

Quantum Dot Market by Material (Cadmium-based Quantum Dots, Cadmium-free Quantum Dots), Product (Displays, Lasers, Solar Cells/Modules, Medical Devices, Photodetectors/Sensors, LED Products), Display, Vertical and Region - Global Forecast to 2029

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Report description:

The quantum dot market is projected to reach USD 23.9 billion by 2029 from USD 10.6 billion in 2024, at a CAGR of 17.7% from 2024 to 2029. The major factors driving the growth of quantum dot market includes the increasing integration of quantum dots in display products and increasing adoption of quantum dots in LED products. Moreover, emerging implementation of quantum dots in image sensor is expected to provide several growth opportunities for market players in the quantum dot market.

Other products segment is expected to witness the highest CAGR in the quantum dot market during the forecast period

The quantum dot based other products segment market which includes quantum dots lasers, solar cells/modules, LED products, photodetectors/sensors, batteries and energy storage devices, transistors, chips, and tags is poised to exhibit the highest CAGR during the forecast period. This is attributed to the increasing commercialization of technologies such as lasers, solar cells, LED products, and medical devices in the near future. Factors such as accelerating demand for LEDs that deliver higher brightness, efficiency and stability than phosphor LEDs, low cost and superior quality, rising need for solar energy and surging need for high output power and superior temperature stability fuels the market growth of quantum dots lasers, solar cells/modules, LED products and photodetectors/sensors.

Consumer vertical is expected to have the largest market size during the forecast period

The consumer vertical is expected to have the largest market size during the forecast period which is attributed to the growth driven by a rising demand for advanced displays and energy-efficient technologies. Quantum dot LEDs offer enhanced color brightness and lower power consumption compared to conventional LEDs. The growing adoption of displays of varying sizes in shopping malls and retail outlets is fuelling demand for quantum dot displays, particularly in the consumer and commercial

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sectors.

The break-up of profile of primary participants in the quantum dot market-

- By Company Type: Tier 1 - 55%, Tier 2 - 25%, Tier 3 - 20%

- By Designation Type: C Level - 25%, Director Level - 50%, Others - 25%

- By Region Type: North America - 30%, Europe - 35%, Asia Pacific - 25%, Rest of the World (RoW) - 10%

The major players of quantum dot market are AUO Corporation (Taiwan), BOE Technology Group Co., Ltd. (China), SAMSUNG DISPLAY (South Korea), LG DISPLAY CO., LTD. (South Korea), and TCL China Star Optoelectronics Technology Co., Ltd. (China) among others.

Research Coverage

The report segments the quantum dot market and forecasts its size based on material, product, display, vertical and region. The report also provides a comprehensive review of drivers, restraints, opportunities, and challenges influencing market growth. The report also covers qualitative aspects in addition to the quantitative aspects of the market.

Reasons to buy the report:

The report will help the market leaders/new entrants in this market with information on the closest approximate revenues for the overall quantum dot market and related segments. This report will help stakeholders understand the competitive landscape and gain more insights to strengthen their position in the market and plan suitable go-to-market strategies. The report also helps stakeholders understand the pulse of the market and provides them with information on key market drivers, restraints, opportunities, and challenges.

The report provides insights on the following pointers:

- Analysis of key drivers (the increasing integration of quantum dots in display products and increasing adoption of quantum dots in LED products, and growing deployment of quantum dots in solar cells), restraints (limited availability of rare earth materials, and high efficacy of alternative display technologies), opportunities (emerging implementation of quantum dots in image sensors, and growing demand of quantum dots for biological and medical imaging), and challenges (presence of environmental regulations for quantum dots) influencing the growth of the quantum dot market.

- Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product launches in the quantum dot market.

- Market Development: Comprehensive information about lucrative markets - the report analyses the quantum dot market across varied regions.

- Market Diversification: Exhaustive information about new products, untapped geographies, recent developments, and investments in the quantum dot market

- Competitive Assessment: In-depth assessment of market shares, growth strategies and product offerings of leading players like AUO Corporation (Taiwan), BOE Technology Group Co., Ltd. (China), SAMSUNG DISPLAY (South Korea), LG DISPLAY CO., LTD. (South Korea), and TCL China Star Optoelectronics Technology Co., Ltd. (China).

Table of Contents:

1 INTRODUCTION 32

1.1 STUDY OBJECTIVES 32

1.2 MARKET DEFINITION 32

1.3 STUDY SCOPE 33

1.3.1 MARKETS COVERED 33

FIGURE 1 QUANTUM DOT: MARKET SEGMENTATION 33

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1.3.2	GEOGRAPHIC SCOPE	33
FIGURE 2	QUANTUM DOT MARKET: GEOGRAPHIC SCOPE	33
1.3.3	INCLUSIONS AND EXCLUSIONS AT COMPANY LEVEL	34
1.3.4	INCLUSIONS AND EXCLUSIONS AT MATERIAL LEVEL	34
1.3.5	INCLUSIONS AND EXCLUSIONS AT PRODUCT LEVEL	34
1.3.6	INCLUSIONS AND EXCLUSIONS AT VERTICAL LEVEL	34
1.3.7	INCLUSIONS AND EXCLUSIONS AT REGIONAL LEVEL	35
1.3.8	YEARS CONSIDERED	35
1.4	CURRENCY CONSIDERED	35
1.5	UNITS CONSIDERED	35
1.6	LIMITATIONS	36
1.7	STAKEHOLDERS	36
1.8	SUMMARY OF CHANGES	36
1.8.1	RECESSION IMPACT	37
2	RESEARCH METHODOLOGY	38
2.1	RESEARCH APPROACH	38
FIGURE 3	QUANTUM DOT MARKET: RESEARCH DESIGN	38
2.1.1	SECONDARY DATA	39
2.1.1.1	Major secondary sources	39
2.1.1.2	Key data from secondary sources	40
2.1.2	PRIMARY DATA	40
2.1.2.1	Primary interviews with experts	40
2.1.2.2	List of key primary interview participants	41
2.1.2.3	Breakdown of primaries	41
2.1.2.4	Key data from primary sources	41
2.1.3	SECONDARY AND PRIMARY RESEARCH	42
2.1.3.1	Key industry insights	43
2.2	MARKET SIZE ESTIMATION	43
2.2.1	BOTTOM-UP APPROACH	43
2.2.1.1	Approach to obtain market share using bottom-up analysis (demand side)	43
FIGURE 4	BOTTOM-UP APPROACH	44
2.2.2	TOP-DOWN APPROACH	44
2.2.2.1	Approach to obtain market share using top-down analysis (supply side)	44
FIGURE 5	TOP-DOWN APPROACH	44
2.3	FACTOR ANALYSIS	45
2.3.1	SUPPLY-SIDE ANALYSIS	45
FIGURE 6	MARKET SIZE ESTIMATION METHODOLOGY: SUPPLY-SIDE ANALYSIS (APPROACH 1)	45
FIGURE 7	MARKET SIZE ESTIMATION: SUPPLY-SIDE ANALYSIS (APPROACH 2)	46
2.3.2	GROWTH FORECAST ASSUMPTIONS	47
TABLE 1	MARKET GROWTH ASSUMPTIONS	47
2.4	RECESSION IMPACT	47
2.5	MARKET BREAKDOWN AND DATA TRIANGULATION	48
FIGURE 8	DATA TRIANGULATION	48
2.6	RESEARCH ASSUMPTIONS	49
2.7	RISK ASSESSMENT	50
TABLE 2	RISK ASSESSMENT: QUANTUM DOT MARKET	50
3	EXECUTIVE SUMMARY	51

