

**GLOBAL SEMICONDUCTOR EQUIPMENT: MARKETS, MARKET SHARES, MARKET FORECASTS****Table of Contents**

<b>Chapter 1</b>	<b>Introduction</b>	<b>1-1</b>
<b>Chapter 2</b>	<b>Semiconductor Industry Driving Forces</b>	<b>2-1</b>
2.1	Introduction	2-1
2.2	Foundries	2-3
2.2.1	Foundry Capex Trends	2-3
2.2.2	Foundry Revenue Growth	2-4
2.2.3	Foundry Market Share	2-7
2.2.4	Revenue Growth by Foundry	2-7
2.2.5	Global Foundry Market Trend by Application	2-9
2.2.6	Global Foundry Market Trend by Customer Type	2-9
2.2.7	Global Foundry Market Trend by Device	2-9
2.2.8	Foundry Technology Linewidth Roadmap	2-13
2.2.9	Capacity trend by linewidth	2-13
2.2.10	Capacity ratio by region	2-13
2.3	DRAM	2-18
2.3.1	Present and Future Capacity of DRAM by Each Manufacturer	2-18
2.3.2	DRAM Price Trends Historic and Future	2-22
2.3.3	DRAM Manufacturer Market Share	2-22
2.3.4	DRAM Demand	2-25
2.4	NAND	2-27
2.4.1	Present and Future Capacity of NAND by Each Manufacturer	2-27
2.4.2	NAND Price Trends Historic and Future	2-31
2.4.3	2D transition to 3D NAND by Each Manufacturer	2-31
2.4.4	NAND Manufacturer Market Share	2-25
2.4.5	NAND Demand	2-35
2.5	China	2-39
2.5.1	China's Semiconductor Infrastructure	2-39
2.5.2	China's Semiconductor Market	2-40
2.5.3	China's IC Production	2-42
2.5.4	China's IC Consumption	2-44

2.5.5	China's IC Production/Consumption Ratio	2-44
2.5.6	China's IC Import Requirements	2-44
2.5.7	China's IC Supply/Demand	2-44
2.5.8	China's IC Fab Capacity	2-44
2.5.9	China's IC Fab Capacity by Region	2-50
2.5.10	China's 8- And 12-Inch Fabs and Foundries	2-50
2.5.11	China's IC Fab Capacity by Wafer Size	2-50
2.5.12	China's IC Fab Capacity by Geometry	2-50
2.5.13	China's IC Production by Type	2-56
<b>Chapter 3</b>	<b>Market Business Sectors Shares and Forecast</b>	<b>3-1</b>
3.1	AMHS Market Shares and Forecast	3-1
3.2	CMP Market Shares and Forecast	3-4
3.3	Clean Market Shares and Forecast	3-7
3.3.1	Plasma Strip	3-8
3.3.2	Spray Processors	3-11
3.3.3	Wet Stations	3-14
3.4	Deposition Market Shares and Forecast	3-17
3.4.1	ALD	3-19
3.4.2	Epitaxy	3-22
3.4.3	MOCVD	3-25
3.4.4	LPCVD (non-tube)	3-28
3.4.5	LPCVD (tube)	3-31
3.4.6	PECVD	3-34
3.4.7	PVD	3-37
3.5	Ion Implantation Market Shares and Forecast	3-40
3.5.1	High-Current	3-41
3.5.2	High-Energy	3-44
3.5.3	Medium-Current	3-47
3.6	Lithography Market Shares and Forecast	3-50
3.6.1	Direct-Write E-Beam Lithography	3-51
3.6.2	Mask-Making Lithography	3-54
3.6.3	Steppers	3-57
3.7	Oxidation/Diffusion Market Shares and Forecast	3-61

