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July 24, 2007

**THE  
TUESDAY  
REPORT**



Published every Tuesday by *Chip Scale Review*

### Second best year for semiconductor equipment forecast

**SAN JOSE**—This will be the second best year in history for sales of semiconductor equipment, according to trade group SEMI's *Capital Equipment Consensus Forecast*.

The mid-year forecast, released during SEMICON West last week, estimates the equipment market will grow to \$40.9 billion in 2007, a 1 percent gain over last year's \$40 billion.

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The forecast is based on interviews conducted between late May and June 2007 with companies that represent most of the total sales volume for the worldwide semiconductor equipment industry.



*The forecast was released during SEMICON West at Moscone Center, San Francisco, last week.*

Respondents to the survey believe there will be a 7 percent growth in 2008, and about a 4 percent growth in 2009, reaching \$45.5 billion.

SEMI's forecast indicates the wafer processing equipment segment will experience the greatest growth this year at an estimated 4 percent to \$29.8 billion. The market for assembly and packaging equipment, the forecast predicts, will remain flat at \$2.5 billion this year.

For 2008, assembly and packaging equipment sales are predicted to reach \$2.7 billion, an increase of 9.8 percent over 2007. In 2009, that segment will grow another 1.9 percent to \$2.76 billion.

A decline of 8 percent in 2007 to \$5.9 billion for test equipment is foreseen by respondents. That segment, however, will recover soundly in 2008, with estimated sales of \$6.88 billion.

*(page 1-continued)*

## Second best year for semiconductor equipment (continued)

By country, the market in Taiwan is the growth leader, according to the survey, with a projected market increase of more than 20 percent, followed by China, with about 15 percent growth.



*Although equipment sales to China are expected to cool in 2008, a rip-roaring 35.9 percent increase is seen for 2009.*

Korea is expected to post 1 percent growth in 2007, with sales in Japan remaining flat.

North America and Europe are expected to decline in equipment buys by about nine percent each.

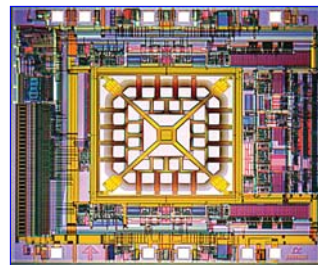
In 2008, the forecast estimates that China will decline in equipment buying by about 3.4 percent. In 2009, however, a rebound to \$3.48 billion, 35.9 percent, is forecast.

Sales of front-end equipment, according to SEMI, are being driven by continued the investment in 300mm technology and 45nm tools. [[semi.org](http://semi.org)]

## MEMS market tagged to reach \$72 billion by 2011

SAN JOSE—The MEMS market, which totaled \$40 billion in 2006, is forecast to top \$72 billion by 2011, according to a new research report from industry trade group SEMI and Yole Developpement, a Lyon, France, market research company.

The devices at the core of the MEMS systems totaled \$5.9 billion in 2006 and are projected to grow to \$10.8 billion by 2011, with a compound annual growth rate (CAGR) of 13 percent.



*Dual accelerometers, such as this one, are a popular MEMS device.*

Fueled by their growing use in consumer electronics, MEMS are defined as die-level components of first-level packaging and include pressure sensors, accelerometers, gyroscopes, microphones, digital mirror displays and micro-fluidic devices.

Materials and equipment employed to manufacture MEMS in 2006 exceeded \$1 billion. Materials are forecast to grow at a CAGR of 9 percent through 2011. The demand for materials is driven by substrates, which make up over 70 percent of the market; packaging coatings and the increasing use of chemical-mechanical polishing. [[semi.org](http://semi.org)] [[yole.fr](http://yole.fr)]

**David Tovar, industry veteran, succumbs from ALS**

David “Dave” Tovar, an IC packaging industry veteran of four decades, has died after a two-year battle with amyotrophic lateral sclerosis (Lou Gehrig’s disease), a neuro-degenerative illness that is progressive.

According to friends, Mr. Tovar died July 21.

Most recently, he was a consultant to several packaging firms. Earlier, he was an operations executive at IPAC, San Jose and vice president of technology development at OSE-USA, San Jose.



*Dave Tovar*

Mr. Tovar also served as president of Pac Tech USA, Santa Clara. His long industry experience includes service at ChipPAC (now STATS ChipPAC), Fairchild Semiconductor, IBM, National Semiconductor, Qualidyne, Synergy Semiconductor and VLSI Technology.

A person of wide interests, he held bachelor’s degrees in both German literature and analytical chemistry and a master’s degree in chemistry, all from San Jose State University.

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**C4NP goes online at IBM’s E. Fishkill Plant**

E. FISHKILL, N.Y.—IBM has gone into production with its C4NP (Controlled Collapse Chip Connection-New Process) at its E. Fishkill facility with a yield of 99.7 percent.

