



Micromem Technologies Inc.
Consolidated Financial Statements
For the years ended October 31, 2019, 2018 and 2017
(Expressed in United States Dollars)

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Micromem Technologies Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated financial statements of Micromem Technologies Inc.(the Company), which comprise the consolidated statements of financial position as at October 31, 2019 and 2018, and the related consolidated statements of operations and comprehensive loss, changes in equity, and cash flows for each of the years in the three year period ended October 31, 2019, and the related notes (collectively referred to as the "consolidated financial statements").

In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Company as of October 31, 2019 and 2018, and the results of its consolidated operations and its consolidated cash flows for each of the years in the three year period ended October 31, 2019, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

Material Uncertainty Related to Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the consolidated financial statements, the Company has suffered recurring losses from operations and has a net capital deficiency that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 2. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

MNP LLP

**Chartered Professional Accountants
Licensed Public Accountants**

We have served as the Company's auditor since 2017.
Toronto, Ontario
February 24, 2020



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Micromem Technologies Inc.
Consolidated Statements of Financial Position
As at October 31, 2019 and 2018
(Expressed in United States dollars)

	<u>Notes</u>	<u>2019</u>	<u>2018</u>
Assets			
Current			
Cash	19	\$ 46,056	\$ 206,832
Development costs receivable	7	-	81,841
Prepaid expenses and other receivables		14,751	16,731
Total current assets		\$ 60,807	\$ 305,404
Property and equipment		2,677	9,228
Patents	8	20,000	396,105
Total assets		\$ 83,484	\$ 710,737
Liabilities			
Current			
Trade payables and other liabilities	19(c)	\$ 997,632	\$ 1,007,220
Convertible debentures	9,19	2,599,074	2,476,571
Derivative liabilities	9,19	765,425	650,116
Total liabilities		\$ 4,362,131	\$ 4,133,907
Shareholders' Deficiency			
Share capital	10	84,153,696	82,282,903
Contributed surplus		27,757,639	27,630,909
Equity component of convertible debentures	9	50,147	70,283
Accumulated deficit		(116,240,129)	(113,407,265)
Total shareholders' deficiency		\$ (4,278,647)	\$ (3,423,170)
Total liabilities and shareholders' deficiency		\$ 83,484	\$ 710,737
Going concern	2		
Commitments	17		
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The accompanying notes are an integral part of these consolidated financial statements

Approved on behalf of the Board of Directors:

"Joseph Fuda"
Director

"Alex Dey"
Director

Micromem Technologies Inc.
Consolidated Statements of Operations and Comprehensive Loss
For the years ended October 31, 2019, 2018 and 2017
(Expressed in United States dollars)

	<u>Notes</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
Operating expenses				
General and administration	14(a)	\$ 197,208	\$ 305,338	\$ 305,421
Professional, other fees and salaries	14(b)	441,981	747,280	1,433,113
Stock-based compensation	11	-	140,612	442,206
Development expense (recovery)	7	(41,546)	(130,069)	147,008
Travel and entertainment		52,568	101,496	118,261
Amortization of property and equipment		3,175	3,922	3,992
Amortization of patents	8	152,962	156,960	133,785
Impairment of patents	8	223,143	-	-
Foreign exchange loss (gain)	19(a)	(40,548)	(117,779)	343,210
Total operating expenses		<u>\$ 988,943</u>	<u>\$ 1,207,760</u>	<u>\$ 2,926,996</u>
Other expenses				
Accretion expense	9	1,517,436	2,039,344	1,358,101
Interest expense	9	496,172	504,778	666,245
Financing costs	9	72,476	40,414	-
Gain on revaluation of derivative liabilities	9	(343,436)	(1,094,718)	(1,614,822)
Loss on conversion of convertible debentures	9	101,919	63,852	1,009,680
Gain on extinguishment of convertible debentures	9	(646)	(399,191)	-
Total other expenses		<u>\$ 1,843,921</u>	<u>\$ 1,154,479</u>	<u>\$ 1,419,204</u>
Loss before income tax provision		<u>\$ (2,832,864)</u>	<u>\$ (2,362,239)</u>	<u>\$ (4,346,200)</u>
Income tax provision	13	<u>-</u>	<u>-</u>	<u>-</u>
Net loss and comprehensive loss		<u>\$ (2,832,864)</u>	<u>\$ (2,362,239)</u>	<u>\$ (4,346,200)</u>
Weighted average number of outstanding shares, basic and diluted				
	12	288,398,051	237,242,674	207,131,781
Basic and diluted loss per share	12	\$ (0.01)	\$ (0.01)	\$ (0.02)

The accompanying notes are an integral part of these consolidated financial statements

Micromem Technologies Inc.
Consolidated Statements of Changes in Equity
For the years ended October 31, 2019, 2018 and 2017
(Expressed in United States dollars)

	<u>Notes</u>	<u>Number of shares</u>	<u>Share capital</u>	<u>Contributed surplus</u>	<u>Equity component of convertible debentures</u>	<u>Accumulated deficit</u>	<u>Total</u>
Balance at November 1, 2016		204,388,569	\$ 75,855,139	\$ 26,918,470	\$ 23,075	\$ (106,698,826)	\$ (3,902,142)
Private placements of shares for cash	10	3,873,223	719,403	-	-	-	719,403
Shares issued on settlement of accounts payable		547,643	107,708	-	-	-	107,708
Stock-based compensation	11	-	-	442,206	-	-	442,206
Shares issued as settlement of wages		132,381	21,909	-	-	-	21,909
Convertible debentures converted into common shares		20,370,895	2,536,963	-	-	-	2,536,963
Reallocation from derivative liability for conversion		-	20,970	-	-	-	20,970
Treasury shares cancelled		(750,000)	-	-	-	-	-
Loss on conversion of convertible debentures		-	936,102	-	38,975	-	975,077
Net loss		-	-	-	-	(4,346,200)	(4,346,200)
Balance at October 31, 2017		228,562,711	\$ 80,198,194	\$ 27,360,676	\$ 62,050	\$ (111,045,026)	\$ (3,424,106)
Private placements of shares for cash	10	14,739,272	866,200	-	-	-	866,200
Shares issued on settlement of accounts payable		79,765	13,379	-	-	-	13,379
Stock-based compensation	11	-	-	140,612	-	-	140,612
Convertible debentures converted into common shares	9	16,220,951	1,205,130	-	-	-	1,205,130
Expiry of convertible debenture conversion option		-	-	129,621	(129,621)	-	-
Renewal of convertible debentures	15	-	-	-	137,854	-	137,854
Net loss		-	-	-	-	(2,362,239)	(2,362,239)
Balance at October 31, 2018		259,602,699	\$ 82,282,903	\$ 27,630,909	\$ 70,283	\$ (113,407,265)	\$ (3,423,170)
Private placements of shares for cash	10	4,961,059	212,968	-	-	-	212,968
Financing costs converted into common shares	9	350,000	21,000	-	-	-	21,000
Convertible debentures converted into common shares	9	82,038,963	1,636,825	-	-	-	1,636,825
Expiry of convertible debenture conversion option		-	-	126,730	(126,730)	-	-
Renewal of convertible debentures	15	-	-	-	106,594	-	106,594
Net loss		-	-	-	-	(2,832,864)	(2,832,864)
Balance at October 31, 2019		346,952,721	\$ 84,153,696	\$ 27,757,639	\$ 50,147	\$ (116,240,129)	\$ (4,278,647)

