

California Nanotechnologies Corp.  
For the six month fiscal period ended August 31, 2018

## MANAGEMENT DISCUSSION AND ANALYSIS

This Management Discussion and Analysis (“MD&A”) should be read in conjunction with the Condensed Consolidated Financial Statements and related notes of California Nanotechnologies Corp. (the “Company” or “Cal Nano”) for the six month fiscal period ended August 31, 2018. The Company’s functional and presentation currency is U.S. dollars and all amounts in this MD&A are expressed in U.S. dollars. The Company reports its financial position, results of operations and cash flows in accordance with International Financial Reporting Standards (“IFRS”), as issued by the International Accounting Standards Board (“IASB”). This MD&A has been completed as of October 10, 2018.

### A. Company Overview

Cal Nano’s mission is to pioneer and commercialize next-generation Nanophase and advanced materials and products to fulfill rising industry demand. Cal Nano’s technologies enhance material performance by improving engineering properties. Cal Nano’s primary technologies include Spark Plasma Sintering and cryogenic milling. The Company is now focusing on commercialization efforts. Target markets are the microchip fabrication, aerospace, sports and recreation, defense, automotive, medical, and the oil and gas industries.

As the Official North American Technical and Training Partner of Fuji-SPS, pioneer of Spark Plasma Sintering (“SPS”) technology, Cal Nano offers both SPS services and equipment support. SPS is the leading technology for sintering Nanophase, Functionally Graded, Diffusion Bonded, Thermoelectric, and other advanced materials. The Company is enhancing the technology and exploring more potential commercial opportunities via extensive collaborations and partnerships with select universities and tier one production suppliers. The Company recently purchased a Fuji Mark V SPS for full-scale production activities.

Since inception, Cal Nano has been actively building industry recognition through published papers and other scientific endeavors. A listing of trade show activities is included at the end of this document.

### B. Markets

Cal Nano currently services customers in the micro-chip fabrication, aerospace, academic, automotive, and sporting industries. A related company, Omni-Lite Industries, has many long-standing relationships in these areas, providing further access to future commercial customers.

## C. Financial Results

**Revenue:** For the six month fiscal period ended August 31, 2018, the Company reported revenue of \$357,719 compared to \$194,095 from the prior six month fiscal period, an increase of 84%.

Sales by segment are summarized below:

<b>Division</b>	<b>Spark Plasma Sintering</b>	<b>Research and Development</b>	<b>Sport and Recreation</b>
<b>Six months 2018</b>	<b>65%</b>	<b>14%</b>	<b>21%</b>
Six months 2017	60%	17%	23%

**Net Income:** Net loss for the fiscal period ended was \$38,456 compared to \$23,812 in the prior fiscal period. Depreciation expense rose as the Company began operating the additional SPS equipment in October 2017 that was purchased for \$675,750.

**Operating Expenses:** Overall operating expenses of \$228,344 decreased by 14% when compared to the prior fiscal period.

**Other income:** Interest expense increased due to the equipment loan used to purchase the additional SPS equipment.

**Earnings (loss) per share:** Basic loss per share was \$nil. The weighted average number of shares was 31,430,296.

The diluted loss per share was \$nil. At August 31, 2018, the diluted weighted average number of shares was 31,430,296.

The basic gain (loss) per common share is calculated using net income (loss) divided by the weighted-average number of common shares outstanding. The diluted gain (loss) per common share is calculated using net income (loss) divided by the weighted-average number of diluted common shares outstanding.

### SUMMARY OF FINANCIAL HIGHLIGHTS (U.S. \$)

All figures in US dollars unless noted.

	<b>For the fiscal period ended August 31, 2018</b>	<b>For the fiscal period ended August 31, 2017</b>	<b>% Increase</b>
Revenue	\$ 357,719	\$ 194,095	84%
Cash flow provided by (used for) operations	43,953	(45,053)	198%
Net loss	(38,456)	(59,441)	35%
EPS (LPS)	nil	nil	35%

## Selected Quarterly Information

The following table summarizes selected quarterly information from the last eight quarters.

ALL FIGURES IN US DOLLARS UNLESS NOTED

	August 31, 2018	May 31, 2018	February 28, 2018	November 30, 2017	August 31, 2017	May 31, 2017	February 28, 2017	November 30, 2016
Revenue	\$175,170	\$182,549	\$196,925	\$157,555	\$77,372	\$116,723	\$78,071	\$261,996
Cash flow from (used for) operations	24,364	19,589	53,859	27,941	10,252	(55,305)	(108,564)	22,999
Net income (loss)	(23,812)	(14,644)	49,466	(37,339)	(71,442)	12,001	(162,172)	(13,623)
EPS (LPS)	(.001)	(.001)	.002	(.001)	(.002)	.001	(.005)	(.001)

## Liquidity and Capital Resources

The following table summarizes the Company's cash flows by activity and cash on hand.