3.8	Photoresist Processing (Track) Market Shares and Forecast	3-64
3.9	RTP Market Shares and Forecast	3-67
3.10	Plasma Etch Market Shares and Forecast	3-70
3.10.1	Dielectric	3-71
3.10.2	Conductive	3-74
3.11	Process Control Market Shares and Forecast	3-77
3.11.1	Lithography Metrology	3-78
3.11.2	Thin-Film Metrology	3-81
3.11.3	Wafer Inspection and Defect Review	3-84
3.12	Wafer-Level Packaging Market Shares and Forecast	3-87
<b>Chapter 4</b>	<b>U.S. Semiconductor Equipment Suppliers - Profiles</b>	<b>4-1</b>
4.1	Applied Materials	4-1
	Business Sectors Covered In The Market Analysis Chapter	4-1
	Company Profile	4-2
	Company Financials	4-12
4.2	Axcelis Technologies	4-13
	Business Sectors Covered In The Market Analysis Chapter	4-13
	Company Profile	4-13
	Company Financials	4-16
4.3	KLA-Tencor	4-17
	Business Sectors Covered In The Market Analysis Chapter	4-17
	Company Profile	4-17
	Company Financials	4-19
4.4	Lam Research	4-20
	Business Sectors Covered In The Market Analysis Chapter	4-20
	Company Profile	4-20
	Company Financials	4-27
4.5	Mattson Technology	4-28
	Business Sectors Covered In The Market Analysis Chapter	4-28
	Company Profile	4-28
	Company Financials	4-30
4.6	Nanometrics	4-31
	Business Sectors Covered In The Market Analysis Chapter	4-31

	Company Profile	4-31
	Company Financials	4-35
4.7	Rudolph Technologies	4-36
	Business Sectors Covered In The Market Analysis Chapter	4-36
	Company Profile	4-36
	Company Financials	4-39
4.8	Ultratech	4-40
	Business Sectors Covered In The Market Analysis Chapter	4-40
	Company Profile	4-40
	Company Financials	4-43
4.9	Veeco	4-44
	Business Sectors Covered In The Market Analysis Chapter	4-44
	Company Profile	4-44
	Company Financials	4-47
<b>Chapter 5</b>	<b>European Semiconductor Equipment Suppliers - Profiles</b>	<b>5-1</b>
5.1	Aixtron	5-1
	Business Sectors Covered In The Market Analysis Chapter	5-1
	Company Profile	5-1
	Company Financials	5-3
5.2	ASM International	5-4
	Business Sectors Covered In The Market Analysis Chapter	5-4
	Company Profile	5-4
	Company Financials	5-7
5.3	ASML	5-8
	Business Sectors Covered In The Market Analysis Chapter	5-8
	Company Profile	5-8
	Company Financials	5-12
5.4	Carl Zeiss	5-13
	Business Sectors Covered In The Market Analysis Chapter	5-13
	Company Profile	5-13
	Company Financials	5-15
5.5	Camtek	5-16
	Business Sectors Covered In The Market Analysis Chapter	5-16

	Company Profile	5-16
	Company Financials	5-18
5.6	EV Group	5-19
	Business Sectors Covered In The Market Analysis Chapter	5-19
	Company Profile	5-19
	Company Financials	5-21
5.7	LPE	5-22
	Business Sectors Covered In The Market Analysis Chapter	5-22
	Company Profile	5-22
	Company Financials	5-22
5.8	Mycronic	5-23
	Business Sectors Covered In The Market Analysis Chapter	5-23
	Company Profile	5-23
	Company Financials	5-24
5.9	Nova Measuring Instruments	5-25
	Business Sectors Covered In The Market Analysis Chapter	5-25
	Company Profile	5-25
	Company Financials	5-29
5.10	Oerlikon / Evatec	5-30
	Business Sectors Covered In The Market Analysis Chapter	5-30
	Company Profile	5-30
	Company Financials	5-31
5.11	Semilab	5-32
	Business Sectors Covered In The Market Analysis Chapter	5-32
	Company Profile	5-32
	Company Financials	5-33
<b>Chapter 6</b>	<b>Asian Semiconductor Equipment Suppliers - Profiles</b>	<b>6-1</b>
6.1	Advantest	6-1
	Business Sectors Covered In The Market Analysis Chapter	6-1
	Company Profile	6-1
6.2	Canon	6-5
	Business Sectors Covered In The Market Analysis Chapter	6-5
	Company Profile	6-5

