



UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, DC 20549

FORM 10-Q

(MARK ONE)

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended June 30, 2007

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission file number 0-23621

**MKS INSTRUMENTS, INC.**

(Exact name of registrant as specified in its charter)

Massachusetts

04-2277512

(State or other jurisdiction  
of incorporation or organization)

(I.R.S. Employer  
Identification No.)

90 Industrial Way, Wilmington, Massachusetts

01887

(Address of principal executive offices)

(Zip Code)

Registrant's telephone number, including area code (978) 284-4000

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer  Accelerated filer  Non-accelerated filer

Indicate by check mark whether the registrant is a shell company as defined in Rule 12b-2 of the Exchange Act.

Yes  No

Number of shares outstanding of the issuer's common stock as of July 30, 2007: 57,537,258

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## PART I. FINANCIAL INFORMATION

## ITEM 1. FINANCIAL STATEMENTS.

MKS INSTRUMENTS, INC.  
CONSOLIDATED BALANCE SHEETS  
(in thousands, except share data)

	<u>June 30, 2007</u> (unaudited)	<u>December 31, 2006</u>
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$ 221,153	\$ 215,208
Short-term investments	114,923	74,749
Trade accounts receivable, net	125,910	123,658
Inventories	163,713	149,820
Deferred income taxes	16,376	16,787
Other current assets	15,652	11,216
Total current assets	<u>657,727</u>	<u>591,438</u>
Property, plant and equipment, net	80,130	79,463
Long-term investments	6,729	2,816
Goodwill	322,712	323,973
Acquired intangible assets, net	35,998	43,104
Other assets	2,376	2,926
Total assets	<u>\$ 1,105,672</u>	<u>\$ 1,043,720</u>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Short-term borrowings	\$ 24,038	\$ 21,845
Current portion of capital lease obligations	1,383	1,176
Accounts payable	37,938	38,541
Accrued compensation	17,642	26,685
Income taxes payable	—	16,619
Other accrued expenses	30,534	25,031
Total current liabilities	<u>111,535</u>	<u>129,897</u>
Long-term debt	5,000	5,000
Long-term portion of capital lease obligations	1,135	1,113
Deferred income taxes	2,727	1,535
Other liabilities	17,412	4,956
Commitments and contingencies (Note 8)		
Stockholders' equity:		
Preferred Stock, \$0.01 par value, 2,000,000 shares authorized; none issued and outstanding	—	—
Common Stock, no par value, 200,000,000 shares authorized; 57,687,601 and 56,671,625 shares issued and outstanding at June 30, 2007 and December 31, 2006, respectively	113	113
Additional paid-in capital	714,034	680,164
Retained earnings	243,479	210,877
Accumulated other comprehensive income	10,237	10,065
Total stockholders' equity	<u>967,863</u>	<u>901,219</u>
Total liabilities and stockholders' equity	<u>\$ 1,105,672</u>	<u>\$ 1,043,720</u>

The accompanying notes are an integral part of the consolidated financial statements.

MKS INSTRUMENTS, INC.  
CONSOLIDATED STATEMENTS OF OPERATIONS  
(in thousands, except per share data)  
(Unaudited)

	Three Months Ended June 30		Six Months Ended June 30,	
	2007	2006	2007	2006
Net sales	\$ 203,978	\$ 198,351	\$ 415,410	\$ 377,412
Cost of sales	117,948	111,850	236,518	217,166
Gross profit	86,030	86,501	178,892	160,246
Research and development	18,351	17,663	36,650	33,720
Selling, general and administrative	35,928	30,300	70,504	60,065
Amortization of acquired intangible assets	4,108	4,086	8,215	9,340
Purchase of in-process technology	—	—	—	800
Income from operations	27,643	34,452	63,523	56,321
Interest expense	216	228	433	431
Interest income	3,797	2,162	7,319	3,795
Income before income taxes	31,224	36,386	70,409	59,685
Provision for income taxes	8,697	12,012	20,592	19,876
Net income	<u>\$ 22,527</u>	<u>\$ 24,374</u>	<u>\$ 49,817</u>	<u>\$ 39,809</u>
Net income per share:				
Basic	<u>\$ 0.40</u>	<u>\$ 0.44</u>	<u>\$ 0.88</u>	<u>\$ 0.72</u>
Diluted	<u>\$ 0.39</u>	<u>\$ 0.44</u>	<u>\$ 0.86</u>	<u>\$ 0.72</u>
Weighted average common shares outstanding:				
Basic	<u>56,820</u>	<u>55,338</u>	<u>56,587</u>	<u>54,999</u>
Diluted	<u>57,939</u>	<u>55,907</u>	<u>57,633</u>	<u>55,588</u>

The accompanying notes are an integral part of the consolidated financial statements.

MKS INSTRUMENTS, INC.  
CONSOLIDATED STATEMENTS OF CASH FLOWS  
(in thousands)  
(Unaudited)

	Six Months Ended June 30,	
	2007	2006
<b>Cash flows from operating activities:</b>		
Net income	\$ 49,817	\$ 39,809
<b>Adjustments to reconcile net income to net cash provided by operating activities:</b>		
Depreciation and amortization	15,435	15,882
Stock-based compensation	6,895	5,980
Tax benefit from stock-based compensation	2,511	3,865
Excess tax benefit from stock-based compensation	(1,025)	(1,829)
Other	1,504	829
<b>Changes in operating assets and liabilities, net of businesses acquired:</b>		
Trade accounts receivable	(2,739)	(28,351)
Inventories	(14,154)	(23,999)
Other current assets	(4,825)	(517)
Accrued expenses and other current liabilities	8,983	11,596
Accounts payable	(560)	4,427
Income taxes payable	(16,671)	(2,924)
Net cash provided by operating activities	<u>45,171</u>	<u>24,768</u>
<b>Cash flows from investing activities:</b>		
Acquisitions of businesses, net of cash acquired	—	(96,672)
Purchases of short-term and long-term available for sale investments	(113,809)	(45,064)
Maturities and sales of short-term and long-term available for sale investments	69,721	65,280
Purchases of property, plant and equipment	(6,898)	(4,210)
Other	557	(756)
Net cash used in investing activities	<u>(50,429)</u>	<u>(81,422)</u>
<b>Cash flows from financing activities:</b>		
Proceeds from short-term borrowings	56,992	42,417
Payments on short-term borrowings	(53,943)	(36,357)
Repurchases of common stock	(31,719)	—
Principal payments on long-term debt and capital lease obligations	(640)	(1,933)
Proceeds from exercise of stock options and employee stock purchase plan	38,968	16,560
Excess tax benefit from stock-based compensation	1,025	1,829
Net cash provided by financing activities	<u>10,683</u>	<u>22,516</u>
Effect of exchange rate changes on cash and cash equivalents	520	862
Increase (decrease) in cash and cash equivalents	5,945	(33,276)
Cash and cash equivalents at beginning of period	215,208	220,573
Cash and cash equivalents at end of period	<u>\$ 221,153</u>	<u>\$ 187,297</u>
<b>Supplemental cash flow disclosure:</b>		
Income taxes paid	<u>\$ 24,108</u>	<u>\$ 17,858</u>