IBM says the C4NP process “combines the best attributes of the most popular, currently available bumping options.”

These C4NP features, says IBM, include the fine-pitch capability of plating and the lower costs of screening. The benefits are solder waste reduction, the use of bulk alloys, faster time-to-market for products and a lower chemical usage rate.

Costs on a per-die basis, IBM points out, are falling at a faster rate than packaging costs. The result is that packaging may often be more costly than manufacturing the ICs.

[\[ibm.com\]](http://ibm.com)

Still time to save \$\$ for September's packaging conference

SAN JOSE—Register by August 10 for the fourth annual International Wafer-Level Packaging Conference (IWLPC) and save 10 percent from the total with the Early Bird discount.

The Conference will be held at the Wyndham Hotel in San Jose from September 17-19. A September 18 keynote will feature Oleg Khaykin, chief operating officer at Amkor Technology Inc.

The first day of the Conference will be devoted to workshops. Days 2 and 3 will be filled with business and technical panels and exhibits by leading industry suppliers.

The program is presented by *Chip Scale Review* and the SMTA. Sponsors are Amkor Technology, the Law Firm of Mintz Levin, Pac Tech, SEMITool and Tessera.

Group discounts are also available. Register four from the same company and only pay for three! For a detailed program description, visit [smta.org/iwlpc](http://smta.org/iwlpc).



*Be wise! Register by August 10 for the Early Bird discount.*

Advantest wins preliminary injunction vs. TechWing in Taiwan

TOKYO—ATE maker Advantest Corp. says the Hsinchu (Taiwan) District Court has granted a preliminary injunction against Korean competitor TechWing.

Advantest filed a petition for the injunction on Feb. 8, 2006. The Japanese ATE maker alleges that TechWing infringed patents registered in Taiwan by Advantest (Nos. 086750, 106527 and 111444).

The patents relate to semiconductor test handlers. The '750 patent covers the basic structure of the handler and the order of main components of the handler.

The '527 patent deals with the detection of remaining device on a test tray; and the '444 patent is for the transportation of multiple test trays. [[advantest.com](http://advantest.com)] [[techwing.co.kr](http://techwing.co.kr)]

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*SPECIAL EDITION*

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*West2007*

IN PICTURES

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### SEMICON West 2007: Kinder, Gentler, Smaller

**SAN FRANCISCO**—With the 36th anniversary of SEMICON West now a memory, we believe this yearly ritual has finally settled in to its (hopefully) permanent venue.

We, and many of the people we know have a love/hate relationship with this deliciously agonizing orthopaedic torture test.

It was a kinder, gentler and smaller show this year after several large exhibitors from the past, including Multitest and Ultratech, decided to forego the event.

Gone, however, was the past years' frequent sniping from exhibitors and visitors about the San Francisco location, with its sky-high parking fees, pricey on-site sandwiches and poor directions to West Hall.



*The view from West Hall to South Hall*

Organizer SEMI seems to have made a major effort to remedy the worst complaints from last year—and there were many. That doesn't mean all was rosy, because it certainly wasn't, and SEMI has more work ahead. Exhibitor money is tight, but that didn't seem to bother SEMI, which will make a bundle for its efforts. (Note to SEMI: NEPCON West is a prime example of what happens when you get too big for your britches!)

We don't have floor traffic reports from SEMI yet, and we wouldn't believe them anyway. According to people we asked, the unscientific consensus was that this year's floor traffic was about the same as last year—maybe a tad better—which means it was sporadic—busy at times and somewhat slow at others.

*(Continued)*

## SEMICON West 2007: Kinder, Gentler, Smaller

We've always felt there were certain risks at any trade show, given the temper of the times. The fate of one unlucky fellow, the president of a Santa Clara company whose name we won't mention, confirms this belief.

He was struck by a flower delivery truck as he tried to cross the street at the show. He survived, but this is one SEMICON he won't soon forget!—R.I.



*The locals were on hand, too.*



*Carl Lehtonen of SiCoast celebrated his birthday.*



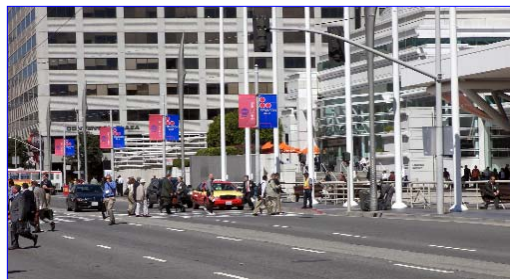
*Visitor Yuji Miwa from Victor Japan Co. seems taken aback by the strange "Silvermen" outside West Hall.*