The accompanying notes are an integral part of these consolidated financial statements

Micromem Technologies Inc.
Consolidated Statements of Cash Flows
For the years ended October 31, 2019, 2018 and 2017
(Expressed in United States dollars)

	<u>Notes</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
Operating activities				
Net loss		\$ (2,832,864)	\$ (2,362,239)	\$ (4,346,200)
Items not affecting cash:				
Stock-based compensation	11	-	140,612	442,206
Amortization of property and equipment		3,175	3,922	3,992
Amortization of patents	8	152,962	156,960	133,785
Impairment of patents	8	223,143	-	-
Bad debt expense		-	10,000	-
Accretion expense	9,15	1,517,436	2,039,344	1,358,101
Convertible debenture interest converted	9,15	63,409	47,435	-
Accrued interest on convertible debentures	15	164,243	125,328	666,245
Shares issued for financing costs	9	21,000	-	-
Gain on revaluation of derivative liabilities	9,15	(343,436)	(1,094,718)	(1,614,822)
Loss on conversion of convertible debentures	9	101,919	63,852	1,009,680
Gain on extinguishment of convertible debentures	9,15	(646)	(399,191)	-
Loss on disposal of property and equipment		5,000	220	983
Foreign exchange gain	19(a)	(136,606)	(87,033)	-
		<u>(1,061,265)</u>	<u>(1,355,508)</u>	<u>(2,346,030)</u>
Net changes in non-cash working capital:				
Decrease (increase) in development costs receivable	7	81,841	324,016	(415,857)
Decrease (increase) in prepaid expenses and other assets		1,980	33,582	(16,986)
Increase (decrease) in trade payables and other liabilities		<u>(4,993)</u>	<u>(341,399)</u>	<u>723,631</u>
Cash flows used in operating activities		<u>(982,437)</u>	<u>(1,339,309)</u>	<u>(2,055,242)</u>
Investing activities				
Purchase of property and equipment		-	(3,548)	(3,809)
Patents	8	<u>-</u>	<u>(121,603)</u>	<u>(161,647)</u>
Cash flows used in investing activities		<u>-</u>	<u>(125,151)</u>	<u>(165,456)</u>
Financing activities				
Private placements of shares for cash	10	212,968	866,200	719,403
Proceeds from issuance of convertible debentures	15	780,891	1,457,983	1,788,974
Repayments of convertible debentures	9,15	(172,198)	(662,080)	(581,618)
Repayments from related parties		-	-	15,000
Cash flows provided by financing activities		<u>821,661</u>	<u>1,662,103</u>	<u>1,941,759</u>
Net change in cash		(160,776)	197,643	(278,939)
Cash - beginning of year		206,832	9,189	288,128
Cash - end of year		<u>\$ 46,056</u>	<u>\$ 206,832</u>	<u>\$ 9,189</u>
Supplemental cash flow information				
Interest paid (classified in operating activities)	9	\$ 353,214	\$ 322,930	\$ 321,700
Income taxes paid	13	\$ -	\$ -	\$ -
Shares issued on settlement of convertible debentures	9	\$ 1,636,825	\$ 1,205,130	\$ 2,536,963
Shares issued on settlement of accounts payable		\$ -	\$ 13,379	\$ 107,708
Shares issued on settlement of wages		\$ -	\$ -	\$ 21,909

The accompanying notes are an integral part of these consolidated financial statements

Micromem Technologies Inc.
Notes to Consolidated Financial Statements
For the years ended October 31, 2019, 2018 and 2017
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1. Reporting entity and nature of business

Micromem Technologies Inc. ("Micromem" or the "Company") is incorporated under the laws of the Province of Ontario, Canada. Micromem is a publicly traded company with its head office located at 121 Richmond Street West, Suite 304, Toronto, Ontario, Canada. The Company's common shares are currently listed on the Canadian Securities Exchange under the trading symbol "MRM" and on the Over the Counter Venture Market under the trading symbol "MMTIF".

The Company develops, based upon proprietary technology, customized sensor applications for companies (referred to as "development partners") operating internationally in various industry segments. The Company has not generated commercial revenues through October 31, 2019 and is devoting substantially all its efforts to securing commercial revenue opportunities.

2. Going concern

These consolidated financial statements have been prepared with the assumption 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 and ultimately on the appropriateness of the use of the accounting principles applicable to a going concern. During the year ended October 31, 2019, the Company reported a net loss and comprehensive loss of \$2,832,864 (2018 - \$2,362,239; 2017 - \$4,346,200) and negative cash flow from operations of \$982,437 (2018 - \$1,339,309; 2017 - \$2,055,242). The Company's working capital deficiency as at October 31, 2019 is \$4,301,324 (2018 - \$3,828,503).

The Company's 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 2020; however, the ability of the Company to continue as a going concern is dependent upon its ability to secure additional financing and/or profitably commercialize its technology. These consolidated 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 statement of financial position classifications used; in such cases, these adjustments would be material.

3. Basis of presentation

These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB") and interpretations issued by the IFRS Interpretations Committee ("IFRIC"). The Company applied, as of November 1, 2018, International Financial Reporting Standard ("IFRS") 9 Financial instruments. The nature and effect of those changes are disclosed in Note 5. The Company has not early adopted any other standard, interpretation or amendment that has been issued but is not yet effective.

These consolidated financial statements were authorized for issuance and release by the Company's Board of Directors on February 24, 2020.

(a) Basis of consolidation

These consolidated financial statements include the accounts of Micromem Technologies Inc. and its subsidiaries. All intercompany transactions and balances have been eliminated upon consolidation. The Company applies the acquisition method to account for business combinations. Acquisition-related costs are expensed as incurred.

The Company's wholly-owned subsidiaries include:

- (i) Micromem Applied Sensors Technology, Inc. ("MAST") which was incorporated in November 2007 and is domiciled in Delaware, United States. MAST has traditionally had the primary responsibility for the exploitation of the Company's technologies in conjunction with various strategic partners and customers.

Micromem Technologies Inc.
Notes to Consolidated Financial Statements
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3. Basis of presentation (continued)

(a) Basis of consolidation (continued)

(ii) 7070179 Canada Inc. which was incorporated in October 2008 under the Canada Business Corporations Act in Ontario, Canada. The Company has assigned to this entity its rights, title and interests in certain patents, which it previously held, directly, in exchange for common shares of this entity.

(iii)	Inactive subsidiaries	Domiciled in
	Memtech International Inc.	Bahamas
	Memtech International (USA) Inc., Pageant Technologies (USA) Inc.	United States
	Pageant Technologies Inc., Micromem Holdings (Barbados) Inc.	Barbados

(b) Basis of measurement

These consolidated financial statements have been prepared on the historical cost basis, except for financial instruments designated at fair value through profit and loss which are measured at their fair value.

(c) Functional and presentation currency

These consolidated financial statements are presented in United States dollars ("USD"), which is the functional currency of the Company and all of its subsidiaries.

(d) Use of estimates and judgments

The preparation of these consolidated financial statements in conformity with IFRSs requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. These estimates are reviewed periodically and adjustments are made as appropriate in the reporting period they become known. Items for which actual results may differ materially from these estimates are described in the following section.

