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June 19, 2013

Kevin L. Vaughn, Accounting Branch Chief
United States Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, DC 20549-6010

RE: MKS Instruments, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2012
Filed February 26, 2013
File No. 000-23621

Dear Mr. Vaughn:

This letter is submitted to you on behalf of MKS Instruments, Inc. (the "Company") in response to comments of the staff (the "Staff") of the Securities and Exchange Commission (the "Commission") with respect to the above-referenced filings of the Company contained in your letter dated June 12, 2013. We have included each of the Staff's questions below in bold and italics. Beneath each question is the Company's corresponding answer.

MKS Instruments, Inc. Form 10-K for the fiscal year ended December 31, 2012

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 25

Results of Operations, page 30

1. We see you indicated that the decrease in product revenues during 2012 is primarily due to lower electronics demand, rising chip inventories and a slowing of investments in production capacity by your customers. When individual line items disclosed in your income statements significantly fluctuate in comparison to the comparable prior period, management should quantify and disclose the nature of each item that caused the significant change. Please revise future filings to specifically quantify each material factor, i.e. such as price changes and / or volume changes, causing the aggregate change in your revenues between periods and disclose the nature of or reason for each factor causing the aggregate change. Your revised future disclosures should discuss the underlying material causes of the factors described as well as the known or expected future impact of any referenced factors on operating results. For further guidance, please refer to Item 303 and the related instructions in Regulation S-K as well as SEC Interpretive Release No. 34-48960.

Company Response:

We respectfully acknowledge the Staff's comment. We advise the Staff that a decrease in volume was the only material factor contributing to the decrease in product revenues during 2012, accounting for substantially all of the change. The impact of pricing on product revenue was not material during such period. The reasons provided; lower electronics demand, rising chip inventories and a slowing of investments in production capacity of the Company's customers, describe the nature of and the reasons for the decrease in volume. These reasons related to the semiconductor equipment market as a whole and we do not believe there is a practical manner to quantify them with respect to the Company individually. We will continue in future filings to disclose the impact of volume changes, price changes and any other factors that are "material and determinable" that contributed to a material change in product revenue in accordance with Commission Release No. 34-48960, as well as to discuss the underlying material causes of the factors described and the known or expected future impact of any referenced factors on operating results.

Liquidity and Capital Resources, page 37

2. ***We note from page 68 that at December 31, 2012 you had \$421.7 million of undistributed earnings in your foreign subsidiaries that you have not provided deferred income taxes on because such earnings are intended to be permanently reinvested outside the U.S.. We also note that cash and cash equivalents and short-term marketable investments totaled \$615.2 million at that date. Please tell us and revise future filings to disclose the amount of cash and cash equivalents as well as liquid investments held by your foreign subsidiaries at December 31, 2012 and to quantify the amount that would not be available for use in the U.S. without incurring U.S taxes. In a related matter, please also revise future filings to discuss the known or expected impact on your liquidity and capital positions if cash and cash equivalents as well as liquid investments held by your foreign subsidiaries were not available for use in the U.S. Refer to Item 303 (a) of Regulation S-K.***

Company Response:

We respectfully acknowledge the Staff's comment. The Company's cash and cash equivalents and short-term marketable investments at December 31, 2012, consisted of \$339 million held in

the U.S. and \$276 million held by the Company's foreign subsidiaries. The amount held by foreign subsidiaries at December 31, 2012 that was not available for use in the U.S. without incurring U.S. taxes is substantially all of the Company's foreign cash and short-term investment balances. We believe that the Company's existing U.S. cash and short-term investment balances are adequate to meet domestic operating needs, including estimated working capital, planned capital expenditure requirements and any future cash dividends or share repurchases, if declared, for the foreseeable future. Consequently, we believe any impact to the Company's liquidity or capital position of the approximately \$276 million of cash, cash equivalents and short-term investments held by the Company's foreign subsidiaries as of December 31, 2012, available for transfer to the U.S. is negligible. We will revise future filings to disclose the amount of cash and cash equivalents as well as liquid investments held by the Company's foreign subsidiaries and quantify the amount that would not be available for use in the U.S. without incurring U.S. taxes. We will also revise future filings to discuss the known or expected impact on our liquidity and capital positions if cash and cash equivalents as well as liquid investments held by the Company's foreign subsidiaries were not available for use in the U.S.

As per your request, the Company hereby acknowledges the following:

- the Company is responsible for the adequacy and accuracy of the disclosure in the filing;
- Staff comments or changes to disclosure in response to Staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the Company may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please do not hesitate to contact me at (978) 645-5578 or Kathleen F. Burke, Vice President and General Counsel at (978) 645-5574 should you have any further questions or comments.

Sincerely,

/s/ Seth H. Bagshaw

Seth H. Bagshaw

Vice President, Chief Financial Officer & Treasurer