



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549-0404

December 17, 2009

Mail Stop 4631

Via U.S. mail and facsimile

Mr. Jess Jankowski, Chief Executive Officer
Nanophase Technologies Corporation
1319 Marquette Drive
Romeoville, Illinois 60446

Re: **Nanophase Technologies Corporation**
Registration Statement on Form S-3
Filed on: November 25, 2009
File No.: 333-163363

Dear Mr. Jankowski:

We have limited our review of the above-captioned filing to those issues we have addressed in our comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Selling Stockholder, page 17

1. Identify the natural person(s) who exercises sole or shared voting and/or investment power over the shares owned by Rohm and Haas Electronic CMP Holdings, Inc. Please refer to Rule 13d-3 of the Securities Exchange Act of 1934, as amended and Regulation S-K, C&DI Question 140.02.
2. We note in the third paragraph that you refer to a joint development agreement that you "described above or as described in the footnotes to the table." We are unable to locate the descriptions you are referring to. As required by Item 507 of Regulation S-K, please revise this discussion to describe any positions, offices, or other material relationships between the selling shareholder and the company and

any of their respective officers, directors, and affiliates. If this information is provided in previously filed reports, provide a more detailed cross-reference to the information.

Item 17. Undertakings, page II-3

3. Please include the undertaking required by Item 512(a)(5)(ii) of Regulation S-K, or advise us supplementally why that undertaking is inapplicable to this offering.
4. We note that you have included the 430A undertaking required by Item 512(i) of Regulation S-K in the second full paragraph on page II-4, which does not appear to apply to your offering. Please remove this undertaking in your amended registration statement.

Exhibit 5.1 – Opinion of Wildman, Harrold, Allen & Dixon LLP, page II-3

5. Please tell us supplementally why you have included the assumption that documents have been duly executed and delivered where this is a prerequisite to their effectiveness. Since this is a resale transaction that is not underwritten, it is not clear what documents you refer to in this assumption or why the assumption is necessary. We may have further comments upon review of your response.
6. Counsel's assumption that "prior to any sale of the shares, the terms of offer and sale of the Shares will have been authorized by resolution of the Company's Board of Directors and an appropriate prospectus supplement with respect to the shares being sold will have been prepared delivered and filed..." does not apply to resale transactions. Please file a revised opinion that deletes this assumption.

As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Act of 1933 and that they have provided all information investors require for an informed investment decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosure they have made.

Mr. Jess Jankowski
Nanophase Technologies Corporation
December 17, 2009
Page 3

Before the amended registration statement is declared effective pursuant to Section 8 of the Securities Act, the company should provide us with a letter, acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

If you have questions regarding the above comments, you may contact Dorine H. Miller, Financial Analyst at (202) 551-3711 or, in her absence, me at (202) 551-3766.

Sincerely,

Pamela A. Long
Assistant Director

cc: John I. Eisel, Esq.
Wildman, Harrold, Allen & Dixon LLP
225 West Wacker Drive
Chicago, Illinois 60606-1229