
**MICROMEM TECHNOLOGIES INC.
MANAGEMENT'S DISCUSSION AND ANALYSIS
FOR THE THREE MONTHS ENDED JULY 31, 2021
PREPARED AS OF SEPTEMBER 21, 2021**

NOTICE TO READER

The Management's Discussion and Analysis ("MD&A") report for Micromem Technologies Inc. for the three months ending July 31, 2021, as attached, is dated as of September 21, 2021, consistent with the date of the Independent Registered Public Accounting Firm report and with the original 52-109 CEO and CFO certification filings related thereto.

/s/ Dan Amadori
Dan Amadori, CFO
September 21, 2021

/s/ Joseph Fuda
Joseph Fuda, CEO
September 21, 2021

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INTRODUCTION

The following sets out the Management's Discussion and Analysis ("MD&A") of the financial position and result of operations for the three months ending July 31, 2021, of Micromem Technologies Inc. (the "Company", "Micromem" or "we"). The MD&A should be read in conjunction with the Company's audited consolidated financial statements and accompanying notes for the fiscal years ending October 31, 2020, which are prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board. Additional information regarding the Company is available on the SEDAR website at www.sedar.com.

The Company's shares are traded on the OTCQB under the symbol MMTIF and on the Canadian Securities Exchange ("CSE") under the symbol MRM. In November 2007, the Company incorporated Micromem Applied Sensor Technologies Inc. ("MAST") for the purpose of moving forward with the planned commercialization of its technology.

Certain information provided by the Company in this MD&A and in other documents publicly filed throughout the year that are not recitation of historical facts may constitute forward-looking statements.

Readers are cautioned that such statements are only predictions and the actual events or results may differ materially. In evaluating such forward-looking statements, readers should specifically consider the various factors that could cause actual events or results to differ materially from those indicated by such forward-looking statements.

FORWARD LOOKING STATEMENTS

This MD&A contains forward-looking statements and forward looking information within the meaning of applicable Canadian securities legislation ("forward looking statements"). Any statements that express or involve discussions with respect to predictions, expectations, beliefs, plans, projections, objectives, assumptions, potentials, future events or performance (often, but not always, using words or phrases such as "believes", "expects" or "does not expect", "is expected", "anticipates" or "does not anticipate", or "intends" or stating that certain actions, events or results "may", "could", "would", "might" or "will" be taken or achieved) are not statements of historical fact, but are "forward-looking statements". Such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause the actual results, performance or achievements of the Company, or developments in the Company's business or in its industry, to differ materially from the anticipated results, performance, achievements, or developments expressed or implied by such forward-looking statements. Forward-looking statements include disclosure regarding possible events, conditions or results of operations that are based on assumptions about future conditions, courses of action and consequences. Forward-looking statements may also include, without limitation, any statement

relating to future events, conditions, or circumstances. The Company cautions you not to place undue reliance upon any such forward-looking statements, which speak only as of the date they are made. Forward-looking statements relate to, among other things, the successful commercialization of our technology, comments about potential future revenues, joint development agreements and expectations of signed contracts with customers, etc. A number of inherent risks, uncertainties and factors affect the operations, performance and results of the Company and its business, and could cause actual results to differ materially from current expectations of estimated or anticipated events or results. Some of these risks and uncertainties include the risk of not securing required capital in future, the risks of not successfully concluding agreements with potential partners on a timely basis and the risks associated with commercializing and bringing to market our technology. These risks are affected by certain factors that are beyond the Company's control: the existence of present and possible future government regulation, competition that exists in the Company's business, uncertainty of revenues, markets and profitability, as well as those other factors discussed in this MD&A report. This list is not exhaustive of the factors that may affect any of the Company's forward-looking statements and reference should also be made to the Company's Annual Information Form (prepared and filed in the form of a Form 20-F Annual Report pursuant to The Securities Exchange Act of 1934) for a description of risk factors.

Although the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking statements, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that such statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking statements. The Company does not undertake to update any forward-looking statements that are incorporated by reference herein, except in accordance with applicable securities law.

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1. OVERVIEW

Micromem is a company that develops customized, proprietary sensor-based solutions for large multinational corporations. Previously it operated also through its wholly- owned subsidiary, Micromem Applied Sensor Technologies (“MAST”). Until August 2018, MAST was traditionally responsible for the development of market opportunities, maintaining customer relationships and the project management of the independent engineering subcontractors that it engaged once a client project was initiated. MAST has been inactive since October 2018. All such activity is now conducted directly in Micromem. Micromem and MAST are referred to interchangeably as “the Company” throughout this report.

In 2021, the Company has had positive new developments in its business initiatives. It also has experienced client driven delays due to the Covid – 19 pandemic in terms of its commercialization strategies for the technology applications that it has continued to pursue. It has continued to deal within very tight working capital constraints and was successful in raising additional capital in 2021 through to the date of this report.

Our litigation with Steve Van Fleet, who resigned as an officer and director of the Company on August 17, 2018, was resolved in the Company’s favor in Q2 when the courts finally dismissed Mr Van Fleet’s claims.

