
**MICROMEM TECHNOLOGIES INC.
MANAGEMENT'S DISCUSSION AND ANALYSIS
FOR THE FISCAL YEAR ENDED OCTOBER 31, 2020
PREPARED AS OF FEBRUARY 12, 2021**

NOTICE TO READER

The Management's Discussion and Analysis ("MD&A") report for Micromem Technologies Inc. for the fiscal year October 31, 2020, as attached, is dated as of February 12, 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
February 12 , 2021

/s/ Joseph Fuda
Joseph Fuda, CEO
February 12, 2021

MICROMEM TECHNOLOGIES INC.
MANAGEMENT'S DISCUSSION AND ANALYSIS
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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 fiscal year ending October 31, 2020 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 and 2019 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. The words "may", "would", "could", "will", "likely", "estimate", "believe", "expect", "forecast" and similar expressions are intended to identify 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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**MICROMEM TECHNOLOGIES INC.
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1. OVERVIEW

Micromem is a company that develops customized, proprietary sensor-based solutions for large multinational corporations. It operates 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. Micromem and MAST are referred to interchangeably as "the Company" throughout this report.

In 2020, the Company had positive new developments in its business initiatives. It also experienced client driven delays due to the Covid - 19 pandemic in terms of its commercialization strategies for the technology applications that it continued to pursue. It continued to deal within very tight working capital constraints and was successful in raising additional capital in 2020 and 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, continues. Mr Van Fleet has not attended any scheduled discoveries and has not appeared at scheduled court dates. We have applied to the courts to have his claims against the Company dismissed and we are now pursuing our claims for damages against Mr Van Fleet.

Financing:

In 2020 the Company secured \$425,789 of financing from private placements (2019: \$212,968) and received proceeds of \$612,279 (2019: \$780,891) from the issuance of convertible debentures. The Company issued 44,237,644 common shares relating to the conversion by debenture holders of their debentures totaling \$859,331 during the year (2019: issued 82,038,962 common shares relating to conversion of debentures totaling \$1,636,825).

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 2020 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 fiscal years ending October 31, 2020 and 2019 none of which impact the Company's cash flows:

	2020	2019	Changes
Accretion expense	\$ 1,099,818	\$ 1,517,436	\$ (417,618)
Loss on conversion of debentures	96,484	101,919	(5,435)
Gain on revaluation of derivatives	(771,920)	(343,436)	(428,484)
(Gain) loss on extinguishment of debentures	(127,409)	(646)	(126,763)
Net expense	\$ 296,973	\$ 1,275,273	\$

Business Developments in 2020:

(a) Chevron:

We maintained a dialogue with Chevron throughout 2020.

As previously reported, successful field testing of the interwell tracer device was conducted on-site at a California-based Chevron well site in 2019. Sample testing was conducted for a 12-month period thereafter through March 2020.

Chevron curtailed development activity in 2020 after the onset of the COVID-19 pandemic. Chevron continues to have interest in our interwell tracer technology. We anticipate that there will be continued opportunity to engage with Chevron with the potential for Micromem to generate commercial sales to Chevron.

Senior management at Chevron has been very supportive of Micromem's engagement with Romgaz during 2020.

(b) Romgaz:

Recap of 2020 developments:

The COVID-19 pandemic has resulted in delays in the execution of our commercial activity with Romgaz during the 2020 fiscal year.

We referenced in our Q2 MD&A commentary in June and again in our Q3 commentary in September that we were awaiting initial purchase orders for the interwell tracer technology application during fiscal 2020.

Our discussions with Romgaz have been continuous on a weekly basis throughout fiscal 2020 and have continued to progress since our October 31, 2020 fiscal year end. 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.

- (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 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. A joint venture agreement between Micromem and Romgaz is contemplated.
- (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. 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.

