
**MICROMEM TECHNOLOGIES INC.
MANAGEMENT'S DISCUSSION AND ANALYSIS
FOR THE THREE AND NINE MONTHS ENDED JULY 31, 2019
PREPARED AS OF SEPTEMBER 24, 2019**

NOTICE TO READER

The Management's Discussion and Analysis ("MD&A") report for Micromem Technologies Inc. for the three months ending July 31, 2019, as attached, is dated as of September 24, 2019, consistent with the date of the Independent Registered Public Accounting Firm report and with the 52-109F1R CEO and CFO certification filings related thereto.

/s/ Dan Amadori
Dan Amadori, CFO
September 24, 2019

/s/ Joseph Fuda
Joseph Fuda, CEO
September 24, 2019

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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 and nine months ending July 31, 2019 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, 2018 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. The Company incorporated Micromem Applied Sensor Technologies Inc. ("MAST") as a wholly – owned subsidiary 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, 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. It also operates, through its wholly - owned subsidiary, Micromem Applied Sensor Technologies (“MAST”) - MAST has traditionally been used for the development of market opportunities, maintaining customer relationships and the project management of the independent engineering subcontractors that it engages once a client project has been initiated. Micromem and MAST are referred to interchangeably as “the Company” throughout this report.

Business Developments:

As detailed in Section 2 of this documentation – Project Updates, the Company’s current business activity includes:

a) **Chevron:**

We are continuing with the field testing of the ARTRA 171 unit; this testing commenced in March 2019. We continue to anticipate a commercialization agreement for the sale of these units to Chevron.

b) **Repsol S.A.:**

We are currently in negotiation towards a final contract for the development of the RT Lube technology, customized to Repsol’s requirements for both initial field units and a longer term product development program.

c) **Other:**

- (i) We are currently pursuing discussions with a European energy company with respect to the potential manufacture and sale of the ARTRA 171 technology, in various European and Middle East countries.
- (ii) We have restarted discussions with Chevron as it relates to a Technology Cooperation Agreement which we initiated in 2015 relating to a cement integrity sensor development project, which we pursued until the project was suspended in 2017.
- (iii) We have recommenced an active marketing program for the ARTRA 171 technology and the RT Lube technology with other potential partners.

Manufacturing and Intellectual Property:

- i. Our working relationship with Entanglement Technologies (“Entanglement”) continues; we are negotiating an extension/expansion of our licensing agreement with Entanglement for their proprietary Aroma technology.
- ii. We have identified potential manufacturing capacity and capabilities in Canada and in several European regions. Preliminary interest has been communicated by several third-party manufacturers in working with the Company to provide manufacturing and service support as we attempt to more broadly commercialize our technology. To this end, Company representatives have attended multiple industry tradeshows in 2019.

Financing:

In summary: In Q3 2019 the Company secured \$10,000 of financing from private placements (2018: \$270,011), and \$125,278 (2018: \$453,760) from the issuance of convertible debentures.

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.

At maturity date, the debenture holder can request payment of principal and interest in cash or it can elect to convert the outstanding balance into common shares, or it can simply extend the term of the debenture.

The Company has repaid certain convertible loans at maturity when due as requested by the debenture holder, or it has converted the debenture into common shares at the request of the debenture holder, or it has 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 – may be adjusted as part of the extension.

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2. CURRENT UPDATE:

Chevron: We have previously reported on the progress of our dealings with Chevron on the ARTRA 171 technology. The development work on this technology continued through 2018 and was funded largely by Chevron. Entanglement, our engineering and design subcontractor, continued to complete the development work.

Initially, we anticipated that, by mid-2018, field testing of the technology would take place in several of the Chevron producing oil wells in the US. This process took longer than anticipated because of the logistics within Chevron in identifying and securing the specific operating wells for such testing. Ultimately, the field testing began in March, 2019 where alcohol tracers were injected into operating wells. Chevron and the Company continue to test samples from the wells in question and, to date, the ARTRA 171 technology is performing as anticipated. The sample testing continues.

Whereas we have previously reported that we anticipated commercial revenues from the sale of this technology to Chevron in 2019, we now expect that Chevron's plans on commercialization will be finalized towards the end of calendar 2019. On that basis, we anticipate commercial sales with Chevron to be realized commencing in calendar 2020.