On June 16th, the Court ruled that Micromem and MAST had established damages totaling \$765,579 representing the full amount that had been requested; furthermore, the Court awarded costs and statutory prejudgment interest from May 9, 2017. On June 29, 2021 the Court entered a judgement in favor of Micromem and MAST for a total amount of \$1,051,739. The Company is now pursuing collection of the judgement award. Due to uncertainty of collection, the Company has not recorded any recovery of funds at July 31, 2021. It will report the recovery of this contingent asset as funds are received.

Financing:

In Q3 2021 the Company secured \$245,386 of financing from private placements (2020: \$nil). Convertible debentures totaling \$41,456 were converted into common shares (2020: \$285,198).

The Company’s convertible debt structure is complex with 3 broad categories of such debt: (i) \$CDN denominated debt with fixed conversion prices; (ii) \$US denominated debt with fixed conversion prices, and (iii) \$US denominated debt with variable conversion prices. The term of the debt in each instance is typically between 4 months and 12 months. In 2021 the Company has repaid certain convertible loans at maturity when due as requested by the debenture holder or converted the debenture into common shares at the request of the debenture holder or extended the term of the debenture through negotiations with the debenture holder – in this latter case,

certain terms of the loan – interest rate and/or conversion price – have, in some instances, been adjusted as part of the extension.

Under IFRS reporting, such loans require quarterly remeasurements. The application of the remeasurement methodology is very specific. This is more fully discussed in Section 2; in summary, there are several non-cash related income and expense charges that arise from such remeasurements. We recorded the following non-cash charges in the periods ending July 31, 2021 and 2020, none of which impact the Company’s cash flows:

	2021	2020	Change
Accretion expense	\$ 124,432	\$ 278,770	\$ (154,338)
(Gain) loss on conversion of convertible debentures	(41,603)	33,138	(74,741.00)
(Gain) loss on revaluation of derivative liability	(2,350,755)	(412,291)	(1,938,464)
(Gain) loss on extinguishment of convertible debent	(888)	567	(1,455)
Net expense	\$ (2,268,814)	\$ (99,816)	\$ (2,168,998)

Business Developments :

(a) Chevron:

We continued our discussions with Chevron during Q3 relating to our plans to commercialize our interwell tracer technology. We believe that we will have future opportunity to generate commercial sales and co-licensing of intellectual opportunities with Chevron .

We attended the August 2021 OTC oil and gas conference in Houston and refreshed our dialogue with other oil and gas companies who have also expressed interest in our technology applications

(b) Romgaz:

In Q3 we launched our product development center in Toronto Ontario and we have now hired dedicated chemical and mechanical engineering personnel. This expands our in house resources as we continue our negotiations with Romgaz.

Our discussions with Romgaz have been continuous on a weekly basis throughout Q3 2021 and to date. The key go-forward points in these discussions, at the current date are as follows:

- (i) We are anticipating an initial purchase order for several interwell tracer devices, similar to the technology that Chevron deployed in the California field trials referenced above. Romgaz has confirmed the terms of these initial purchase orders.
- (ii) Micromem will be commissioned to conduct/lead a development program to enhance and expand the analytics capabilities of the existing technology with the end goal of expertise delivering a comprehensive analytics solution to Romgaz for its specific performance requirements in its gas wells.

- (iii) Micromem and Romgaz are pursuing discussions whereby the technology application developed in (ii) above will be manufactured on a commercial scale in Romania. It is expected that the technology that will be manufactured in Romania will be suitable for both oil and gas well applications.
- (iv) The working relationship between Micromem and Romgaz is expected to expand to include the development of other technology applications where Micromem has been active over the past five years. A joint venture agreement between Micromem and Romgaz is in negotiation and we expect to execute the agreement in 2021.

We expect to finalize these working arrangements and move forward with these initiatives in 2021. It is expected that Romgaz will provide the initial capital to launch this expanded working relationship.

(c) Repsol S.A. (“Repsol”)

Our in house development team in Toronto has begun the process of reconfiguring our RT Lube Analyzer technology prototypes which were originally developed with Repsol pre pandemic in 2018-2019. We intend to resume our dialogue with Repsol in late 2021 and will assess the go forward business opportunities thereafter.

Micromem go forward plans for balance of 2021:

In anticipation of these developments with Romgaz, Micromem is planning for its business activity to include the following components:

- (i) Continuance of its working relationship with the developer of the ARTRA 171 technology which Chevron has successfully tested in on site testing of operating oil wells and for which we anticipate Romgaz purchase orders in 2021.
- (ii) We will expand our development efforts with the captive development team that we brought on in Q3 .
- (iii) We will be attending / participating in a second oil and gas conference in Calgary Alberta in Fall 2021 and plan to expand our potential customer base through this exercise over the next 6- 12 months.
- (iv) As the Romgaz program is launched, we plan to add additional senior management to the Micromem team in the project management ,engineering and financial reporting areas of discipline .We will also look to recruit additional corporate directors to our Board.