The accompanying notes are an integral part of the consolidated financial statements.

MKS INSTRUMENTS, INC.  
 NOTES TO CONSOLIDATED FINANCIAL STATEMENTS  
 (Tables in thousands, except share and per share data)

1) Basis of Presentation

The terms “MKS” and the “Company” refer to MKS Instruments, Inc. and its subsidiaries. The interim financial data as of June 30, 2007 and for the three and six months ended June 30, 2007 and 2006 is unaudited; however, in the opinion of MKS, the interim data includes all adjustments, consisting only of normal recurring adjustments, necessary for a fair statement of the results for the interim periods. The unaudited consolidated financial statements presented herein have been prepared in accordance with the instructions to Form 10-Q and do not include all of the information and note disclosures required by accounting principles generally accepted in the United States of America. The consolidated financial statements should be read in conjunction with the audited consolidated financial statements and notes thereto included in the MKS Annual Report on Form 10-K for the year ended December 31, 2006 filed with the Securities and Exchange Commission on February 28, 2007.

The preparation of these consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. On an on-going basis, management evaluates its estimates and judgments, including those related to revenue recognition, stock-based compensation, inventory, intangible assets, goodwill and other long-lived assets, in-process research and development expenses, merger expenses, income taxes and investments. Management bases its estimates and judgments on historical experience and on various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

Certain amounts in prior periods have been reclassified to be consistent with the current period presentation.

2) Goodwill and Intangible Assets

Intangible Assets

Acquired amortizable intangible assets consisted of the following as of June 30, 2007:

	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Completed technology	\$ 87,706	\$ (69,584)	\$ 18,122
Customer relationships	21,242	(8,487)	12,755
Patents, trademarks, tradenames and other	16,674	(11,553)	5,121
	<u>\$ 125,622</u>	<u>\$ (89,624)</u>	<u>\$ 35,998</u>

Acquired amortizable intangible assets consisted of the following as of December 31, 2006:

	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Completed technology	\$ 87,087	\$ (63,570)	\$ 23,517
Customer relationships	20,932	(7,139)	13,793
Patents, trademarks, tradenames and other	16,494	(10,700)	5,794
	<u>\$ 124,513</u>	<u>\$ (81,409)</u>	<u>\$ 43,104</u>

Aggregate amortization expense related to acquired intangibles for the three and six months ended June 30, 2007 was \$4,108,000 and \$8,215,000, respectively. Aggregate amortization expense related to acquired intangibles for the three and six months ended June 30, 2006 was \$4,086,000 and \$9,340,000, respectively. Estimated amortization expense related to acquired intangibles for the remainder of 2007 and in total for the year is \$7,554,000 and \$15,769,000, respectively. Estimated amortization expense for 2008 and for each of the three succeeding fiscal years is as follows:

Year	Amount
2008	\$8,096
2009	5,835
2010	4,742
2011	4,327

MKS INSTRUMENTS, INC.  
 NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (continued)  
 (Tables in thousands, except share and per share data)

Goodwill

The changes in the carrying amount of goodwill during the six months ended June 30, 2007 were not material.

3) Net Income Per Share

The following table sets forth the computation of basic and diluted net income per share:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2007	2006	2007	2006
<b>Numerator:</b>				
Net income	\$ 22,527	\$ 24,374	\$ 49,817	\$ 39,809
<b>Denominator:</b>				
Shares used in net income per common share — basic	56,820	55,338	56,587	54,999
<b>Effect of dilutive securities:</b>				
Stock options, restricted stock units and employee stock purchase plan	1,119	569	1,046	589
Shares used in net income per common share — diluted	57,939	55,907	57,633	55,588
<b>Net income per common share:</b>				
Basic	\$ 0.40	\$ 0.44	\$ 0.88	\$ 0.72
Diluted	\$ 0.39	\$ 0.44	\$ 0.86	\$ 0.72

For purposes of computing diluted net income per common share, 1,997,191 and 2,744,392 outstanding options for the three and six months ended June 30, 2007, respectively, and 4,783,409 and 4,745,550 outstanding options for the three and six months ended June 30, 2006, respectively, were excluded from the calculation as their inclusion would be anti-dilutive. There were options to purchase approximately 5,393,854 and 8,208,548 shares of the Company's common stock outstanding as of June 30, 2007 and 2006, respectively.