FIGURE 9	QUANTUM DOT MARKET: GLOBAL SNAPSHOT	52
FIGURE 10	CADMIUM-FREE QUANTUM DOTS SEGMENT TO DOMINATE MARKET DURING FORECAST PERIOD	52
FIGURE 11	QUANTUM DOT DISPLAYS TO BE LARGER SEGMENT DURING FORECAST PERIOD	53
FIGURE 12	MINI-LED TO BE LARGEST SEGMENT DURING FORECAST PERIOD	53
FIGURE 13	CONSUMER SEGMENT TO ACCOUNT FOR LARGEST MARKET SIZE DURING FORECAST PERIOD	54
FIGURE 14	ASIA PACIFIC TO DOMINATE MARKET DURING FORECAST PERIOD	54
4	PREMIUM INSIGHTS	56
4.1	ATTRACTIVE GROWTH OPPORTUNITIES FOR PLAYERS IN QUANTUM DOT MARKET	56
FIGURE 15	INCREASE IN DEPLOYMENT OF QUANTUM DOT PHOTODETECTORS/SENSORS TO DRIVE MARKET GROWTH	56
4.2	QUANTUM DOT MARKET, BY VERTICAL	57
FIGURE 16	CONSUMER VERTICAL TO ACCOUNT FOR LARGEST SHARE OF QUANTUM DOT MARKET DURING FORECAST PERIOD	57
4.3	QUANTUM DOT MARKET, BY PRODUCT	57
FIGURE 17	QUANTUM DOT DISPLAYS TO BE LARGER SEGMENT OF QUANTUM DOT MARKET DURING FORECAST PERIOD	57
4.4	QUANTUM DOT MARKET, BY DISPLAY	58
FIGURE 18	MINI-LED SEGMENT TO BE LARGEST MARKET DURING FORECAST PERIOD	58
4.5	QUANTUM DOT MARKET, BY MATERIAL	58
FIGURE 19	CADMIUM-FREE QUANTUM DOTS TO DOMINATE QUANTUM DOT MARKET DURING FORECAST PERIOD	58
4.6	QUANTUM DOT MARKET IN ASIA PACIFIC, BY VERTICAL AND COUNTRY, 2024	59
FIGURE 20	CONSUMER VERTICAL AND CHINA HELD LARGEST MARKET SHARES IN QUANTUM DOT MARKET IN ASIA PACIFIC IN 2024	59
5	MARKET OVERVIEW	60
5.1	INTRODUCTION	60
5.2	MARKET DYNAMICS	60
FIGURE 21	DRIVERS, RESTRAINTS, OPPORTUNITIES, AND CHALLENGES IN QUANTUM DOT MARKET	61
5.2.1	DRIVERS	61
5.2.1.1	Growing deployment of quantum dots in display applications	61
5.2.1.2	Rising adoption of quantum dots in LED products	62
5.2.1.3	Increasing integration of quantum dots in solar cells	62
FIGURE 22	IMPACT ANALYSIS OF DRIVERS ON QUANTUM DOT MARKET	63
5.2.2	RESTRAINTS	63
5.2.2.1	Limited availability of rare earth materials	63
5.2.2.2	High efficacy of alternative display technologies	64
FIGURE 23	IMPACT ANALYSIS OF RESTRAINTS ON QUANTUM DOT MARKET	64
5.2.3	OPPORTUNITIES	65
5.2.3.1	Increasing use of quantum dots for biological and medical imaging	65
5.2.3.2	Emerging implementation of quantum dots in image sensors	65
FIGURE 24	IMPACT ANALYSIS OF OPPORTUNITIES ON QUANTUM DOT MARKET	66
5.2.4	CHALLENGES	66
5.2.4.1	Presence of environmental regulations for quantum dots	66
FIGURE 25	IMPACT ANALYSIS OF CHALLENGES ON QUANTUM DOT MARKET	67
5.3	SUPPLY CHAIN ANALYSIS	67
FIGURE 26	SUPPLY CHAIN ANALYSIS: QUANTUM DOT MARKET	68
TABLE 3	QUANTUM DOT MARKET: SUPPLY CHAIN ANALYSIS	69
5.4	ECOSYSTEM/MARKET MAP	70
FIGURE 27	QUANTUM DOT MARKET: ECOSYSTEM	71
5.5	INVESTMENT AND FUNDING SCENARIO	71
FIGURE 28	INVESTMENT AND FUNDING SCENARIO, 2019-2024	71

