Global Market of CMP Slurries/Polishing Materials for Si Wafers: Key Research Findings 2013

◆ Research Outline

Yano Research Institute has conducted a study on the global market of CMP slurries/polishing materials for Si wafers with the following conditions:

1. Research period: February to April 2013
2. Research target: CMP slurry manufacturers, other polishing materials manufacturers
3. Research methodologies: Face-to-face interviews by the specialized researchers and literature research

<What are CMP Slurries?>
CMP slurries indicate abrasive materials (amorphous non-crystalline inorganic oxides) dispersed in water with other chemicals used in the CMP (Chemical Mechanical Polishing) processes for semiconductors. This research divided the CMP slurry market into two markets: Market of slurries used for oxide films including ILD (Inter Layer Dielectrics), STI (Shallow Trench Isolation), and P-Si, and slurries used for wiring of barrier metals such as W (tungsten) and Cu (copper). The size of the two markets has also been calculated respectively.

<What are Si Wafer Polishing Materials?>
Si-Wafer polishing materials in this research indicate only those polishing materials used in the polishing processes (preceding, intermediate, and final stages) of Si wafers among all polishing materials used for circuit boards. However, those polishing materials used in the process of disconnection and wrapping of Si wafers are not included.

◆ Key Findings

- Size of Global CMP Slurry Market in 2012 Recovered to US$ 998 Million
The global semiconductor industry has recovered to mark positive in 2012, because of explosive popularity of smart phones and tablet terminals. However, influence of belated recovery of DRAM and advanced logics has led the global CMP-slurries market in 2012 to end up at US$998 million (based on the shipment value from manufacturers), a slight increase by 2.5% on year-over-year bases.
In addition to price reduction, CMP slurries from 2013 and onward are anticipated that high concentration types become more popular especially for barrier metals wiring. It is also expected that growth of the CMP slurry market may not be affected by the semiconductor-factory operating ratio or wafer production volumes any longer. The estimated global market size of CMP slurries is 101.1% of the previous year to achieve US$1.050 billion by FY2015 (based on the shipment value from manufacturers).
■ Global Market Size of Polishing Materials for Si Wafers Estimated to Decline to 97.7% of Previous Year to Mark 12.7 Billion Yen in 2012

In spite of the recovery in 2010, the price reduction and use of recycled polishing materials at the preceding and intermediate stages of Si wafers have slowed down the market size of polishing materials for Si wafers to 97.7% of previous year at 12.7 billion yen in 2012 (based on the shipment value from manufacturers).

The above tendency is likely to continue in 2013 and beyond. The manufacturers are working on the development of new polishing materials for sapphire and SiC/GaN wafers (substrates). Although they are yet to be fully adopted, the development of polishing materials for new areas have potential room for lowering costs if the demands get larger.

◆ Report format:

Published report: “Market of Materials for Semiconductor Processing/CMP Precision Polishing for Printed Circuit Boards 2013”

Issued on: April 30, 2013
Language: Japanese
Format: 147 pages in A4 format
Price: 136,500 yen (6,500 yen of consumption tax shall be charged for the sales in Japan.)

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■ Figure 1: Transition and Estimation of Global CMP Slurry Market by Usage

Notes:
1. The figures are based on shipment values from manufacturers.
2. This research divided the CMP slurry market into two markets: Market of slurries used for oxide films including ILD (Inter Layer Dielectrics), STI (Shallow Trench Isolation), and P-Si, and slurries used for wiring of barrier metals such as W (tungsten) and Cu (copper).
Figure 2: Transition and Estimation of Global Market Size of Polishing Materials for CMP Slurries by Usage

<table>
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<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013 (Prospect)</th>
<th>2014 (Estimate)</th>
<th>2015 (Estimate)</th>
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<td>materials for</td>
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<tr>
<td>Si Wafers</td>
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<td>130</td>
<td>97.0%</td>
<td>127</td>
<td>97.7%</td>
<td>124</td>
</tr>
</tbody>
</table>

Notes:
3. The figures are based on shipment values from manufacturers.
4. Si-Wafer polishing materials in this research indicate only those polishing materials used in the polishing processes (preceding, intermediate, and final stages) of Si wafers among all polishing materials used for circuit boards. No polishing materials used in the process of disconnection and wrapping of Si wafers are included.