

SEMI AROUND THE WORLD

Semiconductor Equipment Sales to Reach \$41.7 Billion in 2007

Semiconductor equipment sales were projected to reach \$41.68 billion last year, according to the 2007 year-end edition of the SEMI Capital Equipment Consensus Forecast.

The forecast indicated that following 23 percent market growth in 2006, the equipment market grew 3% in 2007. Survey respondents expect the market to decline about 2% in 2008, and then post growth in the high single digits in 2009 and 2010 to reach \$47.99 billion in 2010.

Wafer processing equipment, the largest product segment by dollar value, was expected to grow over 6% in 2007 to \$30.61 billion. Survey respondents anticipated that the market for assembly and packaging equipment would expand by almost 11% to \$2.72 billion in 2007. The market for equipment to test semiconductors was expected to decline by about 15% to \$5.47 billion in 2007.

The Japanese market was projected to decline by about 3%, and moved behind Taiwan in 2007 for only the second time ever. South Korea continued its expansion in 2007, with projected growth of about 5%. Sales of new equipment in China grew almost 24%, while the Rest-of-World market regions declined by about 12%. •

Bob Graham Award for Marketing Presented to Richard Hong

Richard Hong of KLA-Tencor has received the ninth annual Bob Graham Award for outstanding contributions in semiconductor equipment and materials marketing. Hong was nominated for developing and deploying the concept of "In Line Monitoring," which has become pervasive throughout the industry, and has resulted in faster fab ramp-up and increased wafer yields for semiconductor companies.

"The example Richard Hong set back in 1993 through his successful implementation of the In Line Monitoring concept at Samsung has held many positive implications for the semiconductor manufacturing industry. Once it was shown to be successful, it was rapidly

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Waking Up to Sustainability

UNLESS YOU'VE BEEN ASLEEP FOR THE PAST YEAR, you're aware of the intense global focus on sustainability—everything from renewable energy to global warming.

We cannot go a single day without being confronted by sustainability issues such as global warming, environmental degradation, species loss, energy conservation, resource management and so on. Experts agree that those companies who look at environment, health and safety (EHS) as an integral part of development, production and sales will be long term winners in the market place.

Sustainable manufacturing facilities work with nature and use resources efficiently to achieve better results at a lower cost and with less impact on the planet. The approach is aptly summed up by the title of a recent book: *Green to Gold*. The co-author, Andrew Winston, was a speaker during a Sustainability Executive Panel at the SEMI International Trade Partners' Conference (ITPC) held last November in Maui, Hawaii.

Winston made the point that "going green" is not a fad. It's a sea change that is here to stay. Just ask the CEOs of WalMart, DuPont, Applied Materials and others, all of whom have embraced sustainability as a way to make their businesses more efficient, more profitable and environmentally responsible.

Even activities such as brand and positioning strategy, partner management, and after-sales support can have a serious impact on the energy use and carbon footprint of a product, according to another ITPC speaker, Peter Williams of IBM.

In this business and social climate, "being green" is no longer optional for semiconductor manufacturers, or any company for that matter. Many stakeholders—customers, investors, employees, governments and non-governmental organizations (NGOs)—now routinely ask about the environmental impact of manufacturing plants and projects.

Another speaker at ITPC was Shaunna Black, vice president of Texas Instruments. She explained how TI saved money by applying sustainable design and construction concepts in its 300 mm fab in Richardson, Texas. The savings continued after the fab was built, with an estimated \$1 million reduction in operating costs in the first full year and more than \$4 million per year saved after full buildout. These ongoing savings result from significant reductions in energy consumption and water usage, among others. TI is applying the same practices to the design and construction of two other sites, and investigating the retrofit of all existing buildings to incorporate energy and resource-saving features.

SEMI members can and should play a major role in sustainability. From the equipment makers' point of view, small improvements in sub-components throughout a finished tool add up to large and valuable reductions in energy and materials use.

The current chairman of the SEMI board of directors, Jerry Coder, suggests that SEMI member companies consider reducing their environmental footprints by adopting the following practices:

- Using renewable raw materials for their products;
- Reducing consumption of raw materials used in their operations and/or reclaiming, reusing, or finding alternative uses for waste materials;
- Designing their products and operations for sustainability; and

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SYMPOSIUM

Symposium to Explore Contribution of Equipment and Materials Sector in Global IC Industry

FOR THE PAST 40 YEARS, THE equipment and materials industry has served as the hidden foundation of the semiconductor device industry, which in turn has enabled the proliferation of electronic products that make up the digital age. The goal of a new symposium is to highlight the place of the equipment and materials industry sector within the broader chronicle of the semiconductor industry.

off companies, especially in California's Santa Clara valley, opened up new business opportunities for semiconductor equipment and materials startups.