5.6	TRENDS/DISRUPTIONS IMPACTING CUSTOMER BUSINESS	72
	FIGURE 29	REVENUE SHIFTS FOR QUANTUM DOT MARKET
5.7	TECHNOLOGY ANALYSIS	72
5.7.1	KEY TECHNOLOGIES	72
5.7.1.1	Self-emitting quantum dot displays	72
5.7.1.2	Quantum dot in image sensors	73
5.7.2	COMPLEMENTARY TECHNOLOGIES	73
5.7.2.1	Micro-LED	73
5.7.3	ADJACENT TECHNOLOGIES	74
5.7.3.1	QD-LCD	74
5.7.3.2	QD-OLED	74
5.8	PRICING ANALYSIS	75
5.8.1	AVERAGE SELLING PRICE OF PRODUCTS OFFERED BY KEY PLAYERS	75
	FIGURE 30	AVERAGE SELLING PRICE OF PRODUCTS OFFERED BY KEY PLAYERS
	TABLE 4	AVERAGE SELLING PRICE OF QUANTUM DOT DISPLAYS OFFERED BY KEY PLAYERS
5.8.2	AVERAGE SELLING PRICE TREND OF QUANTUM DOTS, BY REGION	76
	FIGURE 31	AVERAGE SELLING PRICE TREND FOR MINI-LED DISPLAYS, BY REGION
5.9	KEY STAKEHOLDERS & BUYING CRITERIA	76
5.9.1	KEY STAKEHOLDERS IN BUYING PROCESS	76
	FIGURE 32	INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS OF TOP THREE END-USE VERTICALS
	TABLE 5	INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS OF TOP THREE END-USE VERTICALS
5.9.2	BUYING CRITERIA	77
	FIGURE 33	KEY BUYING CRITERIA FOR TOP THREE END-USE VERTICALS
	TABLE 6	KEY BUYING CRITERIA FOR TOP THREE END-USE VERTICALS
5.10	PORTER'S FIVE FORCES ANALYSIS	78
	TABLE 7	QUANTUM DOT MARKET: PORTER'S FIVE FORCES ANALYSIS
	FIGURE 34	QUANTUM DOT MARKET: PORTER'S FIVE FORCES ANALYSIS, 2023
	FIGURE 35	IMPACT OF PORTER'S FIVE FORCES ON QUANTUM DOT MARKET, 2023
5.10.1	THREAT OF NEW ENTRANTS	79
5.10.2	THREAT OF SUBSTITUTES	79
5.10.3	BARGAINING POWER OF SUPPLIERS	79
5.10.4	BARGAINING POWER OF BUYERS	79
5.10.5	INTENSITY OF COMPETITIVE RIVALRY	80
5.11	CASE STUDIES	80
5.11.1	USING NANOCO'S QUANTUM DOTS TO MANUFACTURE WAH HONG INDUSTRIAL CORPORATION'S FILMS FOR USAGE IN TV AND MONITOR PRODUCTS	80
5.11.2	EXPLORING POTENTIAL OF UBIQD'S QUANTUM DOTS TO MANUFACTURE FIRST SOLAR'S ADVANCED SOLAR MODULES	80
5.11.3	INCORPORATING QUANTUM SOLUTIONS' QUANTUM DOTS TO MANUFACTURE QDOT PEROVSKITE CSPBBR3 SINGLE CRYSTALS FOR X-RAY SENSORS	81
5.11.4	ENHANCING PICTURE QUALITY OF LG'S ULTRA HD TV BY INCORPORATING DOW'S QUANTUM DOTS	81
5.12	TRADE ANALYSIS	81
	TABLE 8	IMPORT DATA FOR HS CODE 8541, BY COUNTRY, 2019-2023 (USD BILLION)
	FIGURE 36	IMPORT DATA FOR HS CODE 8541, 2019-2023
	TABLE 9	EXPORT DATA FOR HS CODE 8541, BY COUNTRY, 2019-2023 (USD BILLION)
	FIGURE 37	EXPORT DATA FOR HS CODE 8541, 2019-2023
5.13	LIST OF KEY PATENTS AND INNOVATIONS	84
	TABLE 10	PATENTS FILED DURING REVIEW PERIOD

FIGURE 38	NUMBER OF PATENTS GRANTED FOR QUANTUM DOT	84
FIGURE 39	TOP 10 COMPANIES WITH HIGHEST NUMBER OF PATENTS GRANTED DURING REVIEW PERIOD	85
TABLE 11	TOP 20 PATENT OWNERS, 2013-2023	85
TABLE 12	KEY PATENTS RELATED TO QUANTUM DOT	86
5.14	REGULATORY LANDSCAPE PERTAINING TO QUANTUM DOT MARKET	87
5.14.1	GLOBAL	87
5.14.2	EUROPE	87
5.14.3	ASIA-PACIFIC	87
5.14.4	NORTH AMERICA	88
5.14.5	GOVERNMENT REGULATIONS	89
5.14.5.1	Asia Pacific	89
5.14.5.2	North America	89
5.14.5.3	Europe	89
5.15	KEY CONFERENCES & EVENTS, 2024-2025	90
TABLE 13	QUANTUM DOT MARKET: DETAILED LIST OF CONFERENCES & EVENTS	90
6	QUANTUM DOT MARKET, BY DISPLAY	91
6.1	INTRODUCTION	92
6.2	DISPLAY TECHNOLOGY	92
TABLE 14	QUANTUM DOT MARKET, BY DISPLAY TYPE, 2020-2023 (USD MILLION)	92
FIGURE 40	MINI-LED DISPLAY TO BE LARGEST SEGMENT DURING FORECAST PERIOD	92
TABLE 15	QUANTUM DOT MARKET, BY DISPLAY TYPE, 2024-2029 (USD MILLION)	93
TABLE 16	QUANTUM DOT MARKET, BY DISPLAY TYPE, 2020-2023 (MILLION UNITS)	93
TABLE 17	QUANTUM DOT MARKET, BY DISPLAY TYPE, 2024-2029 (MILLION UNITS)	93
6.2.1	QUANTUM DOT LCDS (QD LCDS)	93
6.2.1.1	Growing need for enhanced color accuracy to drive market	93
6.2.2	MINI-LEDs	94
6.2.2.1	Rising demand for enhanced color accuracy, brightness, and energy efficiency to drive market	94
6.2.3	QUANTUM DOT OLED (QD-OLED)	94
6.2.3.1	Growing preference for QD-OLEDs in high-end displays to drive market	94
6.3	DISPLAY PANEL TYPE	94
6.3.1	QUANTUM DOT ENHANCEMENT FILM (QDEF) DISPLAYS	94
6.3.2	QUANTUM DOT COLOR FILTER (QD-CF) DISPLAYS	94
6.3.3	SELF-EMITTING/TRUE QLED DISPLAYS	95
7	QUANTUM DOT MARKET, BY MATERIAL	96
7.1	INTRODUCTION	97
TABLE 18	QUANTUM DOT MARKET, BY MATERIAL, 2020-2023 (USD MILLION)	97
FIGURE 41	CADMIUM-FREE QUANTUM DOTS TO BE LARGER SEGMENT DURING FORECAST PERIOD	97
TABLE 19	QUANTUM DOT MARKET, BY MATERIAL, 2024-2029 (USD MILLION)	98
7.2	CADMIUM-BASED QUANTUM DOTS	98
7.2.1	GROWING INTEGRATION OF CADMIUM-BASED QUANTUM DOTS IN MEDICAL DEVICES AND PHOTODETECTORS/SENSORS	98
7.2.2	CADMIUM SELENIDE QUANTUM DOTS	98
7.2.3	CADMIUM SULFIDE QUANTUM DOTS	98
7.2.4	CADMIUM TELLURIDE QUANTUM DOTS	99
7.2.5	CADMIUM ZINC SELENIDE QUANTUM DOTS	99
7.3	CADMIUM-FREE QUANTUM DOTS	99
7.3.1	GROWING DEMAND FOR SAFER AND MORE SUSTAINABLE QUANTUM DOTS TO DRIVE MARKET	99
7.3.2	INDIUM ARSENIDE QUANTUM DOTS	99

