

Mail Stop 6010

June 21, 2007

Frank H. Laukien, Ph.D.

President, Chairman, Chief Executive Officer, and Director
Bruker BioSciences Corporation
40 Manning Park
Billerica, Massachusetts 01821

Via U S Mail and FAX [(978) 667-5993]

Re: Bruker BioSciences Corporation
Form 10-K for the fiscal year ended December 31, 2006
Form 10-Q for the fiscal quarter ended March 31, 2007
File No. 0-30833

Dear Dr. Laukien:

We have reviewed your filings and have the following comments. We have limited our review to only your financial statements and related disclosures, and do not intend to expand our review to other portions of your documents. Where indicated, we think you should revise your documents in response to these comments in all future filings with the Commission. 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. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

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 on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 10-K for the fiscal year ended December 31, 2006

Financial Statements

Report of Independent Registered Public Accounting Firm, page 70

1. We note this report does not present the conformed signature of the accounting firm. In future filings, please include a signed report.

Note 2 Summary of Significant Accounting Policies, page 76

Revenue Recognition, page 79

2. We see you have recorded grant revenue for government grants to assist you in funding early-stage development of your technology applications. Please present your accounting policy, and clarify the reasons why these grants are recorded as revenue and not as a reduction to your costs for early-stage R&D.

Note 3 Acquisition of Bruker Optics, page 82

3. We note that on page 83 you refer to using the valuation of an independent third party when determining fair value of assets acquired. Please revise future filings, beginning with your next 10-Q, to name the independent valuation firm. In addition, please note that if you intend to incorporate your Form 10-K by reference into any registration statement, you will be required to identify the appraisal firm in the "Experts" section and include its consent in the registration statement.
4. In the Form 8-K filed on 7/7/06, you disclose that Dr. Laukien and family hold 58% of the registrant's common shares and 99% of the shares of Optics. However, in Note 3 you disclose that the minority ownership of Optics was 4.1%. Please provide a reconciliation of this minority ownership to the 1% not held by Dr. Laukien and family at the time of the transaction.

5. We reference the use of the phrase “pooling-of-interests” to explain the merger transaction throughout the filing. Since pooling of interests is no longer acceptable accounting treatment tell us how you accounted for this transaction under SFAS 141 and disclose the accounting treatment in future filings.
6. We read on page 83 that you recorded IPR&D in this transaction. In future filings, please present IPR&D separately in the statements of operations and provide disclosures in the footnotes, if material.

Note 4 Other Acquisitions, page 84

7. In future filings, please present the purchase price allocations for each acquisition and the other disclosures required by paragraphs 52-55 of SFAS 141. Please clarify the amount of goodwill which arose in each acquisition.
8. Please tell us how you determined that there was no settlement of a preexisting executory contract in the acquisition of Socabim and that EITF 04-01 does not apply to this transaction.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a response letter that keys your responses to our comments and provides the requested information. Confirm that you will comply with these comments in all future filings with the Commission. Detailed response letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your responses to our comments and the requested information.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing reviewed by the staff to be certain that the filing includes all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed 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 disclosures they have made.

Dr. Frank H. Laukien

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that

- 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.

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 our review of your filing or in response to our comments on your filing.

You may contact Jeanne Bennett at (202) 551-3606, or me at (202) 551-3676, if you have questions regarding our comments. In our absence you may contact Martin F. James, Senior Assistant Chief Accountant at (202) 551-3671.

Sincerely,

Brian R. Cascio
Accounting Branch Chief