

CLOSE UP

New Process Technology Center: A Model Facility for the 300mm Era

The move to larger wafer sizes will allow a significant increase in the number of semiconductor chips created on each wafer, thus reducing the overall production cost per chip. When wafer sizes change, most production equipment must be replaced with brand new products that use a new platform.

Today, with the 300mm era rapidly approaching, Tokyo Electron's state-of-the-art New Process Technology Center has started to carry out several important missions for our customers.

Development, Evaluation and Demonstration of 300mm Wafer Equipment

The clean room area consists of demonstration rooms for 300mm wafer process equipment and separate development areas for new equipment, in which we have begun developing strategic key process modules for future 0.13 μ m-0.10 μ m design rules and 256M-1Gbit processes. A major feature of the Center is the joint development it conducts with customers. Because those working at the Center know the user's requirements, they can set about developing equipment immediately, enabling mass production equipment to be delivered in a short period of time.



Analytic equipment is used to test thin-film quality on wafers.

Development and Evaluation of Process Integration

The Center is also involved in the development and evaluation of process integration, a new paradigm technology that will become increasingly important. The focus here is on the development and evaluation of a series of process steps encompassing several pieces of equipment, rather than separate single-process solutions. The key for the equipment business of the future will be the ability to provide customers with strategic solutions like these that enable them to differentiate their products. The shift from providing single-process technologies to supplying integrated process technologies will bring about further advantages to Tokyo Electron as a multi-product supplier.



A centralized supervision system monitors and records power supply data for each piece of equipment as well as clean room safety.

New Process Technology Center Data:
Established: February 1998
Location: Nirasaki, Yamanashi Prefecture
Total floor area: 14,000m²
Clean room area: 2,300m²
Cleanliness level: Class 10 -10,000

Addressing Environmental, Energy and Safety Concerns

There is one more reason the Center is attracting the interest of customers worldwide: The facility was built as a place for developing and testing near-term environmental and energy-saving solutions, and boasts visionary concepts for the semiconductor factories of the future. The Center focuses on devising measures to address environmental, energy-saving and safety concerns of semiconductor production equipment and its accessories, and on developing the clean technology that enables microcontamination-free manufacturing. In addition, a centralized supervision system monitors and records clean room safety and power supply data to each piece of equipment on a 24-hour basis.

Integrated circuits supplied by semiconductor manufacturers have enabled the creation of numerous energy-saving, high-tech products. On the other hand, the pursuit of cost-efficient IC production has resulted in larger factories and equipment, which in turn have a greater impact on the environment because they use more electricity, gases, chemicals and water, and generate more waste fluid and exhaust gases. The importance of environmental and energy-saving solutions is therefore likely to increase. Tokyo Electron is positioning the New Process Technology Center as a laboratory for developing and testing solutions for these problems, and intends to share these results with the world. These activities will further boost the Company's role in the industry as more than just an equipment supplier.