Micromem go forward plans for 2021:

In anticipation of these developments with Romgaz in 2021, 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 pursue our plans to develop a captive, small engineering/product development team based in Toronto. In this context, we announced a working relationship with a Toronto-based engineering/manufacturing group ("Group") in the aftermath of the departure of Steve Van Fleet in August 2018. At that time, this Group provided technical guidance and assistance to Micromem as we navigated our discussions with Chevron, Repsol and Romgaz. As our plans to establish this Toronto- based resource develop further, we expect this Group to have a significant role as a strategic partner to Micromem.
- (iii) We will 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 .
- (c) Repsol S.A. ("Repsol")

We have had minimal dialogue with Repsol in 2020. We intend to resume the dialogue in 2021.

COVID-19:

The impact on the Company of the COVID-19 pandemic during the 2020 fiscal year is discussed below; we believe 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, 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 program from the Canadian Federal Government to support our payroll obligations in 2020.
- (c) We have utilized the Canadian Federal Government small business loan program and secured a \$40,000 CDN term loan which is as described in our consolidated financial statements. An additional \$20,000 of term loan financing under this program was secured in December 2020.
- (d) We are in regular phone and electronic contact with our key service providers, subcontractors, and customers.
- (e) All business-related travel was suspended as of March 10, 2020.

There remains substantial uncertainty as to the duration of the pandemic. If the pandemic continues for an extended period of time in 2021, there may be 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.

(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 as high (in these reported financials) as 20,559% 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.

It is essential, when reviewing our audited consolidated 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 *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.
- c) The use of convertible debentures has served to increase our outstanding number of shares over the past few years. The Company plans to deemphasize or eliminate this complex and expensive source of financing in future as it develops and grows its business and is better able to secure more conventional, lower cost financing.

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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 October 31, 2020

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

Chevron:

Refer to the Chevron commentary provided in the Overview section on page 6 of this MD&A document.

Repsol:

We have previously reported on our initial activity with this Spanish energy conglomerate in our 2019 report. We intend to resume our dialogue in 2021.

Romgaz:

Romgaz is the state-controlled gas company in Romania. We initiated a dialogue with the senior management team at Romgaz in May 2019. The opportunity developed as a result of the progress that we had experienced with our Chevron initiative which, by that point, had advanced to the onsite pilot program referenced above.

We continued our initial discussions with Romgaz thereafter and, in October 2019, we announced that the Company had executed a letter of intent ("LOI") with Romgaz which afforded the Company the opportunity to sell the ARTRA technology units to Romgaz and to develop a robust analytics solution for the technology .

For the developments with Romgaz during the 2020 fiscal year, refer to the Romgaz commentary provided in the Overview section on pages 6-7 of this MD&A document.

Other Developments:

In last year's report we indicated that the Company was engaged in dialogue with an established private company that has engineering and manufacturing capabilities and commercial revenues in North America. As outlined in the Overview section of this MD&A document on page 8 under the caption of Micromem plans for 2021, we are anticipating that a formal working arrangement will be negotiated with this Toronto-based group in 2021.

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4. DISCUSSION OF OPERATING RESULTS:

(a) Financial Position as at October 31, 2020:

	October 31, 2020 (US \$000)	October 31, 2019 (US \$000)
Assets:		
Cash	191	46
Deposits and other receivables	25	15
	<u>217</u>	<u>61</u>
Property and equipment, net	49	3
Patents, net	12	20
	<u>278</u>	<u>84</u>
Liabilities:		
Accounts payable and accrued liabilities	768	998
Current lease liability	36	-
Convertible debentures	3,082	2,599
Derivative liability	534	765
	<u>4,420</u>	<u>4,362</u>
Long-term lease liability	15	-
Long-term lease loan	30	-
	<u>4,465</u>	<u>4,362</u>
Shareholders' Equity:		
Share capital	85,463	84,154
Contributed surplus	27,811	27,758
Equity component of bridge loans	24	50
Deficit	(117,485)	(116,240)
	<u>(4,187)</u>	<u>(4,278)</u>
	<u>278</u>	<u>84</u>

Commentary:

- The Company's working capital deficiency is \$4,202,571 at October 31, 2020 (2019: deficiency of \$4,301,324).

- 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.

