

# Review of Operations



The **UNITY®-CVD** is an advanced CVD system for depositing 0.25 micron Ti/TiN film.



The **UW8000** carrierless cleaning system has earned the trust of customers due to its damageless wafer features.



## Semiconductor Production Equipment

After contracting in 1996, the semiconductor market grew in single digits in 1997, while DRAM production overcapacity restrained a recovery in memory prices. This affected the semiconductor production equipment market as DRAM manufacturers worldwide reduced capital investment. Moreover, the financial difficulties in Korea resulted in additional decreases in investment in the second half of the past fiscal year.

Despite the difficult operating environment, consolidated net sales of Semiconductor Production Equipment (SPE) increased 6.8 percent to a record ¥380,184 million. Primary factors included increased investment among semiconductor manufacturers in 0.25 micron technology, and strong sales growth in the United States and Taiwan. SPE sales growth was the result of the approximately 14 percent year-on-year gain in sales of original products.

By geographic region, sales in Japan decreased 13.5 percent year-on-year, mainly because distribution agreements with KLA-Tencor (formerly KLA Instruments) and Varian Associates were terminated. However, sales of other imported products such as CMP systems of IPEC PLANAR and FIB systems of

Micron increased. Sales in the United States expanded 146.6 percent, reflecting Tokyo Electron's steady progress in globalizing operations and growth in sales to logic device manufacturers. Sales in Europe decreased 10.3 percent due to sluggish market conditions. Sales in Korea declined 41.7 percent despite stable demand as credit

concerns impacted shipments. Sales in Taiwan increased 41.1 percent as demand among foundry and memory device manufacturers expanded.

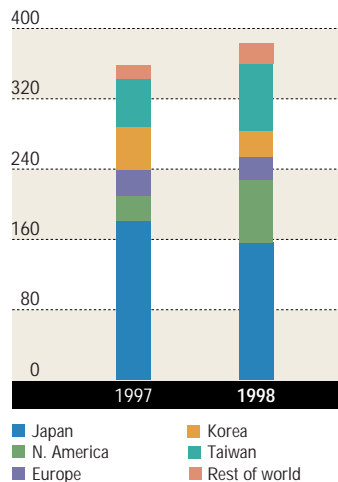
By product sector, in oxidation/diffusion furnaces and LP-CVD systems, sales of the Fast Thermal Processing System (FTPS), which Tokyo Electron emphasizes, increased significantly. We expect the sequential process that our FTPS provides will continue to support our

ability to meet advanced process requirements.

Sales of metal CVD systems increased about 80 percent, supported by growth in sales of *MBF-730* systems. Sales of *UNITY®-CVD* systems, a new product line, were also favorable. Moreover, Tokyo Electron expects its acquisition of the semiconductor production equipment operations of Materials Research Corporation will position the Company to strengthen its presence in the metallization process market.

In the coater/developer sector, Tokyo Electron generated double-digit sales growth.

**SPE Sales by Geographic Region**  
(¥ Billions)



*Sales of third-party products imported into Japan are included in Japan sales.*

Representative product *CLEAN TRACK ACT™ 8* is a new type of coater/developer whose design concept is completely different from conventional models, offering a reduced footprint, higher throughput, and the advantage of compatibility with Deep UV process technology.

Sales of oxide etch systems, represented by the *UNITY® Ver. IIe* line, also expanded by double digits. Furthermore, growth in the oxide etch market will increase when the damascene process becomes a mainstream technology in the near future.

In the cleaning systems sector, Tokyo Electron has recently begun marketing a reduced bath system. We expect solid gains in sales of this product because of its space-saving design and high-performance 0.25-micron-and-below capability.

Sales of fully automatic wafer probers grew in double digits, supported by solid expansion overseas. Building on the strong market position of the *Model P-8*, Tokyo Electron introduced the *P-8XL* for high-speed multi-pincount test applications. This product is expected to further boost our market share.

The reliability of Tokyo Electron's LCD production equipment supported sales growth of approximately 30 percent in this product sector as well as continued market share dominance in coater/developer systems and etch/ash systems. In LCD coater/developer systems, Tokyo Electron will continue to offer customers innovative solutions such as processes that use less resist. In LCD plasma etch/ash systems, we project that the market for dry etch systems, products that Tokyo

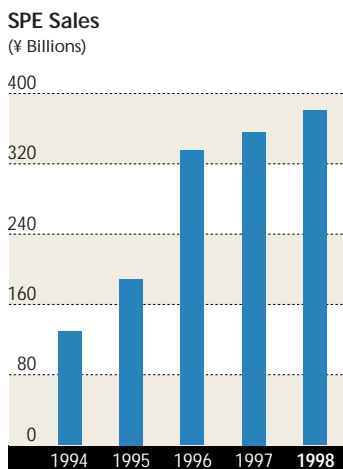
Electron specializes in, will expand as they replace wet etch systems.