	August 31, 2018	August 31, 2017
Net cash provided (used) by operating activities	\$ 43,953	\$ (45,053)
Net cash provided (used) by financing activities	(40,633)	346,598
Net cash used for investing activities	(16,892)	(286,992)
Net increase (decrease) in cash	(13,572)	14,553
Cash at the beginning of the period	36,192	18,257
Cash at the end of the period	22,620	32,810

At August 31, 2018, the sources of liquidity were cash from operating activities. The cash balance was \$29,620. At the end of fiscal period, the Company's working capital deficiency (current assets less current liabilities) was \$1,472,439.

Net cash provided by operating activities increased to \$43,953.

Cash flow used by financing activities was \$40,633.

Effective September 2016, the Company established a new long-term primary credit facility (the "Credit Agreement") with total credit facilities of up to \$250,000, comprised of a commercial advance line in the amount of \$250,000, bearing interest at the Prime Rate plus one-half of one percent (0.50%) maturing on September 30, 2019. The Credit Agreement is secured by all the accounts, inventory, equipment, and general intangibles of the Company and guaranteed by a related party.

Effective February 2017, the Company increased the long-term primary credit facility up to \$800,000, adding an equipment advance line in the amount of \$550,000, bearing interest at the prime rate plus one-half of one percent (0.50%) maturing on February 28, 2023.

On April 9, 2014, the Company completed a private placement of 5,290,296 units, with each unit consisting of one common share and one-half of one common share purchase warrant, at a price of \$0.135 CAD. The purchase warrants had a one year term with an exercise price of \$0.225 CAD. The private placement resulted in the Company receiving total gross proceeds of \$714,190 CAD. Since April 9, 2014 various extensions of the warrants' expiration date have been approved by the TSV Venture Exchange with a current extension of the share purchase warrants to April 8, 2018, which expired during the fiscal period.

Cash used for investing activities was \$16,892.

The Company's functional and reporting currency is U.S. dollars; however, the calculation of income tax expense is based on income in the currency of the country of origin. As such, the Company is continually subject to foreign exchange fluctuations, particularly as the Canadian dollar moves against the U.S. dollar.

The Company manages its exposure to foreign currency fluctuations by maintaining foreign currency bank accounts to offset foreign currency payables and planned expenditures. The Company reports in its functional currency, the U.S. dollar.

The Company does not have any off-statement of financial position arrangements.

## D. Future Developments

With the potential of over 80% of future production efforts focusing on SPS technology, the Company has purchased a large Fuji Mark V SPS system. Based on a research study completed late 2016, it was felt that SPS is quickly becoming an advanced manufacturing solution for a wide range of industries. Cal Nano's efforts are focused on the micro-chip fabrication, nuclear and aerospace industries.

Additional developments undertaken at Cal Nano have made milled "nano alloys" significantly more feasible for a large array of performance components and applications. Cal Nano plans to pursue commercialization of "nano alloys" via several production techniques including bulk consolidation, thermal spray and the cold heading of individual nano components. To help develop these products, several renowned industry experts have joined the Cal Nano team to assist in executing these opportunities.

In 2013, the Company became the exclusive marketing partner of Fuji-SPS, the leading manufacturer of SPS equipment. This relationship places Cal Nano as exclusive Technical and Marketing Partner in North America. To complement the existing equipment at Cal Nano, larger production scale equipment is being evaluated as customers for potential production products are being developed by Cal Nano, its

partners, and collaborators. Cal Nano has recently completed a working proto-type for one of these Customers.

The Company has successfully installed several new SPS systems in the U.S., Mexico and Canada for which it received commission and services revenue.

In June 2014, the Company purchased a larger mill, increasing its cryogenic milling capacity by a factor of six, which is now operational. Since March 2015, the Company has received several larger development orders from a large, Seattle-based airframe manufacturer, which will require Cal Nano to utilize its new larger milling capacity. Under this program Cal Nano will subcontract major portions of the analytical work to its growing academic partners. The Company has received a patent which outlines equipment designs and concepts which make the cryogenic milling economically feasible on a large scale.

The successful launch and continued success of the world's highest performance commercial track shoe, Adidas' flagship, "adiZero Prime", has increased "nano alloy" product sales overall. Continuous efforts to reduce the cost of nano-engineered alloys could allow the current and developmental technologies to be applied to the much larger volume "replaceable spike" market, in which several large customers have expressed significant interest. In May 2018, the Company started work on a new design and the development of a replaceable track spike for Adidas.