4) Inventories

Inventories consist of the following:

	June 30, 2007	December 31, 2006
Raw material	\$ 83,513	\$ 82,007
Work in process	31,041	26,943
Finished goods	49,159	40,870
	<u>\$ 163,713</u>	<u>\$ 149,820</u>

5) Stockholders' Equity

Comprehensive Income

Components of comprehensive income were as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2007	2006	2007	2006
Net income	\$ 22,527	\$ 24,374	\$ 49,817	\$ 39,809
<b>Other comprehensive income (loss):</b>				
Changes in value of financial instruments designated as cash flow hedges (net of tax of \$90 and \$0 for the three months ended June 30, respectively, and net of tax benefit of \$91 and \$271 for the six months ended June 30, respectively)	148	—	(154)	(452)
Foreign currency translation adjustment	(95)	960	255	1,830
Unrealized gain on investments (net of tax of \$26 and \$1 for the three months ended June 30, respectively, and net of tax of \$42 and \$34 for the six months ended June 30, respectively)	44	3	71	57
Other comprehensive income	97	963	172	1,435
<b>Total comprehensive income</b>	<u>\$ 22,624</u>	<u>\$ 25,337</u>	<u>\$ 49,989</u>	<u>\$ 41,244</u>



MKS INSTRUMENTS, INC.  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (continued)  
(Tables in thousands, except share and per share data)

Stock Repurchase Program

On February 12, 2007, MKS' Board of Directors approved a share repurchase program (the "Program") for the repurchase of up to \$300 million of its outstanding stock over the subsequent two years. The repurchases may be made from time to time on the open market or through privately negotiated transactions. The timing and amount of any shares repurchased under the Program will depend on a variety of factors, including price, corporate and regulatory requirements, capital availability, and other market conditions. The Program may be discontinued at any time at the discretion of the Company and its Board of Directors. During the three months ended June 30, 2007, we repurchased 690,765 shares of common stock for \$18,844,288 for an average price of \$27.28 and during the six months ended June 30, 2007, we repurchased 1,200,765 shares of common stock for \$31,719,084 for an average price of \$26.42.

Share-Based Compensation

At June 30, 2007, total unrecognized estimated compensation cost related to non-vested stock options, restricted stock and restricted stock units (collectively "stock-based shares") granted prior to that date was approximately \$27,334,564, which is expected to be recognized over a weighted-average period of 2.1 years. Net stock-based shares, after forfeitures and cancellations, granted during the six months ended June 30, 2007 and 2006 represented 1.0% and 1.1%, respectively, of outstanding shares as of the beginning of each fiscal period and represented 1.0% and 1.1%, respectively, of outstanding shares as of the end of each fiscal period.

6) Income Taxes

The Company has adopted FASB Interpretation 48, Accounting for Uncertainty in Income Taxes ("FIN 48"), as of January 1, 2007. As a result of the implementation of FIN 48, the Company recognized no adjustment in the liability for unrecognized income tax benefits. At the adoption date of January 1, 2007, the total amount of gross unrecognized tax benefits, which excludes interest and penalties discussed below, was approximately \$10,500,000. If these benefits were recognized in a future period, the timing of which is not estimable, the net unrecognized tax benefit of approximately \$10,100,000 would impact the Company's effective tax rate. The total amount of gross unrecognized tax benefits at June 30, 2007 was approximately \$11,700,000. The increase from January 1, 2007 was primarily attributable to tax positions taken by the Company in the current year.

MKS and its subsidiaries are subject to U.S. federal income tax as well as the income tax of multiple state and foreign jurisdictions. The Company has concluded all U.S. federal income tax matters for years through 2002. At June 30, 2007, there were ongoing audits in various other tax jurisdictions. The Company does not expect any material changes to the returns as filed from these open audits.

Within the next four quarters, the statute of limitations will close on the 2001 and 2002 tax returns filed in various foreign jurisdictions. As a result, it is reasonably expected that net unrecognized tax benefits from these foreign jurisdictions may be recognized within the next four quarters. The recognition of these tax benefits is not expected to have a material impact on the Company's financial statements. The Company does not reasonably expect any other significant changes in the next four quarters. The following tax years, in the major tax jurisdictions noted, are open for assessment or refund: U.S. Federal: 2003 to 2006, Germany: 2002 to 2006, Korea: 2005 and 2006, Japan: 2001 to 2006, and the United Kingdom: 2005 and 2006.

The Company will accrue interest and, if applicable, penalties, for any uncertain tax positions. This interest and penalty expense will be a component of income tax expense. At the date of adoption of FIN 48 and at June 30, 2007, the Company had approximately \$700,000 and \$1,000,000, respectively, accrued for interest on unrecognized tax benefits.

The Company's effective tax rate for the three and six months ended June 30, 2007 was 27.9% and 29.2%, respectively. The effective tax rate is less than the statutory tax rate primarily due to the profits of the Company's international subsidiaries being taxed at rates lower than the U.S. statutory tax rate and the benefit from U.S. research and development credits.

7) Geographic, Product and Significant Customer Information

The Company operates in one segment for the development, manufacturing, sales and servicing of products that measure, control, power and monitor critical parameters of advanced manufacturing processes. The Company's chief decision-maker reviews consolidated operating results to make decisions about allocating resources and assessing performance for the entire Company.

MKS INSTRUMENTS, INC.  
 NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (continued)  
 (Tables in thousands, except share and per share data)

Information about the Company's operations in different geographic regions is presented in the tables below. Net sales to unaffiliated customers are based on the location in which the sale originated. Transfers between geographic areas are at negotiated transfer prices and have been eliminated from consolidated net sales.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2007	2006	2007	2006
<b>Geographic net sales:</b>				
United States	\$ 127,505	\$ 133,376	\$ 257,852	\$ 258,509
Japan	27,897	23,947	53,943	46,105
Europe	22,009	17,339	42,936	31,871
Asia	26,567	23,689	60,679	40,927
	<u>\$ 203,978</u>	<u>\$ 198,351</u>	<u>\$ 415,410</u>	<u>\$ 377,412</u>
			June 30, 2007	December 31, 2006
<b>Long-lived assets:</b>				
United States			\$ 66,841	\$ 68,393
Japan			5,758	5,479
Europe			4,667	4,908
Asia			5,240	3,609
			<u>\$ 82,506</u>	<u>\$ 82,389</u>

The Company groups its products into three product groups. Net sales for these product groups are as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2007	2006	2007	2006
Instruments and Control Systems	\$ 97,338	\$ 94,316	\$ 198,529	\$ 178,224
Power and Reactive Gas Products	86,813	83,645	172,380	160,229
Vacuum Products	19,827	20,390	44,501	38,959
	<u>\$ 203,978</u>	<u>\$ 198,351</u>	<u>\$ 415,410</u>	<u>\$ 377,412</u>

The Company had one customer comprising 21% of net sales for the three months ended June 30, 2007 and one customer comprising 20% of net sales for the six months ended June 30, 2007. The Company had one customer comprising 22% of net sales for the three months ended June 30, 2006, and two customers comprising 22% and 10%, respectively, of net sales for the six months ended June 30, 2006.