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7.3.3	SILICON QUANTUM DOTS	99
7.3.4	GRAPHENE QUANTUM DOTS	100
7.3.5	PEROVSKITE QUANTUM DOTS	100
7.3.6	LEAD SULFIDE QUANTUM DOTS	100
7.3.7	LEAD SELENIDE QUANTUM DOTS	100
7.3.8	OTHER QUANTUM DOTS	101
8	QUANTUM DOT MARKET, BY PRODUCT	102
8.1	INTRODUCTION	103
TABLE 20	QUANTUM DOT MARKET, BY PRODUCT TYPE, 2020-2023 (USD MILLION)	103
FIGURE 42	QUANTUM DOT DISPLAYS TO ACCOUNT FOR LARGER MARKET SIZE DURING FORECAST PERIOD	103
TABLE 21	QUANTUM DOT MARKET, BY PRODUCT TYPE, 2024-2029 (USD MILLION)	103
TABLE 22	QUANTUM DOT MARKET, BY PRODUCT, 2020-2023 (USD MILLION)	104
TABLE 23	QUANTUM DOT MARKET, BY PRODUCT, 2024-2029 (USD MILLION)	104
8.2	QUANTUM DOT DISPLAYS	105
8.2.1	INCREASING DEMAND FOR NARROW SPECTRUM AND HIGH STABILITY TO DRIVE MARKET	105
TABLE 24	QUANTUM DOT DISPLAY MARKET, BY VERTICAL, 2020-2023 (USD MILLION)	105
FIGURE 43	CONSUMER VERTICAL TO ACCOUNT FOR LARGEST MARKET SIZE DURING FORECAST PERIOD	106
TABLE 25	QUANTUM DOT DISPLAY MARKET, BY VERTICAL, 2024-2029 (USD MILLION)	106
8.3	QUANTUM DOT LASERS	107
8.3.1	GROWING DEMAND FOR HIGH OUTPUT POWER AND SUPERIOR TEMPERATURE STABILITY TO DRIVE MARKET	107
TABLE 26	QUANTUM DOT LASERS MARKET, BY VERTICAL, 2020-2023 (USD MILLION)	107
TABLE 27	QUANTUM DOT LASERS MARKET, BY VERTICAL, 2024-2029 (USD MILLION)	108
8.4	QUANTUM DOT SOLAR CELLS/MODULES	108
8.4.1	RIISING NEED TO CAPTURE SOLAR ENERGY MORE COST-EFFECTIVELY TO DRIVE MARKET	108
TABLE 28	QUANTUM DOT SOLAR CELLS/MODULES MARKET, BY VERTICAL, 2024-2029 (USD MILLION)	109
FIGURE 44	CONSUMER VERTICAL TO ACCOUNT FOR LARGEST SHARE IN QUANTUM DOT SOLAR CELLS/MODULES MARKET DURING FORECAST PERIOD	109
8.5	QUANTUM DOT MEDICAL DEVICES	109
8.5.1	DIVERSE APPLICATIONS TO DRIVE MARKET	109
TABLE 29	QUANTUM DOT MEDICAL DEVICES MARKET, BY VERTICAL, 2024-2029 (USD MILLION)	110
8.6	QUANTUM DOT PHOTODETECTORS/SENSORS	110
8.6.1	GROWING DEMAND FOR PHOTODETECTORS/SENSORS THAT DELIVER LOW COST AND SUPERIOR QUALITY TO DRIVE MARKET	110
TABLE 30	QUANTUM DOT PHOTODETECTORS/SENSORS MARKET, BY VERTICAL, 2024-2029 (USD MILLION)	111
8.7	QUANTUM DOT LED PRODUCTS	111
8.7.1	RIISING DEMAND FOR LEDS THAT DELIVER HIGHER BRIGHTNESS, EFFICIENCY, AND STABILITY TO DRIVE MARKET	111
TABLE 31	QUANTUM DOT LED PRODUCTS MARKET, BY VERTICAL, 2020-2023 (USD MILLION)	112
TABLE 32	QUANTUM DOT LED PRODUCTS MARKET, BY VERTICAL, 2024-2029 (USD MILLION)	112
8.8	OTHER PRODUCTS	112
TABLE 33	QUANTUM DOT OTHER PRODUCTS MARKET, BY VERTICAL, 2024-2029 (USD MILLION)	113
9	QUANTUM DOT MARKET, BY PRODUCTION TECHNIQUE	114
9.1	INTRODUCTION	114
9.2	COLLOIDAL SYNTHESIS	114
9.3	PLASMA SYNTHESIS	115
9.4	FABRICATION	115
9.4.1	LITHOGRAPHY	115
9.4.1.1	Electron-beam lithography	115

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9.4.1.2	Soft lithography	116
9.4.1.3	Stencil lithography	116
9.4.1.4	Nanolithography	116
9.4.1.5	Photopatternable array	116
9.5	BIO-MOLECULAR SELF-ASSEMBLY	116
9.6	VIRAL ASSEMBLY	116
9.7	ELECTROCHEMICAL ASSEMBLY	117
9.8	BULK MANUFACTURING	117
10	QUANTUM DOT MARKET, BY VERTICAL	118
10.1	INTRODUCTION	119
TABLE 34	QUANTUM DOT MARKET, BY VERTICAL, 2020-2023 (USD MILLION)	119
FIGURE 45	CONSUMER VERTICAL TO DOMINATE QUANTUM DOT MARKET DURING FORECAST PERIOD	119
TABLE 35	QUANTUM DOT MARKET, BY VERTICAL, 2024-2029 (USD MILLION)	120
10.2	CONSUMER	120
10.2.1	GROWING DEMAND FOR HIGH-QUALITY DISPLAYS TO DRIVE MARKET	120
TABLE 36	CONSUMER VERTICAL: QUANTUM DOT MARKET, BY PRODUCT, 2020-2023 (USD MILLION)	121
TABLE 37	CONSUMER VERTICAL: QUANTUM DOT MARKET, BY PRODUCT, 2024-2029 (USD MILLION)	121
TABLE 38	CONSUMER VERTICAL: QUANTUM DOT MARKET, BY REGION, 2020-2023 (USD MILLION)	122
FIGURE 46	ASIA PACIFIC TO ACCOUNT FOR LARGEST MARKET SIZE FOR CONSUMER VERTICAL DURING FORECAST PERIOD	122
TABLE 39	CONSUMER VERTICAL: QUANTUM DOT MARKET, BY REGION, 2024-2029 (USD MILLION)	122
TABLE 40	NORTH AMERICA: QUANTUM DOT MARKET FOR CONSUMER VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	123
TABLE 41	NORTH AMERICA: QUANTUM DOT MARKET FOR CONSUMER VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	123
TABLE 42	EUROPE: QUANTUM DOT MARKET FOR CONSUMER VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	123
TABLE 43	EUROPE: QUANTUM DOT MARKET FOR CONSUMER VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	124
TABLE 44	ASIA PACIFIC: QUANTUM DOT MARKET FOR CONSUMER VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	124
TABLE 45	ASIA PACIFIC: QUANTUM DOT MARKET FOR CONSUMER VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	124
TABLE 46	ROW: QUANTUM DOT MARKET FOR CONSUMER VERTICAL, BY REGION, 2020-2023 (USD MILLION)	125
TABLE 47	ROW: QUANTUM DOT MARKET FOR CONSUMER VERTICAL, BY REGION, 2024-2029 (USD MILLION)	125
10.3	COMMERCIAL	125
10.3.1	GROWING DEMAND FOR QUANTUM DOT-BASED KIOSKS AND INTERACTIVE SCREENS TO DRIVE MARKET	125
TABLE 48	COMMERCIAL VERTICAL: QUANTUM DOT MARKET, BY PRODUCT, 2020-2023 (USD MILLION)	126
TABLE 49	COMMERCIAL VERTICAL: QUANTUM DOT MARKET, BY PRODUCT, 2024-2029 (USD MILLION)	126
TABLE 50	COMMERCIAL VERTICAL: QUANTUM DOT MARKET, BY REGION, 2020-2023 (USD MILLION)	127
TABLE 51	COMMERCIAL VERTICAL: QUANTUM DOT MARKET, BY REGION, 2024-2029 (USD MILLION)	127
TABLE 52	NORTH AMERICA: QUANTUM DOT MARKET FOR COMMERCIAL VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	127
TABLE 53	NORTH AMERICA: QUANTUM DOT MARKET FOR COMMERCIAL VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	128
TABLE 54	EUROPE: QUANTUM DOT MARKET FOR COMMERCIAL VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	128
TABLE 55	EUROPE: QUANTUM DOT MARKET FOR COMMERCIAL VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	128
TABLE 56	ASIA PACIFIC: QUANTUM DOT MARKET FOR COMMERCIAL VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	129
TABLE 57	ASIA PACIFIC: QUANTUM DOT MARKET FOR COMMERCIAL VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	129
TABLE 58	ROW: QUANTUM DOT MARKET FOR COMMERCIAL VERTICAL, BY REGION, 2020-2023 (USD MILLION)	129
TABLE 59	ROW: QUANTUM DOT MARKET FOR COMMERCIAL VERTICAL, BY REGION, 2024-2029 (USD MILLION)	130
10.3.2	RETAIL	130
10.3.3	CORPORATE	130
10.3.4	HOSPITALITY	130
10.4	HEALTHCARE	130
10.4.1	INCREASING DEMAND FOR ENHANCED EFFICIENCY AND BRIGHTNESS TO DRIVE MARKET	130