(i) Fair value of options and conversion features

The Company makes estimates and utilizes assumptions in determining the fair value for stock options and derivative liabilities based on the application of the Black-Scholes option pricing model or the binomial option pricing model, depending on the circumstances. These pricing models require management to make various assumptions and estimates that are susceptible to uncertainty, including the volatility of the share price, expected dividend yield, expected term, expected risk-free interest rate, and exercise price in the binomial option pricing model.

(ii) Useful lives and recoverability of long-lived assets

Long-lived assets consist of property and equipment and patents. Amortization is dependent upon estimates of useful lives and impairment is dependent upon estimates of recoverable amounts. These are determined through the exercise of judgment and are dependent upon estimates that take into account factors such as economic and market conditions, frequency of use, anticipated changes in laws, and technological improvements.

(iii) Income taxes

Income taxes and tax exposures recognized in the consolidated financial statements reflect management's best estimate of the outcome based on facts known at the reporting date. When the Company anticipates a future income tax payment based on its estimates, it recognizes a liability. The difference between the expected amount and the final tax outcome has an impact on current and deferred taxes when the Company becomes aware of this difference.

When the Company incurs losses for income tax purposes, it assesses the probability of taxable income being available in the future, based on budgeted forecasts. These forecasts are adjusted for certain non-taxable income and expenses and specific rules on the use of unused credits and tax losses. When the forecasts indicate that sufficient future taxable income will be available to deduct the temporary differences, a deferred tax asset is recognized for all deductible temporary differences.

3. Basis of presentation (continued)

(d) Use of estimates and judgments (continued)

(iv) Going concern assumption

The Company applies judgment in assessing whether material uncertainties exist that would cause doubt as to the whether the Company could continue as a going concern.

(v) Expected credit losses on financial assets

Determining an allowance for expected credit losses ("ECLs") for all debt financial assets not held at fair value through profit or loss requires management to make assumptions about the historical patterns for the probability of default, the timing of collection and the amount of incurred credit losses, which are adjusted based on management's judgment about whether economic conditions and credit terms are such that actual losses may be higher or lower than historical patterns suggest.

4. Summary of significant accounting policies

The principal accounting policies applied to the preparation of these consolidated financial statements are set out below:

(a) Foreign currency translation

These consolidated financial statements are presented in USD, which is the functional currency of the Company and all of its subsidiaries. At each reporting date, foreign currency denominated monetary assets and liabilities are translated at year-end exchange rates. Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction. Income and expenses, and cash flows of foreign operations, are translated into USD using annual average exchange rates. Exchange differences arising from operating transactions are recorded in operating profit or loss for the period; exchange differences related to financing transactions are recognized in finance income or directly in equity.

(b) Financial instruments

The Company aggregates similar financial instruments into classes based on their nature and characteristics. All financial assets except those classified as fair value through profit or loss are reviewed at each reporting date to determine whether there is any indication of impairment. Financial assets are considered to be impaired when there is objective evidence that the estimated future cash flows of the investment have been affected as a result of one or more events that occurred after the initial recognition.

The Company's accounting policy for each class of financial instruments is as follows:

(i) Fair value through profit or loss

Financial instruments classified as fair value through profit or loss are reported at fair value at each reporting date, and any change in fair value is recognized in net income in the period during which the change occurs. In these consolidated financial statements, cash and derivative liabilities have been classified as fair value through profit or loss.

(ii) Loans and receivables and other financial liabilities

Financial instruments classified as loans and receivables and other financial liabilities are carried at amortized cost using the effective interest method. Transaction costs are included in the amount initially recognized. In these consolidated financial statements, development costs receivable have been classified as loans and receivables. Trade payables and other liabilities and convertible debentures have been classified as other financial liabilities.

(c) Convertible debentures and derivative liabilities

The Company issues convertible debentures used as bridge loans, which can be converted into common shares at the option of the holder, into a fixed number of shares for a fixed amount of consideration, or into a fixed number of shares for a variable amount of consideration, or into a variable number of shares.

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Notes to Consolidated Financial Statements
For the years ended October 31, 2019, 2018 and 2017
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4. Summary of significant accounting policies (continued)

(c) Convertible debentures and derivative liabilities (continued)

(i) Initial recognition

Upon initial recognition, the Company determines whether the convertible debentures consist of liability and equity components, or if both components represent liabilities.

For convertible debentures which provide conversion into a fixed number of shares, the liability component is recognized initially at the fair value of a similar, non-convertible liability. The equity component is recognized as the difference between the fair value of the instrument as a whole and the fair value of the liability component. Any directly attributable transaction costs are allocated to the liability and equity components in proportion to their initial carrying amounts.

For convertible debentures which provide conversion into a variable number of shares or into a fixed number of shares for a variable amount of consideration, the conversion option is accounted for as an embedded derivative, which is separated from the host contract. Upon initial recognition, the derivative liability is valued at fair value using a Black Scholes or a binomial pricing model. The carrying amount of the convertible debenture is recognized as the difference between the fair value of the instrument as a whole and the fair value of the derivative liability. Any directly attributable transaction costs allocated to the derivative liability are expensed in the period

(ii) Modifications and extinguishments

To the extent there are changes to the terms of outstanding convertible debentures, these changes may be recorded as a modification or an extinguishment. A substantial change in the terms of an existing financial liability is accounted for as an extinguishment of the original financial liability and the recognition of a new financial liability. The terms are substantially different if the discounted present value of the cash flows under the new terms is at least 10% different from the discounted present value of the remaining cash flows of the original financial liability. A modification of the original financial liability is accounted for as an adjustment to the effective interest rate.

(d) Property and equipment

Property and equipment are recorded at cost and are amortized over their estimated useful lives at the following annual rates and methods:

	<u>Method</u>	<u>Rate</u>
Computers	Declining balance	30%
Furniture and equipment	Declining balance	30%

(e) Impairment of long-lived assets

The Company follows the guidelines prescribed in IAS 36 with respect to the measurement for impairment of assets. The carrying amounts of property and equipment and patents are reviewed for impairment when events or changes in circumstances indicate that the carrying amounts may not be recoverable. When the carrying amount exceeds the estimated recoverable amount, the assets are written down to their recoverable amount.

The recoverable amount of long-lived assets is the greater of fair value less costs to sell and value in use. Impairment losses are recognized in the consolidated statements of loss and comprehensive loss.

(f) Development costs

Research costs are expensed in the period incurred. Development costs are expensed as incurred unless they meet the criteria for capitalization. Expenditures during the development phase are capitalized if the Company can demonstrate each of the following criteria: (i) the technical feasibility of completing the asset so that it will be available for use or sale, (ii) its intention to complete the asset and use or sell it, (iii) its ability to use or sell the asset, (iv) how the asset will generate probable future economic benefits, (v) the availability of adequate technical, financial and other resources to complete the development and to use or sell the asset, and (vi) its ability to measure reliably the expenditure attributable to the asset during its development; otherwise, these costs are expensed as incurred. Payments received from development partners on projects are recorded to deferred development costs as a recovery of costs incurred.

4. Summary of significant accounting policies (continued)

(g) Patents

Patents are recorded at cost and are amortized on a straight line basis over their estimated useful lives of 5 years.