For financial reporting purposes the Company recorded an impairment reserve of \$223,143 in 2019 and it reflects an amortized value of \$11,877 as its patent assets at October 31, 2020. 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. The Company continued to secure additional financing in 2020 through convertible bridge loans. Given the terms of the bridge loans, the Company has measured, as appropriate, the prescribed accounting treatment for these bridge loans and the related derivatives. These loans were typically of a short-term nature and, in many cases, renewed on multiple occasions; the related financial reporting has become progressively more complex. Refer to Section 3 of this report for additional commentary.

The balance reported as bridge loans at October 31, 2020 is \$3,081,518 (2019: \$2,599,074) and the related derivative liability balance is \$533,562 (2019: \$765,425). The Company reports accretion expense on these debentures of \$1,099,818 (2019: \$1,517,436), a loss on the conversion of bridge loans to share capital of \$94,834 (2019: \$101,919), a gain on the revaluation of the underlying derivative liabilities of \$771,920 (2019: \$343,436) and a gain on extinguishment of convertible debentures of \$127,409 (2019: \$646). Management generally employs a Black Scholes valuation model although, 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 2020 we reported \$441,369 of interest expense (2019: \$496,172).

4. During the 2020 and 2019 fiscal years, the Company secured funding from various sources, the significant components include:

	2020	2019
i) Private placements of shares for cash consideration	\$ 425,789	\$ 212,968
ii) Bridge loan financing	612,279	780,891
iii) Bridge loan settlements for share consideration	859,331	1,636,825
iv) Cost reimbursement provided by development partners	-	77,597
	<u>\$ 1,897,399</u>	<u>\$ 2,708,281</u>

5. Operating Results:

The following table summarizes the Company's operating results for the years ended October 31, 2020 and 2019:

Discussion of Operating Results

	Years ended October 31,	
	2020 (\$000)	2019 (\$000)
Administration	154	197
Professional fees and salaries	462	442
Recovery of reserve for litigation	(206)	-
Development expense (recovery)	-	(42)
Travel and entertainment	24	53
Amortization of property and equipment	28	3
Amortization of patents	8	153
Impairment of patents	-	223
Foreign exchange loss (gain)	1	(41)
Accretion expense	1,100	1,517
Convertible interest expense	441	496
Financing costs	36	72
Gain on revaluation of derivatives	(772)	(343)
Loss on conversion of debentures	96	102
(Gain) loss on extinguishment of debt	(127)	(1)
Net expenses	1,245	2,833
Net comprehensive income (loss)	(1,245)	(2,833)
Income (loss per share)	-	(0.01)

Fiscal 2020 Compared to Fiscal 2019

- a) Administration costs were \$154,007 in 2020 versus \$197,208 in 2019. These costs include rent and occupancy costs of \$37,153 (2019: \$64,647, the Company reported sublet income for a portion of its office space in 2020 and 2019); office insurance costs of \$2,024 (2019: \$26,812; the Company did not renew its D&O insurance coverage in 2020), investor relations, listings and filing fees of \$49,537 (2019: \$49,029), other general and administrative expenses of \$49,702 (2019: \$56,720) and a loss on settlement of accounts payable of \$15,591 (2019: nil).

- b) Professional and other fees and salaries costs were \$462,124 in 2020 versus \$441,981 in 2019. The components of these total costs include legal and audit related expenses of \$148,926 (2019: \$157,354) , 3rd party consulting fees of \$138,123 (2019: \$53,845), staff salaries and benefits of \$175,075 (2019: \$230,782).

The CFO has received no compensation from the Company since March 2018. The CEO of the Company has received \$17,517 of salary in 2020 which amount is reported in staff salaries and benefits; he received \$4,682 in 2019.

Prior to the onset of the COVID-19 pandemic in January 2020, the Company entered into an agreement with a New York-based advisory group ("Advisor") whereby the Advisor would assist the Company in securing mid to long term institutional financing from different US -based financial groups. The Company paid the Advisor a fee of \$100,000 in January 2020 representing all fees and expenses due under the agreement.