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TABLE 60	HEALTHCARE VERTICAL: QUANTUM DOT MARKET, BY PRODUCT, 2020-2023 (USD MILLION)	131
FIGURE 47	QD DISPLAYS TO ACCOUNT FOR LARGEST MARKET SIZE FOR HEALTHCARE VERTICAL DURING FORECAST PERIOD	131
TABLE 61	HEALTHCARE VERTICAL: QUANTUM DOT MARKET, BY PRODUCT, 2024-2029 (USD MILLION)	132
TABLE 62	HEALTHCARE VERTICAL: QUANTUM DOT MARKET, BY REGION, 2020-2023 (USD MILLION)	132
TABLE 63	HEALTHCARE VERTICAL: QUANTUM DOT MARKET, BY REGION, 2024-2029 (USD MILLION)	132
TABLE 64	NORTH AMERICA: QUANTUM DOT MARKET FOR HEALTHCARE VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	133
TABLE 65	NORTH AMERICA: QUANTUM DOT MARKET FOR HEALTHCARE VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	133
TABLE 66	EUROPE: QUANTUM DOT MARKET FOR HEALTHCARE VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	133
TABLE 67	EUROPE: QUANTUM DOT MARKET FOR HEALTHCARE VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	134
TABLE 68	ASIA PACIFIC: QUANTUM DOT MARKET FOR HEALTHCARE VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	134
TABLE 69	ASIA PACIFIC: QUANTUM DOT MARKET FOR HEALTHCARE VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	134
TABLE 70	ROW: QUANTUM DOT MARKET FOR HEALTHCARE VERTICAL, BY REGION, 2020-2023 (USD MILLION)	135
TABLE 71	ROW: QUANTUM DOT MARKET FOR HEALTHCARE VERTICAL, BY REGION, 2024-2029 (USD MILLION)	135
10.4.2	BIOLOGICAL IMAGING	135
10.4.3	CELLULAR LABELING	135
10.4.4	DNA LABELING	135
10.4.5	CANCER DIAGNOSIS	136
10.5	DEFENSE	136
10.5.1	INCREASING DEMAND FOR HIGH PHOTOSTABILITY AND BRIGHTNESS TO DRIVE MARKET	136
TABLE 72	DEFENSE VERTICAL: QUANTUM DOT MARKET, BY PRODUCT, 2020-2023 (USD MILLION)	136
TABLE 73	DEFENSE VERTICAL: QUANTUM DOT MARKET, BY PRODUCT, 2024-2029 (USD MILLION)	137
TABLE 74	DEFENSE VERTICAL: QUANTUM DOT MARKET, BY REGION, 2020-2023 (USD MILLION)	137
TABLE 75	DEFENSE VERTICAL: QUANTUM DOT MARKET, BY REGION, 2024-2029 (USD MILLION)	137
TABLE 76	NORTH AMERICA: QUANTUM DOT MARKET FOR DEFENSE VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	138
TABLE 77	NORTH AMERICA: QUANTUM DOT MARKET FOR DEFENSE VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	138
TABLE 78	EUROPE: QUANTUM DOT MARKET FOR DEFENSE VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	138
TABLE 79	EUROPE: QUANTUM DOT MARKET FOR DEFENSE VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	139
TABLE 80	ASIA PACIFIC: QUANTUM DOT MARKET FOR DEFENSE VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	139
TABLE 81	ASIA PACIFIC: QUANTUM DOT MARKET FOR DEFENSE VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	139
TABLE 82	ROW: QUANTUM DOT MARKET FOR DEFENSE VERTICAL, BY REGION, 2020-2023 (USD MILLION)	140
TABLE 83	ROW: QUANTUM DOT MARKET FOR DEFENSE VERTICAL, BY REGION, 2024-2029 (USD MILLION)	140
10.6	TELECOMMUNICATIONS	140
10.6.1	ONGOING RESEARCH TOWARD INTEGRATION OF QUANTUM DOTS IN TELECOMMUNICATIONS TO DRIVE MARKET	140
TABLE 84	TELECOMMUNICATIONS VERTICAL: QUANTUM DOT MARKET, BY PRODUCT, 2020-2023 (USD MILLION)	141
TABLE 85	TELECOMMUNICATIONS VERTICAL: QUANTUM DOT MARKET, BY PRODUCT, 2024-2029 (USD MILLION)	141
TABLE 86	TELECOMMUNICATIONS VERTICAL: QUANTUM DOT MARKET, BY REGION, 2020-2023 (USD MILLION)	142
TABLE 87	TELECOMMUNICATIONS VERTICAL: QUANTUM DOT MARKET, BY REGION, 2024-2029 (USD MILLION)	142
TABLE 88	NORTH AMERICA: QUANTUM DOT MARKET FOR TELECOMMUNICATIONS VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	142
TABLE 89	NORTH AMERICA: QUANTUM DOT MARKET FOR TELECOMMUNICATIONS VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	143
TABLE 90	EUROPE: QUANTUM DOT MARKET FOR TELECOMMUNICATIONS VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	143
TABLE 91	EUROPE: QUANTUM DOT MARKET FOR TELECOMMUNICATIONS VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	143
TABLE 92	ASIA PACIFIC: QUANTUM DOT MARKET FOR TELECOMMUNICATIONS VERTICAL, BY COUNTRY, 2020-2023 (USD MILLION)	144
TABLE 93	ASIA PACIFIC: QUANTUM DOT MARKET FOR TELECOMMUNICATIONS VERTICAL, BY COUNTRY, 2024-2029 (USD MILLION)	144