## E. Risk Factors

The Company is subject to a number of risks as outlined below.

### **Experimental Field**

Cal Nano is engaged in the research and development of new materials with the goal of commercializing viable products. The nanotechnology industry and specifically the production of nanocrystalline materials require extensive experimental effort and can require significant investment. Customers may be hesitant to implement any new materials developed without extensive and time-consuming testing.

### **No Assurance of Commercial Production**

Cal Nano has historically been a research and development firm. The Company is now entering the commercial production phase of its growth, with the procurement of the large Fuji Mark V system. There is no assurance that it will achieve commercial levels of production or sales for any product.

## **Relationships with Customers**

The success of Cal Nano is directly related to the strength of its relationships with and the economic success of its larger customers. Should Cal Nano's relationships with these customers become strained or the profitability of these customers become negatively affected, the Company's profitability may be impacted.

## **Competition**

Cal Nano is engaged in the technology industry. There is a high degree of competition in these industries which could impact Cal Nano's ability to find and keep customers.

## **Potential Fluctuations in Financial Results**

If Cal Nano's future anticipated revenues are not realized on a timely basis, Cal Nano's financial results could be materially adversely affected.

Financial results in the future may be influenced by these or other factors.

## **Management of Growth**

Any expansion of Cal Nano's business may place a significant strain on its financial, operational and managerial resources. There can be no assurance that Cal Nano will be able to manage its operations and financial assets successfully in order to manage any growth it undertakes. Any inability of Cal Nano to manage growth successfully could have a material adverse effect on Cal Nano's business, financial condition and results of operations.

## **Government Regulations**

Cal Nano may be subject to various laws, regulations, regulatory actions and court decisions that may have negative effects on Cal Nano. Changes in the regulatory environment imposed upon Cal Nano could adversely affect the ability of Cal Nano to attain its corporate objectives.

## **Reliance on Key Personnel and Consultants**

There can be no assurance that any of Cal Nano's directors, officers or employees will remain with Cal Nano or that, in the future, directors, officers or employees will not organize competitive businesses or accept employment with companies competitive with Cal Nano.

## **Additional Financing Requirements and Access to Capital**

Cal Nano may require additional financing to implement its business plan. The ability of the Company to arrange such financing in the future will depend in part upon the prevailing capital market conditions as well as the business performance of Cal Nano. There can be no assurance that Cal Nano will be successful in its efforts to arrange additional financing, if needed, on terms satisfactory to Cal Nano. If additional financing is raised by the issuance of shares from the treasury of Cal Nano, control of Cal Nano

may change and shareholders may suffer additional dilution. There can be no assurance that Cal Nano will generate cash flow from operations necessary to support the continuing operations of Cal Nano.

## F. Disclosure Controls and Procedures

Disclosure controls and procedures have been designed to ensure that information required to be disclosed by the Corporation is accumulated and communicated to our management as appropriate to allow timely decisions regarding disclosure. The Company's Chief Executive Officer and a Director have concluded, based on their evaluation at August 31, 2018, that the Company's disclosure controls and procedures are effective to provide reasonable assurance that material information related to Cal Nano, is made known to them by employees or third party consultants working for the Company. It should be noted that while the Company's Chief Executive Officer and a Director believe that the disclosure controls and procedures will provide a reasonable level of assurance and that they are effective, they do not expect that the disclosure controls and procedures will prevent all errors and fraud. A control system, no matter how well conceived or operated, can provide only reasonable, not absolute assurance that the objectives of the control system are met.

## Outstanding Share Capital

At October 10, 2018:

- Common shares issued and outstanding: 31,430,296
- Stock options:

<u>Description</u>	<u>Quantity</u>
Options outstanding – August 31, 2018	2,275,000
Options forfeited	<u>(50,000)</u>
Options outstanding – October 10, 2018	2,225,000
Options exercisable – August 31, 2018	1,308,325
Options forfeited	<u>(50,000)</u>
Options exercisable – October 10, 2018	1,258,325

## H. Transactions with Related Parties

Advances from related parties are from a related entity that owns 18% of the Company's shares. The advances bear interest at 2% per annum and are due upon demand. There are no set terms for repayment and the loan is secured by all the assets of the Company. Interest was paid in the amount of \$nil (2017 - \$1,719) on the advances with accrued interest in the amount of \$163,453 (February 28, 2018 – \$149,722). This related entity also engaged with the Company for revenue of \$11,739 (2017 – \$3,283) and incurred expenses of \$14,071 (2017 – \$31,038). The transactions are considered to be in the normal course of operations and are initially recognized at their fair value.

## I. Board of Directors

Some of the Company's directors are material shareholders.

