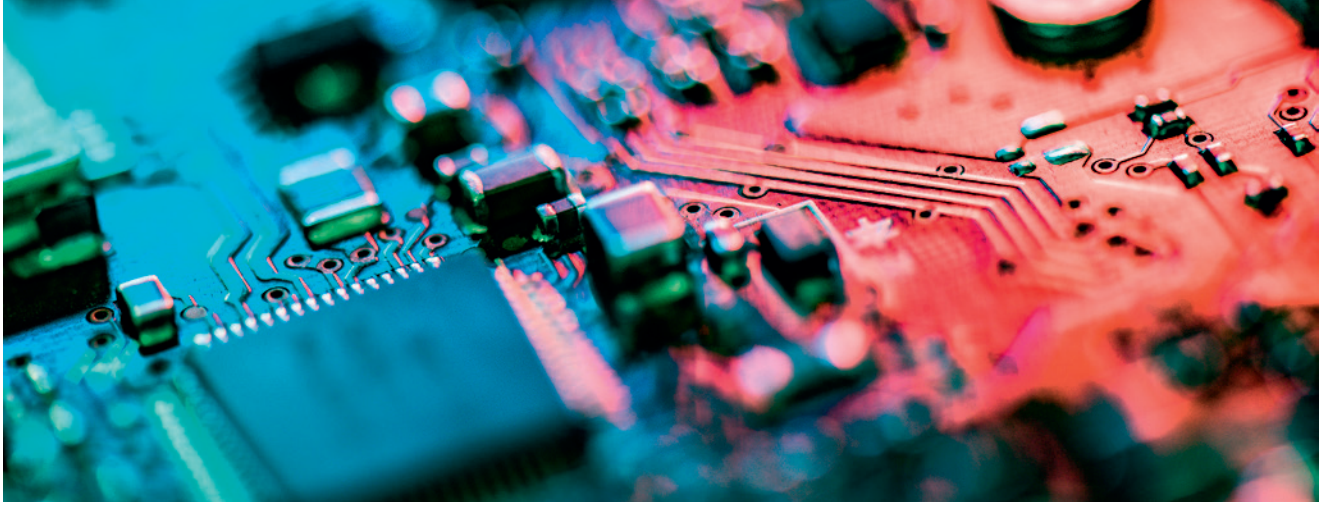
PLASMA TREATMENT AUTOMATED

ADVANCED PACKAGING WITH AUTOMATED PLASMA TREATMENT

From substrate delivery to process completion – automated loading and unloading via OHT and AGV/AMR systems ensures continuous plasma treatment with maximum throughput and minimum contamination risk.

PVA TePla



ADVANCED PACKAGING

WHY AUTOMATION IS CENTRAL

Plasma treatment is a critical process step – and only as reliable as the handling around it.

Advanced Packaging places exceptional demands on every process step. As package architectures become more complex – spanning fan-out, 2.5D/3D integration, and heterogeneous designs – plasma treatment remains a fundamental enabler: for surface activation prior to bonding, for cleaning before underfill or molding, and for descum after lithography. But in a high-volume production environment, process quality is inseparable from a perfect handling of the product. Manual loading and unloading of plasma systems introduces variability: in throughput, in contamination risk, and in process consistency. Automated handling – via loaders/unloaders, Equipment Front-End Modules (EFEMs), and standardized carriers such as FOUPs or JEDEC Trays – removes this variability and creates the conditions for repeatable, traceable plasma processes at production scale.

Modern packaging fabs operate with continuous material flows. Overhead Hoist Transport (OHT) systems and autonomous mobile robots (AMR/AGV) move substrates between process stations without human intervention. PVA TePla plasma systems are designed to integrate into these material handling architectures – accepting substrate delivery directly from OHT or AMR/AGV interfaces and returning processed carriers to the automated transport loop without interruption.

The Result is Throughput, Yield, and Traceability

Automated plasma systems in an Advanced Packaging environment deliver three measurable outcomes: higher equipment utilization through continuous substrate feeding, improved yield through reduced contamination exposure, and full process traceability through integrated recipe management and SECS/GEM connectivity.

OPTIMIZED THROUGHPUT. MINIMIZED HANDLING.

GIGA690 AUTO

The GIGA690 AUTO combines GHz plasma treatment with automated magazine handling for efficient processing of multiple substrate magazines. Magazines can be delivered via AMR/AGV and are automatically loaded into the system, buffered internally, and unloaded after processing. With support for up to six lead frame magazines up to 120 mm wide or four Flipchip magazines up to 168 mm wide, the system enables automated, recipe-based production with reduced operator intervention..

- Proven platform foundation
- Automated material flow
- Reduced operator intervention
- Flexible magazine capacity
- Production-ready connectivity

MAXIMUM FLEXIBILITY. HIGHEST PRECISION.

80Plus AUTO

The 80Plus AUTO is designed for automated processing across a broad range of product formats, including wafers, substrates, panels, and JEDEC trays. Fully automated magazine loading and unloading combine with intermediate storage to organize different product types and processing sequences efficiently. With AMR/AGV-ready magazine delivery and SECS/GEM host communication, the system supports precise, traceable integration into automated manufacturing environments.

- Broad product flexibility on one platform
- Automated magazine handling
- Organized production flow with intermediate storage
- Factory automation ready

MAXIMUM THROUGHPUT. MINIMUM FOOTPRINT.

AUTOfab GIGA690

The AUTOfab GIGA690 is designed for high-throughput advanced packaging applications with parallel processing of up to 12 wafers or panels. Based on the proven GIGA690 Inline platform, it combines maximum substrate flexibility with full automation and SECS/GEM communication. OHT and/or AMR/AGV delivery options support integration into automated production lines, all while high quality performing application-focused plasma processing.