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TABLE 94	ROW: QUANTUM DOT MARKET FOR TELECOMMUNICATIONS VERTICAL, BY REGION, 2020-2023 (USD MILLION)	144
TABLE 95	ROW: QUANTUM DOT MARKET FOR TELECOMMUNICATIONS VERTICAL, BY REGION, 2024-2029 (USD MILLION)	145
10.7	OTHER VERTICALS	145
10.7.1	GROWING INTEGRATION OF QUANTUM DOT DISPLAYS AND LED PRODUCTS TO DRIVE MARKET	145
TABLE 96	OTHER VERTICALS: QUANTUM DOT MARKET, BY PRODUCT, 2020-2023 (USD MILLION)	145
TABLE 97	OTHER VERTICALS: QUANTUM DOT MARKET, BY PRODUCT, 2024-2029 (USD MILLION)	146
TABLE 98	OTHER VERTICALS: QUANTUM DOT MARKET, BY REGION, 2020-2023 (USD MILLION)	146
TABLE 99	OTHER VERTICALS: QUANTUM DOT MARKET, BY REGION, 2024-2029 (USD MILLION)	146
TABLE 100	NORTH AMERICA: QUANTUM DOT MARKET FOR OTHER VERTICALS, BY COUNTRY, 2020-2023 (USD MILLION)	147
TABLE 101	NORTH AMERICA: QUANTUM DOT MARKET FOR OTHER VERTICALS, BY COUNTRY, 2024-2029 (USD MILLION)	147
TABLE 102	EUROPE: QUANTUM DOT MARKET FOR OTHER VERTICALS, BY COUNTRY, 2020-2023 (USD MILLION)	147
TABLE 103	EUROPE: QUANTUM DOT MARKET FOR OTHER VERTICALS, BY COUNTRY, 2024-2029 (USD MILLION)	148
TABLE 104	ASIA PACIFIC: QUANTUM DOT MARKET FOR OTHER VERTICALS, BY COUNTRY, 2020-2023 (USD MILLION)	148
TABLE 105	ASIA PACIFIC: QUANTUM DOT MARKET FOR OTHER VERTICALS, BY COUNTRY, 2024-2029 (USD MILLION)	148
TABLE 106	ROW: QUANTUM DOT MARKET FOR OTHER VERTICALS, BY REGION, 2020-2023 (USD MILLION)	149
TABLE 107	ROW: QUANTUM DOT MARKET FOR OTHER VERTICALS, BY REGION, 2024-2029 (USD MILLION)	149
10.7.2	MANUFACTURING	149
10.7.3	TRANSPORTATION	149
10.7.4	EDUCATION	149
10.7.5	SPORTS & ENTERTAINMENT	150
10.7.6	AGRICULTURE/HORTICULTURE LIGHTING	150
11	QUANTUM DOT MARKET, BY REGION	151
11.1	INTRODUCTION	152
FIGURE 48	CANADIAN QUANTUM DOT MARKET TO GROW AT HIGHEST CAGR DURING FORECAST PERIOD	152
TABLE 108	QUANTUM DOT MARKET, BY REGION, 2020-2023 (USD MILLION)	152
TABLE 109	QUANTUM DOT MARKET, BY REGION, 2024-2029 (USD MILLION)	153
11.2	NORTH AMERICA	153
FIGURE 49	NORTH AMERICA: QUANTUM DOT MARKET SNAPSHOT	154
TABLE 110	NORTH AMERICA: QUANTUM DOT MARKET, BY COUNTRY, 2020-2023 (USD MILLION)	154
TABLE 111	NORTH AMERICA: QUANTUM DOT MARKET, BY COUNTRY, 2024-2029 (USD MILLION)	155
TABLE 112	NORTH AMERICA: QUANTUM DOT MARKET, BY VERTICAL, 2020-2023 (USD MILLION)	155
TABLE 113	NORTH AMERICA: QUANTUM DOT MARKET, BY VERTICAL, 2024-2029 (USD MILLION)	155
11.2.1	RECESSION IMPACT	156
11.2.2	US	156
11.2.2.1	Increasing awareness and integration of quantum dot technology to drive market	156
11.2.3	CANADA	157
11.2.3.1	Presence of developers and manufacturers to drive market	157
11.2.4	MEXICO	157
11.2.4.1	Growing demand for quantum dots to drive growth	157
11.3	EUROPE	157
FIGURE 50	EUROPE: QUANTUM DOT MARKET SNAPSHOT	158
TABLE 114	EUROPE: QUANTUM DOT MARKET, BY COUNTRY, 2020-2023 (USD MILLION)	159
TABLE 115	EUROPE: QUANTUM DOT MARKET, BY COUNTRY, 2024-2029 (USD MILLION)	159
TABLE 116	EUROPE: QUANTUM DOT MARKET, BY VERTICAL, 2020-2023 (USD MILLION)	159
TABLE 117	EUROPE: QUANTUM DOT MARKET, BY VERTICAL, 2024-2029 (USD MILLION)	160
11.3.1	RECESSION IMPACT	160
11.3.2	UK	160

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11.3.2.1 Presence of major companies to drive market 160

