



UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549-7010

Mail Stop 4631

September 9, 2009

By U.S. Mail and Facsimile

Mr. Frank Cesario  
Chief Financial Officer  
Nanophase Technologies Corporation  
1319 Marquette Drive  
Romeoville, Illinois 60446

**Re: Nanophase Technologies Corporation**  
**Form 10-K for the Fiscal Year Ended December 31, 2008**  
**Form 10-K/A for the Fiscal Year Ended December 31, 2008**  
**Form 10-Q for the Fiscal Quarter Ended March 31, 2009**  
**Form 10-Q for the Fiscal Quarter Ended June 30, 2009**  
**File No. 000-22333**

Dear Mr. Cesario:

We have reviewed your response letter dated August 7, 2009 and have the following additional comment. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. After reviewing this information, we may or may not raise additional comments.

General

1. We remind you to file your amended Forms 10-K and 10-Q, as applicable, as requested in our previous letters dated June 15, 2009 and July 28, 2009.

\* \* \*

Please respond to these comments within 10 business days, or tell us when you will provide us with a response. Please provide us with a response letter that keys your response to our comments and provides any requested information. Detailed letters greatly facilitate our review. Please furnish your response on EDGAR as a correspondence file. Please understand that we may have additional comments after reviewing your responses to our comments.

Mr. Frank Cesario  
Nanophase Technologies Corporation  
September 9, 2009  
Page 2

If you have any questions regarding these comments, you may contact Dale  
Welcome, Staff Accountant, at (202) 551-3865, Anne McConnell, Senior Staff  
Accountant, at (202) 551-3709 or, in their absence, to the undersigned at (202) 551-3768.

Sincerely,

John Cash  
Accounting Branch Chief