8) Commitments and Contingencies

The Company is subject to various legal proceedings and claims, which have arisen in the ordinary course of business. In the opinion of management, the ultimate disposition of these matters will not have a material adverse effect on the Company's results of operations, financial condition or cash flows.

The Company reviewed its contractual obligations and commercial commitments as of June 30, 2007 and determined that there were no significant changes from the ones set forth in the Company's Annual Report on Form 10-K for the year ended December 31, 2006. However, certain changes in the Company's obligations related to the adoption of FIN 48 are discussed in Note 6, Income Taxes, in the Notes to Consolidated Financial Statements in this Form 10-Q.

9) Product Warranties

The Company provides for the estimated costs to fulfill customer warranty obligations upon the recognition of the related revenue. While the Company engages in extensive product quality programs and processes, including actively monitoring and evaluating the quality of its component suppliers, the Company's warranty obligation is affected by product failure rates, utilization levels, material usage, and supplier warranties on parts delivered to the Company. Should actual product failure rates, utilization levels, material usage, or supplier warranties on parts differ from the Company's estimates, revisions to the estimated warranty liability would be required.

MKS INSTRUMENTS, INC.  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (continued)  
(Tables in thousands, except share and per share data)

Product warranty activities for the six months ended June 30 were as follows:

	2007	2006
Balance at January 1	\$ 11,549	\$ 7,766
Fair value of warranty liabilities acquired during the period	—	612
Provisions for product warranties during the period	4,020	7,299
Direct charges to warranty liability during the period	(4,211)	(4,606)
Balance at June 30	<u>\$ 11,358</u>	<u>\$ 11,071</u>

10) Recently Issued Accounting Pronouncements

In September 2006, the Financial Accounting Standards Board (the “FASB”) issued SFAS No. 157, “Fair Value Measurements” (“SFAS 157”). SFAS 157 clarifies the principle that fair value should be based on the assumptions market participants would use when pricing an asset or liability and establishes a fair value hierarchy that prioritizes the information used to develop those assumptions. Under the standard, fair value measurements would be separately disclosed by level within the fair value hierarchy. SFAS 157 is effective for fiscal years beginning after November 15, 2007, with early adoption permitted. MKS is currently in the process of evaluating any potential impact of SFAS 157.

In February 2007, the FASB issued SFAS No. 159, “The Fair Value Option for Financial Assets and Liabilities” (“SFAS 159”). SFAS 159 permits companies to choose to measure certain financial instruments and certain other items at fair value and requires that unrealized gains and losses on items for which the fair value option has been elected be reported in earnings. SFAS 159 is effective for fiscal years beginning after November 15, 2007, although early adoption is permitted. The Company is currently evaluating the impact of SFAS 159 and has not yet determined its possible effect on its consolidated financial statements.

## MKS INSTRUMENTS, INC.

## ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

We believe that this Quarterly Report on Form 10-Q contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act and Section 21E of the Securities Exchange Act. When used herein, the words "believes," "anticipates," "plans," "expects," "estimates" and similar expressions are intended to identify forward-looking statements. These forward-looking statements reflect management's current opinions and are subject to certain risks and uncertainties that could cause results to differ materially from those stated or implied. We assume no obligation to update this information. Risks and uncertainties include, but are not limited to those discussed in the section entitled "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2006 filed with the Securities and Exchange Commission on February 28, 2007

**Overview**

We are a leading worldwide provider of instruments, components, subsystems and process control solutions that measure, control, power, monitor and analyze critical parameters of semiconductor and other advanced manufacturing processes.

We are managed as one operating segment which is organized around three product groups: Instruments and Control Systems, Power and Reactive Gas Products and Vacuum Products. Our products are derived from our core competencies in pressure measurement and control, materials delivery, gas and thin-film composition analysis, electrostatic charge control, control and information management, power and reactive gas generation and vacuum technology. Our products are used to manufacture semiconductors and thin film coatings for diverse markets such as flat panel displays, optical and magnetic storage media, architectural glass, solar panels and electro-optical products. We also provide technologies for other markets, including the medical imaging equipment and the energy generation and conservation markets.

Our customers include semiconductor capital equipment manufacturers, semiconductor device manufacturers, capital equipment manufacturers of thin-film coatings used in flat panel displays, optical and magnetic data storage media, architectural glass, solar panels and electro-optical products, industrial and manufacturing companies, medical equipment manufacturers and university, government and industrial research laboratories. For the six months ended June 30, 2007 and the full year ended December 31, 2006, we estimate that approximately 70% of our net sales, respectively, were to semiconductor capital equipment manufacturers and semiconductor device manufacturers. We expect that sales to the semiconductor capital equipment manufacturers and semiconductor device manufacturers will continue to account for a substantial majority of our sales.

During 2006, we experienced significant increases in customer orders, which primarily resulted in an increase in our net sales for 2006 to \$782.8 million, which ranged quarterly from \$179.1 million to \$205.5 million, from 2005 net sales of \$509.3 million. Orders and net sales during our first two quarters of 2007 continued at a high level resulting in net sales of \$211.4 million and \$204.0 million for the first and second quarter, respectively. For the third quarter of 2007, we expect that our net sales could be approximately 10% lower than our second quarter 2007 net sales. The semiconductor capital equipment industry is subject to rapid demand shifts, which are difficult to predict, and we are uncertain how long these sales levels may be maintained or the timing or extent of any future downturn or upturn in the semiconductor capital equipment industry.

A portion of our net sales is attributable to operations in international markets. For the six months ended June 30, 2007 and full year ended December 31, 2006, international sales accounted for approximately 38% and 34% of net sales, respectively.