The project was to extend for 6-9 months and was timed to coincide with the developments that we anticipated to occur with Romgaz by September 2020.

With the advent of COVID-19 in March 2020, the Romgaz project was delayed and we were unsuccessful in securing any institutional financing through the Advisor during the period of their mandate. The Company reported the \$100,000 fee as part of the total 3rd party consulting fees of \$138,123 incurred in 2020.

- c) Travel and entertainment expenses were \$23,903 in 2020 (\$52, 568 in 2019) .We limited travel expenses in 2020 as part of the broad effort to reduce the Company's operating expenses. Post March 2020, there were no corporate travel expenses incurred .
- d) Development cost recoveries represent development costs incurred less costs reimbursed by our development partners which are paid at milestone dates under our joint development contracts. In 2020 ,we did not incur any development costs and we received no reimbursement of development costs from our development partners for a net recovery of development costs of nil (2019: we incurred \$36,051 in development costs and were reimbursed for \$77,597 of development costs from our partners reimbursed for a net recovery of \$41,546).
- e) There were no stock options grants awarded in fiscal 2020 or 2019. In 2018, the Company granted 2.2 million common stock options to directors, officers, employees, and consultants; the related expense of \$140,612 was calculated using the Black Scholes option-pricing model. In 2020 , a total of 2.2 million common stock options previously issued to employees , officers and directors were cancelled .Subsequent to October 31, 2020, the Company issued an additional 6.5 million stock options (Section 8).
- f) Interest expense was \$441,369 in 2020 versus \$496,172 in 2019. This represents the actual interest expense obligations incurred by the Company based on the stated interest rates on the convertible debenture notes.
- g) Amortization expense was \$35,858 in 2020 consisting of \$8,123 relating to patents and \$27,735 relating to Capital Assets (2019: \$156,137 consisting of \$152,962 relating to patents and \$3,175 relating to Capital Assets). In 2019, the Company recorded an impairment reserve of \$ 223,143 on its patent portfolio based on its assessment of the net present value of the portfolio as of October 31, 2019.

- h) Financing costs were \$35,500 in 2020 versus \$72,476 in 2019. These expenses relate to costs associated with the convertible debenture financings which the Company completed in 2020 and 2019.
- i) The loss on foreign exchange reported in 2020 was \$1,447 versus a gain of \$40,548 in 2019. This included the exchange relating to the translation of \$CDN denominated transactions during the year and to Canadian denominated assets and liabilities at fiscal quarter and year ends. It also included the foreign exchange relating to the initiation, renewal, conversion and repayment of convertible debentures transactions during the fiscal years. The Canadian dollar, relative to the US dollar was \$0.7601 at October 31, 2018 , \$0.7509 at October 31, 2019 and \$0.7596 at October 31,2020 .
- j) The other expenses reported relate to the convertible debentures. These expenses are all non-cash expenses and compare as follows:

	2020	2019	Changes
Accretion expense	\$ 1,099,818	\$ 1,517,436	\$ (417,618)
Loss on conversion of debentures	96,484	101,919	(5,435)
Gain on revaluation of derivatives	(771,920)	(343,436)	(428,484)
(Gain) loss on extinguishment of debentures	(127,409)	(646)	(126,763)
Net expense	\$ 296,973	\$ 1,275,273	\$ (978,300)

- k) The Company reversed the accrual that it had recorded in 2018-2019 of \$205,788 with respect to Mr. Van Fleet's claims against the Company. The current status of the litigation with Mr Van Fleet is detailed in Section 7 (b) and Section 8 of this report .While the Company may also obtain a judgment for damages, we cannot currently predict the amount of damages, if any, that will be awarded and/or if a judgment will be collectible; accordingly, the Company has not recognized any amount receivable that may be forthcoming for damages that it is seeking in this matter.