	Company Financials	6-7
6.3	Canon Anelva	6-9
	Business Sectors Covered In The Market Analysis Chapter	6-9
	Company Profile	6-9
	Company Financials	6-10
6.4	Daifuku	6-11
	Business Sectors Covered In The Market Analysis Chapter	6-11
	Company Profile	6-11
	Company Financials	6-12
6.5	Ebara	6-13
	Business Sectors Covered In The Market Analysis Chapter	6-13
	Company Profile	6-13
	Company Financials	6-15
6.6	Hermes Microvision	6-17
	Business Sectors Covered In The Market Analysis Chapter	6-17
	Company Profile	6-17
	Company Financials	6-18
6.7	Hitachi High-Technologies	6-19
	Business Sectors Covered In The Market Analysis Chapter	6-19
	Company Profile	6-19
	Company Financials	6-21
6.8	Hitachi Kokusai Electric	6-22
	Business Sectors Covered In The Market Analysis Chapter	6-22
	Company Profile	6-22
	Company Financials	6-23
6.9	JEOL	6-24
	Business Sectors Covered In The Market Analysis Chapter	6-24
	Company Profile	6-24
	Company Financials	6-25
6.10	Jusung Engineering	6-26
	Business Sectors Covered In The Market Analysis Chapter	6-26
	Company Profile	6-26
	Company Financials	6-27
6.11	KC Tech	6-28
	Business Sectors Covered In The Market Analysis Chapter	6-28

	Company Profile	6-28
	Company Financials	6-29
6.12	Lasertec	6-30
	Business Sectors Covered In The Market Analysis Chapter	6-30
	Company Profile	6-30
	Company Financials	6-31
6.13	Murata Machinery	6-32
	Business Sectors Covered In The Market Analysis Chapter	6-32
	Company Profile	6-32
	Company Financials	6-33
6.14	Nikon	6-34
	Business Sectors Covered In The Market Analysis Chapter	6-34
	Company Profile	6-34
	Company Financials	6-35
6.15	Nippon Sanso	6-37
	Business Sectors Covered In The Market Analysis Chapter	6-37
	Company Profile	6-37
	Company Financials	6-38
6.16	Nissin Ion Equipment	6-39
	Business Sectors Covered In The Market Analysis Chapter	6-39
	Company Profile	6-39
	Company Financials	6-39
6.17	NuFlare Technology	6-40
	Business Sectors Covered In The Market Analysis Chapter	6-40
	Company Profile	6-40
	Company Financials	6-41
6.18	PSK	6-42
	Business Sectors Covered In The Market Analysis Chapter	6-42
	Company Profile	6-42
	Company Financials	6-43
6.19	Screen Semiconductor Solutions	6-44
	Business Sectors Covered In The Market Analysis Chapter	6-44
	Company Profile	6-44
	Company Financials	6-46
6.20	SEMES	6-47

	Business Sectors Covered In The Market Analysis Chapter	6-47
	Company Profile	6-47
	Company Financials	6-48
6.21	SEN	6-49
	Business Sectors Covered In The Market Analysis Chapter	6-49
	Company Profile	6-49
	Company Financials	6-50
6.22	TES	6-51
	Business Sectors Covered In The Market Analysis Chapter	6-51
	Company Profile	6-51
	Company Financials	6-52
6.23	Tokyo Electron	6-53
	Business Sectors Covered In The Market Analysis Chapter	6-53
	Company Profile	6-53
	Company Financials	6-56
6.24	Tokyo Seimitsu	6-57
	Business Sectors Covered In The Market Analysis Chapter	6-57
	Company Profile	6-57
	Company Financials	6-58
6.25	Topcon Technohouse	6-59
	Business Sectors Covered In The Market Analysis Chapter	6-59
	Company Profile	6-59
	Company Financials	6-59
6.26	Toray Engineering	6-60
	Business Sectors Covered In The Market Analysis Chapter	6-60
	Company Profile	6-60
	Company Financials	6-61
6.27	Ulvac	6-62
	Business Sectors Covered In The Market Analysis Chapter	6-62
	Company Profile	6-62
	Company Financials	6-63
6.28	Ushio	6-64
	Business Sectors Covered In The Market Analysis Chapter	6-64
	Company Profile	6-64
	Company Financials	6-64