On January 3, 2006, we completed our acquisition of Ion Systems, Inc. ("Ion"), a leading provider of electrostatic management solutions located in Alameda, California, pursuant to an Agreement and Plan of Merger dated November 25, 2005. Ion's ionization technology controls electrostatic charges to reduce process contamination and improve yields, which complements our process monitoring and control technologies. The aggregate purchase price consisted of \$68.1 million in cash, net of \$5.1 million in cash acquired, and \$0.8 million in acquisition related costs.

Additionally, on January 3, 2006, we completed our acquisition of Umetrics, AB ("Umetrics"), a leader in multivariate data analysis and modeling software located in Umea, Sweden, pursuant to a Sale and Purchase Agreement dated December 15, 2005. Umetrics' multivariate data analysis and modeling software converts process data into useable information for yield improvement, when linked with our open and modular platform of process sensors and data collection, integration, data storage, and visualization capabilities. The purchase price consisted of \$27.4 million in cash, net of \$2.6 million in cash acquired, and \$0.4 million in acquisition related costs.

**Critical Accounting Policies and Estimates**

The preparation of our consolidated financial statements and related disclosures in conformity with accounting principles generally accepted in the United States of America requires management to make judgments, assumptions and estimates that affect the amounts reported. There have been no material changes in our critical accounting policies since December 31, 2006. For further

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information, please see the discussion of critical accounting policies in our Annual Report on Form 10-K for the year ended December 31, 2006.

### Results of Operations

The following table sets forth, for the periods indicated, the percentage of total net sales of certain line items included in MKS' consolidated statements of operations data.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2007	2006	2007	2006
Net sales	100.0%	100.0%	100.0%	100.0%
Cost of sales	57.8	56.4	56.9	57.5
Gross profit	42.2	43.6	43.1	42.5
Research and development	9.0	8.9	8.8	8.9
Selling, general and administrative	17.6	15.3	17.0	15.9
Amortization of acquired intangible assets	2.0	2.0	2.0	2.5
Purchase of in-process technology	—	—	—	0.3
Income from operations	13.6	17.4	15.3	14.9
Interest income, net	1.7	1.0	1.7	0.9
Income before income taxes	15.3	18.4	17.0	15.8
Provision for income taxes	4.3	6.1	5.0	5.3
Net income	11.0%	12.3%	12.0%	10.5%

### Net Sales (dollars in millions)

	Three Months Ended June 30,			Six Months Ended June 30,		
	2007	2006	% Change	2007	2006	% Change
Net sales	\$204.0	\$198.4	2.8	\$415.4	\$377.4	10.1

Net sales increased \$5.6 million during the three month period ended June 30, 2007 mainly due to an increase in worldwide demand from our thin-film and other non-semiconductor manufacturing applications, which sales increased \$8.1 million or 14.0% compared to the same period for the prior year offset by a decrease in sales to our semiconductor capital equipment manufacturer and semiconductor device manufacturer customers of \$2.5 million or 1.8% compared to the same period for the prior year. International net sales were approximately \$76.5 million for the three months ended June 30, 2007 or 37.5% of net sales compared to \$65.0 million for the three months ended June 30, 2006 or 32.8% of net sales.

Net sales increased \$38.0 million during the six month period ended June 30, 2007 mainly due to an increase in worldwide demand from our semiconductor capital equipment manufacturer and semiconductor device manufacturer customers, which sales increased \$22.8 million or 8.5% compared to the same period for the prior year and from our other non-semiconductor manufacturing applications, which sales increased \$15.0 million or 19.1% compared to the same period for the prior year. International net sales were approximately \$157.6 million for the six months ended June 30, 2007 or 37.9% of net sales compared to \$118.9 million for the six months ended June 30, 2006 or 31.5% of net sales.

### Gross Profit

	Three Months Ended June 30,			Six Months Ended June 30,		
	2007	2006	% Points Change	2007	2006	% Points Change
Gross profit as a percentage of net sales	42.2%	43.6%	(1.4)	43.1%	42.5%	0.6

Gross profit decreased by approximately 1.4 percentage points during the three months ended June 30, 2007 consisting of approximately 1.3 percentage points from higher overhead, 0.7 percentage points from higher costs related to excess and obsolete inventory and 0.5 percentage points from changes in product mix, offset primarily by 0.9 percentage points from reduced warranty costs.

Gross profit increased by approximately 0.6 percentage points during the six months ended June 30, 2007 primarily consisting of approximately 1.1 percentage points from increased sales volume and 0.9 percentage points from lower warranty costs, offset by 1.2 percentage points from higher overhead, 0.5 percentage points from higher costs related to excess and obsolete inventory and the remainder from a combination of changes in product mix and foreign currency fluctuations.

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### Research and Development (dollars in millions)

	Three Months Ended June 30,			Six Months Ended June 30,		
	2007	2006	% Change	2007	2006	% Change
Research and development expenses	\$18.4	\$17.7	3.9	\$36.7	\$33.7	8.7

Research and development expense increased \$0.7 million during the three months ended June 30, 2007 mainly due to increased compensation expense of \$0.6 million, as a result of higher staffing and compensation levels.

Research and development expense increased \$3.0 million during the six months ended June 30, 2007 mainly due to increased compensation expense of \$2.0 million, as a result of higher staffing and compensation levels.

Our research and development is primarily focused on developing and improving our instruments, components, subsystems and process control solutions to improve process performance and productivity.

We have hundreds of products and our research and development efforts primarily consist of a large number of projects related to these products, none of which is individually material to us. Current projects typically have a duration of 12 to 30 months depending upon whether the product is an enhancement of existing technology or a new product. Our current initiatives include projects to enhance the performance characteristics of older products, to develop new products and to integrate various technologies into subsystems. These projects support in large part the transition in the semiconductor industry to larger wafer sizes and smaller integrated circuit geometries, which require more advanced process control technology. Research and development expenses consist primarily of salaries and related expenses for personnel engaged in research and development, fees paid to consultants, material costs for prototypes and other expenses related to the design, development, testing and enhancement of our products.