The emergence of the equipment and materials industry as a separate sector reflected the rapidly growing complexity of semiconductor manufacturing. As semiconductor devices followed the path of miniaturization outlined by Gordon Moore in 1965, fabrication of these new chips required precision techniques to manipulate extremely small quantities of materials. These specialty manufacturers were active participants in the collective technological innovation that helped bring the semiconductor industry down the Moore's Law curve during the past 40 years.

Moreover, the specialized equipment manufacturers and materials suppliers facilitated the globalization of the semiconductor industry by virtue of their active overseas marketing. In the early 1970s, as semiconductor products converged into silicon-based integrated circuits using standardized fabrication techniques such as photolithography, sputtering, and ion implantation, the availability of off-the-shelf equipment significantly reduced the entry barrier to semiconductor manufacturing for would-be chipmakers around the world.

The conference will be organized around four themes:

EMERGENCE OF THE INDUSTRY: The semiconductor equipment and materials industry emerged in the mid- to late-1960s as a separate sector. What was the context within which the specialized equipment and materials industry emerged? What were the forces that drove tool-making from an in-house activity to outsourcing? In this session, participants will discuss the transition that led to the emergence of the equipment

and materials sector.

EVOLUTION OF TECHNOLOGIES: As the equipment and materials sector became established in the 1970s, it increasingly became the catalyst for critical technological breakthroughs that made advanced chip manufacturing possible. What were some of the key technological innovations? How were they integrated within the complex device manufacturing process? In this session, participants will discuss specific technologies and their evolution, including crystal growth, photolithography, ion implantation, and others.

GLOBALIZATION: From the beginning, the equipment and materials sector was a global industry. Firms aggressively marketed their products to overseas customers. At the same time, formidable competition emerged from outside the U.S. in the 1970s and 80s. In this session, participants will examine how the equipment and materials sector enabled the global semiconductor industry, as well as the impact of globalization on the sector.

CONTEMPORARY ISSUES AND LESSONS FROM HISTORY: With the rapid pace of technology change, shifting industry structure, and increasing forces of globalization, the equipment and materials sector faces new challenges and opportunities. What are some of the key contemporary challenges in the sector? What lessons can be learned from the collective historical experience during the past 40 years? In this session, participants will explore these questions through a roundtable discussion among industry participants and observers.

For more information on the event, contact Hyungsub Choi at the Chemical Heritage Foundation, email hchoi@chemheritage.org or telephone 1-215-873-8231. •

SEMI and the Chemical Heritage Foundation present—

**Past, Present and Future
of the Semiconductor Equipment
and Materials Industry
Computer History Museum**

April 1–2, 2008

Computer History Museum, Mountain View, CA
www.semi.org or hchoi@chemheritage.org

The symposium, titled “The Past, Present, and Future of the Semiconductor Equipment and Materials Industry,” will be held April 1–2, 2008 at the Computer History Museum, Mountain View, California. The event is presented by SEMI and the Chemical Heritage Foundation, a Philadelphia-based public charity dedicated to advancing the understanding of the role of chemical and molecular sciences in shaping society.

Until the mid-1960s, many semiconductor manufacturers had a vertically integrated structure, handling most, if not all, of the manufacturing process in-house. As the decade progressed, however, an increasing number of chipmakers began to outsource part of the process (such as silicon wafer manufacturing) and to purchase equipment from specialty manufacturers. At the same time, the proliferation of spin-

SEMI JAPAN

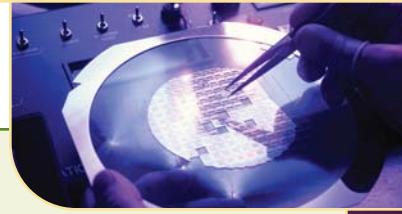
Yoichi Nakagawa Named President of SEMI Japan



SEMI HAS ANNOUNCED THE APPOINTMENT OF YOICHI (HANK) NAKAGAWA to the position of president of SEMI Japan effective January 1, 2008. Nakagawa assumes full responsibility for the Japan office of SEMI, which has been overseen by Dennosuke (Dennis) Uchida for the past five months. Nakagawa assumes full responsibility for SEMI operations in Japan and oversees the association's programs, products and services in the region.

Prior to joining SEMI, Nakagawa was president and representative director both at Nova Measuring Instruments K.K. (2006–2007) and at Helix Technology K.K. (1996–2005). Before that, he held a variety of senior management, business development, sales and marketing positions at GE Capital Japan, Applied Materials Japan, and Tokyo Electron Limited. Nakagawa earned his bachelors degree in electronic engineering from the Musashi Institute of Technology in Tokyo.