*The Beer Hall was a popular gathering spot.*



*Sign of the times in North Hall*



*Signs of the times outside South Hall*

## SEMICON West 2007 Photo Album (continued)



*Erich Thallner, EV Group founder and chairman*



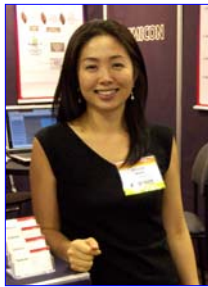
*Tink Young, OATest, San Jose*



*Isaac Mazor, president of Jordan Valley, Israel*



*Dr. Hans Kripps, Hesse & Kripps CEO*



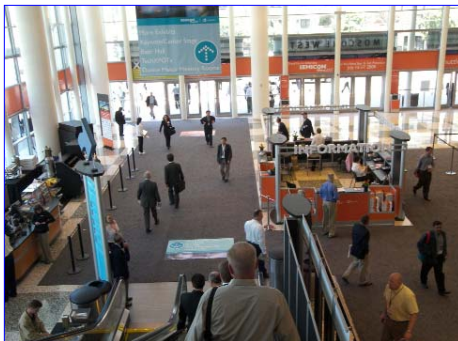
*Ms. Eugene Moon iSemicon*



*Nick Langston Sr., Antares Test, will retire.*



*Gary Catlin, industry vet, Plexus, Nampa, Idaho*



*The much-traveled West Hall escalator*



*Michael Riddle (under the "Y"), Wolfgang Buxeder (his left) of Cyber Technologies, discuss new products. Larry Jacobsen is at right.*



*Ian Ryou and Arianne Lim represented Korean test equipment manufacturer Miraee.*



*Martin Hart of Mirror Semiconductor (second from right) visits with (from left) CAD Design's Mario Rocha, John Sovinsky and Bob Korte.*

## SEMICON West 2007 Photo Album (continued)



*German bonder maker Hesse & Knipps met visitors from a prime spot on the first floor.*



*SolVision made the long trek from north of the border, Boucherville, Quebec, Canada.*



*Jennifer Salhus of Johnstech International finds a remark from John Byrne, Chip Scale Review rep, amusing.*



*David Dick and Amber Thomas from socket maker RTI*



*Venue for front-end equipment, South Hall*



*From left, Joe Mibili, Paul Ruo and President Bill Sinclair with socket maker Aries Electronics Inc.*



*Jan Vardaman (left) and Becky Travelstead of TechSearch International, Austin, Texas, celebrated the company's 20th birthday at the show.*

## SEMICON West 2007 Photo Album (continued)



Thomas Oppert of Pac Tech GmbH inspects the company's first floor exhibit.



Dr. James Getty (left) and Dave Foote of March Plasma, Concord, Calif., discuss new plasma etching applications with Japanese booth visitors.



Edwin El-Kareh, KLA Tencor, stops by the Jinan TMMT Stone Co., China, exhibit to chat with Chu Yan Ling.



Left to right, Dr. James Carriere, Gordon Gray, Maya Rao and Todd Hudson at Tessera Technologies.



From left, Jeremy Cole, Suzanne Redding and Bob Forman await visitors at the Rohm & Haas Electronic Materials booth.

**SEMICON West 2007 Photo Album (continued)**



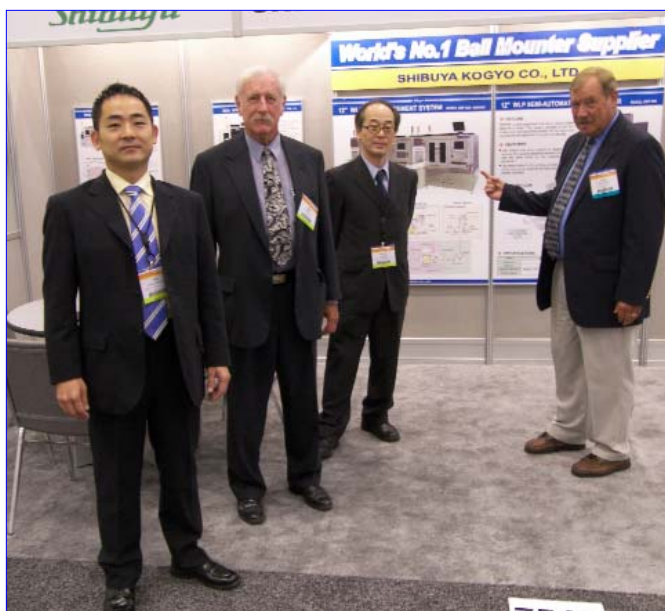
*Visitor Val Taruntaev of Prime Research makes a point with Benjamin Liem of NHK International Corp. At left is Yumiko Kurata.*



*Allteq Industries' Phil Davies (left) stopped to chat with Eric Leonard of Hymite in West Hall.*