We believe that the continued investment in research and development and ongoing development of new products are essential to the expansion of our markets, and expect to continue to make significant investment in research and development activities. We are subject to risks if products are not developed in a timely manner, due to rapidly changing customer requirements and competitive threats from other companies and technologies. Our success primarily depends on our products being designed into new generations of equipment for the semiconductor industry. We develop products that are technologically advanced so that they are positioned to be chosen for use in each successive generation of semiconductor capital equipment. If our products are not chosen to be designed into our customers' products, our net sales may be reduced during the lifespan of those products.

### Selling, General and Administrative (dollars in millions)

	Three Months Ended June 30,			Six Months Ended June 30,		
	2007	2006	% Change	2007	2006	% Change
Selling, general and administrative expenses	\$35.9	\$30.3	18.6	\$70.5	\$60.1	17.4

Selling, general and administrative expenses increased \$5.6 million for the three months ended June 30, 2007 due to \$2.3 million in foreign exchange rate gains in 2006 that did not occur in 2007, \$2.1 million of additional costs related to our ongoing enterprise resource planning system implementation and a \$1.0 million increase in compensation costs resulting from increased headcount and compensation and benefit costs.

Selling, general and administrative expenses increased \$10.4 million for the six months ended June 30, 2007 due to \$3.6 million in foreign exchange rate gains primarily occurring in 2006 that did not occur in 2007, \$4.0 million of additional costs related to our ongoing enterprise resource planning system implementation and a \$2.1 million increase in compensation costs resulting from increased headcount and compensation and benefit costs.

### Amortization of Acquired Intangible Assets (dollars in millions)

	Three Months Ended June 30,			Six Months Ended June 30,		
	2007	2006	% Change	2007	2006	% Change
Amortization of acquired intangible assets	\$4.1	\$4.1	—	\$8.2	\$9.3	(12.0)

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Amortization expense for the six months ended June 30, 2007 decreased \$1.1 million primarily as a result of certain acquired intangible assets that were fully amortized during the first quarter of 2006.

### Interest Income, Net (dollars in millions)

	Three Months Ended June 30,			Six Months Ended June 30,		
	2007	2006	% Change	2007	2006	% Change
Interest income, net	\$3.6	\$1.9	85.2	\$6.9	\$3.4	104.7

Interest income, net increased \$1.7 million and \$3.5 million during the three and six month periods ended June 30, 2007, respectively, mainly as a result of higher average cash and cash equivalent balances in 2007.

### Provision for Income Taxes (dollars in millions)

	Three Months Ended June 30,			Six Months Ended June 30,		
	2007	2006		2007	2006	
Provision for income taxes	\$ 8.7	\$ 12.0		\$ 20.6	\$ 19.9	

Our effective tax rate for the three and six month periods ended June 30, 2007 was 27.9% and 29.2%, respectively. The effective tax rate is less than the statutory tax rate primarily due to the profits of our international subsidiaries being taxed at rates lower than the U.S. statutory tax rate and the benefit from U.S. research and development credits.

Our effective tax rate for the three and six month periods ended June 30, 2006 was 33.0% and 33.3%, respectively. The effective tax rate is less than the statutory tax rate primarily due to the profits of our international subsidiaries being taxed at rates lower than the U.S. statutory tax rate.

We have adopted FASB Interpretation 48, Accounting for Uncertainty in Income Taxes ("FIN 48"), as of January 1, 2007. As a result of the implementation of FIN 48, we did not recognize an adjustment in the liability for unrecognized income tax benefits. At the adoption date of January 1, 2007, the total amount of gross unrecognized tax benefits, which excludes interest and penalties discussed below, was \$10.5 million. If these benefits were recognized in a future period, the timing of which is not estimable, the net unrecognized tax benefit of \$10.1 million would impact our effective tax rate. The total amount of gross unrecognized tax benefits at June 30, 2007 was approximately \$11.7 million. The increase from January 1, 2007 was primarily attributable to our tax positions taken during the current year.

MKS and its subsidiaries are subject to U.S. federal income tax as well as the income tax of multiple state and foreign jurisdictions. We have concluded all U.S. federal income tax matters for years through 2002. As of June 30, 2007, there were ongoing audits in various other tax jurisdictions. We do not expect any material changes to the returns as filed from these open audits.

Within the next four quarters, the statute of limitations will close on our 2001 and 2002 tax returns filed in various foreign jurisdictions. As a result, it is reasonably expected that net unrecognized tax benefits from these foreign jurisdictions may be recognized in the next four quarters. The recognition of these tax benefits is not expected to have a material impact on our financial statements. We do not reasonably expect any other significant changes in the next four quarters. The following tax years, in the major tax jurisdictions noted, are open for assessment or refund: U.S. Federal: 2003 to 2006, Germany: 2002 to 2006, Korea: 2005 and 2006, Japan: 2001 to 2006, and the United Kingdom: 2005 and 2006.

We will accrue interest and, if applicable, penalties, for any uncertain tax positions. This interest and penalty expense will be a component of income tax expense. At the date of adoption of FIN 48 and at June 30, 2007, we had \$0.7 million and \$1.0 million, respectively, accrued for interest on unrecognized tax benefits.

The U.S. Research and Development Tax Credit expired at the end of 2005 and was not reinstated until late in the fourth quarter of 2006. As a result, we did not take any benefit for this credit in the three and six month periods ending June 30, 2006 and recorded a retroactive adjustment for fiscal 2006 in the fourth quarter. The benefits taken in the three and six month periods ending June 30, 2007 for this credit were approximately \$0.5 million and \$0.8 million, respectively.

### **Liquidity and Capital Resources**

Cash, cash equivalents and short-term investments totaled \$336.1 million at June 30, 2007 compared to \$290.0 million at December 31, 2006. The primary source of funds for the first six months of fiscal 2007 was cash provided by operating activities of \$45.2 million.