COVID-19:

The impact to date on the Company of the COVID-19 pandemic is discussed below; we believe that we have taken the appropriate steps to maintain our business and to protect our 5 person staff to ensure their wellbeing:

- (a) We closed the office in mid-March 2020, and it remains closed as of the date of this report. Our staff is working remotely from their homes.
- (b) We have utilized the Canada Employment Wage Subsidy (“CEWS”) program from the Canadian Federal Government to support our payroll obligations in 2020 and to date in 2021- the program extends until September 2021. Additionally, we have utilized the Canada Emergency Business Account (“CEBA”) loan program and have secured a \$40,000 CDN (\$31,400 USD) term loan which is as described in our consolidated financial statements. An additional \$20,000 CDN (\$16,489 USD) of CEBA term loan financing under this program was secured in December 2020. Finally, we have received \$36,073 CDN (\$28,773 USD) in rental support payments since September 2020 under the provisions of the Canada Emergency Rent Subsidy (“CERS”) program.

We believe that we are in full compliance with the terms of these government subsidies. Furthermore, we have considered the recent reporting guidelines for such government assistance and we believe that we have complied in all material respects with the prescribed accounting and reporting guidelines.

- (c) We are in regular phone and electronic contact with our key service providers, subcontractors, and customers.
- (d) All business-related travel was suspended as of March 2020 and has resumed in the current quarter.
- (e) While our progress in our initiatives with Chevron, Romgaz and Repsol have been delayed, we anticipate that these will all be further pursued in fiscal 2021.

There remains substantial uncertainty as to the duration of the pandemic. If the pandemic continues for an extended period of time in 2021 and beyond, there may be additional repercussions to the Company’s ongoing business which could be significant.

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2. COMMENTARY ON CONVERTIBLE DEBENTURES:

This section of the report is intended to provide readers with additional information as to the nature of the reporting requirements, procedures, and impact of the convertible debt financings that the Company has completed. The objective is to facilitate the reader's understanding of this complex aspect of the Company's financial statements.

Q3 overview:

The Company reports a non-cash gain of \$2,350,755 relating to the revaluation of derivatives in Q3 2021 (a non cash gain \$412,921 relating to the revaluation of derivatives in Q3 2020). The significant swing in the quarterly non-cash expense in Q3 is attributable to the volatility of the Company's share price during the quarter ended July 31, 2021. The Company's closing share price at October 31, 2020, was \$0.02 per share ; it was \$0.06 per share at January 31, 2021; it was \$0.14 per share at April 30th. The Company's share price rose to \$0.19 during Q3 and closed at \$0.07 per share on July 31, 2021. This increased volatility in share price significantly impacts the periodic Black Scholes and binomial measurements of the derivative liabilities – at October 31 , 2020 the derivative liability was reported as \$533,562; at January 31, 2021 it was reported as \$1,254, 250; at April 30, 2021, it was reported as \$3,860,186; at July 31, 2021 it is \$1,412,105 . We believe that it is important to recognize that the revaluation of derivative liabilities on a quarterly basis , as reported in accordance with IFRS, results in a non-cash expense or income amount; the derivative liability that is reported at each quarter end is not a cash obligation of the Company to be discharged in future periods.

(1) Overview: convertible debenture reporting

- (a) We are required under IFRS reporting standards to measure the components of our convertible debt including the debt, the derivative liability, and the equity component of the face value of the debt, as appropriate, upon execution of the loan agreement with the investor.
- (b) The measurement methodology that we employ is in accordance with prescribed guidelines under IFRS and International Accounting Guidelines. This methodology is either a Black Scholes pricing model or a binomial distribution measurement model, depending on which model is more suitable in each case. That determination is based on a subjective assessment by the Company.
- (c) When we secure a convertible debenture from an investor, the terms which are finalized through negotiation with the investor will vary on a case-by-case basis in terms of the following aspects:

- (i) Term (typically 2 months to 12 months).
 - (ii) Interest rate (typically 1 to 2% per month but, in some cases, between 5% - 10% per annum).
 - (iii) Conversion price (which may be fixed at initiation date or fixed after 6 months based on a formulaic calculation, denominated in Canadian dollars or U.S. Dollars, the latter being the functional currency of the Company and its subsidiaries).
 - (iv) The option for the Company to prepay the loan during the entire term of the loan or within an initial period of the term of the loan (typically up to 6 months).
- (d) At maturity date of the debenture, the debenture holder may agree to extend the term of the loan for an additional period of time, either on the same basic terms as already exist or on renegotiated terms.

(2) Accounting measurements and periodic reporting of convertible debentures:

- (a) To the extent that there is a derivative liability that arises in the initial measurement (1(a) above), we are required to revalue the derivative liability at each quarter end using prescribed Black Scholes or binomial methodology. Then, on a quarterly basis, we are required to report this gain or loss on the revaluation in our quarterly consolidated statement of income.
- (b) To the extent that the face value of the loan – which is due at the maturity date – is greater than the amount that is assigned to the loan component of the total amount at inception of the loan (1(a) above), then this difference must be accreted over the term of the loan. Typically, the loan term is from 2 months to 12 months. Thus, over the term of the loan, we are required to report this accretion amount as an expense in our quarterly consolidated statement of income.
- (c) To the extent that a loan is converted into common shares by the debenture holder, we will close out the loan at that point, record remaining accretion expense up to the date of conversion, remeasure the derivative liability to nil and calculate a net gain or loss on conversion of the loan. The net gain or loss is reported in our consolidated statement of income.