Funding Overview: The Company has received funding from Chevron and other parties for development activity and, in turn, it has committed that funding to such development, primarily through Entanglement. The chart in Section 3 (b) (vii) of this report illustrates the timing of all funding received and expenditures made in 2018 fiscal year and by quarter in 2019.

All expenditures are recorded as development expenses as incurred. When funding is received against such development work, it is applied as a recovery of development costs incurred. This accounting treatment conforms to the prescribed treatment under IFRS reporting guidelines.

Given the timing lag between incurring expenditures and in receiving related funding from our partners, the Company has currently been reporting net recoveries of development expense on a quarterly basis in 2019 and on an overall basis in fiscal 2018.

Marketing of the ARTRA 171 Technology: We previously reported our participation in a tradeshow (attended by Steven Van Fleet and representatives from Entanglement) in Dubai in March, 2018. As the follow up to that tradeshow, a series of initial leads were developed and pursued. At the time, in excess of 50 proposals were generated by Mr. Van Fleet to different parties who had expressed initial interest in this technology.

After the departure of Mr. Van Fleet in August, 2018, the Company approached many of the parties to whom proposals have been submitted.

In these proposals, the Company typically offered to provide initial units to the potential customer on the proviso that the customer provided upfront funding to cover the costs of these initial units. The feedback that we received from the potential customers at the time was that, once the technology had been successfully tested in an operating oil well environment, there could be greater interest in pursuing discussions with the Company for the purchase of such units. We believe that there remains potential opportunity with certain of the group of companies that were originally approached in 2018 ; such opportunities may be pursued further in 2020.

In 2019, Company representatives attended several onshore and offshore oil and gas conferences in North America. We believe that we have developed a potential pipeline of new potential customers to be pursued in 2020. This relates to both the ARTRA 171 technology and the RT Lube technology, which is as further discussed below.

RT Lube Technology: We have previously reported on the development of this technology, which was initially undertaken in cooperation with Castrol. The work with Castrol spanned several years through 2017 by which point approximately \$3.5 million had been collectively invested in the development program by the Company and by Castrol.

In mid-2017, we had a series of meetings and discussions with Castrol as to the future of this development work. Castrol was unwilling to commit additional funding to the project at that time and the Company was not prepared to absorb all of the go forward developments costs without an assurance of commercial orders from Castrol that would justify the financial commitment by the Company. Ultimately, these discussions reached an impasse and the project with Castrol was suspended.

In late 2017, through early 2018, the Company engaged in initial discussions with Repsol S.A. and launched an initial pilot program to develop the RT Lube technology specific to Repsol's requirements. The initial agreement that was executed with Repsol was that the Company would deliver initial prototype units to Repsol and, in turn, Repsol committed to provide \$150,000 of initial funding.

This work was commissioned through one of our engineering subcontractors, SB Microsystems. The initial contract was not fully completed and the work was suspended by mid-2018. At that point, Repsol had invested \$75,000 in the development work.

After the departure of Steve Van Fleet in August 2018, we resumed discussions with Repsol to restart the development program with them. These discussions continued through June 2019 at which point an initial draft of a go forward development contract was drafted between Repsol and the Company.

The current status of our dealings with Repsol is that we are seeking to finalize the development contract in 2019 and restart the development project in 2020. The development project has two stages:

- a) An initial field unit which would be marketed for large commercial applications, and, thereafter,
- b) The miniaturization of this technology with greater functionality, which work would commence in 2021, pending successful results of the first stage of the project.

Our discussions with Repsol continue.

In parallel, as noted above, we have continued our marketing efforts with respect to this technology in 2019. We have had multiple expressions of initial interest in the technology from other potential third party customers. We continue to evaluate and pursue those opportunities.

Product Development: We continue to work with Entanglement and are exploring opportunities to expand the scope of the Aroma tracer technology beyond the alcohol tracers now being deployed. The potential areas for product expansion relate to utilizing and expanding the current technology to accommodate offshore wells, gas fields and the utilization of other types of chemical tracers. To this end, we are pursuing strategic funding to expand the scope of the Entanglement's work.