C. Unaudited Quarterly Financial Information - Summary

Three months ended (unaudited)	Revenues	Expenses	Income (loss) in period	Loss per share
	\$	\$	\$	\$
January 31, 2019	-	1,110,303	(1,110,303)	-
April 30, 2019	-	48,088	(48,088)	-
July 31, 2019	-	554,533	(554,533)	-
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)	-

Three months ended (unaudited)	Working capital (deficiency)	Capital assets at NBV	Other Assets	Total Assets	Shareholders' equity (deficit)
	\$	\$	\$	\$	\$
January 31, 2019	(4,488,643)	8,434	364,296	473,177	(4,115,813)
April 30, 2019	(4,158,247)	7,639	326,358	379,334	(3,824,250)
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)

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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. There remains the risk that the Company must successfully complete development work on these products to have available commercially viable products which can be licensed or sold.

Customers' Willingness to Purchase:

We have entered into joint development agreements whereby our prototype products are being 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 it decided to abandon certain provisional patent filings in international jurisdictions which it believes 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.

Outstanding Lawsuit:

The Company is engaged in a lawsuit with Mr. Steven Van Fleet who, until his resignation on August 17, 2018, served as a director of the Company and as the President of the Company's wholly-owned subsidiary, MAST, Inc. This matter is discussed further in Section 7 (b) and Section 8 of this MD&A report.

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 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, 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 of time in future. During the year ended October 31, 2019 the Company reported a net loss and comprehensive loss of \$1,245,393 (2019 - \$2,832,864; 2018 - \$2,362,239) and negative cash flow from operations of \$760,572 (2019 - \$982,437; 2018 - \$1,339,309). The Company's working capital deficiency as at October 31, 2020 is \$4,202,571 (2019 - \$4,301,324).

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 in 2020 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, 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, conversion features of 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.

(b) Legal matters: lawsuit vs Steven Van Fleet

On October 7, 2018, the former President of MAST, Mr. Steven Van Fleet, filed a lawsuit against Micromem and MAST in New York State Supreme Court, Dutchess County. In the action, Mr. Van Fleet was 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.

The Company answered the complaint December 7, 2018 by denying the material allegations in Mr. Van Fleet's claims. In addition, the Company interposed 7 counterclaims against Mr. Van Fleet seeking, among other things: (i) damages of not less than \$2.75 million, (ii) specific performance to compel Mr. Van Fleet to comply with his contractual obligations which were required for the period of time that he served as an officer and director through to his resignation date; (iii) repayment of certain salary and expenses paid to Mr. Van Fleet; (iv) a direction for Mr. Van Fleet to turn over all Company property in his possession or control; and (v) an accounting to determine all money and property belonging to the Company and/or MAST.

On January 24, 2019, the Company amended its original answer and counterclaims to include, among other things, a demand for additional damages.

On February 8, 2019 Mr. Van Fleet, through his counsel, replied to and denied the material allegations in Micromem's counterclaims.

In January 2020, the court sent a schedule for completing discovery, which later had to be revised due to the COVID-19 pandemic. In May 2020, the court revised the discovery schedule, which required the parties to complete depositions and all remaining discovery by August 26, 2020.

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 a 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 has not submitted any opposition to the motion. Although the motion has not yet been decided, given that the facts and law support a default, and the motion is unopposed, we anticipate that the court will grant the motion striking Mr. Van Fleet's claim and schedule a hearing to determine the Company's damages on its counterclaims.

Micromem has now filed for default judgement of all Mr. Van Fleet's alleged claims and is now seeking a judgement for damages against Mr. Van Fleet as contemplated in the counter-claim which it filed on January 24, 2019.

Based on these developments, we believe that, at October 31, 2020, the reasonable value of Mr. Van Fleet's claims against the Company was \$nil. At October 31, 2020, the Company has eliminated the accrual of \$205,788 which it reflected in its accounts at October 31, 2019 with respect to the alleged remuneration and expense reimbursements originally claimed by Mr. Van Fleet in October 2018. Refer also to Section 8 (h) of this report . While the Company is currently seeking judgement for damages, it has not reflected any amount as receivable at October 31, 2020 as there is no certainty to date that damages will be awarded to the Company.

(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 October 31, 2020.

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: \$32,040 CDN.