(h) Stock-based compensation and other stock-based payments

Where equity instruments are granted to employees, they are recorded at the fair value of the equity instrument granted at the grant date. The grant date fair value is recognized in net income over the vesting period. Where equity instruments are granted to non-employees, they are recorded at the fair value of the goods or services received. When the value of goods or services received in exchange for the stock-based payment cannot be reliably estimated, the fair value is measured by use of a valuation model. The cost recognized for all equity-settled stock-based payments are reflected in contributed surplus, until the instruments are exercised. Upon exercise, shares are issued from treasury and the amount previously reflected in contributed surplus along with any proceeds paid upon exercise, are credited

(i) Income taxes

The Company accounts for its income taxes using the deferred tax assets and liabilities method. Deferred income tax assets and liabilities are determined based on the difference between the carrying amount and the tax basis of the assets and liabilities. Any change in the net amount of deferred income tax assets and liabilities is included in profit or loss or equity. Deferred income tax assets and liabilities are determined based on enacted or substantively enacted tax rates and laws which are expected to apply to taxable profit for the years in which the assets and liabilities will be recovered or settled. Deferred income tax assets are recognized when it is probable they will be realized. Deferred tax assets and liabilities are not discounted.

(j) Provisions

Provision for risks and expenses are recognized for probable outflows of resources that can be estimated and that result from present obligations resulting from past events. In the case where a potential obligation resulting from past events exists, but where occurrence of the outflow of resources is not probable or the estimate is not reliable, these contingencies are disclosed. Provisions, if any, are measured based on management's best estimates of outcomes on the basis of facts known at the reporting date.

(k) Share capital

Share capital is presented at the fair value of the shares issued. Costs related to the issuance of shares are reported in equity, net of tax, as a deduction from the issuance proceeds.

(l) Earnings or loss per share

The Company presents basic and diluted earnings per share data for its common shares. Basic earnings per share is calculated by dividing the profit or loss attributable to common shareholders of the Company by the weighted average number of common shares outstanding during the period. Diluted earnings per share is determined by adjusting the profit or loss attributable to common shareholders and the weighted average number of common shares outstanding, for the effects of all potentially dilutive common shares, which comprise stock options and convertible debentures.

5. Adoption of new accounting pronouncements

(a) Amendments to IFRS 2 Share-based payments

IFRS 2 clarifies how to account for certain types of share-based payment transactions. The amendments provide requirements on the accounting for the effects of vesting and non-vesting conditions on the measurement of cash-settled share-based payments, share-based payment transactions with a net settlement feature for withholding tax obligations, and a modification to the terms and conditions of a share-based payment that changes the classification of the transaction from cash-settled to equity-settled. The effective date of these amendments is for annual periods beginning January 1, 2018. The Company has adopted these amendments as of the effective date and has assessed no significant changes as a result of the adoption of these amendments.

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5. Adoption of new accounting pronouncements (continued)

(b) IFRS 9 Financial instruments

IFRS 9 addresses classification and measurement of financial assets and replaces the multiple category and measurement models in IAS 39 for debt instruments with a new mixed measurement model having only two categories: amortized cost, and fair value through profit or loss. IFRS 9 also replaces the models for measuring equity instruments and such instruments are either recognized at fair value through profit or loss or at fair value through other comprehensive income ("FVOCI"). The effective date of this standard is for annual periods beginning January 1, 2018. The Company has adopted this new standard as of its effective date on a retrospective basis with the exception of financial assets that were derecognized at the date of initial application, November 1, 2018. There was no significant impact on these consolidated financial statements as a result of the adoption of this new standard. The new classification and measurement of the Company's financial assets are as follows:

(i) Amortized cost

This category includes financial assets that are held within a business model with the objective to hold the financial assets in order to collect contractual cash flows that meet the solely principal and interest ("SPPI") criterion. Financial assets classified in this category are measured at amortized cost using the effective interest method.

(ii) Fair value through profit or loss ("FVTPL")

This category includes derivative instruments as well as quoted equity instruments which the Company has not irrevocably elected, at initial recognition or initial application date, to classify at FVOCI. This category would also include debt instruments whose cash flow characteristics fail the SPPI criterion or are not held within a business model whose objective is either to collect contractual cash flows, or to both collect and sell contractual cash flows. Financial assets in this category are recorded at fair value with changes recognized in profit or loss.

(iii) Impairment of financial assets

Critical to the determination of ECLs is the definition of default and the definition of a significant increase in credit risk. The definition of default is used in measuring the amount of ECLs and in the determination of whether the loss allowance is based on 12-month or lifetime ECLs. The Company considers the following as constituting an event of default: the borrower is past due more than 90 days on any material credit obligation, or the borrower is unlikely to pay its credit obligations to the Company in full. The Company monitors all financial assets that are subject to the impairment requirements to assess whether there has been a significant increase in credit risk since initial recognition. If there has been a significant increase in credit risk, the Company will measure the loss allowance based on lifetime rather than 12-month ECLs. In assessing whether the credit risk on a financial asset has increased significantly since initial recognition, the Company compares the risk of a default on the financial asset at the current reporting date against the risk of a default that was anticipated when the financial asset was first recognized, adjusted for remaining maturity of the instrument.

The IFRS 9 requirements for the classification and measurement of financial liabilities are substantially unchanged from IAS 39 except for the removal of cost exception for derivative financial liabilities and changes in fair value as a result of entity's own credit risk now recognized in OCI. The Company has assessed no change in classification and measurement of financial liabilities.

The assessment of the Company's business models was made as of the date of initial application, November 1, 2018, and then applied retrospectively to those financial instruments that were not derecognized before November 1, 2018. There was no adjustment to opening accumulated deficit resulting from the retrospective application of IFRS 9 to these financial instruments.

	IFRS 9	IAS 39
Financial assets		
Cash	Amortized cost	FVTPL
Development costs receivable	Amortized cost	Amortized cost
Other receivables	Amortized cost	Amortized cost
Financial liabilities		
Trade payables and other liabilities	Amortized cost	Amortized cost
Convertible debentures	Amortized cost	Amortized cost
Derivative liabilities	FVTPL	FVTPL

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5. Adoption of new accounting pronouncements (continued)

(c) IFRS 15 Revenue from contracts with customers

IFRS 15 replaces the previous guidance on revenue. This standard specifies how and when revenue should be recognized based on a five-step model, which is applied to all contracts with customers. The revenue recognition model has changed from one based on the transfer of risks and rewards of ownership to one based on the transfer of control. IFRS 15 became effective for annual periods beginning on or after January 1, 2018, with early adoption permitted. The Company has adopted this new standard as of its effective date, using the full retrospective method of adoption. The Company does not have any current contracts with customers and has assessed no changes to current and prior reporting periods as a result of the adoption of this new standard.

6. New and revised standards and interpretations issued but not yet effective

(a) IFRS 16 Leases

IFRS 16 replaces the previous guidance on leases. This standard provides a single recognition and measurement model to be applied by lessees to leases, with required recognition of assets and liabilities for most leases. This standard is effective for annual periods beginning on or after January 1, 2019, with early adoption permitted. The Company will adopt this new standard as of its effective date.

The Company has reviewed all of the Company's leasing arrangements as at October 31, 2019, in respect of the new lease standard. The standard will primarily affect the accounting of the Company's operating leases. At the reporting date, the Company has non-cancellable operating lease commitments of \$132,165 CDN (Note 17). The Company intends to apply the simplified transition approach and will not restate comparative amounts to the year prior to adoption. The Company expects to approximately recognize net right-of-use assets of \$74,307, current lease liabilities of \$36,442, and non-current lease liabilities of \$37,865. The Company does not expect any adjustment to opening accumulated deficit as at November 1, 2019. The Company expects that profit (loss) will decrease (increase) by approximately \$4,374 for the year ended October 31, 2020 as a result of the application of IFRS 16.