Other Initiatives:

- (a) We previously announced a Technology Cooperation Agreement with Chevron in 2015 relating to a cement integrity development program with an overall estimated contract value of in excess of \$8 million. The project stalled after 2015 given budget constraints within Chevron and due to the Company's inability to raise the substantial amount of development capital required for this standalone program on its own.

Since late 2018, we have been revisiting this potential opportunity with Chevron. Those discussions continue. We believe that the Company may have the opportunity to restart this program with Chevron in 2020.

- (b) In 2019, the Company began discussions with a large European energy company with whom it has not had previous dealings. To date, there have been discussions with respect to the development and customization of the ARTRA 171 technology for that company's use. These discussions continue and appear promising.

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3. DISCUSSION OF OPERATING RESULTS:

(a) Financial Position as at July 31, 2019:

	July 31, 2019	October 31, 2018
	('\$000)	('\$000)
Cash	11	207
Deposits and other receivables	22	99
	<u>33</u>	<u>306</u>
Property and equipment, net	7	9
Patents, net	149	396
	<u>189</u>	<u>711</u>
Bridge loans	2,632	2,477
Accounts payable and accrued liabilities	1,082	1,007
Derivative liability	508	650
	<u>4,223</u>	<u>4,134</u>
Shareholders' Equity		
Share capital	83,300	82,283
Equity component of bridge loans	64	70
Contributed surplus	27,723	27,631
Deficit	(115,120)	(113,407)
	<u>(4,034)</u>	<u>(3,423)</u>
	<u>189</u>	<u>711</u>

Commentary:

- The Company's working capital deficiency is (\$4,189,540) at July 31, 2019 (at October 31,2018: deficiency of \$3,828,503). Included in accounts payable and accrued liabilities at July 31, 2019 and at October 31,2018 are reported balances payable to:
 - Mr. Van Fleet: of approximately \$205,000 ,which is the subject of current litigation as described in Section 6 (c) of this report.
 - Mr. Von Herzen (a current director) of \$167,000, which amount has been outstanding since 2015 and which the Company has disputed.
 - Engineering subcontractor fees totaling \$168,000 relating to project development charges dating back to 2013 which the Company has disputed.

The Company's position remains that these are not obligations that it will discharge; it continues to pursue settlement of these charges.

2. The Company capitalizes the costs incurred with respect to its patent portfolio. These applications and filings relate to the ongoing product development work that the Company has undertaken. It has a portfolio of awarded patents in the United States and has filed for provisional patents in certain foreign countries.

During the 3 months ended July 31, 2019, we have completed a review of our patent pending filings in international jurisdictions. These filings were previously initiated and coordinated by Mr. Van Fleet in conjunction with various patent attorneys in Europe, Asia and elsewhere.

Based on the review which we have now completed, we have decided to suspend the continued prosecution of a number of these international filings. Accordingly, our patent related expenditures have decreased significantly in 2019 – for the 9 months ending July 31, 2019 our expenditures were \$18,147 versus \$113,970 for the 9 months ended July 31, 2018.

Additionally, in the 3 months ended July 31, 2019 we recorded an accelerated amortization expense on our patent portfolio of \$149,078. We believe that we will realize the reported net value of \$149,177 of our patent portfolio in future through the exploitation of our existing patent portfolio.

3. Bridge loans:

The Company continued to secure additional financing in 2019 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 are typically of a short-term nature and, in many cases, renewed on multiple occasions; the related financial reporting has become progressively more complex.

The balance reported as bridge loans at July 31, 2019 is \$2,632,267 (at October 31, 2018: \$2,476,571) and the related derivative liability balance is \$507,946 (at October 31, 2018: \$650,116). Related thereto, for the nine months ended July 31, the Company reports accretion expense on these debentures of \$1,103,438 (2018: \$1,428,108), a loss on the conversion of bridge loans to share capital of \$31,499 (2018: \$nil), a gain on the revaluation of the underlying derivative liabilities of \$735,242 (2018: \$1,079,690) and a gain on extinguishment of convertible debentures of \$707 (2018: loss of \$4,691). Management primarily employs a Black Scholes valuation model; for certain of the loan transactions contracted for, it uses a binomial measurement model for those specific loans. Interest on the bridge loans is substantial. For the 9 months ended July 31 we report \$473,919 of interest expense (2018: \$346,232).

