



Welcome to the 2010 *EquipmentFutures*™ Survey. Your participation will help give an early look at the industry for the next few years. Following is a list of semiconductor manufacturing technologies and equipment capabilities. Please indicate the year that you expect to see each technology in production manufacturing. You do not need to respond in all areas – just the areas in which you have an opinion or expertise. Each person completing a survey will receive a summary of the final results. Individual surveys will remain anonymous. Thanks for your help, foresight, and vision.

### Part 1 – Technology Timing

<b>Litho</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017+</b>	<b>Never</b>
193 Hi Refractive Index Immersion									
Direct Write									
Double Patterning (1 resist step)									
Double Patterning (2 resist steps)									
EUV									
Imprint									
Directed Self Assembly Nano-resists									
<b>Etch &amp; Clean</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017+</b>	<b>Never</b>
Super Critical CO <sub>2</sub> cleans									
Through Silicon Vias for 3-D Integration									
Non SC1/SC2 post implant cleans									
<b>Deposition</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017+</b>	<b>Never</b>
Deposited Hard Masking Layers									
<b>Test &amp; Metrology</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017+</b>	<b>Never</b>
Wafer-Level Reliability Testing									
300mm whole wafer testing									
<b>Gate Technologies</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017+</b>	<b>Never</b>
Damascene Gate Formation									
HiK Gate (HfO <sub>2</sub> , ZrO <sub>2</sub> , etc.)									
Metal or Dual Metal Gate									
Poly/Metal Stack									
<b>Manufacturing</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017+</b>	<b>Never</b>
450mm wafers									
Equipment with energy saving "sleep" states									
Equipment suppliers using remote diagnostic capability									
Manufacturing Capacity, Utilization and Cycle Time Simulation									
Implementation of 300mm Prime advances									
Semiconductor Upturn									

1. How are you handling low factory utilization rates? (mark all that apply)
  - a. We don't have low utilization rates
  - b. Taking equipment off-line
  - c. Cannibalizing equipment that has been taken off-line
  - d. Increasing metrology to improve yields and lower costs
  - e. Upgrading or performing preventative maintenance on idle equipment
  - f. Making no changes

## Part 2 – Consumer Electronics

When do you next expect to purchase the following for your personal or business use?

	2010	2011	2012	2013	2014	2015	2016	2017+	Never
Desktop PC									
Laptop PC									
Netbook PC									
Interior LED Lighting									
Solar Electric System (on Grid)									

## Part 3 – Photovoltaic Industry Influences

1. Will the photovoltaic market impact silicon supplies for the semiconductor market?
  - a. Yes – in the next 5 years
  - b. Yes – in the next 5 to 10 years
  - c. Already has impacted silicon supplies
  - d. No impact
  - e. Unknown impact
2. Will the photovoltaic equipment market divert semiconductor OEM R&D funds?
  - a. Yes – in the next 5 years
  - b. Yes – in the next 5 to 10 years
  - c. Already has impacted semiconductor OEM R&D
  - d. No impact
  - e. Unknown impact
3. Will the photovoltaic equipment market continue to expand?
  - a. Yes
  - b. Only if subsidies continue
  - c. No
  - d. Unknown

## Part 4 – Demographics

- A. Your role in the semiconductor industry
  - a. Equipment Supplier
  - b. Materials Supplier
  - c. Service Supplier
  - d. IC Manufacturer
  - e. PV Manufacturer
  - f. Consultant/Academic
  - g. Other \_\_\_\_\_
- B. Your geographic location
  - a. North America
  - b. Latin America
  - c. Europe
  - d. Pacific Rim
  - e. Other \_\_\_\_\_

Please email completed survey to [survey@wwk.com](mailto:survey@wwk.com)

Or fax to +1-925-396-6174

Your email (to receive a summary of the results):