11.3.3 GERMANY 161

11.3.3.1 Increasing development of public infrastructure and healthcare industry to drive growth 161

11.3.4 FRANCE 161

11.3.4.1 Growing integration of display and digital signage products to drive market 161

11.3.5 ITALY 162

11.3.5.1 Rising demand for quantum dot displays to drive market 162

11.3.6 SPAIN 162

11.3.6.1 Growing demand for signage products to drive market 162

11.3.7 REST OF EUROPE 162

11.4 ASIA PACIFIC 163

FIGURE 51 ASIA PACIFIC: QUANTUM DOT MARKET SNAPSHOT 163

TABLE 118 ASIA PACIFIC: QUANTUM DOT MARKET, BY COUNTRY, 2020-2023 (USD MILLION) 164

TABLE 119 ASIA PACIFIC: QUANTUM DOT MARKET, BY COUNTRY, 2024-2029 (USD MILLION) 164

TABLE 120 ASIA PACIFIC: QUANTUM DOT MARKET, BY VERTICAL, 2020-2023 (USD MILLION) 164

TABLE 121 ASIA PACIFIC: QUANTUM DOT MARKET, BY VERTICAL, 2024-2029 (USD MILLION) 165

11.4.1 RECESSION IMPACT 165

11.4.2 CHINA 165

11.4.2.1 Advancements in display market to drive growth 165

11.4.3 JAPAN 166

11.4.3.1 Increasing deployment of displays and quantum dot lasers for telecommunication to drive market 166

11.4.4 SOUTH KOREA 166

11.4.4.1 Presence of several established display manufacturers to drive market 166

11.4.5 INDIA 167

11.4.5.1 Rising demand for displays to drive growth 167

11.4.6 REST OF ASIA PACIFIC 167

11.5 REST OF THE WORLD (ROW) 168

TABLE 122 ROW: QUANTUM DOT MARKET, BY REGION, 2020-2023 (USD MILLION) 168

TABLE 123 ROW: QUANTUM DOT MARKET, BY REGION, 2024-2029 (USD MILLION) 168

TABLE 124 ROW: QUANTUM DOT MARKET, BY VERTICAL, 2020-2023 (USD MILLION) 168

TABLE 125 ROW: QUANTUM DOT MARKET, BY VERTICAL, 2024-2029 (USD MILLION) 169

11.5.1 RECESSION IMPACT 169

11.5.2 MIDDLE EAST & AFRICA 169

11.5.2.1 Growing developments to expand in region to drive market 169

11.5.2.1.1 GCC Countries 170

11.5.2.1.1.1 Increasing market expansions by quantum dot display manufacturers to drive market 170

11.5.2.1.2 Rest of Middle East & Africa 170

11.5.2.1.2.1 Expanding retail, corporate, transportation, and commercial sectors to drive market 170

TABLE 126 MIDDLE EAST & AFRICA: QUANTUM DOT MARKET, BY REGION, 2020-2023 (USD MILLION) 170

TABLE 127 MIDDLE EAST & AFRICA: QUANTUM DOT MARKET, BY REGION, 2024-2029 (USD MILLION) 171

11.5.3 SOUTH AMERICA 171

11.5.3.1 Increasing demand for sensors, transistors, and lasers to drive market 171

12 COMPETITIVE LANDSCAPE 172

12.1 INTRODUCTION 172

12.2 MARKET EVALUATION FRAMEWORK 172

TABLE 128 OVERVIEW OF STRATEGIES DEPLOYED BY KEY QUANTUM DOT PLAYERS 172

FIGURE 52 COMPANIES ADOPTED COLLABORATIONS, AGREEMENTS, PRODUCT LAUNCHES, AND ACQUISITIONS AS KEY GROWTH

STRATEGIES, 2020-2024173

12.2.1ORGANIC/INORGANIC GROWTH STRATEGIES174

12.2.2PRODUCT PORTFOLIO174

12.2.3GEOGRAPHIC PRESENCE174

12.2.4MANUFACTURING FOOTPRINT174

12.3MARKET SHARE ANALYSIS, 2023174

TABLE 129MARKET SHARE ANALYSIS OF KEY COMPANIES IN QUANTUM DOT MARKET, 2023175

12.4COMPANY VALUATION AND FINANCIAL METRICS176

FIGURE 53COMPANY VALUATION, 2024 (USD BILLION)176

FIGURE 54FINANCIAL METRICS (EV/EBITDA), 2024176

12.5BRAND/PRODUCT COMPARISON177

FIGURE 55BRAND/PRODUCT COMPARISON177

12.6HISTORICAL REVENUE ANALYSIS OF MAJOR MARKET PLAYERS177

12.7HISTORICAL REVENUE ANALYSIS, 2019-2023178

FIGURE 56HISTORICAL REVENUE ANALYSIS OF MAJOR COMPANIES IN QUANTUM DOT MARKET, 2019-2023 (USD BILLION)178

12.8COMPANY EVALUATION MATRIX178

12.8.1STARS179

12.8.2EMERGING LEADERS179

12.8.3PERVASIVE PLAYERS179

12.8.4PARTICIPANTS179

FIGURE 57QUANTUM DOT MARKET (GLOBAL): COMPANY EVALUATION MATRIX, 2023180

12.9STARTUP/SME EVALUATION MATRIX181

12.9.1PROGRESSIVE COMPANIES181

12.9.2RESPONSIVE COMPANIES181

12.9.3DYNAMIC COMPANIES181

12.9.4STARTING BLOCKS181

FIGURE 58QUANTUM DOT MARKET (GLOBAL): STARTUP/SME EVALUATION MATRIX, 2023182

12.9.5COMPETITIVE BENCHMARKING183

TABLE 130QUANTUM DOT MARKET: DETAILED LIST OF KEY STARTUPS/SMES183

TABLE 131COMPETITIVE BENCHMARKING FOR STARTUPS/SMES: MATERIAL183

TABLE 132COMPETITIVE BENCHMARKING FOR STARTUPS/SMES: PRODUCT184

TABLE 133COMPETITIVE BENCHMARKING FOR STARTUPS/SMES: VERTICAL184

TABLE 134COMPETITIVE BENCHMARKING OF STARTUP/SMES: REGION184

12.9.6COMPANY FOOTPRINT185

12.9.6.1Company product footprint185

TABLE 135COMPANY MATERIAL TYPE FOOTPRINT186

TABLE 136COMPANY PRODUCT FOOTPRINT187

TABLE 137COMPANY VERTICAL FOOTPRINT188

TABLE 138COMPANY REGION FOOTPRINT190

12.10COMPETITIVE SITUATIONS AND TRENDS191

12.10.1PRODUCT LAUNCHES191

TABLE 139QUANTUM DOT MARKET: PRODUCT LAUNCHES, NOVEMBER 2020-APRIL 2024191

12.10.2DEALS193

TABLE 140QUANTUM DOT MARKET: DEALS, AUGUST 2020-JANUARY 2024193

13COMPANY PROFILES195

13.1INTRODUCTION195

(Business Overview, Products/Services/Solutions Offered, MnM View, Key Strengths and Right to Win, Strategic Choices Made,