Tokyo Electron is aggressively investing in equipment and process development to meet its mid- to long-term objectives. We completed a new Process Technology Center in February 1998 that will focus on 300mm wafer technology and process integration. It will also concentrate on clean technologies for applications such as optimizing the equipment operating environment, thus contributing to Tokyo Electron's industry leadership in

providing total support and advanced technologies. Tokyo Electron Miyagi completed a plant in February 1998 that will produce etch systems and 300mm metal CVD equipment. Moreover, Tokyo Electron Texas has begun producing *CLEAN TRACK ACT™* series equipment at a recently completed plant. We also continue to expand our global sales and

support capabilities, having added two bases in the United States, three in Europe, and three in Korea in the past fiscal year.

Tokyo Electron Tohoku recently received ISO 14001 certification for the environmental management systems at its Tohoku and Sagami plants, and Tokyo Electron Kyushu received the same certification at its Saga and Kumamoto plants. Tokyo Electron considers preserving and continuously improving the Earth's environment a top priority, and views ISO 14001 certification as confirmation of this commitment. We are continuing to make progress toward achieving certification at all of our other manufacturing locations as well.



The *P-8XL* wafer probe for high-speed multi-pincount test applications is the latest offering in a market segment we have long served.



Tokyo Electron is the global leader in providing coater/developer systems and etch/ash systems for LCD production.



Tokyo Electron is striving to achieve ISO 14001 certification at all of its plants.

# Computer Systems and Electronic Components

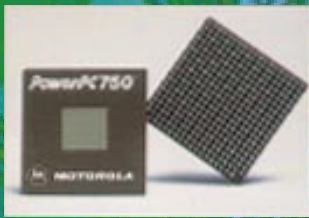


GenRad Inc.'s combination test station is one of the many value-added computer system products Tokyo Electron distributes.



Tokyo Electron began marketing Extreme Networks' high-speed gigabit ETHERNET switch for intranet use in the past fiscal year.

EC operations concentrate on distributing value-added third-party and original components.



## Computer Systems

Computer Systems division consolidated net sales increased 5.9 percent to ¥15,262 million. This division centers on the distribution of computers, networks, aerospace products and board/bare board testers of manufacturers including Hewlett-Packard, Silicon Graphics, FORE Systems and GenRad. Sales of computer and network systems were particularly strong, growing in double digits. A highlight of the past fiscal year was an agreement with SEEK Systems to distribute their efficient, high-speed *Adaptive RAID™* products, which are used in such applications as client/server systems and databases. In addition, the division began marketing Brocade Communication Systems' *Silkworm™*, a

new fiber channel gigabit switch. Tokyo Electron started marketing fiber channel products in fiscal 1996, and now carries a full line of products needed to construct fiber channel systems. The division also began marketing Extreme Networks' highly functional gigabit ETHERNET switch to meet the needs of the market for high-speed products.

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## Electronic Components

Electronic Components division consolidated net sales decreased 3.8 percent to ¥60,139 million, largely due to sluggishness in the Japanese economy. A highlight of last year was an agreement with Dallas Semiconductor to distribute their interface products.

This division focuses on the distribution of

value-added products such as application-specific integrated circuits (ASICs), logic circuits, and analog and memory devices of more than 30 companies, including Fujitsu, Motorola, AMD, Rockwell, and XILINX. We also design our own branded products known as Tokyo Electron Original Products (TOPs). Sales of TOPs have grown because of solid domestic and overseas demand. Moreover, demand for our *F1 PACK®* series flash

memory control chip sets was particularly strong due to growth in the digital still camera market. Until recently, we had focused on industry sales, but in the past fiscal year we began expanding into consumer-related fields as well.

In July 1998, electronic component operations will be transferred to wholly owned subsidiary Tokyo Electron Device Ltd. Consolidating these operations in a single, focused entity will improve efficiency, thus helping us meet the needs of customers and increase sales. To further raise efficiency, we have constructed a new distribution center, and have also begun operation of a computerized logistics system dedicated to the electronic components business.

CS & EC Sales  
(¥ Billions)