4. During the 2019 and 2018 fiscal years, the Company secured financing from various sources, the significant components include:

	(12 months) October 31, 2018	(9 months) July 31, 2019	(3 months) July 31, 2019
i) Private placements of shares for cash consideration	\$ 866,200	\$ 112,968	\$ 10,000
ii) Shares issued to settle financing fees	-	21,000	-
iii) Settlement of trade accounts payable for share consideration	13,379	-	-
iv) Bridge loan financing	1,457,983	-	-
v) Bridge loan settlements for share consideration	1,205,130	2,018	235,406
vi) Project financing provided by development partners	738,983	75,684	15,097
	<u>\$ 4,281,675</u>	<u>\$ 211,670</u>	<u>\$ 260,503</u>

(b) Operating Results:

The following table summarizes the Company's operating results for the three months ended July 31, 2019 and 2018:

Discussion of Operating Results

	Quarter ending July 31,	
	2019 (\$000)	2018 (\$000)
Administration	42	63
Interest expense	220	123
Accretion expense	298	533
Financing costs	-	34
Professional fees and salaries	113	181
Stock-based compensation	-	141
Development expense (recovery)	(4)	(126)
Travel	18	21
Foreign exchange loss (gain)	82	45
Amortization of property and equipment	1	1
Amortization of patents	188	41
Loss on conversion of debentures	12	-
(Gain) loss on revaluation of derivatives	(417)	(1,123)
(Gain) loss on extinguishment of debt	-	44
Net expenses	554	(23)
Net comprehensive income (loss)	(554)	23
Income (loss per share)	-	-

Commentary:

In addition to the commentary above regarding the impact of the bridge loans on the Company's operating results, we note that, in 2019, the Company has instituted a series of cost cutting measures on operating expenses given its working capital constraints:

- i) We reduced professional and other fees and salaries in 2019. There has been no remuneration paid to the CEO or the CFO to-date in 2019. In the 3 months ended July 31, 2018 we reported \$57,195 of consulting fees pertaining to Steven Van Fleet (2019: Nil); Mr. Van Fleet resigned in August, 2018. The Company also rolled back certain staff salaries. We have utilized less outside consulting and legal services in 2019.

- ii) General and administrative costs include insurance expense which has been reduced in 2019 as we have eliminated certain coverage which was in place previously and which is currently not required.
- iii) Professional fees include out accrual for year end audit work, financing fees paid to 3rd parties on bridge loans and general legal expenses. In the quarter ended July 31, 2019 we incurred approximately \$6,000 in legal fees pertaining to the current litigation described in Section 6(c) – Contingencies – in this report.
- iv) The quarterly foreign exchange loss at July 31, 2019 of \$82,350 (2018: exchange loss of \$44,552) consists of the exchange adjustment on \$CDN denominated transactions during the period, the exchange translation arising on consolidation of the Company’s financial statements and an exchange adjustment relating to the measurement of \$CDN denominated convertible debt transactions during the quarter.
- v) Stock - based compensation relates to the cost associated within the issuance of stock options to employees, officers and directors calculated in accordance with the Black Scholes options pricy model. These were no options grants in the quarter ending July 31, 2019.
- vi) Under IFRS reporting, such loans require quarterly remeasurements. The application of the remeasurement methodology is very specific. This is more fully discussed in Section 3; 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 nine and three -month period ending July 31, 2019 and 2018:

	Nine and three months ended July 31			
	2019		2018	
Accretion expense	\$1,103,438	\$298,355	\$1,428,108	\$ 533,494
Loss on Conversion of debentures	31,499	11,701	-	-
(Gain) loss on revaluation of derivatives	(735,242)	(417,239)	(1,079,690)	(1,122,960)
(Gain) loss on extinguishment of debentures	(707)	-	4,691	43,832
Net expense	398,988	(107,183)	353,109	(545,634)

There is no impact on the Company’s cash flow for these non-cash charges.

vii) A summary of the development costs incurred and the funding provided by our development partners in 2018 and by quarter in 2019 is presented as follows:

	Oct. 31, 2018 12 mos	Jan. 31, 2019 3 mos	Apr.30, 2019 3 mos	Jul. 31, 2019 3 mos	Jul. 31, 2019 9 mos.
Gross expenditures by the Company	608,914	-	26,221	11,177	37,398
Recoveries from our development partners	(738,983)	-	(60,587)	(15,097)	(75,684)
Net development expense (recovery)	(130,069)	-	(34,366)	(3,920)	(38,286)