(b) IFRIC 23 Uncertainty over income tax treatments

IFRIC 23 clarifies the application of recognition and measurement requirements in IAS 12, Income Taxes, when there is uncertainty over income tax treatments. It specifically addresses whether an entity considers each tax treatment independently or collectively, the assumptions an entity makes about the examination of tax treatments by taxation authorities, how an entity determines taxable profit (tax loss), tax bases, unused tax losses, unused tax credits and tax rates, and how an entity considers changes in facts and circumstances. IFRIC 23 will be effective for the annual periods beginning on or after January 1, 2019, with earlier application permitted. The Company will adopt this interpretation as of its effective date. The Company has performed a preliminary analysis and has not assessed any significant impacts as a result of the adoption of this standard.

7. Development costs receivable

The Company incurs development costs, and recovers from its development partners, a portion of the costs it has incurred in accordance with meeting milestones as stipulated in development contracts. The remaining balances outstanding from its development partners are recorded as development costs receivable on the statement of financial position.

8. Patents

	<u>November 1, 2017</u>	<u>Additions</u>	<u>October 31, 2018</u>	<u>Additions</u>	<u>Impairment</u>	<u>October 31, 2019</u>
Cost	\$ 782,828	\$ 121,603	\$ 904,431	\$ -	\$ (223,143)	\$ 681,288
Accumulated amortization	351,366	156,960	508,326	152,962	-	661,288
Net book value	<u>\$ 431,462</u>		<u>\$ 396,105</u>			<u>\$ 20,000</u>

The Company holds several patents in the United States for its Multimodal Fluid Condition Sensor Platform. In prior years, the Company had negotiated with a major automotive company and a Tier 1 manufacturer for the development and commercial exploitation of this patented technology. In 2019, the Company discontinued provisional patent applications in international jurisdictions and determined that patents was impaired, its carrying amount was higher than its recoverable amount. The value in use, measured as the present value of the future cash flows expected to be derived from this asset class, has been estimated at a minimum of \$20,000 at October 31, 2019. Accordingly, the Company has recorded an impairment reserve of \$223,143 in the current fiscal year. The Company maintains that there remains significant potential value in its existing patents in terms of potential licensing agreements and royalty fees once it begins to exploit this asset class in the future.

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9. Convertible debentures

The Company issues three types of convertible debentures: USD denominated convertible debentures with an equity component, Canadian dollar ("CDN") denominated convertible debentures with an embedded derivative due to variable consideration receivable upon conversion caused by foreign exchange, and USD denominated convertible debentures with an embedded derivative caused by variable conversion prices.

	Convertible debentures		Derivative liabilities		Equity component of convertible debentures	
	2019	2018	2019	2018	2019	2018
(a)	\$ 2,511,514	\$ 2,419,877	\$ 204,366	\$ 151,918	\$ 50,147	\$ 70,283
(b)	87,560	56,694	561,059	498,198	-	-
	<u>\$ 2,599,074</u>	<u>\$ 2,476,571</u>	<u>\$ 765,425</u>	<u>\$ 650,116</u>	<u>\$ 50,147</u>	<u>\$ 70,283</u>

(a) USD denominated debentures with equity components and CDN denominated debentures with embedded derivatives

All loan principal amounts are expressed in original currency and all remaining dollar amounts expressed in USD. Convertible debentures outstanding as at October 31:

	USD (equity component)		CDN (embedded derivative)	
	2019	2018	2019	2018
Loan Principal				
Opening balance	\$ 931,000	\$ 730,000	\$ 2,234,294	\$ 2,392,860
Issuance during the year	-	231,000	165,266	1,035,800
Repayment or conversion	-	(30,000)	(128,543)	(1,194,366)
Outstanding at year-end	<u>\$ 931,000</u>	<u>\$ 931,000</u>	<u>\$ 2,271,017</u>	<u>\$ 2,234,294</u>

Terms of Loan

Annual interest rate	12% - 24%	12% - 24%	12% - 24%	12% - 24%
Effective annual interest rate	24% - 36%	36% - 37%	13% - 645%	23% - 398%
Conversion price to common shares	\$0.04 - \$0.07	\$0.04 - \$0.21	\$0.05 - \$0.15	\$0.05 - \$0.15
Remaining life (in months)	1 - 6	0 - 7	0 - 12	0 - 7

Consolidated Statements of Financial Position

Carrying value of loan principal	\$ 906,993	\$ 894,838	\$ 1,464,416	\$ 1,428,616
Interest payable	18,661	15,100	121,444	81,323
Convertible debentures	<u>\$ 925,654</u>	<u>\$ 909,938</u>	<u>\$ 1,585,860</u>	<u>\$ 1,509,939</u>
Derivative liability	\$ -	\$ -	\$ 204,366	\$ 151,918
Equity component	\$ 50,147	\$ 70,283	\$ -	\$ -

Consolidated Statements of Operations and Comprehensive Loss

Accretion expense	\$ 118,749	\$ 110,469	\$ 914,780	\$ 1,652,007
Interest expense	\$ 191,001	\$ 168,052	\$ 229,673	\$ 284,908
Gain on revaluation of derivative liability	\$ -	\$ -	\$ (846,401)	\$ (1,322,507)
Loss on conversion of debentures	\$ -	\$ -	\$ -	\$ 6,261
Loss (gain) on extinguishment	\$ -	\$ 2,792	\$ (2,865)	\$ (401,983)

Consolidated Statements of Changes in Equity

Amount of principal converted to common shares	\$ -	\$ -	\$ -	\$ 19,023
Amount of interest converted to common shares	\$ -	\$ -	\$ -	\$ 60,634

Number of common shares issued on conversion of convertible debentures

	-	-	-	770,962
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Consolidated Statements of Cash Flows

Amount of principal repaid in cash	\$ -	\$ 30,000	\$ 96,598	\$ 632,080
Amount of interest repaid in cash	\$ 187,440	\$ 161,424	\$ 159,801	\$ 161,506

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9. Convertible debentures (continued)

(b) USD denominated debentures with embedded derivatives

During the year ended October 31, 2019, the Company has incurred \$72,476 (2018 - \$40,414; 2017 - \$nil) financing costs which primarily consist of early repayment premiums and admin fees relating to the convertible debentures, of which \$21,000 (2018 - \$nil; 2017 - \$nil) was converted into common shares.