- Unmatched process performance for underfill
- Flexible substrate handling
- Parallel processing
- Automated line integration
- Connected production control

SAFEST PROCESSING. HIGHEST QUALITY.

AUTOfab 80Plus

The AUTOfab 80Plus combines a field-tested plasma platform with fully automated handling for wafer and panel processing. Its broad product flexibility allows different product formats to be processed on one system, while automated material flow helps reduce manual intervention during production. With OHT and/or AMR/AGV delivery options, the system is prepared for integration into automated manufacturing environments.

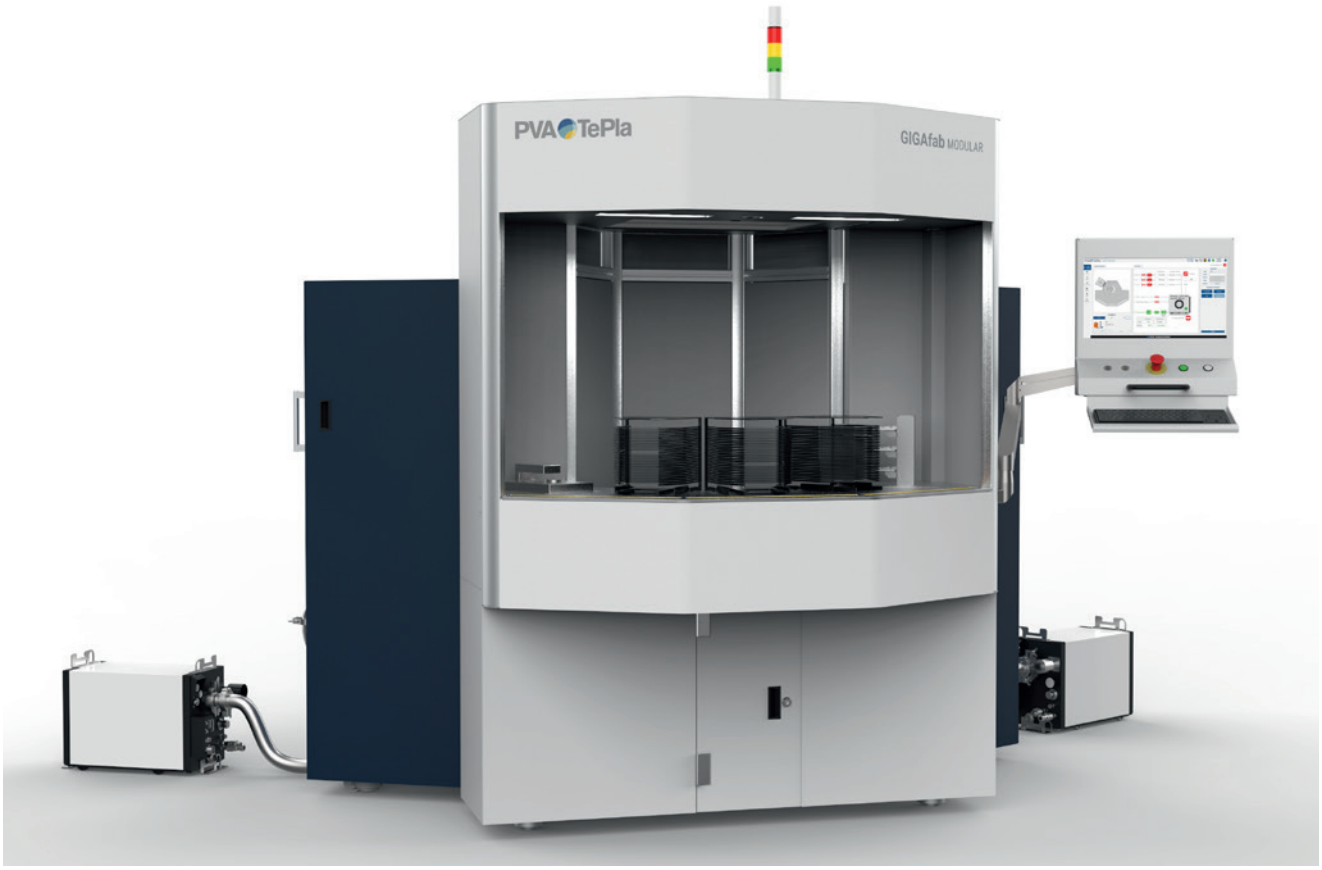
- Leverages a field-tested plasma platform with established process quality
- Maximum product flexibility
- Fully automated wafer or panel handling
- Automation-ready integration

MODULAR PROCESSING. RELIABLE WAFER FLOW.

GIGAfab Modular

The GIGAfab Modular is designed for flexible single-wafer processing of wafers up to 200 mm in diameter. The system can be equipped with up to three process modules, allowing different applications and process chemistries to be combined in one platform. Wafers are loaded into up to three cassettes at the front of the handling module; the user assigns the required recipe to each cassette, and the integrated wafer handling robot transfers the wafers to the designated process module. During processing, the wafer rests on a temperature-controlled hot chuck, supporting the precise control of ashing and descum processes. After processing, the robot returns and sorts the wafers into their assigned cassettes, creating a defined wafer flow from loading through processing to unloading.

- Cost-effective entry configuration with easy capacity expansion
- Application-specific process flexibility
- Efficient recipe-based production setup
- Automated safe wafer flow from cassette to process and back



DO YOU NEED AUTOMATION?
CONTACT US FOR INFORMATION!

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