Net cash provided by operating activities of \$45.2 million for the six months ended June 30, 2007, resulted mainly from net income of \$49.8 million, non-cash charges of \$15.4 million for depreciation and amortization and \$8.4 million for stock-based compensation and related tax benefits, offset by an increase in net operating assets of \$21.7 million and an \$8.2 million decrease in net operating liabilities. The

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\$21.7 million increase in net operating assets consisted primarily of a \$14.2 million increase in inventory, to support our increased revenues and to support the increased inventory levels required for our planned China facility relocation in the second half of 2007, and a \$4.8 million increase in other current assets, primarily related to prepaid taxes. The decrease in net operating liabilities of \$8.2 million is mainly caused by a decrease of \$16.7 million in current income taxes payable, primarily due to payments of estimated U.S. taxes, offset by an increase of \$8.9 million in accrued expenses and other liabilities. Net cash provided by operating activities of \$24.8 million for the six months ended June 30, 2006, resulted mainly from net income of \$39.8 million, a \$13.1 million increase in net operating liabilities and non-cash charges of \$15.9 million for depreciation and amortization and \$8.0 million for stock-based compensation and related tax benefits, offset by an increase in net operating assets of \$52.9 million. The increase in net operating liabilities is mainly caused by an increase of \$11.6 million in accrued expenses and other current liabilities, primarily as a result of higher accrued compensation and warranty costs, an increase of \$4.4 million in accounts payable, primarily as a result of inventory procurement activities, offset by a decrease of \$2.9 million in income taxes payable. The \$52.9 million increase in net operating assets consisted primarily of a \$28.4 million increase in accounts receivable as a result of higher revenue and a \$24.0 million increase in inventory as a result of increased product demand.

Net cash used in investing activities of \$50.4 million for the six months ended June 30, 2007, resulted primarily from net purchases of \$44.1 million of available for sale investments. Net cash used in investing activities of \$81.4 million for the six months ended June 30, 2006, resulted primarily from the purchase of two technology companies for \$96.7 million, offset by the net maturities of \$20.2 million of available for sale investments.

Net cash provided by financing activities of \$10.7 million for the six months ended June 30, 2007, consisted primarily of \$39.0 million in proceeds from the exercise of stock options and purchases under our employee stock purchase plan, offset by repurchases of common stock of \$31.7 million. Net cash provided by financing activities of \$22.5 million for the six months ended June 30, 2006, consisted primarily of \$16.6 million in proceeds from the exercise of stock options and purchases under our employee stock purchase plan and \$6.1 million in net proceeds from short-term borrowings.

On February 12, 2007, our Board of Directors approved a share repurchase program (the "Program") for the repurchase of up to \$300 million of our outstanding stock over two years. The repurchases may be made from time to time on the open market or through privately negotiated transactions. The timing and amount of any shares repurchased under the Program will depend on a variety of factors, including price, corporate and regulatory requirements, capital availability, and other market conditions. The Program may be discontinued at any time at the discretion of the Company and our Board of Directors. During the six months ended June 30, 2007, we repurchased 1.2 million shares of common stock for \$31.7 million for an average price of \$26.42.

We believe that our working capital, together with the cash anticipated to be generated from operations, will be sufficient to satisfy our estimated working capital, stock repurchase program activity and planned capital expenditure requirements through at least the next 12 months.

To the extent permitted by Massachusetts law, our Restated Articles of Organization, as amended, require us to indemnify any of our current or former officers or directors or any person who has served or is serving in any capacity with respect to any of our employee benefit plans. Because no claim for indemnification has been pursued by any person covered by the relevant provisions of our Restated Articles of Organization, we believe that the estimated exposure for these indemnification obligations is currently minimal. Accordingly, we have no liabilities recorded for these requirements as of June 30, 2007.

We also enter into agreements in the ordinary course of business which include indemnification provisions. Pursuant to these agreements, we indemnify, hold harmless and agree to reimburse the indemnified party, generally our customers, for losses suffered or incurred by the indemnified party in connection with certain patent or other intellectual property infringement claims, and, in some instances, other claims, by any third party with respect to our products. The terms of these indemnification obligations are generally perpetual after execution of the agreements. The maximum potential amount of future payments we could be required to make under these indemnification agreements is, in some instances, not contractually limited. We have never incurred costs to defend lawsuits or settle claims related to these indemnification obligations. As a result, we believe the estimated fair value of these obligations is minimal. Accordingly, we have no liabilities recorded for these obligations as of June 30, 2007.

When, as part of an acquisition, we acquire all of the stock or all of the assets and liabilities of another company, we assume liability for certain events or occurrences that took place prior to the date of acquisition. The maximum potential amount of future payments we could be required to make for such obligations is undeterminable at this time. Other than obligations recorded as liabilities at the time of the acquisitions, historically we have not made significant payments for these indemnifications. Accordingly, no liabilities have been recorded for these obligations as of June 30, 2007.

In conjunction with certain asset sales, we may provide routine indemnifications whose terms range in duration and often are not explicitly defined. Where appropriate, an obligation for such indemnifications is recorded as a liability. Because the amounts of liability under these types of indemnifications are not explicitly stated, the overall maximum amount of the obligation under such indemnifications



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cannot be reasonably estimated. Other than obligations recorded as liabilities at the time of the asset sale, historically we have not made significant payments for these indemnifications.

### **Off-Balance Sheet Arrangements**

We do not have any financial partnerships with unconsolidated entities, such as entities often referred to as structured finance, special purpose entities or variable interest entities, which are often established for the purpose of facilitating off-balance sheet arrangements or for other contractually narrow or limited purposes. Accordingly, we are not exposed to any financing, liquidity, market or credit risk that could arise if we had such relationships.

### **Recently Issued Accounting Pronouncements**

In September 2006, the FASB issued SFAS No. 157, "Fair Value Measurements" ("SFAS 157"). SFAS 157 clarifies the principle that fair value should be based on the assumptions market participants would use when pricing an asset or liability and establishes a fair value hierarchy that prioritizes the information used to develop those assumptions. Under the standard, fair value measurements would be separately disclosed by level within the fair value hierarchy. SFAS 157 is effective for fiscal years beginning after November 15, 2007, with early adoption permitted. We are in the process of evaluating any potential impact of SFAS 157.

In February 2007, the FASB issued SFAS No. 159, "The Fair Value Option for Financial Assets and Liabilities" ("SFAS 159"). SFAS 159 permits companies to choose to measure certain financial instruments and certain other items at fair value and requires that unrealized gains and losses on items for which the fair value option has been elected be reported in earnings. SFAS 159 is effective for fiscal years beginning after November 15, 2007, although early adoption is permitted. We are currently evaluating the impact of SFAS 159 and have not yet determined its possible effect on our consolidated financial statements.

