



DIVISION OF
CORPORATION FINANCE

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

August 23, 2010

Mr. Dan Amadori
Chief Financial Officer
Micromem Technologies Inc.
777 Bay Street, Suite 1910
Toronto, Ontario M5G 2E4, Canada

**Re: Micromem Technologies Inc.
Form 20-F for the Fiscal Year Ended October 31, 2009
Filed March 1, 2010
File No. 000-26005**

Dear Mr. Amadori:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Item 4. Information on the Company

B. Business Overview, page 16

General

1. You indicate in your "Operating Results" discussion on page 21 that the company "has developed a 'pipeline' of other initiatives that it is pursuing and [that] it has made specific strides in the development of sensor technology for several industrial vertical applications." Please tell us what consideration you gave to expanding your disclosure to describe such "other initiatives," to the extent significant, and the status of their development. In this regard, we note the discussion of your new applications in mining and oil sensor technology in Exhibit 99.2 to your Form 6-K filed on March 2, 2010. Refer to Item 4.B.1 of Form 20-F.

Competition, page 17

2. We note your disclosure distinguishing your MRAM technology from that of your competitors. Specifically, you note that the company's technology "is significantly different with respect to the device architecture and mechanism of functioning." Please enhance your disclosure to clearly explain the basis for the foregoing statement. Refer to Item 4.B.7 of Form 20-F.

Equity Financing Transactions, page 18

3. You disclose a number of financing transactions pursuant to which the company has raised capital in the past three years. For each such securities issuance that was not registered under the Securities Act of 1933, please tell us in your response letter the exemption from registration or other theory upon which you relied and state briefly the factual basis for the exemption or other theory. We note in this regard the Forms D filed by the company on July 29, 2009, December 17, 2009, February 11, 2010, and February 22, 2010, relating to securities issuances made in reliance on Rule 506 under the Securities Act. Please specify in your response letter the offerings to which these Forms D relate and advise of the exemption or other theory relied upon for the other unregistered issuances you discuss.

Item 5. Operating and Financial Review and Prospects

Overview, page 20

4. Your disclosure does not appear to include a balanced, executive-level discussion that identifies the most important themes or other significant matters with which management is primarily concerned in evaluating the company's financial condition and operating results. Consider expanding your "Overview" to address, for instance, economic or industry-wide factors relevant to the company and the material operational risks and challenges facing you and how management is dealing with these issues. We note your disclosure beginning on page 14 with respect to the company's recent development agreements. We further note your disclosure in Exhibit 99.2 to your Form 6-K filed on March 2, 2010, wherein you discuss the company's strategy for fiscal year 2010 and its expectations regarding realization of revenues in 2010 from license fees, royalties and product sales. Consider enhancing your disclosure to address these business goals, any material trends and challenges relating to expected product developments and other business initiatives, and their respective impact on your prospective financial condition and operating performance. Refer to Section III.A of SEC Release No. 34-48960.

Item 15. Controls and Procedures

Disclosure Controls and Procedures, page 43

5. We note that you concluded that your disclosure controls and procedures “except as discussed below, were effective.” Given the exceptions noted, it is unclear whether your Chief Executive Officer and Chief Financial Officer have concluded that your disclosure controls and procedures are effective or not effective. Please amend your Form 20-F to revise your disclosure to state, in clear and unqualified language, the conclusions reached by your Chief Executive Officer and Chief Financial Officer on the effectiveness of your disclosure controls and procedures.
6. Additionally, we note your conclusion indicates that disclosure controls and procedures “were designed to ensure that information required to be disclosed by [you] in [your] reports that [you] file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms.” Exchange Act Rule 13a-15(e) also states that disclosure controls and procedures are “designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under the Act is accumulated and communicated to the issuer's management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.” Please revise your disclosure accordingly.

Management’s Annual Report on Internal Control Over Financial Reporting, page 43

7. We note that management concluded that your internal control over financial reporting “was not fully effective.” Given the exceptions noted, it is unclear whether your Chief Executive Officer and Chief Financial Officer have concluded that your internal controls over financial reporting were effective or not effective. Please amend and revise your disclosure to state, in clear and unqualified language, the conclusions reached by your Chief Executive Officer and Chief Financial Officer on the effectiveness of your internal control over financial reporting.
8. We note your disclosure that management identified one material weakness in the company’s internal control systems during fiscal year 2009 and three material weaknesses during fiscal year 2008. Yet, elsewhere in this section and on page 10, you indicate that the company’s auditors, rather than management, identified these material weaknesses. We further note your assertion at the top of page 44 that all material weaknesses identified in 2008 were remedied. Yet, elsewhere in this section you state that the material weakness in procedures affecting the timely closure of year-end financial statements “remained as a material weakness” in 2009. Please advise and revise your disclosure where necessary to address the foregoing discrepancies. Refer to Item 15(b) of Form 20-F.

Item 16F. Change in Registrants Certifying Accountant, page 48

9. Your disclosures indicate that on June 30, 2009, Schwartz Levitsky Feldman LLP, was “replaced” as your independent auditor. Please amend and revise to state whether Schwartz Levitsky Feldman LLP resigned, declined to stand for re-election or was dismissed. Refer to Item 16F(a)(1)(i) of Form 20-F.
10. Your disclosure indicates that “for the fiscal years ended October 31, 2008 and 2007 there were no reportable events.” Please amend and revise to also state whether there were any reportable events, as defined in Item 16F(a)(1)(v)(A) through (D) of Form 20-F, through June 30, 2009, the subsequent interim period. In the event of a reportable event(s), provide the specific disclosures required by Item 16F(a)(1)(iv) of Form 20-F.
11. To the extent that you make changes to your disclosures to comply with our comments, please obtain and file an updated letter from the former accountants stating whether the accountant agrees with the statements made in your revised disclosures.

Item 17. Financial Statements

Note 18 – Reconciliation between Canadian GAAP and U.S. GAAP, page F-43

12. We note your disclosure on page F-14 that accounts receivable, accounts payable and accrued liabilities are initially measured at fair value and subsequently measured at amortized cost using the effective interest rate method. Please tell us more about your accounting under Canadian GAAP, quantify and tell us where these measurement adjustments are reflected in your financial statements, and tell us how you determined that this accounting treatment was appropriate under U.S. GAAP.

Item 19. Exhibits

13. We note your disclosure on page 38 regarding certain material contracts (specifically, those agreements described in paragraphs 7 through 11) that have not been filed as exhibits to your annual report on Form 20-F. We further note your disclosure on page 25 of a license agreement with the University of Toronto, pursuant to which the company is obligated to pay royalties and other fees. Please provide us with your analysis as to whether these contracts are required to be filed as exhibits to your Form 20-F pursuant to Instruction 4 to Item 19 of Form 20-F.

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 the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. 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.

Dan Amadori
Micromem Technologies Inc.
August 23, 2010
Page 5

In responding to our comments, please provide a written 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.

You may contact Jaime John, Staff Accountant, at (202) 551- 3446 or Christine Davis, Assistant Chief Accountant, at (202) 551-3408 if you have questions regarding comments on the financial statements and related matters. Please contact Courtney Haseley, Staff Attorney, at (202) 551- 3548 or Katherine Wray, Staff Attorney, at (202) 551-3483 with any other questions. Please contact me at (202) 551-3406 with any other questions.

Sincerely,

Patrick Gilmore
Accounting Branch Chief