1) **Administrative related expenses compare as follows (\$000):**

	2019	2018
General and administrative	13	8
Rent and occupancy cost	17	17
Office insurance	-	23
Telephone	1	2
Investor relations, listing and filing fees	10	13
	42	63

2) **Professional and other fees and salaries compare as follows (\$000):**

	2019	2018
Professional fees	42	36
Consulting fees	15	70
Salaries and benefits	56	74
	113	181

3) **Travel expenses compare as follows (\$000):**

	2019	2018
Airfare	3	6
Hotel	5	6
Other	10	9
	18	21

C. Unaudited Quarterly Financial Information – Summary

Three months ended (unaudited)	Revenues	Expenses	Income (loss) in period	Loss per share
	\$	\$	\$	\$
October 31, 2017		1,638,499	(1,638,499)	(0.01)
January 31, 2018 (1)	-	2,291,691	(2,291,691)	(0.01)
April 30, 2018	-	(207,605)	207,605	-
July 31, 2018	-	(22,711)	22,711	-
October 31, 2018	-	300,864	(300,864)	-
January 31, 2019 (1)	-	1,110,303	(1,110,303)	-
April 30, 2019	-	48,088	(48,088)	-
July 31, 2019	-	554,533	(554,533)	-

(1) The net loss reported for the quarter ended July 31, 2019 (2018: the net income) includes non-cash related expenses with respect to accretion expense of \$1,103,438 (2018: \$1,428,108) and with respect to gain on revaluation of derivative liabilities of \$735,242 (2018: gain \$1,079,690).

Three months ended (unaudited)	(1) Working capital (deficiency)	Capital assets at NBV	Other Assets	Total Assets	Shareholders' equity (deficit)
	\$	\$	\$	\$	\$
October 31, 2017	(3,375,656)	9,822	431,462	916,643	(3,424,106)
January 31, 2018	(3,619,741)	8,968	451,454	566,763	(5,382,493)
April 30, 2018	(3,551,233)	8,117	438,725	597,983	(4,805,909)
July 31, 2018	(3,639,419)	7,275	427,179	605,309	(4,088,047)
October 31, 2018	(3,828,503)	9,228	396,105	710,737	(3,423,170)
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)

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4. 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 has incurred significant costs with respect to the maintenance and development of our intellectual property portfolio. In 2018 and 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 specific 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 6 (c) - Contingencies – in this report. The outcome of this lawsuit has not been determined at this stage.

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.

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5. 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 nine months ended July 31, 2019 the Company reported a net loss and comprehensive loss of \$1,712,924 (2018 - \$2,061,375) and negative cash flow from operations of \$621,561 (2018 - \$935,973). The Company’s working capital deficiency as at July 31, 2019 is \$4,189,540 (October 31, 2018 – \$3,828,503).

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 2019 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.

If the “going concern” assumption were 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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6. OTHER MATTERS

(a) Critical Accounting Policies:

The accounting policies which 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-term assets, deferred development costs, stock-based compensation and income taxes. These critical accounting policies are set forth in Note 4 to our audited consolidated financial statements as of October 31, 2018 and as updated in Note 4 to our consolidated financial statements as of July 31, 2019.

(b) Commitments:

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: \$96,120 CDN,

(c) Contingencies:

Legal Matters:

The Company has agreed to indemnify its directors and officers and certain of its employees in accordance with the Company's by-laws. The Company maintains insurance policies that may provide coverage against certain claims.

On October 7, 2018, the former President of MAST, Inc. (the Company's wholly-owned subsidiary), 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 is 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 on 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; (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 based on new information that had come to light. On February 8, 2019 Mr. Van Fleet, through his counsel, replied to and denied the material allegations in Micromem's counterclaims. The Company reports an accrual of \$205,788 at July 31, 2019 with

respect to alleged remuneration and expense reimbursements claimed by Mr. Van Fleet but, nonetheless, has denied the allegations in Mr. Van Fleet's claims. This matter remains as a contingency at September 24, 2019.

In addition to the above, 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.