(3) Impact on financial reporting:

The realities and complexities of this prescribed accounting treatment gives rise to complicated disclosures in our financial statements and footnotes:

- (a) We report substantial accretion expense in our audited financial statements.
- (b) Over time, barring significant volatility in the share price, we generally report a gain on the settlement of the derivative liabilities. However, the quarterly revaluations of the derivative liabilities result in significant interim fluctuations.

- (c) The calculated *effective interest rate* on debt can be substantial. To illustrate, (for example) if the reported value of the debt is a small fraction of the face value at inception and it must be accreted to face value over the term (for example 2 months) then the effective rate of interest will be substantial representing the rate that would be required to step up the reported value to the face value in the short period of the term of the loan.

The *actual interest expense* on our convertible debentures which is interest paid to the debenture holders, is at a coupon rate ranging between *1% and 2%* per month. The effective rate referenced above is an accounting measurement metric, not a payable obligation.

It is important , when reviewing our unaudited interim condensed consolidated financial statements, to bear in mind the following:

- a) Accretion expense is a *non- cash item*.
- b) Gain or loss on revaluation of derivatives in a *non -cash item*.
- c) Gain or loss on extinguishment of debentures *is a non -cash item*.
- d) Gain or loss on conversion of debentures to common shares is a *non -cash item*.

(4) Additional Comments:

The Company notes the following:

- a) We have had to resort to convertible debentures financing as a primary means of securing financing over the past several years in order to continue our operations.
- b) The use of convertible debentures has served to increase our outstanding number of shares over the past few years.
- c) We expect that we will deemphasize this source of financing in future and that the Company will resume more conventional private placement financings in future as it pursues its current business opportunities.

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3. PROJECT UPDATES:

Since the resignation of Mr. Van Fleet in August 2018, the Company has worked diligently to establish a renewed dialogue with its active strategic partners. Its management has engaged with Chevron and Repsol as well as with its engineering and design subcontractors. It has forged a new business relationship with Romgaz, based in Romania and has engaged with additional engineering manufacturing and marketing resources to provide it with specialized expertise. The Company's CEO and CFO, under the guidance of the active board members, have assumed these responsibilities.

Update of Product Development Activity at July 31, 2021

The current status of our active development projects is as reported below:

We launched our product development initiative in Q3 and added chemical and mechanical engineering staff to expand our in house resources and capabilities .

Chevron: Refer to the Chevron commentary provided in the Overview section on page 6 of this MD&A document. We have expanded our dialogue with Chevron in Q3 regarding future sales and technology licensing opportunities . We attended the OTC oil and gas conference in Houston Texas and engaged with other oil and gas companies who have expressed interest in the work we have completed to date with Chevron .

Repsol: Our in house development team in Toronto has begun the process of reconfiguring our RT Lube Analyzer technology prototypes which were originally developed with Repsol pre pandemic in 2018-2019. We intend to resume our dialogue with Repsol in late 2021 and will assess the go forward business opportunities thereafter.

Romgaz: Our discussions with Romgaz have been continuous on a weekly basis throughout Q3 2021 and to date.

We are anticipating an initial purchase order for several interwell tracer devices, similar to the technology that Chevron deployed. Romgaz has confirmed the terms of these initial purchase orders. Micromem will also be commissioned to conduct/lead a development program to enhance and expand the analytics capabilities of the existing technology with the end goal of expertise delivering a comprehensive analytics solution to Romgaz for its specific performance requirements in its gas wells.

The working relationship between Micromem and Romgaz is expected to expand to include the development of other technology applications where Micromem has been active over the past five

years. A joint venture agreement between Micromem and Romgaz is in negotiation and we expect to execute the agreement in 2021.

Other Developments:

We will be attending / participating in a second oil and gas conference in Calgary Alberta in Fall 2021 and plan to expand our potential customer base through this exercise over the next 6- 12 months.

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4. DISCUSSION OF OPERATING RESULTS:

(a) Financial Position as at July 31, 2021:

	July 31, 2021	October 31, 2020
	(US \$000)	(US \$000)
Assets:		
Cash	146	191
Prepaid expenses and other receivables	40	25
	<u>186</u>	<u>217</u>
Property and equipment, net	31	49
Patents, net	6	12
	<u>224</u>	<u>278</u>
Liabilities:		
Accounts payable and accrued liabilities	345	768
Current lease liability	33	36
Convertible debentures	3,273	3,082
Derivative liability	1,412	534
	<u>5,063</u>	<u>4,419</u>
Long-term lease liability	-	16
Long-term lease loan	48	30
	<u>5,111</u>	<u>4,465</u>
Shareholders' Equity:		
Share capital	86,735	85,464
Contributed surplus	28,111	27,811
Equity component of bridge loans	24	24
Deficit	(119,758)	(117,486)
	<u>(4,887)</u>	<u>(4,187)</u>
	<u>224</u>	<u>278</u>

Commentary:

1. The Company's working capital deficiency is \$4,876,595 at July 31, 2021 (at October 31, 2020: deficiency of \$4,202,571). The increase in the working capital deficiency in Q3 2021 is explained by the increase in the derivative liabilities, which are a non-cash obligation as outlined in Section 2 of this report. During the period ending July 31, 2021, derivative liabilities increased by \$878,543 to \$1,412,105 from the October 31, 2020, balance of \$533,562.