### **ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.**

Information concerning market risk is contained in the Management's Discussion and Analysis of Financial Condition and Results of Operations contained in our Annual Report on Form 10-K for the year ended December 31, 2006 filed with the Securities and Exchange Commission on February 28, 2007. There were no material changes in our exposure to market risk from December 31, 2006.

### **ITEM 4. CONTROLS AND PROCEDURES.**

#### **a) Effectiveness of disclosure controls and procedures.**

MKS' management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures as of June 30, 2007. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended ("the Exchange Act"), means controls and other procedures of a company that are designed to ensure that information required to be disclosed by the company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of June 30, 2007, our chief executive officer and chief financial officer concluded that, as of such date, MKS' disclosure controls and procedures were effective at the reasonable assurance level.

#### **b) Changes in internal control over financial reporting.**

There was no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the quarter ended June 30, 2007 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

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## PART II. OTHER INFORMATION

## ITEM 1. LEGAL PROCEEDINGS.

We are subject to various legal proceedings and claims, which have arisen in the ordinary course of business. In the opinion of management, the ultimate disposition of these matters will not have a material adverse effect on our results of operations, financial condition or cash flows.

## ITEM 1A. RISK FACTORS.

Information regarding risk factors affecting the Company's business are discussed in the Company's Annual Report of Form 10-K for the year ended December 31, 2006 in the section entitled "Risk Factors." As of June 30, 2007, there have been no material changes from those risk factors.

## ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS.

The following table provides information about purchases by MKS during the quarter ended June 30, 2007, of equity securities that are registered by MKS pursuant to Section 12 of the Exchange Act:

## ISSUER PURCHASES OF EQUITY SECURITIES

Period	(a) Total Number of Shares (or Units) Purchased <sup>1</sup>	(b) Average Price Paid per Share (or Unit)	(c) Total Number of Shares (or Units) Purchased as Part of Publicly Announced Plans or Programs <sup>1</sup>	(d) Maximum Number (or Approximate Dollar Value) of Shares (or Units) that May Yet Be Purchased Under the Plans or Programs <sup>2</sup>
4/1/07 — 4/30/07	—	\$25.24	510,000	\$287,125,203
5/1/07 — 5/31/07	265,000	\$26.97	775,000	\$279,976,858
6/1/07 — 6/30/07	425,765	\$27.47	1,200,765	\$268,280,916

- We repurchased an aggregate of 1,200,765 shares of our common stock pursuant to the repurchase program that we publicly announced on February 12, 2007 (the "Program").
- Our board of directors approved the repurchase by us of up to an aggregate of \$300 million of our common stock pursuant to the Program. The expiration date of this Program is February 11, 2009, unless terminated earlier by resolution of our board of directors.

## ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS.

At our Annual Meeting of Shareholders on May 7, 2007, the following proposals were voted upon as further specified below:

## 1. Election of Class II Directors:

	Votes For	Votes Withheld
Cristina H. Amon	52,129,867	955,233
Richard S. Chute	36,900,159	16,184,941

## 2. Ratification of PricewaterhouseCoopers LLP as our independent auditors:

Votes For	Votes Against	Votes Abstaining
53,000,848	53,921	30,331

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### ITEM 6. EXHIBITS.

<u>Exhibit No.</u>	<u>Exhibit Description</u>
3.1(1)	Restated Articles of Organization
3.2(2)	Articles of Amendment, as filed with the Secretary of State of Massachusetts on May 18, 2001
3.3(3)	Articles of Amendment, as filed with the Secretary of State of Massachusetts on May 16, 2002
3.4(4)	Amended and Restated By-Laws
31.1	Certification of Principal Executive Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended
31.2	Certification of Principal Financial Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended
32.1	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

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- (1) Incorporated by reference to the Registration Statement on Form S-4 (File No. 333-49738) filed with the Securities and Exchange Commission on November 13, 2000.
  - (2) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2001.
  - (3) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2002.
  - (4) Incorporated by reference to the Registration Statement on Form S-1 filed with the Securities and Exchange Commission on January 28, 1999, as amended.

### SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

MKS INSTRUMENTS, INC.

August 8, 2007

By: /s/ Ronald C. Weigner  
Ronald C. Weigner  
Vice President and Chief Financial Officer (Principal  
Financial Officer)

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER  
PURSUANT TO RULE 13a-14(a)/RULE 15d-14(a) OF THE  
SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Leo Berlinghieri, certify that:

1. I have reviewed this report on Form 10-Q of MKS Instruments, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15(d)-15(f)) for the registrant and have:
  - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d) Disclosed in this report any changes in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control and financial reporting.

Date: August 8, 2007

/s/ Leo Berlinghieri  
\_\_\_\_\_  
Leo Berlinghieri  
Chief Executive Officer and President  
(Principal Executive Officer)

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER  
PURSUANT TO RULE 13a-14(a)/RULE 15d-14(a) OF THE  
SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Ronald C. Weigner, certify that:

1. I have reviewed this report on Form 10-Q of MKS Instruments, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15(d)-15(f)) for the registrant and have:
  - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d) Disclosed in this report any changes in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control and financial reporting.

Date: August 8, 2007

/s/ Ronald C. Weigner

Ronald C. Weigner  
Vice President and Chief Financial Officer (Principal  
Financial Officer)

CERTIFICATION OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER  
PURSUANT TO 18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of MKS Instruments, Inc. (the "Company") for the period ended June 30, 2007 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Leo Berlinghieri, Chief Executive Officer and President of the Company, and Ronald C. Weigner, Vice President and Chief Financial Officer of the Company, each hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, based on his knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: August 8, 2007

/s/ Leo Berlinghieri  
\_\_\_\_\_  
Leo Berlinghieri  
Chief Executive Officer and President

Dated: August 8, 2007

/s/ Ronald C. Weigner  
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Ronald C. Weigner  
Vice President and Chief Financial Officer