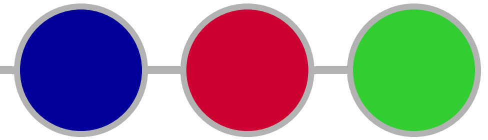

Global and China IC Advanced Packaging Equipment Industry Report, 2013-2014

Aug. 2014

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STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

- To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- To help company to succeed in a competitive market, and

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

INFORMATION SOURCES

The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

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Abstract

Global and China IC Advanced Packaging Equipment Industry Report, 2013-2014 mainly deals with the followings:

1. Overview of semiconductor industry
2. Status quo of memory and wafer foundry industry
3. Downstream market of semiconductor industry
4. Trend in emerging advanced packaging technology
5. Packaging equipment industry analysis and ranking
6. 15 major advanced packaging equipment vendors

Packaging equipment can fall into two categories: wafer level and die level. And the former is typically included in wafer equipment as it is used in the manufacturing of wafer. Wafer level packaging is primarily used in the following 5 fields, namely, Analog & Mixed Signal (including IPD, PA, PMU, Local Power, IC Driver, and Audio & Video), Wireless Connectivity (including Bluetooth+FM+WLAN Combo and GPS Single Chip), Optoelectronic (including CIS, AL Sensor), MEMS & Sensor (including Accelerometers, Gyroscope, RF-MEMS, Pressure Sensor, and Fingerprint Sensor), as well as Misc Logic and Memory (covering Logic gate and EEPROMs). And these applications mostly adopt the Fan-in design, with the number of Pin usually less than 20.

Ranking of Top 16 Major Global Packaging Equipment Vendors by Revenue, 2013-2014

Unit: USD mln

	2013	2014E
ASM Pacific	670	850
Kulicke & Soffa	535	588
BESI	345	564
DISCO	508	516
Applied Material	308	356
Tokyo Seimitsu	310	338
Cohu	215	271
Advantest	190	258
HANMI	171	208
SUSS	150	162
Hitachi High-Technologies	138	150
PFSA	108	138
Ultratech	157	128
Shinkawa	78	110
Rudolph	95	92
TOWA	78	79

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In future, WLCSP will be required to follow the Fan-out design to expand its applications. However, the current Fan-out design, which is not mature, restricts the application of wafer level packaging, leaving an untapped market potential for now. But if the Fan-out design is mature, WLCSP will embark on a new development stage.

Wafer level packaging equipment consists of Process Tool (mainly including CVD and PVD, Etching, Sputtering), Packaging Lithography, Contact Probers, and Packaging Inspection. Among them, the main vendors of Process Tool are Applied Material (including the acquired NEXX) and ULVAC; the major companies in Packaging Lithography field are Ultratech, SUSS, and EV Group; the companies involved in Contact Probers are represented by Tokyo Seimitsu and Tokyo Electron(already acquired by Applied Material); the companies engaging in Packaging Inspection principally include Rudolph, Camtek, and KLA-TENCOR. In 2014, the market size of wafer packaging level equipment will be very likely to reach approximately USD1.3 billion.

Die packaging level equipment mainly involves Wire Bonder (main vendors are Kulicke & Soffa, ASM Pacific, and Shinkawa), Die Bonder (represented by ASM Pacific, Hitachi High Technologies, BESI, and Canon), Flip chip Bonder (typical vendors cover PFSA, BESI, ASM Pacific, Toray Engineering, and Hanmi), Test Handler (Delta Design, Advantest, Epson, and Tesec serve as the major players), Wafer Dicing Saws (players include DISCO and Tokyo Seimitsu), Molding/Encapsulation (Towa, BESI, Dai-ichi Seiko are the typical vendors), and Package singulation (Hanmi, ASM Pacific, and DISCO play the main role).

With obvious periodicity, semiconductor devices saw a rise during 2001-2007 but a slump in 2008-2009, while fiercely surged by 100% in 2011, then declined for 3 consecutive years from 2011. And in 2014, they will witness an explosive growth, with the estimated market size of die packaging level equipment rising significantly by 20% to USD4.1 billion. And this figure is projected to climb to USD4.3 billion in 2015 and then begin to fall in 2016. The major growth engine would be Die Bonder, Flip-chip Bonder, and Test Handler

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