Semiconductor Back-End Equipment Market is anticipated to reach US$148.756 billion by 2029 at a CAGR of 8.11%

The semiconductor back-end equipment market is anticipated to grow at a CAGR of 8.11% from US$86.193 billion in 2022 to US$148.756 billion by 2029.

NOIDA, UTTAR PARDESH, INDIA, May 14, 2024 /EINPresswire.com/ -- According to a new study published by Knowledge Sourcing Intelligence, the semiconductor back-end equipment market is projected to grow at a CAGR of 8.11% between 2022 and 2029 to reach US$148.756 billion by 2029.

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> *Knowledge Sourcing Intelligence*

The front-end equipment in semiconductors is the machine, which is used for the first stage as an integrated circuit (FEOL) production Pattern making for the individual components such as transistors, capacitors, resistors and many more is part of the front end of line (FEOL) process wherein the semiconductor substrate will be involved. As a rule, a front end-of-line (FEOL) plot includes all steps leading up to deposition of interconnected metal layers but does not include the deposition process itself. Semiconductor manufacturing is segregated into two types front-end and back-end where the front-end performs wafer fabrication and the back-end focuses on the assembly of an integrated circuit.

Semiconductor front-end inspection and metrology systems are indispensable in the initial phases of semiconductor production including part evaluation in the whole process for the reasons of quality, precision, and reliability. These systems analyze many criteria of materials of semiconductors, such as dimension, substance constituent, thickness, etc. Through transfer of microscopy, spectroscopy, ellipsometry, and scanning they provide a detailed examination of features microstructure of semiconductor materials.

The growing government initiatives and schemes are the primary driving force behind the semiconductor back-end equipment market growth. For instance, according to the Ministry of

Electronics and Information Technology, India published an article in March 2024, it states that The government would like to give a boost to indigenous design and innovation by introducing the “Design Linked Incentive” (DLI) Scheme. This initiative offers a substantial financial assistance by reducing up to 50% expenses on eligible design and development supports as well as offering additional 6–4 % credit on sales over a 5-year period. This incorporates the provision of such facilities as this convinces local companies to invest in R&D and production.

Semiconductor back-end instruments consist of the gear, apparatus, and equipment which are on the job in the last semiconductor production. These stages entail the actual IC (Integrated Circuit) design as well as the particular IC fabrication process.

Numerous product launches and collaborations are taking place in the market thereby, increasing semiconductor back-end equipment.

• For instance, in October 2023: Canon launched Nanoimprint lithography, unlike optical-based methods, is a mask-free photolithography process in which the mold is used to produce exact patterns onto a resist layer, thus offering high resolution for a large area of chip manufacturing in just a simple, straightforward manner.

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The semiconductor back-end equipment market, based on the procedure is segmented into five categories namely wafer testing, bonding, dicing, metrology, and assembly packaging. wafer testing and assembly packaging is expected to account for the major share of the semiconductor back-end equipment market. The wafer testing and assembly packaging plays a vital role in semiconductor industry as these procedures enables the proper functionality of chips and make those chips ready for use in consumer electronics.

Based on geography, the semiconductor back-end equipment market is expanding significantly in the Asia Pacific region due to various factors. In countries like China, Japan, South Korea, and Taiwan there is a growing demand for semiconductor back-end equipment in various industries, including semiconductors, consumer electronics, automotive, and telecommunication. The demand is being driven by these nations is due to the region is famous for its well-established semiconductor industries and chip manufacturing capacity. The surge in consumer electronics propels the demand for chip production in which semiconductor back-end equipment plays a vital role and government initiatives in the region to boost domestic chip production drive the market of semiconductor back-end equipment in future.

The research includes several key players from the semiconductor back-end equipment market, such as ASML Holding, Applied Materials, Lam Research, S firm Applied Materials Inc (Tokyo Electron Limited), KLA Corporation, Onto Innovation Inc, SCREEN Holdings Co Ltd, Teradyne Inc, and Japan Industrial Partners (Toshiba Corporation).

The market analytics report segments the semiconductor back-end equipment market as follows:

- By Procedure

o Wafer Testing
o Bonding
o Dicing
o Metrology
o Assembly Packaging

- By Geography

o North America

- USA
- Canada
- Mexico

o South America

- Brazil
- Argentina
- Others

o Europe

- Germany
- UK
- France
- Spain
- Others

o Middle East and Africa

- Saudi Arabia
- UAE
- Others

o Asia Pacific

- China

- Japan
- South Korea
- India
- Australia
- Others

Companies Profiled:

- ASML Holding
- Applied Materials
- Lam Research
- S firm Applied Materials Inc (Tokyo Electron Limited)
- KLA Corporation
- Onto Innovation Inc
- SCREEN Holdings Co Ltd
- Teradyne Inc
- Japan Industrial Partners (Toshiba Corporation)

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