

DKN Research Newsletter

#1736, December 17th, 2017 (English Edition)

(Micro Electronics & Packaging)

dnumakura@dknresearch.com, www.dknresearch.com

SEMICON JAPAN 2017

SEMICON JAPAN 2017 was held at Tokyo Big Sight on Wednesday December 13. This is the last trade show for the electronics industry in 2017. The show use to be held at Makuhari Messe in Chiba Prefecture, but changed venues due to shrinking attendance. Event organizers were hoping for a bump in visitors with the venue change. This year's show did seem to attract more people compared to previous years. Many of the visitors were employed by semiconductor manufacturers. The majority of the exhibitors were vendors for suppliers and equipment manufacturers.

The common topic throughout the show was the Internet of Things (IoT). Most of the presentations from exhibitors focused on IoT. One problem with IoT is the lack of displays from any of the major semiconductor companies. It was a little bit difficult to visualize the business direction for the industry. Some exhibitors worked in IoT during their presentations by speaking about smart manufacturing and Minimal Lab, the flexible manufacturing systems designed for new semiconductor devices.

Most exhibitors did not present anything for a significant segment in the industry - processors and memory devices. The pavilion received a lot of attention, and audience members viewed demonstrations and presentations. One of the presenters was Yokogawa Electric; they reserved a large booth and displayed the broad capabilities from wafer processing to final tests and evaluations. Yokogawa was manufacturing specialty semiconductor devices for in-house use. In my opinion, the internal demands were not enough to optimize the utilization rates from the manufacturing lines, so the company is hoping to attract business from other sources by focusing on specialty devices such as semiconductor sensors. This is not a bad idea; this business is not price driven, but rather technologically driven.

My primary interest at the show was packaging and assembling. There were not many companies representing this, but I did discover a few companies with unique products. The first one was Shinko Electric, a major packaging material supplier. Shinko use to supply substrate circuits for IC packaging, but recently launched flexible substrates for wearable devices for medical applications. These

technologies are not very new; however, the whole packaging is new and practical. Toray Engineering, a major equipment manufacture demonstrated the combinations of automatic bonding and testing with high density flexible substrates. Nippon Electric Glass, one of the major glass material suppliers displayed ultra-thin glass tape down to 4 micron thick. It resembles PET film, but the tape has equivalent flexibility, higher heat resistant and dimensional stability. Any ideas where to utilize this thin flexible glass tape?

One thought I had with this year's show - the semiconductor industry in Japan does not have a big interest in volume business any more. It looks like these companies are chasing unique specialty devices with great margins.

Dominique K. Numakura, dnumakura@dknresearch.com
DKN Research, www.dknresearch.com

*To view the Newsletter archives, click on the following URL:

<http://www.dknresearchllc.com/DKNRArchive/Newsletter/Newsletter.html>

Headlines of the week

(Please contact haverhill@dknresearch.com for further information and news.)

1. Fujitsu (Major electronics company in Japan) 11/30
Has developed a new carbon nanotube sheet with the world highest heat conductivity for electric vehicles.
2. Texas Instrument Japan (Device manufacturer) 12/1
Has unveiled a new controller device. It provides more design flexibility for the LED lighting systems in the automobiles.
3. Mitsubishi Electric (Major electric & electronics company in Japan) 12/5
Has been working with Tokyo University to analyze resistance factors of the SiC base power semiconductors.
4. Kyoto University (Japan) 12/5
Was successful to synthesize carbon nano-ring with large volume. It also developed organic devices with the nano-material.
5. RIKEN (Major R&D organization in Japan) 12/6
Co-developed a holography micro-scope with ultra high resolution down to 0.67 nanometers.

6. Fujitsu (Major electronics company in Japan) 12/7

Has developed the world first bonding process of diamond on SiC substrate at room temperature to build HEMT devices.

7. JST (Public R&D organization in Japan) 12/8

Was successful to drive LED display with organic semiconductors for large scale digital signage.

8. Bando Chemical (Specialty chemical supplier in Japan. 12/11

Has developed a new dust monitor “BANDO DEC20” detect foreign materials in the clean rooms.

9. DISCO (Major semiconductor equipment supplier in Japan) 12/11

Has developed fully automated laser slicing machine “KABRA!zen”. It will make the productivity of silicon wafer significantly higher.

10. ZMP (Robotics technology developer in Japan) 12/14

Will conduct field tests of automatic driving vehicles on the public road in Tokyo targeting unmanned taxi cab system by 2020.

Recent Articles of DKN Research

Please find the full articles at the following web site.

<http://www.dknresearchllc.com/DKNRArchive/Articles/Articles.html>