If these balances are omitted from the working capital measurement, the Company's working capital deficiency is \$3,464,490 at July 31, 2021 (at October 31, 2020: working capital deficiency of \$3,669,009). Virtually all of this deficiency is comprised of the convertible debentures which are reported as current liabilities. In practice, the Company has to date been successful in extending or converting the convertible debentures as these debentures mature.

2. In 2019 the Company evaluated its patent portfolio and its go forward strategy for its intellectual property portfolio. It decided that it would suspend its provisional patent filings in jurisdictions outside the United States where it has been issued several patents.

The Company reflects an amortized value of \$5,877 as its patent assets at July 31, 2021. The Company believes that its patents remain as a valuable asset to be exploited in future through the pursuit of licensing agreements with potential strategic partners.

3. Trade payables and other liabilities total \$345,055 (Oct 31: \$767,949) consisting of accounts payable of \$21,696 (Oct 31: \$65,457), accrued liabilities of \$151,016 (Oct 31: \$132,640), non-convertible loans of \$62,050 (Oct 31: \$71,981), wages and source deductions payable of \$110,293 (Oct 31: \$56,128) and stale-dated or disputed payables of \$Nil (Oct 31: \$441,743).
4. In Q3 2021 the Company secured \$245,386 of financing from private placements (2020: \$nil) and convertible debentures totaling \$41,456 were converted into common shares (2020: \$285,200).

5. The balance reported as bridge loans at July 31, 2021, is \$3,273,278 (at October 31,2020: \$3,081,518) and the related derivative liability balance is \$1,412,105 (at October 31,2020: \$533,562). The Company reports accretion expense on these debentures of \$124,432 (2020: \$278,770), a gain on the conversion of bridge loans to share capital of \$41,603 (2020: loss of \$33,138), a gain on the revaluation of the underlying derivative liabilities of \$2,350,755 (2020: \$412,921) and a gain on extinguishment of convertible debentures of \$888 (2020: loss of \$567). Management generally employs a Black Scholes valuation model to remeasure the derivative liabilities at each quarter end; however, for certain of the loan transactions contracted for, it uses a binomial measurement model.

Management acknowledges that the cost of financing to the Company is significant; interest on the bridge loans is substantial. In Q3 2021 we reported \$113,763 of interest expense (2020: \$113,886).

(b) Operating Results:

The following table summarizes the Company's operating results for the three months ended July 31, 2021, and 2020:

	Quarter ended July 31,	
	2021 (\$000)	2020 (\$000)
Administration	32	26
Professional fees and salaries	124	71
Recovery on settlement of AP balances	(167)	-
Travel and entertainment	4	2
Amortization of property and equipment	7	7
Write-down of capital assets	-	-
Amortization of patents	2	2
Foreign exchange loss (gain)	1	107
Accretion expense	124	279
Interest expense Convertible debt	114	114
Other financing costs	49	8
(Gain) loss on revaluation of derivatives liabilities	(2,351)	(413)
(Gain) loss on conversion of convertible debentures	(42)	33
(Gain) loss on extinguishment of convertible debentures	(1)	1
Net expenses	(2,103)	235
Net comprehensive income (loss)	2,103	(235)
Income (loss per share)	-	-

Discussion of Operating Results

Q3 2021 Compared to Q3 2020.

1. Administration costs were \$31,506 in 2021 versus \$25,536 in 2020. These costs include rent and occupancy costs of \$10,123 (2020: \$14,117), the Company reported sublet income for a portion of its office space in 2021 and 2020; office insurance costs of \$380 (2020: \$472; the Company did not renew its D&O insurance coverage in 2021 and 2020), investor relations, listings, filing and other fees of \$14,265 (2020: \$10,805), other general and administrative expenses of \$6,738 (2020: \$142).