(d) Off-Balance Sheet Arrangements:

At July 31, 2019, 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, 2019 the Company reports 293,538,497 common shares outstanding (2018: 244,445,175). Additionally, the Company has 5,730,000 stock options outstanding with a weighted average exercise price of \$0.25 per share (2018: 6,935,000 options outstanding with a weighted average exercise price of \$0.29 per share).

(g) Transactions with Related Parties:

The Company reports the following related party transactions:

(i) 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) for the 9 months ended July 31, are summarized as:

	2019	2018
Professional, other fees and salaries	\$ -	\$ 208,938

(ii) Trade payables and other liabilities:

At July 31, 2019 the Company reports in trade payables and other liabilities, a balance owing to the former President of MAST of \$193,174 which amount represents alleged outstanding wages payable and which is the subject of current litigation per section 6(c) above.

As at July 31, 2019 and October 31, 2018 the Company includes \$167,000 in trade payables and other liabilities owing to a company whose major shareholder is a director of the Company and who has also previously served as its Chief Technology Officer. This individual was elected as a director on February 19, 2014. The balance reported relates to services provided in 2015; there have been no invoices submitted by this related party after October 31, 2015.

(iii) Convertible debenture:

In May 2019 the CEO of the Company provided for a short-term loan of \$15,000 CDN (\$11,450 USD). At July 31, 2019, \$10,000 CDN (\$9,541 USD) in loan principal outstanding.

In January 2018, the CEO of the Company provided a convertible debenture of \$150,000 CDN (\$114,086 USD). At July 31, 2019 \$54,362 CDN (\$41,346 USD) (October 31, 2018 - \$100,862 CDN, \$76,713 USD) in loan principal remains outstanding.

(g) 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 2018 and 2019, 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 July 31, 2019 there are 5,730,000 options outstanding at an average exercise price of \$0.25 per share.

Capital Resources: We have no commitments for capital expenditures as of July 31, 2019.

(h) Management and Board of Directors:

Management:

Following the resignation of Mr. Van Fleet in August 2018, we have implemented the following changes in our operations:

- We recruited three independent advisors to provide assistance, as required, in the areas of manufacturing and customer service, in the recruitment of personnel & consultants in the energy sector and in the area of strategic planning and potential merger & acquisition opportunities.
- The CEO and CFO have assumed broader responsibilities with respect to engagement with our existing and potential customers and our engineering subcontractors; additionally, they have assumed more responsibility for marketing and business development initiatives, patent prosecution and all contractual agreements.
- The Company intends to hire a full-time project manager to supervise all of the ongoing client projects which are contemplated for 2020.
- We continue to rely on subcontracted engineering for design and product development work required. Our continued relationships with our subcontractors are positive and effective.

Mr. Van Fleet's compensation through August 2018 was reported as consulting fees. We are currently in litigation with Mr. Van Fleet as reported in Section 6(c) of this report.

The CEO has not received compensation for services provided after the 2017 fiscal year. The CFO has not received compensation for services provided since March 2018. The compensation of the CEO and CFO will be revisited by the Company when its financial position has improved.

Board of Directors:

Currently, our Board consists of:

- Joseph Fuda, CEO
- Alex Dey, Chair of the Audit Committee (independent director)
- Oliver Nepomuceno, Chair of the Compensation Committee (independent director)
- Brian Von Herzen

Previously, our Board also included:

- Steven Van Fleet, who resigned in August 2018. We are currently in litigation with Mr. Van Fleet.
- David Sharpless, who resigned in March 2018 to pursue other interests after 18 years of service to the Company.
- Larry Blue, who resigned in September 2017 to pursue other interests after 12 years of service to the Company.

We are currently evaluating our go forward requirements for our Board of Directors and expect to add additional Board members in 2020.

Our Board members receive no monetary compensation for services rendered; stock options have been awarded to Board members at regular intervals.

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7. SUBSEQUENT EVENTS

Subsequent to July 31, 2019:

- (a) The Company secured three convertible debentures amounting to \$160,000 USD and \$25,000 CDN (\$19,083 USD), respectively; these debentures have a one-year term.
- (b) The Company issued 29,160,946 common shares upon the conversion of \$259,049 convertible debentures.
- (c) The Company extended convertible debentures that were within 3 months of maturity from at July 31, 2019; Extension terms ranged from 2 to 6 months.