions for the semiconductor industry- and SET -leading supplier of high precision flip-chip bonders- signed a joint development agreement to develop a cluster, including several modules such as surface preparation, cleaning, bonding and metrology.

As part of this partnership, SUSS MicroTec's high-efficiency surface preparation modules and throughput-optimized metrology solutions for post bond overlay verification will be combined with SET's latest ultra-high accuracy D2W hybrid bonding platform.

As today's 2.5D and 3D packaging schemes are limited by the minimum interconnect density that traditional microbump technology can offer, hybrid bonding solves this problem by bonding the direct contact between two metal pads (mostly copper) and surrounding dielectrics in one single bonding step. This bumpless bonding approach allows for substantially smaller pitches and higher interconnect density which are the key enablers for future generations of multi-die solutions.

Goetz M. Bendele, PhD, CEO of SUSS MicroTec:

"*Hybrid bonding is one of the main growth drivers of the advanced semiconductor backend equipment space, as well as one of the main growth levers for SUSS MicroTec. With our partnership with SET, we will be able to offer our customers a complete suite of both die-to-wafer and wafer-to-wafer hybrid bonding solutions for the broadest set of heterogeneous integration applications in the advanced backend space. Our die-to-wafer bonding solution, leveraging the combination of SET's leading-precision die placement technology with SUSS's proven surface activation, automation, and metrology capabilities, will deliver additional customer value through differentiation in terms of throughput and yield, while at the same time enabling friction-less integration into our customers' fabrication sites.*"

Pascal Metzger, PhD, CEO of SET:

"*Thanks to several partnerships we had & our more than 10 years experience in hybrid bonding, we have succeeded in taking hybrid bonding from a purely laboratory state to an industrial state. Thus in September 2019, SET launched a stand-alone machine – the NEO HB. Thanks to our new partnership with SUSS MicroTec, we are now going to accelerate the integration and automation phase of the process. This will permit to provide a complete industrial solution to our customers, for applications coming in the very near future such as HPC (High Performance Computing), AI (Artificial Intelligence), 5G and many other more, to diversify our offer and address new market segments.*"

For more details on hybrid bonding at SUSS MicroTec and SET
https://www.suss.com/hybrid-bonding
https://set-sas.fr/catalog/direct-bonding/

About SUSS MicroTec
SUSS MicroTec is a leading supplier of equipment and process solutions for microstructuring in the semiconductor industry and related markets. In close cooperation with research institutes and industry partners SUSS MicroTec contributes to the advancement of next-generation technologies such as 3D Integration and nanoimprint lithography as well as key processes for MEMS and LED manufacturing. With a global infrastructure for applications and service SUSS MicroTec supports more than 8.000 installed systems worldwide. SUSS MicroTec is headquartered in Garching near Munich, Germany.
www.suss.com

About SET
Founded in 1975, based near Annecy in the northern Alps in France, SET is a world leading supplier of high accuracy flip-chip bonders (chip-to-chip and chip-to-wafer) and versatile Nanoimprint Lithography (NIL) solutions. SET accompanies laboratories and industries of semiconductor, which look for a high precision and an important reliability in the assembly of their components in their projects, and accelerate their developments of the chips of future. With equipment installed worldwide, SET is globally renowned for the unsurpassed accuracy and the flexibility of its flip-chip bonders. Ranging from manual loading to fully automated version, they adapt to all main bonding techniques: fluxless reflow, thermo-compression, adhesive joining compression, thermosonic, hybrid bonding.
www.set-sas.fr

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