Convertible debentures outstanding as at October 31:

	(i)		(ii)	
	2019	2018	2019	2018
Loan Principal				
Opening balance	\$ 213,600	\$ -	\$ 101,250	\$ -
Issuance during the year	563,600	278,600	307,250	142,750
Conversion	(397,600)	(65,000)	(287,500)	(41,500)
Repayment	(75,600)	-	-	-
Outstanding at year-end	<u>\$ 304,000</u>	<u>\$ 213,600</u>	<u>\$ 121,000</u>	<u>\$ 101,250</u>
Terms of Loan				
Annual interest rate	4%	12%	10%	10%
Effective annual interest rate	139% - 5044%	4380% - 4932%	4338% - 5368%	3873% - 5658%
Conversion price to common shares	(i)	(i)	(ii)	(ii)
Remaining life (in months)	6 - 11	4 - 12	3 - 12	6 - 8
Consolidated Statements of Financial Position				
Carrying value of loan principal	\$ 39,993	\$ 772	\$ 23,429	\$ 262
Interest payable	10,953	12,973	13,185	4,238
Convertible debentures	<u>\$ 50,946</u>	<u>\$ 13,745</u>	<u>\$ 36,614</u>	<u>\$ 4,500</u>
Derivative liability	\$ 370,759	\$ 190,274	\$ 190,300	\$ 89,328
Consolidated Statements of Operations and Comprehensive Loss				
Accretion expense	\$ 57,111	\$ 2,496	\$ 165,753	\$ 264
Interest expense	\$ 27,053	\$ 11,769	\$ 21,916	\$ 4,670
Loss on revaluation of derivative liability	\$ 196,842	\$ 8,690	\$ 294,673	\$ 16,332
Loss on conversion of debentures	\$ 49,738	\$ 3,652	\$ 52,181	\$ 10,513
Loss on extinguishment	\$ 2,219	\$ -	\$ -	\$ -
Consolidated Statements of Changes in Equity				
Amount of principal converted to common shares	\$ 397,600	\$ 65,000	\$ 287,500	\$ 41,500
Amount of interest converted to common shares	\$ 23,100	\$ -	\$ 21,969	\$ 6,400
Number of common shares issued on conversion of convertible debentures	29,106,847	2,456,707	33,421,726	982,921
Consolidated Statements of Cash Flow				
Amount of principal repaid in cash	\$ 75,600	\$ -	\$ -	\$ -
Amount of interest repaid in cash	\$ 5,973	\$ -	\$ -	\$ -

(i) Conversion price defined as 75% multiplied by average of lowest 3 closing stock prices for the 10 trading days prior to conversion date.

(ii) Conversion price defined as 75% multiplied by lowest stock price for the 20 trading days prior to conversion date.

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9. Convertible debentures (continued)

(b) USD denominated debentures with embedded derivatives (continued)

Convertible debentures outstanding as at October 31:

	(iii)		(iv)	
	2019	2018	2019	2018
Loan Principal				
Opening balance	\$ -	\$ 100,200	\$ 308,000	\$ 343,000
Issuance during the year	-	175,800	-	308,000
Conversion	-	(276,000)	(308,000)	(343,000)
Outstanding at year-end	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 308,000</u>
Terms of Loan				
Annual interest rate	n/a	12%	5%	5%
Effective annual interest rate	n/a	264% - 6002%	5234%	160% - 5242%
Conversion price to common shares	(iii)	(iii)	(iv)	(iv)
Remaining life (in months)	n/a	n/a	n/a	1 - 5
Consolidated Statements of Financial Position				
Carrying value of loan principal	\$ -	\$ -	\$ -	\$ 26,755
Interest payable	-	-	-	11,694
Convertible debentures	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 38,449</u>
Derivative liability	\$ -	\$ -	\$ -	\$ 218,596
Consolidated Statements of Operations and Comprehensive Loss				
Accretion expense	\$ -	\$ 61,453	\$ 261,042	\$ 212,655
Interest expense	\$ -	\$ 14,816	\$ 22,443	\$ 20,563
Loss (gain) on revaluation of derivative liability	\$ -	\$ 19,375	\$ 11,451	\$ 183,392
Loss on conversion of debentures	\$ -	\$ 43,426	\$ -	\$ -
Loss on extinguishment	\$ -	\$ -	\$ -	\$ -
Consolidated Statements of Changes in Equity				
Amount of principal converted to common shares	\$ -	\$ 276,000	\$ 308,000	\$ 343,000
Amount of interest converted to common shares	\$ -	\$ 10,145	\$ 18,339	\$ 12,554
Number of common shares issued on conversion of convertible debentures	-	6,076,094	19,510,390	5,934,267

(iii) Conversion price defined as 80% multiplied by lowest 3 closing stock prices for the 10 trading days prior to conversion date.

(iv) Conversion price defined as 75% multiplied by lowest stock price for the 15 trading days prior to conversion date.

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9. Convertible debentures (continued)

(c) Fair value of derivative liabilities outstanding

The fair value of the derivative liabilities is determined in accordance with the Black Scholes or binomial option-pricing models, depending on the circumstances. The underlying assumptions are as follows:

	<u>2019</u>	<u>2018</u>
Share price	\$0.02	\$0.03
Exercise price	\$0.01 - \$0.11	\$0.02 - \$0.11
Volatility factor (based on historical volatility)	173% - 321%	168% - 297%
Risk free interest rate	1.67% - 1.69%	1.74% - 2.22%
Expected life of conversion features (in months)	0 - 12	0 - 12
Expected dividend yield	0%	0%
CDN to USD exchange rate (as applicable)	0.7582	0.7609
Call value	\$0.00 - \$0.02	\$0.00 - \$0.02

Volatility was estimated using the historical volatility of the Company's stock prices for common shares.

10. Share capital

(a) Authorized and outstanding shares

The Company has two classes of shares as follows:

- (i) Special redeemable voting preference shares - 2,000,000 authorized, nil issued and outstanding.
- (ii) Common shares without par value – an unlimited number authorized. The holders of the common shares are entitled to receive dividends which may be declared from time to time, and are entitled to one vote per share at shareholder meetings of the Company. All common shares are ranked equally with regards to the Company's residual assets.

(b) Private placements

- (i) In 2019, the Company completed four private placements with investors consisting of common shares with no warrants, pursuant to prospectus and registration exemptions set forth in applicable securities law. The Company received net proceeds of \$212,968 and issued a total of 4,961,059 common shares.
- (ii) In 2018, the Company completed thirty-three private placements with investors consisting of common shares with no warrants, pursuant to prospectus and registration exemptions set forth in applicable securities law. The Company received net proceeds of \$866,200 and issued a total of 14,739,272 common shares.
- (iii) In 2017, the Company completed twenty-four private placements with investors consisting of common shares, with no warrants, pursuant to prospectus and registration exemptions set forth in applicable securities law. The Company received net proceeds of \$719,403 and issued a total of 3,873,223 common shares.

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11. Stock options

(a) Stock option plan

The Company has a fixed stock option plan. Under the Company's stock option plan (the "Plan"), the Company may grant options for up to 18,840,000 shares of common stock to directors, officers, employees or consultants of the Company and its subsidiaries. The exercise price of each option is equal to or greater than the market price of the Company's shares on the date of grant unless otherwise permitted by applicable securities regulations. An option's maximum term under the Plan is 10 years. Stock options are fully vested upon issuance by the Company unless the Board of Directors stipulates otherwise by Directors' resolution.