Following a career spanning over 40 years, including almost 11 years with SEMI Japan as its president, Dennosuke Uchida will continue to work over the coming year in a global capacity as Special Advisor to SEMI CEO, Stanley T. Myers. •



AKIRA INOUE AWARD 2007

Templeton Receives Akira Inoue Award for EHS Excellence



RICHARD (RICH) K. TEMPLETON, PRESIDENT AND CEO of Texas Instruments, is the recipient of the 2007 SEMI Akira Inoue Award for outstanding achievement in environment, health and safety in the semiconductor industry.

Templeton is recognized for his contributions to EHS leadership at Texas Instruments, which has resulted in the introduction of innovative environmentally-friendly products and processes and operational excellence in health and safety for employees.

Templeton has been president and CEO of Texas Instruments since May 2004, having joined the company in 1980 after earning a bachelor of science degree in electrical engineering from Union College in New York. Templeton is also the immediate past chairman of the Semiconductor Industry Association.

The Akira Inoue Award is named after the late Akira Inoue, past president of Tokyo Electron Limited and a strong advocate of the environment, health and safety. Inoue also served on the SEMI Board of Directors. •

SEMI AROUND THE WORLD *continued*

integrated into advanced fabs worldwide," said Stanley T. Myers, president and CEO of SEMI.

Hong holds bachelor and masters degrees in electrical engineering from the University of Myungji and the University of Yonsei respectively,

an MBA from Golden Gate University and Executive MBAs from UC Berkeley, University of Sei-jong and Deoul National University. He has almost two decades of experience with companies including KLA-Tencor, Samsung Semiconductor and Al Omran.

The Bob Graham Award is named in honor of the late Bob Graham who was part of the founding team of Intel and who helped establish industry-leading companies Applied Materials and Novellus Systems. •



PERSPECTIVES *continued*

- Delivering an internal awareness campaign on sustainability.

Coder comes from the chemical industry, where environmental policy in the past was typically driven by government regulatory controls. That's turned around, and many chemical and materials companies have become leading proponents of sustainability.

For several years SEMI has operated the Global Care program, which establishes a framework for companies to build and strengthen the commitment to EHS programs. This SEMI initiative is based on five key principles: workplace health and safety, resource conservation, product stewardship, community service, and excellence.

Another recent example of our efforts in this area was SEMICON® Japan 2007. Under a trial project, 90 percent of the energy consumption at the December show came from renewable energy sources such as wind power and biomass. In line with the theme of sustainability, featured programs at SEMICON Japan included the SEMI Global Environment Symposium as well as a special zone for EcoTech and EHS.

Going forward, SEMI will continue to focus on sustainability by providing information exchange and platforms for discussion and action among our member companies and their customers. — *Stan Myers* •

MEMBERSHIP

SEMI Annual Customer Satisfaction Survey Indicates Gains

ON A YEARLY BASIS, SEMI CONDUCTS A CUSTOMER SATISFACTION Survey (CSS) to assess the association's effectiveness in meeting member needs. This year's survey showed that two-thirds of SEMI members recognized an improvement in performance during the year and stable or improving satisfaction gains in product, service and communication quality.

Over 1,600 responses to the survey were received from every region in the world giving the survey strong statistical significance. Key objectives of the study were to determine key drivers of SEMI satisfaction and priorities of improvement.

Among the top improvements in customer satisfaction were in product and service quality and communications (see last year's *Quarterly Report to Members*, Winter 2007, at www.semi.org, click "Press," click "Report to Members"). Every product and service area (among ten categories) achieved measurable improvement and member's opinion of the quality of communications rose a significant 12%. Both product quality and communications were targeted for improvement following last year's CSS, so achieving positive results in these areas were encouraging.

Thank you to all SEMI members for your valuable feedback •

CALENDAR OF EVENTS

FEBRUARY 2008

January 30–February 1 SEMICON Korea 2008

Seoul, Korea
www.semi.org/semiconkorea

MARCH 2008

March 2–4

ISS Europe 2008
Hotel Westin Dragonara
Malta
www.semi.org/isseurope

March 11–13

FPD China 2008
Shanghai International
Exhibition Center (INTEX)
Shanghai, China
www.semi.org/fpdchina

March 18–20

SEMICON China 2008
Shanghai New International
Expo Centre
Shanghai, China
www.semi.org/semiconchina

March 19–20

**China Semiconductor
Materials International
Conference (CSMIC)**
Pudong
Shanghai, China
www.semi.org

APRIL 2008

April 1–2

**Past, Present and
Future of the Semiconductor
Equipment and Materials
Industry Computer
History Museum**
Computer History Museum
Mountain View, California
www.semi.org

April 6–10

**NA Standards
Spring Meetings**
Adam's Mark Hotel
Dallas, Texas
www.semi.org

April 9–12

**Global FPD Partners
Conference**
Phoenix Seagaia Resort
Miyazaki, Japan
www.semi.org/gfpc •