*John Manley of Keteca USA laughs at a joke from Alan Routledge (center). From left are Dr. Douglas Lam, Keteca CTO, and Desmond Poh.*



*From left, Tom Nakamura of Japan's Shibuya, Mike Buggy of SunSil Inc., and Mikito Nomura of Shibuya listen as SunSil's Terry Snowden talks marketing strategy.*



*Scott Kulicke, chairman and CEO of Kulicke & Soffa Industries, met the press at K&S' media luncheon.*

## **SEMICON West 2007 Photo Album (continued)**



*Nordson's Asymtek, Carlsbad, Calif., demonstrated dispensing systems at its first floor exhibit.*



*Keteca's George Lam, managing director, with the company's production manager, Teresa Lam, were at their booth to answer visitors' questions.*



*Dr. Steve Cho and Lee Levine handled questions for Surfactant on the second floor of West Hall.*

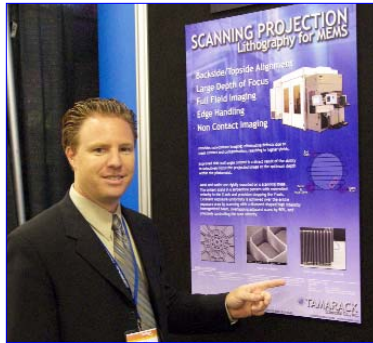


*Dr. Roger Weiss of Paricon Technologies, Fall River, Mass, displays the test interconnect company's new strip test product.*



*Harry Rozakis, who is building an IC assembly plant in Vietnam, exchanges business cards.*

## **SEMICON West 2007 Photo Album (continued)**



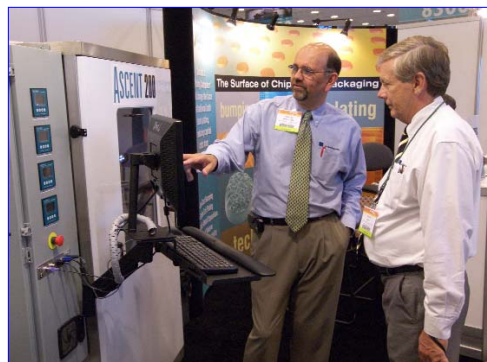
*Matt Souter of Tamarack Scientific Co., Corona, Calif., discussed the features of his company's equipment.*



*Anna Gualtieri of Elle Technology, Milpitas, and George Chu of Micrel, San Jose, discuss power packaging with Freddie Canlas of PSi Technologies, Manila.*



*Vincent Kinol (right) describes Umicore's line of solder paste, wires and ribbons to a visitor. Umicore's Stefan Merlau is in the background.*



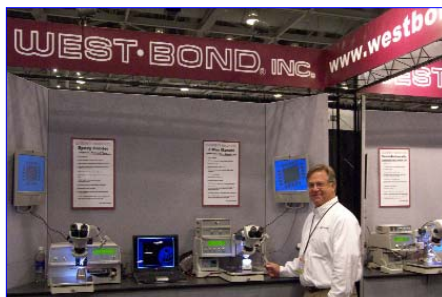
*Chuck Bonasera (left) and David Gray of Jay Stone Associates inspect a Surflect electrolytic plating system for bumping wafers.*



*Tomoya Arakawa of Shibuya, Japan, reflected on solder ball equipment trends with Seth Alavi of SunSil.*



*David Pfaff (left) and Steve Durrett of Plastronics Socket Co., Irving, Texas, discussed the company's new technology.*



*Randy Straight of West Bond Inc., shows the Anaheim company's bonder line.*



*From left, Heraeus' Jim Alexander, Brian Bauer and Rick Lathrop welcomed visitors to their booth.*

## SEMICON West 2007 Photo Album (continued)



Dr. Aart de Gues, chairman of Synopsys, presented a Thursday afternoon keynote on "The Bulls and the Bears."



Frank Cha (left) and Mike Kim of Hanmi Semiconductor, Incheon, Korea, demonstrated equipment for visitors.



Dave Looney of Premier Semiconductor Services "zaps" Mark Berry of Amkor Technology to capture his badge information.



Multinational solder vendor Henkel was strategically located near the second floor entrance.

## SEMICON West 2007 Photo Album (continued)



Paul Walter (left) and Dr. Evstatin Krastev enumerated the latest methods of wire bond testing for show visitors at the Dage Group booth.



Keith Chalman (left), Chalman Technology, asks Joe Bubel about the capabilities of the Hesse & Kripps ribbon bonders.



Yukiyo Le, LINTEC Advanced Technologies (USA), Phoenix, answered questions about materials for substrates.



Stan Myers, SEMI president and CEO greeted attendees to Thursday's keynote talk.

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