(b) Summary of changes

	<u>Number of options</u>	<u>Weighted average exercise price</u>
Outstanding at November 1, 2017	6,595,000	\$ 0.37
Granted ⁽ⁱ⁾	2,200,000	0.10
Expired	<u>(2,545,000)</u>	<u>0.34</u>
Outstanding at October 31, 2018	6,250,000	\$ 0.29
Expired	<u>(520,000)</u>	<u>0.34</u>
Outstanding at October 31, 2019	<u>5,730,000</u>	<u>\$ 0.25</u>

⁽ⁱ⁾ The fair value of the options granted was determined in accordance with the Black Scholes option-pricing model. The underlying assumptions are as follows:

	<u>2018</u>
Share price	\$0.09
Exercise price	\$0.10
Volatility factor (based on historical volatility)	95%
Risk free interest rate	2.07%
Expected life of conversion features (in months)	60
Expected dividend yield	0%
Forfeiture rate	0%

All options vest immediately upon issuance. There were no options issued to directors and officers during the year ended October 31, 2019 (2018 - 700,000; 2017 - 2,500,000) nor employees (2018 - 1,500,000; 2017 - 390,000).

(c) Stock options outstanding at October 31, 2019

<u>Date of issue</u>	<u>Expiry Date</u>	<u>Number of options</u>	<u>Weighted average Exercise price</u>	<u>Remaining contractual life (years)</u>
June 4, 2015	June 4, 2020	300,000	\$ 0.49	0.6
August 20, 2015	August 20, 2020	940,000	0.46	0.8
September 30, 2015	September 30, 2020	250,000	0.40	0.9
December 30, 2016	December 30, 2021	2,040,000	0.25	2.2
June 29, 2018	June 29, 2023	<u>2,200,000</u>	<u>0.10</u>	<u>3.7</u>
Outstanding and exercisable at October 31, 2019		<u>5,730,000</u>	<u>\$ 0.25</u>	<u>2.4</u>

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12. Loss per share

Basic and diluted loss per share are calculated using the following numerators and denominators:

Numerator	<u>2019</u>	<u>2018</u>	<u>2017</u>
Loss attributable to common shareholders	\$ (2,832,864)	\$ (2,362,239)	\$ (4,346,200)
Loss used in computation of basic and diluted loss per	\$ (2,832,864)	\$ (2,362,239)	\$ (4,346,200)
Denominator	<u>2019</u>	<u>2018</u>	<u>2017</u>
Weighted average number of common shares for computation of basic and diluted loss per share	<u>288,398,051</u>	<u>237,242,674</u>	<u>207,131,781</u>

For the year ended October 31, 2019, 2018 and 2017, all stock options and conversion options were anti-dilutive and, therefore, are excluded from the calculation of diluted loss per share.

13. Income taxes

- (a) The Company has non-capital losses of approximately \$30.5 million available to reduce future taxable income, the benefit of which has not been recognized in these consolidated financial statements. At October 31, 2019, the tax losses expire as follows:

	<u>Canada</u>	<u>Other foreign</u>	<u>Total</u>
2026	\$ 1,824,942	-	\$ 1,824,942
2027	1,534,633	-	1,534,633
2028	-	-	-
2029	1,572,795	452,762	2,025,557
2030	2,122,111	1,880,897	4,003,008
2031	1,278,506	18,526	1,297,032
2032	1,416,917	325,793	1,742,710
2033	1,717,443	157,463	1,874,906
2034	2,484,557	679,089	3,163,646
2035	2,807,765	570,901	3,378,666
2036	3,295,071	441,019	3,736,090
2037	2,637,800	232,719	2,870,519
2038	1,783,250	-	1,783,250
2039	1,224,688	5,254	1,229,942
	<u>\$ 25,700,478</u>	<u>\$ 4,764,423</u>	<u>\$ 30,464,901</u>

- (b) In addition, the Company has available capital loss carry forwards of approximately \$1.3 million to reduce future taxable capital gains, the benefit of which has not been recognized in these consolidated financial statements. Capital losses carry forward indefinitely.
- (c) Deferred income taxes reflect the net tax effect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and amounts used for income tax purposes. Significant components of the Company's deferred tax assets and liabilities are as follows:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Non-capital losses and other	\$ 8,073,286	\$ 7,698,859	\$ 7,277,434
Capital losses	175,090	175,090	350,180
Property, equipment, patents and deferred costs	1,668,632	1,567,228	1,598,394
	<u>\$ 9,917,008</u>	<u>\$ 9,441,177</u>	<u>\$ 9,226,008</u>
Deferred tax asset not recognized	<u>(9,917,008)</u>	<u>(9,441,177)</u>	<u>(9,226,008)</u>
	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>

As at October 31, 2019 and 2018, the Company assessed that it is not probable that sufficient taxable profit will be available to use deferred income tax assets based on operating losses in prior years; therefore, there are no balances carried in the consolidated statements of financial position for such assets.

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13. Income taxes (continued)

- (d) The reconciliation of income tax attributed to continuing operations computed at the statutory tax rates to income tax expense is as follows:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Loss before income taxes	\$ (2,832,864)	\$ (2,362,239)	\$ (4,346,200)
Statutory tax rate	26.50%	26.50%	26.50%
Expected income tax recovery	\$ (750,709)	\$ (625,993)	\$ (1,151,743)
Non-deductible expenses and other items	270,610	182,056	413,499
Effect of exchange rate on deferred tax assets carried forward	4,269	225,846	424,023
Effect of higher tax rates in foreign jurisdiction	-	-	163,651
Change in deferred tax assets not recognized	475,830	218,091	150,570
	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>

14. Operating expenses

- (a) General and administration

The components of general and administration expenses are as follows:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
General and administrative	\$ 56,720	\$ 63,936	\$ 98,187
Rent and occupancy	64,647	70,674	72,725
Office insurance	26,812	117,615	54,023
Investor relations, listing and filing fees	49,029	53,113	80,486
	<u>\$ 197,208</u>	<u>\$ 305,338</u>	<u>\$ 305,421</u>

- (b) Professional, other fees and salaries

The components of professional, other fees and salaries expenses are as follows:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Professional fees	\$ 157,354	\$ 165,685	\$ 224,139
Consulting fees	53,845	316,815	813,735
Salaries and benefits	230,782	264,780	395,239
	<u>\$ 441,981</u>	<u>\$ 747,280</u>	<u>\$ 1,433,113</u>

15. Supplemental cash flow information

The following provides a reconciliation of the cash flows from convertible debentures and derivative liabilities :

	<u>2019</u>	<u>2018</u>
Balance - beginning of year	\$ 3,126,687	\$ 2,978,751
Cash flows from financing activities:		
Proceeds from issuance of convertible debentures	780,891	1,457,983
Repayments of convertible debentures	(172,198)	(662,080)
Non-cash changes:		
Increase in loan principal ⁽ⁱ⁾	60,000	-
Accretion expense	1,517,436	2,039,344
Accrued interest on convertible debentures	164,243	125,328
Gain on revaluation of derivative liabilities	(343,436)	(1,094,718)
Gain on extinguishment of debt	(646)	(399,191)
Convertible debentures converted into common shares	(1,636,825)	(1,093,842)
Renewal of convertible debentures	(106,594)	(137,854)
Foreign exchange gain	(25,059)	(87,034)
Balance - end of year	<u>\$ 3,364,499</u>	<u>\$ 3,126,687</u>

- ⁽ⁱ⁾ In accordance with the convertible debenture agreements, additional consideration was provided as of the conversion date, based on the stipulated conversion price.