2. The Company was successful in eliminating a total of \$167,215 of stale - dated and disputed accounts payable balances in Q3; accordingly, it reports a recovery of \$167,215 on the settlement of these balances. Since October 2020, the Company has eliminated a total of \$640,215 of stale-dated and disputed accounts payable for payment of \$38,000.
3. Professional and other fees and salaries costs were \$124,118 in 2021 versus \$70,677 in 2020. The components of these total costs include legal and audit related expenses of \$53,079 (2020: \$38,927), consulting fees of \$38,446 (2020: \$9,217), staff salaries and benefits of \$32,593 (2020: \$22,533).
4. The CFO has received compensation of \$16,505 in 2021 (2020: nil). The CEO of the Company has received \$50,799 in 2021 which amount is reported in staff salaries and benefits; he received compensation \$9,124 in 2020.
5. In November 2020, the Company granted 6.5 million common stock options to directors, officers, employees and to one external consultant; the related expense of \$297,726 was calculated using the Black Scholes option-pricing model. In Q2 2021, no stock options grants were awarded.
6. Travel and entertainment expenses were \$4,220 in Q3 2021 (\$1,522 in Q3 2020). Post March 2020, only minimal corporate travel expenses have been incurred.
7. Interest expense was \$113,763 in Q3 2021 versus \$113,886 in Q3 2020. This represents the actual interest expense obligations incurred by the Company based on the stated interest rates on the convertible debenture notes.
8. Amortization expense was \$8,755 in Q3 2021 consisting of \$2,000 relating to patents and \$6,755 relating to Capital Assets (Q3 2020: \$8,933) consisting of \$2,000 relating to patents and \$6,933 relating to Capital Assets).
9. The Company reports a non-cash gain of \$2,350,755 relating to the revaluation of derivatives in Q3 2021 (\$412,921 relating to the revaluation of derivatives in Q3 2020). The significant swing in the quarterly non-cash expense in Q3 is attributable to the volatility of the Company's share price between October 31, 2020 and July 31, 2021 binomial measurements of the derivative liabilities – at October 31, 2020 was reported as \$533,562; at January 31, 2021 it was reported as \$1,254, 250; at April 30, 2021, it was reported as \$3,860,186; at July 31,2021 it is \$1,412,105. We believe that it is important to recognize that the revaluation of derivative liabilities on a quarterly basis , as reported in accordance with IFRS, results in a non-cash expense or income amount; the derivative liability that is reported at each quarter end is not a cash obligation of the Company to be discharged in future periods.
10. The loss on foreign exchange reported in Q3 2021 was \$1,399 versus a loss of \$107,052 in Q3 2020. This included the exchange adjustment relating to the translation of \$CDN denominated transactions during the year and to Canadian denominated assets and liabilities at fiscal quarter end. It also included the foreign exchange relating to the initiation, renewal, conversion, and repayment of convertible debentures transactions during the period. The Company reports its financial statements in \$USD which is its functional currency.

(c) Unaudited Quarterly Financial Information – Summary

Three months ended (unaudited)	Revenues	Expenses	Income (loss) in period	Loss per share
	\$	\$	\$	\$
October 31, 2019	-	1,119,940	(1,119,940)	-
January 31, 2020	-	1,726,023	(1,726,023)	-
April 30, 2020	-	(1,071,746)	1,071,746	-
July 31, 2020	-	234,946	(234,946)	-
October 31, 2020	-	356,170	(356,170)	
January 31, 2021	-	1,220,301	(1,220,301)	-
April 30, 2021	-	3,055,877	(3,055,877)	-
July 31, 2021 ⁽¹⁾	-	(2,102,701)	2,102,701	-

(1) The reported gain of \$2,102,701 in the quarter ended July 31, 2021, includes net non-cash gains totaling \$2,154,163 relating to the convertible debentures. Excluding these non-cash amounts the expense for the quarter ended July 31, 2021, would be \$51,462.

Three months ended (unaudited)	Working capital (deficiency)	Capital assets at NBV	Other Assets	Total Assets	Shareholders' equity (deficit)
July 31, 2019	(4,189,540)	6,847	149,177	189,025	(4,033,516)
October 31, 2019	(4,301,324)	2,677	20,000	83,484	(4,278,647)
January 31, 2020	(5,387,954)	70,046	18,000	296,256	(5,331,481)
April 30, 2020	(4,140,569)	63,120	15,877	141,860	(4,061,572)
July 31, 2020	(3,994,076)	56,187	13,877	108,438	(3,974,641)
October 31, 2020	(4,202,571)	49,249	11,877	278,026	(4,187,342)
January 31, 2021	(4,694,513)	42,364	9,877	124,318	(4,698,923)
April 30, 2021	(7,214,669)	38,170	7,877	253,940	(7,318,323)
July 31, 2021	(4,876,595)	31,283	5,877	223,528	(4,887,324)

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5. RISKS AND UNCERTAINTIES

There are a number of risks which may individually or in the aggregate affect the long-term commercial success of the Company, both known and unknown. An investment in the Company should be considered speculative due to the nature of the Company's activities and its current stage of development.

Stage of Development of Technology:

The Company has made strides in advancing its technology and in developing a product portfolio and in engaging customers in joint development projects. We now have commercially viable products which we are beginning to showcase with existing and potential customers. There remains the risk that the Company must secure commercial orders of significant scale to generate positive income in future.

Customers' Willingness to Purchase:

We have entered into joint development agreements whereby our prototype products have been subjected to rigorous testing by our partners. We expect to be successful in completing remaining development work on our product portfolio. If we are successful in doing so, our partners will then have to decide the extent to which they will adopt our technology for future use for their applications. The future revenue streams for the Company are dependent upon the rate of adoption by our customers and their willingness to do so.

Patent Portfolio:

The Company has spent time and effort and incurred significant costs with respect to the maintenance and development of our intellectual property portfolio. In 2019, we decided to abandon certain provisional patent filings in international jurisdictions which we believe does not impact on the core patent technology that the Company maintains. Given the nature of IP development, the Company is subject to continuing risks that our patents could be successfully challenged and that our patent pending files may not ultimately be granted full patent status. While we continue to make efforts to broaden our IP claims, this is an ongoing process and requires continued effort and vigilance. The Company does not have extensive in-house resources so as to manage its IP portfolio in this environment and has traditionally relied heavily on its patent attorneys for these services.

Financing:

The Company has successfully raised funding over the past several years to continue to support its development initiatives and fund the Company's corporate structure and overheads. The Company must continue to source financing in order to continue to support its business initiatives.