6.29	Wonik IPS	6-65
	Business Sectors Covered In The Market Analysis Chapter	6-65
	Company Profile	6-65
	Company Financials	6-65
<b>List of Tables</b>		
2.1	Foundry Capex (\$ Billions) And Shares (%)	2-5
2.2	Foundry Forecast	2-6
2.3	Pure Play Foundry Revenue Shares	2-8
2.4	Global Foundry Market By Application	2-10
2.5	Global Foundry Market By Customer Type	2-11
2.6	Global Foundry Market By Device Type	2-12
2.7	Technology Roadmaps For China Foundries	2-14
2.8	Global Foundry Market By Linewidth	2-15
2.9	Foundry Capacity By Region	2-17
2.10	Present And Future Capacity Of Dram By Manufacturer	2-19
2.11	DRAM Wafer Capacity	2-21
2.12	DRAM Output And Price Metrics Forecast	2-23
2.13	Mobile Dram Market Share	2-24
2.14	Dram Demand Forecast By Application	2-26
2.15	NAND Capacity By Supplier	2-28
2-16	NAND Capacity Forecast By Supplier	2-30
2-17	NAND Output And Price Metrics Forecast	2-32
2-18	2D Vs 3D NAND FORECAST	2-34
2-19	NAND Market Share By Manufacturer	2-36
2-20	NAND Manufacturer Market Share	2-37
2-21	NAND Market By Application	2-38
2-22	China's 8- And 12-Inch Fabs and Foundries	2-52
3.1	AMHS Market Forecast	3-2
3.2	CMP Market Forecast	3-5
3.3	Plasma Strip Market Forecast	3-9
3.4	Spray Processors Market Forecast	3-12
3.5	Wet Stations Market Forecast	3-15
3.6	ALD Market Forecast	3-20

3.7	Epitaxy Market Forecast	3-23
3.8	MOCVD Market Forecast	3-26
3.9	LPCVD (non-tube) Market Forecast	3-29
3.10	LPCVD (tube) Market Forecast	3-32
3.11	PECVD Market Forecast	3-35
3.12	PVD Market Forecast	3-38
3.13	High-Current Ion Implantation Market Forecast	3-42
3.14	High-Voltage Ion Implantation Market Forecast	3-45
3.15	Medium-Current Ion Implantation Market Forecast	3-48
3.16	Direct-Write E-Beam Lithography Market Forecast	3-52
3.17	Mask-Making Lithography Market Forecast	3-55
3.18	Steppers Market Forecast	3-58
3.19	Oxidation Market Forecast	3-62
3.20	Photoresist Processing (Track) Market Forecast	3-65
3.21	RTP Market Forecast	3-68
3.22	Dielectric Etch Market Forecast	3-72
3.23	Conductive Etch Market Forecast	3-75
3.24	Lithography Metrology Market Forecast	3-79
3.25	Thin-Film Metrology Market Forecast	3-82
3.26	Wafer Inspection and Defect Review Market Forecast	3-85
3.27	Wafer-Level Packaging Market Forecast	3-89

### List of Figures

2.1	China's IC Production Forecast	2-43
2.2	China's IC Consumption	2-45
2.3	China's IC Production/Consumption Ratio	2-46
2.4	China's IC Import Requirements	2-47
2.5	China's IC Supply/Demand	2-48
2.6	China's IC Fab Capacity	2-49
2.7	China's IC Fab Capacity by Region	2-51
2.8	China's IC Fab Capacity by Wafer Size	2-54
2.9	China's IC Fab Capacity by Geometry	2-55
2.10	China's IC Production by Type	2-57
3.1	AMHS Market Shares	3-3

3.2	CMP Market Shares	3-6
3.3	Plasma Strip Market Shares	3-10
3.4	Spray Processors Market Shares	3-13
3.5	Wet Stations Market Shares	3-16
3.6	ALD Market Shares	3-21
3.7	Epitaxy Market Shares	3-24
3.8	MOCVD Market Shares	3-27
3.9	LPCVD (non-tube) Market Shares	3-30
3.10	LPCVD (tube) Market Shares	3-33
3.11	PECVD Market Shares	3-36
3.12	PVD Market Shares	3-39
3.13	High-Current Ion Implantation Market Shares	3-43
3.14	High-Voltage Ion Implantation Market Shares	3-46
3.15	Medium-Current Ion Implantation Market Shares	3-49
3.16	Direct-Write E-Beam Lithography Market Shares	3-53
3.17	Mask-Making Lithography Market Shares	3-56
3.18	Steppers Market Shares	3-59
3.19	Oxidation Market Shares	3-63
3.20	Photoresist Processing (Track) Market Shares	3-66
3.21	RTP Market Shares	3-69
3.22	Dielectric Etch Market Shares	3-73
3.23	Conductive Etch Market Shares	3-76
3.24	Lithography Metrology Market Shares	3-80
3.25	Thin-Film Metrology Market Shares	3-83
3.26	Wafer Inspection and Defect Review Market Shares	3-86
3.27	Wafer-Level Packaging Market Shares	3-90