(d) Off-Balance Sheet Arrangements

At October 31, 2020, 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 October 31, 2020, the Company reports 402,552,453 common shares outstanding (2019: 346,925,721). Additionally, the Company has 2,200,000 stock options outstanding with a weighted average exercise price of \$0.10 per share (2019: 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 at the Annual Meeting. Joseph Fuda and Dan Amadori continue to serve as officers of the Company. Steven Van Fleet resigned as an officer and director of the Company on August 17, 2018. As of October 31, 2020, the Company remains engaged in a lawsuit with Mr. Van Fleet, as outlined in Section 7(b) and Section 8 of this MD&A report

Our management team and directors, along with their 2020 remuneration, is presented as below:

Individual	Position	2020 remuneration		
		Cash	Options	Total
Joseph Fuda	President, Director	17,517	-	17,517
Oliver Nepomuceno	Director	-	-	-
Alex Dey	Director	-	-	-
Brian Von Herzen	Director	-	-	-
Dan Amadori	CFO	-	-	-

(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:

	2020	2019	2018
Professional, other fees and salaries	\$ 17,517	\$ 4,684	\$ 235,297
Stock based compensation	-	-	44,740
	\$ 17,517	\$ 4,684	\$ 280,037

In 2020 and 2019, these parties were awarded a total of \$nil options (2018 - 700,000 options at an exercise price of \$0.10). In 2020 a total of 1.3 million common stock options previously awarded to key management were cancelled. Subsequent to October 31, 2020, key management was awarded an additional 3 million common stock options (Section 8).

Trade payables and other liabilities:

As at October 31, 2020 and 2019 the Company includes \$167,000 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 maintains that no amount is payable to by the Company.

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 \$10,600.

In January 2018, an officer of the Company provided a convertible debenture of \$150,000 CDN (\$114,138 USD). At October 31, 2020, \$10,001 CDN (\$7,509 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. In 2020 and subsequent to the end of the fiscal year, the Company continued to raise additional financing.

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 employees options to purchase shares at prices that are at or above market price on the date of grant. At October 31, 2020 there are 2,200,000 options outstanding at an average exercise price of \$0.10 per share. Subsequent to October 31, 2020, the Company awarded a total of an additional 6.5 million common stock options to directors, officers, employees and one consultant (Section 8).

Capital Resources: We have no commitments for capital expenditures as of October 31, 2020.

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8. SUBSEQUENT EVENTS

Subsequent to October 31, 2020:

- (a) The Company secured seven (7) private placements with investors consisting of common shares with no warrants pursuant to prospectus and registrations set forth in applicable securities law. It realized net proceeds of \$46,200 CDN and \$60,000 USD and issued a total of 3,542,223 common shares.
- (b) The Company settled interest debt of \$204,233 CDN and \$30,200 USD with the issuance of 6,953,755 common shares.
- (c) The Company repaid \$25,000 CDN of convertible debentures. It also converted \$40,000 CDN and \$111,520 USD of convertible debentures through the issuance of 3,712,672 common shares.
- (d) The Company extended convertible debentures that were within 3 months of maturity date from October 31, 2020. Extension terms ranged from three (3) months to nine (9) months.
- (e) The Company secured \$52,000 in convertible debentures with a 12 month term and conversion features which become effective six months after initiation date.
- (f) On November 13, 2020, the Company issued 6.5 million common stock options to directors, officers, employees and one consultant at a strike price of \$0.05 USD (\$0.07 CDN) per share. These stock options vested in full immediately upon issuance and have a 5 year term, expiring on November 13, 2025, if unexercised by that date.
- (g) The Company received an additional \$20,000 CDN (\$15,125 USD) loan under the Canadian government's CEBA loan program under the same terms as the original loan of \$40,000 secured in April 2020..
- (h) With respect to the Company's litigation matter as outlined in Section 7 (b) of this report, Mr Van Fleet failed to reply to the court within the prescribed timelines that the court set out (January 11, 2021) and the Company's motion to strike his claims is unopposed. The Company is currently pursuing potential damage claims against Mr. Van Fleet.