Competitors:

The Company is subject to competition from other entities that may have greater financial resources and more in-house technical expertise.

Management Structure:

The Company is highly dependent on the services of a small number of senior management team members. If one of these individuals were unavailable, the Company could encounter a difficult transition process.

Foreign Currency Exposure:

The Company expects to sell its products and license technologies in the United States, in Canada and abroad. It has raised financing in both \$CDN and \$USD. The Company has not hedged its foreign currency exposure. Foreign currency fluctuations present an ongoing risk to the business.

COVID-19 Pandemic:

The impact on the Company of the COVID-19 pandemic during the 2020 fiscal year and in the 9 months ending July 31, 2021, has been outlined earlier in this report, including the steps that management has taken in an attempt to maintain our operations. There remains substantial uncertainty as to the duration of the pandemic. If the pandemic continues for an extended period of time in 2021 and beyond, there may be repercussions to the Company's ongoing business which could be significant.

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6. GOING CONCERN

The consolidated financial statements have been prepared on the “going concern” basis, which presumes that the Company will be able to realize its assets and discharge its liabilities in the normal course of business for the foreseeable future.

There are material uncertainties related to conditions and events that cast significant doubt about the Company’s ability to continue as a going concern for a reasonable period in future. During the three months ended July 31, 2021, the Company reported a net gain and comprehensive gain of \$2,102,701 (2020: loss of \$234,974) and negative cash flow from operations of \$210,764 (2020: \$52,143). The Company’s working capital deficiency as at July 31, 2021, is \$4,876,595 (October 31, 2020 – \$4,202,571).

The Company’s future success depends on the profitable commercialization of its proprietary sensor technology. There is no assurance that the Company will be successful in the profitable commercialization of its technology. Based upon its current operating and financial plans, management of the Company believes that it will have sufficient access to financial resources to fund the Company’s planned operations through fiscal 2021 and beyond; however, the ability of the Company to continue as a going concern is dependent on its ability to secure additional financing and/or to profitably commercialize its technology. The financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classifications of liabilities that may result from the possible inability of the Company to continue as a going concern.

The COVID 19 pandemic has had a significant impact of the Company’s operations through July 31, 2021, as discussed in the body of this MD&A document. There remains considerable uncertainty at this date as to the duration of the pandemic. If the pandemic continues for an extended period of time in 2021 and beyond , there may be repercussions to the Company’s ongoing business which could be significant.

If the “going concern” assumption was not appropriate for these consolidated financial statements, then adjustments would be necessary to the carrying value of assets and liabilities, the reported expenses and the balance sheet classifications used; in such cases, these adjustments would be material.

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7. OTHER MATTERS

(a) Critical Accounting Policies

The accounting policies the Company believes are critical to the financial reporting process include foreign currency translation, financial instruments, compound and hybrid financial instruments, derivative liabilities, the conversion features of the bridge loans, patents, impairment of long-lived assets, patents, deferred development costs, revenue recognition, stock-based compensation, and income taxes. These critical accounting policies are set forth in Note 4 to our consolidated financial statements as of October 31, 2020, and as updated in Note 4 to our unaudited condensed consolidated financial statements as of July 31, 2021.

We believe that we are in full compliance with the terms of the government subsidies that the company has received as outlined on page 8 of this MD&A document. Furthermore, we have considered the recent reporting guidelines for such government assistance and we believe that we have complied in all material respects with the prescribed accounting and reporting guidelines.

(b) Legal matters: lawsuit vs Steven Van Fleet

The Company has previously reported on:

- (i) The lawsuit filed by Mr. Van Fleet against Micromem and MAST seeking payment of \$214,574 plus interest relating to alleged remuneration and expense reimbursements due to him prior to his resignation as an officer and director of Micromem and MAST on August 17, 2018.
- (ii) The Company's response to the complaint whereby it denied the allegations in Mr. Van Fleet's claims and additionally its counterclaims against Mr. Van Fleet seeking damages of no less than \$2.75 million and other remedies.

Counsel for the parties agreed that Mr. Van Fleet's deposition would proceed on July 31, 2020. The day before the deposition, Mr. Van Fleet's counsel advised the Company's counsel that if Mr. Van Fleet were to appear at the deposition, he would invoke his Fifth Amendment right not to incriminate himself with respect to the Company's counterclaims, and that rather than doing so, Mr. Van Fleet had chosen not to appear for his deposition and would never appear for his deposition in the future.

In light of this development, on September 25, 2020, the Company's counsel moved for default, asking the court to strike Mr. Van Fleet's claims and to enter a judgment in the Company's favor

on its counterclaims. Mr. Van Fleet did not submit any opposition to the motion. Mr Van Fleet's counsel resigned in October 2020.

The deadline for Mr. Van Fleet to appeal the Company's motion was January 11, 2021; Mr Van Fleet did not appear nor was he represented by legal counsel in court on January 11th. Micromem's motion for dismissal was thus uncontested.

On June 16th, the Court ruled that Micromem and MAST had established damages totaling \$765,579 representing the full amount that had been requested; furthermore, the Court awarded costs and statutory prejudgment interest from May 9, 2017. On June 29, 2021 the Court entered a judgement in favor of Micromem and MAST for a total amount of \$1,051,739.