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16. Key management compensation and related party transactions

The Company reports the following related party transactions:

(a) 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) are summarized as follows:

	<u>2019</u>	<u>2018</u>	<u>2017</u>
Professional, other fees, and salaries	\$ 4,684	\$ 235,297	\$ 667,724
Stock-based compensation	-	44,740	382,531
	<u>\$ 4,684</u>	<u>\$ 280,037</u>	<u>\$ 1,050,255</u>

In 2019, these parties were not awarded any options (2018 - 700,000 options at an exercise price of \$0.10; 2017 - 1,950,000 options at an exercise price of \$0.25).

(b) Trade payables and other liabilities

As at October 31, 2019 and 2018, the Company reports in trade payables and other liabilities a balance owing to the former President of MAST of \$193,174 which represents alleged outstanding wages payable, see Note 18(b).

As at October 31, 2019 and 2018, the Company reports \$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 alleged services provided in 2015; there have been no invoices submitted by this related party after October 31, 2015.

(c) Convertible debentures

In May 2019, the CEO of the Company subscribed for 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 January 2018, the CEO of the Company subscribed for a convertible debenture of \$150,000 CDN (\$114,138 USD). At October 31, 2019, \$52,319 CDN (\$39,756 USD)(October 31, 2018 - \$ 100,862 CDN, \$76,713 USD) in loan principal remains outstanding.

17. Commitments

The Company has extended the lease for its 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:

	<u>CDN</u>
Less than one year	\$ 48,060
Two to five years	84,105
	<u>\$ 132,165</u>

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18. Contingencies

- (a) The Company has agreed to indemnify its directors and officers and certain of its employees in accordance with the Company's bylaws. The Company maintains insurance policies that may provide coverage against certain claims.
- (b) On October 7, 2018, the former President of MAST, Inc. (a 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 October 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. The matter is currently at the pre-trial stage, pending discoveries and remains as a contingency at February 24, 2020.

19. Financial risk management

- (a) Currency risk

Currency risk is the risk that the fair value of, or future cash flows from, the Company's financial instruments will significantly fluctuate due to changes in foreign exchange rates. The Company is exposed to currency risk to the extent that it incurs expenses and issues convertible debentures denominated in Canadian dollars. The Company manages currency risk by monitoring the Canadian position of these monetary financial instruments on a periodic basis throughout the course of the reporting period.

As at October 31, 2019, balances that are denominated in CDN are as follows:

	<u>2019</u>	<u>2018</u>
Cash (bank indebtedness)	\$ (3,188)	\$ 99,139
Trade payables and other liabilities	\$ 387,766	\$ 318,172
Convertible debentures	\$ 2,010,940	\$ 1,877,487
Derivative liabilities	\$ 207,161	\$ 199,650

A 10% strengthening of the USD against the CDN would decrease accumulated deficit by \$126,371 as at October 31, 2019 (2018 - decrease accumulated deficit by \$158,836). A 10% weakening of the USD against the CDN would have had the opposite effect of the same magnitude.

- (b) Interest rate risk

Interest rate risk is the risk that the fair value of, or future cash flows from, the Company's financial instruments will significantly fluctuate due to changes in market interest rates. The Company is exposed to interest rate risk on its interest-bearing convertible debentures. This exposure is limited due to the short-term nature of the convertible debentures.

- (c) Liquidity risk

Liquidity risk is the risk that the Company will not be able to meet its financial obligations as they become due. The Company's policy is to review liquidity resources and ensure that sufficient funds are available to meet financial obligations as they become due. Further, the Company's management is responsible for ensuring funds exist and are readily accessible to support business opportunities as they arise. The Company's funding is provided in the form of capital raised through the issuance of shares on conversion of convertible debentures. All financial liabilities are due within 1 year as at October 31, 2019.

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19. Financial risk management (continued)

(c) Liquidity risk (continued)

(i) Trade payables

The following represents an analysis of the maturity of trade payables:

	<u>2019</u>	<u>2018</u>
Less than 30 days past billing date	\$ 18,201	\$ 87,356
31 to 90 days past billing date	13,259	12,837
Over 90 days past billing date	781,230	740,131
	<u>\$ 812,690</u>	<u>\$ 840,324</u>

As at October 31, 2019, trade payables include \$540,000 (2018 - \$334,000) of invoices which the Company has disputed and/or are stale-dated. The Company does not anticipate that it will be required to discharge such amounts.

(ii) Convertible debentures and derivative liabilities

The following represents an analysis of the maturity of the convertible debentures and derivative liabilities:

	<u>2019</u>		<u>2018</u>	
	<u>Convertible debentures</u>	<u>Derivative liability</u>	<u>Convertible debentures</u>	<u>Derivative liability</u>
Less than three months	\$ 754,799	\$ 75,528	\$ 862,686	\$ 90,142
Three to six months	1,168,349	71,326	1,346,315	382,309
Six to twelve months	675,926	618,571	267,570	177,665
	<u>\$ 2,599,074</u>	<u>\$ 765,425</u>	<u>\$ 2,476,571</u>	<u>\$ 650,116</u>

(d) Credit risk

Credit risk is the risk of financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Company's cash, development costs receivable, and other receivables. The maximum exposure to credit risk is the carrying value of these financial assets, which amounted to \$46,056 as at October 31, 2019 (2018 - \$288,673). The Company reduces its credit risk by assessing the credit quality of counterparties, taking into account their financial position, past experience and other factors.

The Company held cash of \$46,056 at October 31, 2019 (2018 - \$206,832). The cash is held with central banks and financial institution counterparties that are highly rated. The Company has assessed no significant change in credit risk and an insignificant loss allowance, which was not recognized in these consolidated financial statements.

20. Fair value hierarchy

Assets and liabilities recorded at fair value in the consolidated statements of financial position are classified using a fair value hierarchy that reflects the significance of the inputs used in making the measurements. The fair value hierarchy has the following levels:

Level 1 - valuation based on quoted prices (unadjusted) in active markets for identical assets and liabilities. There are no assets or liabilities in this category in these consolidated financial statements.

Level 2 - valuation techniques based on inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly. In these consolidated financial statements, derivative liabilities are included in this category.

Level 3 - valuation techniques using the inputs for the asset or liability that are not based on observable market data. There are no assets or liabilities in this category in these consolidated financial statements.

The Company's policy for determining when transfers between levels of fair value hierarchy occur is based on the date of the event or changes in circumstances that caused the transfer. During the year ended October 31, 2019 and 2018, there were no transfers between levels.

21. Capital risk management

The Company's objectives when managing capital are to (i) maintain its ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders, (ii) ensure it has sufficient cash resources to further develop and market its technologies and (iii) maintain its ongoing operations. The Company defines its capital as its net assets (total assets less total liabilities). In order to secure the additional capital necessary to pursue these objectives, the Company may attempt to raise additional funds through the issuance of equity or convertible debentures or by securing strategic partners. The Company is not subject to externally imposed capital requirements and there has been no change with respect to the overall capital risk management strategy during the year ended October 31, 2019.

22. Subsequent events

Subsequent to October 31, 2019:

- (a) The Company secured, in aggregate, \$411,891 in convertible debentures with terms of 6 to 12 months. These loans have conversion features which become effective six months after initiation date.
- (b) The Company repaid \$122,764 CDN and \$80,000 USD in convertible debentures and \$179,370 in convertible debentures were converted into 15,927,765 common shares.
- (c) The Company extended convertible debentures that were within 4 months of maturity date from October 31, 2019. Extension terms ranged from 2 months to 6 months.
- (d) The Company secured 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 \$402,161 and issued a total of 10,008,491 common shares.