Weaknesses and Competitive Threats, Recent Developments)*

13.2 □ KEY PLAYERS □ 195

13.2.1 □ SAMSUNG DISPLAY □ 195

TABLE 141 □ SAMSUNG DISPLAY: COMPANY OVERVIEW □ 196

FIGURE 59 □ SAMSUNG ELECTRONICS: COMPANY SNAPSHOT □ 196

TABLE 142 □ SAMSUNG DISPLAY: PRODUCTS OFFERED □ 197

TABLE 143 □ SAMSUNG DISPLAY: PRODUCT LAUNCHES □ 197

13.2.2 □ LG DISPLAY CO., LTD. □ 199

TABLE 144 □ LG DISPLAY CO., LTD.: COMPANY OVERVIEW □ 199

FIGURE 60 □ LG DISPLAY: COMPANY SNAPSHOT □ 200

TABLE 145 □ LG DISPLAY CO., LTD.: PRODUCTS OFFERED □ 200

TABLE 146 □ LG DISPLAY CO., LTD.: PRODUCT LAUNCHES □ 201

13.2.3 □ BOE TECHNOLOGY GROUP CO., LTD. □ 202

TABLE 147 □ BOE TECHNOLOGY GROUP CO., LTD.: COMPANY OVERVIEW □ 202

FIGURE 61 □ BOE TECHNOLOGY GROUP CO., LTD.: COMPANY SNAPSHOT □ 203

TABLE 148 □ BOE TECHNOLOGY GROUP CO., LTD.: PRODUCTS OFFERED □ 203

TABLE 149 □ BOE TECHNOLOGY GROUP CO., LTD.: PRODUCT LAUNCHES □ 204

13.2.4 □ AUO CORPORATION □ 205

TABLE 150 □ AUO CORPORATION: COMPANY OVERVIEW □ 205

FIGURE 62 □ AUO CORPORATION: COMPANY SNAPSHOT □ 206

TABLE 151 □ AUO CORPORATION: PRODUCTS OFFERED □ 206

13.2.5 □ TCL CHINA STAR OPTOELECTRONICS TECHNOLOGY CO., LTD. □ 208

TABLE 152 □ TCL CHINA STAR OPTOELECTRONICS TECHNOLOGY CO., LTD.: COMPANY OVERVIEW □ 208

TABLE 153 □ TCL CHINA STAR OPTOELECTRONICS TECHNOLOGY CO., LTD.: PRODUCTS OFFERED □ 208

13.2.6 □ SHOEI CHEMICAL, INC. (NANOSYS, INC.) □ 210

TABLE 154 □ SHOEI CHEMICAL, INC.: COMPANY OVERVIEW □ 210

TABLE 155 □ SHOEI CHEMICAL, INC.: PRODUCTS OFFERED □ 210

TABLE 156 □ SHOEI CHEMICAL, INC.: DEALS □ 211

13.2.7 □ AMERICAN ELEMENTS □ 212

TABLE 157 □ AMERICAN ELEMENTS: COMPANY OVERVIEW □ 212

TABLE 158 □ AMERICAN ELEMENTS: PRODUCTS OFFERED □ 212

TABLE 159 □ AMERICAN ELEMENTS: PRODUCT LAUNCHES □ 213

13.2.8 □ HANSOLCHEMICAL □ 214

TABLE 160 □ HANSOLCHEMICAL: COMPANY OVERVIEW □ 214

FIGURE 63 □ HANSOLCHEMICAL: COMPANY SNAPSHOT □ 215

TABLE 161 □ HANSOLCHEMICAL: PRODUCTS OFFERED □ 215

13.2.9 □ NANOCO GROUP PLC □ 216

TABLE 162 □ NANOCO GROUP PLC: COMPANY OVERVIEW □ 216

FIGURE 64 □ NANOCO GROUP PLC: COMPANY SNAPSHOT □ 217

TABLE 163 □ NANOCO GROUP PLC: PRODUCTS OFFERED □ 217

TABLE 164 □ NANOCO GROUP PLC: DEALS □ 218

13.2.10 □ AVANTAMA AG □ 219

TABLE 165 □ AVANTAMA AG: COMPANY OVERVIEW □ 219

TABLE 166 □ AVANTAMA AG: PRODUCTS OFFERED □ 219

13.2.11 □ NNCRYSTAL US CORPORATION □ 220

TABLE 167 □ NNCRYSTAL US CORPORATION: COMPANY OVERVIEW □ 220

TABLE 168 □ NNCRYSTAL US CORPORATION: PRODUCTS OFFERED □ 220

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13.2.12	OCEAN NANOTECH	222
TABLE 169	OCEAN NANOTECH.: COMPANY OVERVIEW	222
TABLE 170	OCEAN NANOTECH: PRODUCTS OFFERED	222
13.2.13	QUANTUM MATERIALS CORP	223
TABLE 171	QUANTUM MATERIALS CORP: COMPANY OVERVIEW	223
TABLE 172	QUANTUM MATERIALS CORP: PRODUCTS OFFERED	223
13.2.14	QUANTUM SOLUTIONS	224
TABLE 173	QUANTUM SOLUTIONS: COMPANY OVERVIEW	224
TABLE 174	QUANTUM SOLUTIONS: PRODUCTS OFFERED	224
TABLE 175	QUANTUM SOLUTIONS: PRODUCT LAUNCHES	225
TABLE 176	QUANTUM SOLUTIONS: DEALS	226
13.2.15	MERCK KGAA	227
TABLE 177	MERCK KGAA: COMPANY OVERVIEW	227
FIGURE 65	MERCK KGAA: COMPANY SNAPSHOT	228
TABLE 178	MERCK KGAA: PRODUCTS OFFERED	228
*Business Overview, Products/Services/Solutions Offered, MnM View, Key Strengths and Right to Win, Strategic Choices Made, Weaknesses and Competitive Threats, Recent Developments might not be captured in case of unlisted companies.		
13.3	OTHER PLAYERS	229
13.3.1	STREM	229
13.3.2	SUZHOU XINGSHUO NANOTECH CO. LTD.	230
13.3.3	UBIQD, INC.	231
13.3.4	NANOSHEL LLC	232
13.3.5	NANORH	233
13.3.6	ACS MATERIAL	234
13.3.7	NANOOPTICAL MATERIALS INC	235
13.3.8	NANOCHEMAZONE	236
13.3.9	THE DOW CHEMICAL COMPANY	237
13.3.10	QUSTOMDOT BV	238
13.3.11	DUXERIALS EUROPE B.V.	239
13.3.12	NANOLUMI PTE. LTD.	239
13.3.13	RINA TECHNOLOGY CO., LTD.	240
13.3.14	WAH HONG INDUSTRIAL CORP.	241
13.3.15	EFUN TECHNOLOGY	241
14	APPENDIX	242
14.1	INSIGHTS OF INDUSTRY EXPERTS	242
14.2	DISCUSSION GUIDE	243
14.3	KNOWLEDGESTORE: MARKETSandMARKETS' SUBSCRIPTION PORTAL	247
14.4	CUSTOMIZATION OPTIONS	249
14.5	RELATED REPORTS	249
14.6	AUTHOR DETAILS	250

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Quantum Dot Market by Material (Cadmium-based Quantum Dots, Cadmium-free Quantum Dots), Product (Displays, Lasers, Solar Cells/Modules, Medical Devices, Photodetectors/Sensors, LED Products), Display, Vertical and Region - Global Forecast to 2029

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