The Company is now pursuing collection of the judgement award. Due to uncertainty of collection, the Company has not recorded any recovery of funds at July 31, 2021. It will report the recovery of this contingent asset as funds are received.

(c) Contingencies and Commitments

The Company may be subject to litigation, claims and governmental and regulatory proceedings arising in the ordinary course of business. In such cases, the Company accrues a loss contingency for these matters when it is probable that a loss has been incurred and the amount of the loss can be reasonably estimated. There are no such accruals reflected in the Company's accounts at July 31, 2021.

The Company has extended its lease for premises through July 2022. The lease term is for 5 years and stipulates base monthly rental expenses of \$4,005 CDN. Lease commitments are as follows – commitments less than one year of \$48,060 CDN, years 2-5: \$8,010 CDN. The Company has had some relief provided through the CERS program as referenced on page 8 of this MD&A document.

(d) Off-Balance Sheet Arrangements

At July 31, 2021, the Company has no off-balance sheet financial commitments and does not anticipate entering into any contracts of such nature other than the addition of new operating leases for equipment and premises as may be required in the normal course of business.

(e) Share Capital

At July 31, 2021, the Company reports 429,835,935 common shares outstanding (at October 31, 2020: 392,425,023). Additionally, the Company has 8,700,000 stock options outstanding with a weighted average exercise price of \$0.06 per share (2020: 5,730,000 options outstanding with a weighted average exercise price of \$0.25 per share).

(f) Management and Board of Directors

At our Annual Meeting of Shareholders held on September 8, 2020, Joseph Fuda, Oliver Nepomuceno, and Alex Dey were re-elected to serve on our Board of Directors; Brian Von Herzen

was not put forward for reelection to the Board. Joseph Fuda and Dan Amadori continue to serve as officers of the Company.

Our management team and directors, along with their Q3 2021 remuneration, is presented as below:

		Q3 2021 remuneration		
		Cash	Options	Total
Individual	Position			
Joseph Fuda	President, Director	50,799	-	50,799
Oliver Nepomuceno	Director	-	-	-
Alex Dey	Director	-	-	-
Dan Amadori	CFO	16,505	-	16,505

(g) Transactions with Related Parties

The Company reports the following related party transactions:

Key management compensation:

Key management personnel are persons responsible for planning, directing, and controlling activities of the Company, including officers and directors. Compensation paid or payable to these individuals (or companies controlled by such individuals) is summarized as:

	2021	2020
Professional, other fees and salaries	\$ 67,304	\$ 9,124
Stock based compensation	137,400	-
	<u>\$ 204,704</u>	<u>\$ 9,124</u>

In 2021 Q2, these parties were awarded a total of 3,000,000 options at an exercise price of \$0.05 (2020 - \$nil). In 2020 a total of 1.3 million common stock options, which were previously awarded to key management, were cancelled.

Trade payables and other liabilities:

As at, and October 31, 2020 the Company included \$167,215 in trade payables owing to a company whose major shareholder was a director of the Company from February 2014 through September 2020 and who has also previously served as its Chief Technology Officer. The balance reported relates to alleged services provided in 2015; there have been no invoices submitted by this related party after October 31, 2015. The Company has eliminated \$167,215 from trade payables in the quarter ended July 31, 2021; accordingly, it reported a recovery of \$ 167,215 in the consolidated statement of income for the three months ended July 31, 2021.

Convertible debentures:

In May 2019, an officer of the Company provided a short-term loan of \$15,000 CDN (\$11,450 USD). At October 31, 2019, \$10,000 CDN (\$7,582 USD) in loan principal remains outstanding. In 2020, the remaining amount of loan principal was extinguished by participation of the CEO in the private placement which the Company completed at the time. The extinguishment of the debt for the shares received in the private placement resulted in a loss on conversion of \$14,000 CDN (\$10,600 USD).

In January 2018, an officer of the Company provided a convertible debenture of \$150,000 CDN (\$114,086 USD). At July 31, 2021 \$10,001 CDN (\$8,141 USD) remains outstanding (October 31, 2019, \$52,319 CDN (\$39,756 USD); October 31, 2018 - \$ 100,862 CDN, \$76,713 USD).

(h) Liquidity and Capital Resources

Liquidity:

We currently report negative cash flow from operations. This result will only change once we are generating sufficient revenue from either license fees, royalties or the sale of products utilizing our technology.

We currently have no lines of credit in place. We must continue to obtain financing from investors or from clients in support of our development projects.

We have granted to our directors, officers, and employee's options to purchase shares at prices that are at or above market price on the date of grant. At July 31, 2021, there are 8,700,000 common stock options outstanding at an average exercise price of \$0.06 per share.

Capital Resources: We have no commitments for capital expenditures as of July 31, 2021.

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8. SUBSEQUENT EVENTS

Subsequent to July 31, 2021:

- (a) The Company converted \$35,000 USD of convertible debentures through the issuance of 721,649 common shares.
- (b) The Company repaid \$5,000 USD of a short term loan.
- (c) The Company extended convertible debentures for six (6) months, that were within 3 months of maturity date at July 31, 2021.
- (d) The Company secured \$124,000 USD in convertible debentures with a 12 month term and conversion features which become effective six months after initiation date.
