

FEATURE

# CLEAN TRACK™ LITHIUS Pro™

*Born of Challenging the Limits*

## Role of Coater/Developer

Finer geometries are essential to realizing a high level of IC integration. Playing a central role in achieving finer design rules is the lithography process. This process is performed by exposure equipment (stepper/scanner), which projects circuit patterns onto the wafer that is coated and developed with photoresist (photosensitizing agent) by a coater/developer.

Coater/developers, along with exposure equipment, must accommodate a diverse range of customer demands, and therefore require sophisticated coating and processing technologies alongside high reliability.

## Creation of CLEAN TRACK™ LITHIUS Pro™

We formally announced the CLEAN TRACK™ LITHIUS Pro™ at Semicon Japan 2006, held in December 2006, to the surprise of many customers.

The reason is that the CLEAN TRACK™ LITHIUS Pro™ builds on the cutting-edge functions and advanced processes of the existing CLEAN TRACK™ LITHIUS™ to not only boost throughput by 30% but also to reduce the footprint by 25% and improve the productivity per footprint by 75%. These attributes are clearly tied to higher productivity for customers.

The existing CLEAN TRACK™ LITHIUS™ already achieves high productivity and processing stability, underpinning a market sales share of 80%. It is only natural therefore that the announcement of the CLEAN TRACK™ LITHIUS Pro™, with its even greater capabilities, was met with great surprise.

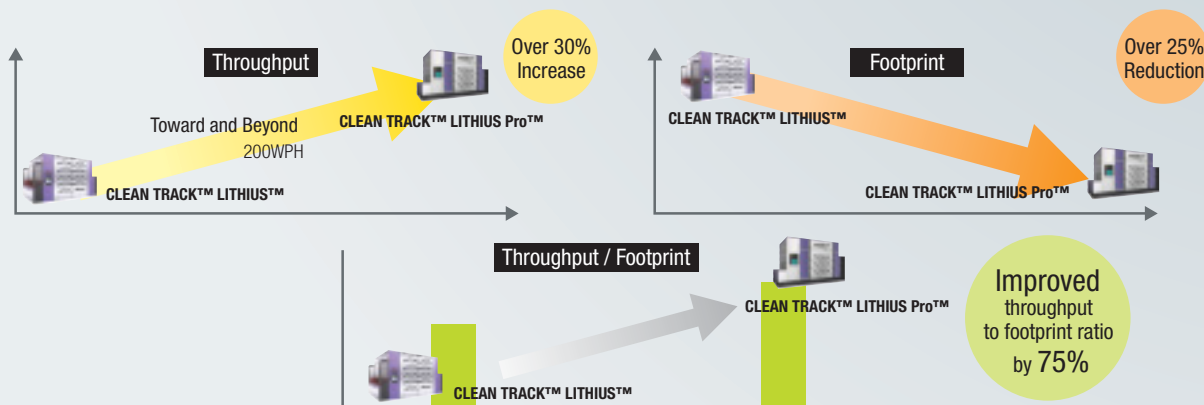
Actually, immediately after the start of mass shipments of CLEAN TRACK™ LITHIUS™, we were already making steady headway on the development of next-generation equipment,

the CLEAN TRACK™ LITHIUS Pro™. The reason is that, amid a shift toward expanding production volume per machine, it had become apparent that customers were seeking improved performance from coater/developers; the development of high-end exposure equipment was already progressing in response to this need. With market competition escalating, the ability to constantly respond to the market ahead of rivals is essential. This sense of urgency served as the impetus for the development of the CLEAN TRACK™ LITHIUS Pro™.

## Indefatigable Research, Then on to the Next Challenge

First, in trying to reduce the footprint, we cut the unit area by 25% over the existing level. Next, we developed a wafer transport system that increased throughput by 30%. By overcoming the seemingly contradictory issue of reducing the footprint while increasing throughput, we boosted the productivity per footprint by 75%, which is clearly tied to greater productivity for customers. We also increased reliability while also enhancing maintainability, including equipment adjustments. The CLEAN TRACK™ LITHIUS Pro™ is designed to enable adjustments for time-related changes in equipment operations without having to involve an engineer, thus maximizing the period of production contribution. Moreover, the equipment is repeatedly load tested to ensure the highest possible levels of stability and reliability.

As such, the CLEAN TRACK™ LITHIUS Pro™ was born in anticipation of customer needs, and is the crystallization of the indefatigable pursuit of product and technology development by project members from sales, marketing, development, and manufacturing units.





CLEAN TRACK™ LITHIUS Pro™

**Hikaru Ito:** Former VP & Deputy General Manager, SPE-1 Division and General Manager, CLEAN TRACK BU



(From June 2007, Corporate Director, Senior VP & Deputy General Manager, SPE-2 Division and General Manager, Etch Systems BU)

### Aggressively Addressing Market Needs Ahead of the Competition

Given the changes in the market in recent years, requests to increase equipment reliability and productivity will surely exceed previous levels. To meet user needs in this kind of era, we decided to implement a model change, and achieved unparalleled development speed.

During the project, the key focus was the creation of a concept that conformed to the desires of users. Consequently, in the initial phase of development, there were many long and repeated discussions about what specifica-

tions would be selected and what should be dropped, which brought the concept into focus. Productivity is increasing in exposure equipment, but machine down-time even for an instant causes damage to the customer. Thus, achieving even greater reliability became our mission.

Born of this process, the CLEAN TRACK™ LITHIUS Pro™, is an extremely compact yet highly productive product.

Not content with an 80% share of this market, we will pursue further improvements in our technology development capabilities and manufacturing technology capabilities to launch new products in the global market in a timely manner.

**Masami Akimoto:** Senior VP & General Manager, Development



### A Challenge-Oriented Mindset Produces More Highly Skilled and Motivated Employees

The drive to doggedly pursue a theme and an unshakable will are essential to developing market-leading products. For this, we pursued this project behind closed doors, including the use of a special room for development. In the initial phase, 15 development engineers were involved, and 30 were involved at the prototype stage, which is an exceedingly small number of people. I believe that the shared mentality among this group increased motivation and sped up the pace of development.

In the development process, one of the primary focuses was increasing quality. Because it is not feasible to improve quality substantially once mass production has begun, we

pursued a design concept from the early development stage of minimizing the frequency of problems as well as repair time after coming on line. As a result, I think we were able to deliver equipment that offers enhanced reliability and that contributes to greater productivity for customers.

We learned that people who are prepared to take up the challenge of making the impossible possible will grow and even become leaders. TEL Values\* are fostered through participation in projects, not through mere words alone.

\* TEL Values are aimed at sustaining the Company's progress and dynamism. They validate the TEL-way, which is the driving force behind the Company's growth and a set of fixed ideals to be passed on.