## J. Financial instruments

As part of its operations, the Company utilizes a number of financial instruments. It is management's opinion that the Company is not exposed to significant interest, currency or credit risks arising from these financial instruments except as otherwise disclosed. The Company manages these risks by operating in a manner that minimizes risk exposure to the extent practical.

Financial instruments of the Company consist of cash, accounts receivable, share purchase warrants, accounts payable and accrued liabilities, finance lease obligation, bank indebtedness and advances from related parties.

	August 31, 2018		February 28, 2018	
	Carrying Value	Fair Value	Carrying Value	Fair Value
<b>At fair value through profit or loss</b>				
Cash	\$ 22,620	\$ 22,620	\$ 36,192	\$ 36,192
Share purchase warrants	-	-	11	11
<b>Loans and receivables</b>				
Accounts receivable	42,396	42,396	50,126	50,126
<b>Other liabilities</b>				
Accounts payable and accrued liabilities	144,705	144,705	166,816	166,816
Finance lease obligation	1,268	1,268	1,707	1,707
Bank indebtedness	759,806	759,806	800,000	800,000
Advances from related parties	1,045,522	1,045,522	1,045,522	1,045,522

The table below sets out fair value measurements using fair value hierarchy at August 31, 2018.

	Total	Level 1	Level 2	Level 3
Assets				
Cash	\$ 22,620	\$ 22,620	\$ -	\$ -

There have been no transfers during the period between Levels 1, 2 and 3.

The fair value of the Company's advances from related parties, finance lease obligation and line of credit approximate their fair values due to the interest rates applied to these instruments, which approximate market interest rates.

As disclosed above, the Company holds various forms of financial instruments. The nature of these instruments and the Company's operations expose the Company to foreign currency risk. The Company manages its exposure to these risks by operating in a manner that minimizes its exposure to the extent practical. The Company does not use off balance sheet contracts to manage these risks.

### Liquidity Risk

The Company defines liquidity risk as the financial risk that the Company will encounter difficulties meeting its financial obligations. The Company's objective for managing liquidity risk is to ensure that it will have sufficient liquidity to meet liabilities when due. This risk is partially mitigated by managing the cash flow through controlling receivables and payables to vendors and related parties. At August 31, 2018, the Company had a working capital deficiency of \$1,472,439 (February 28, 2018 – \$1,434,912).

### Foreign currency risk

A portion of the Company's operations are located outside of the U.S. and, accordingly, the related financial assets and liabilities are subject to fluctuations in exchange rates.

The Company manages its exposure to foreign currency fluctuations by maintaining foreign currency bank accounts to facilitate foreign currency payables and planned expenditures. The Company reports in its functional currency, the U.S. dollar. At August 31, 2018, the Company had the following balances denominated in Canadian dollars. The balances have been translated into U.S. currency in accordance with the Company's foreign exchange accounting policy.

	<b>U.S. Dollar August 31, 2018</b>	<b>U.S. Dollar February 28, 2018</b>
Cash (bank overdraft)	<b>\$ 1,090</b>	\$ 1,581
Accounts payable and accrued liabilities	<b>33,421</b>	36,947

The Company operates with a U.S. dollar functional currency which gives rise to currency exchange rate risk on the Company's Canadian dollar denominated monetary assets and liabilities, such as Canadian dollar bank accounts and accounts payable, as follows:

	<b>Impact on Net Income</b>
U.S. Dollar Exchange Rate – 10% increase	<b>\$ 3,233</b>
U.S. Dollar Exchange Rate – 10% decrease	<b>(3,233)</b>

### Credit risk

The Company manages credit risk by dealing with financially sound customers, based on an evaluation of the customer's financial condition. For the period ended August 31, 2018, the Company was engaged in contracts for products with three (August 31, 2017 – three) customers in excess of 10% of revenue, which accounted for \$199,570 (August 31, 2017 - \$128,932) or 56% (August 31, 2017 – 66%) of the Company's total revenue. The maximum exposure to credit risk is the carrying value of accounts receivable and cash. Two (2017 - two) customers had an outstanding balance in excess of 10% of accounts receivable, which accounted for \$24,585 (2017 - \$20,692) or 58% (2017 – 65%) of the Company's total accounts receivable balance. No allowance for doubtful accounts was recorded. The table below provides an analysis of our current and past due but not impaired accounts receivables.

	<b>Total</b>	<b>Current</b>	<b>≤ 30 days</b>	<b>&gt; 30 days ≤ 60 days</b>	<b>&gt;60 days ≤ 90 days</b>	<b>&gt; 90 days</b>
<b>August 31, 2018</b>	<b>\$ 42,396</b>	<b>\$ 34,715</b>	<b>\$ 4,600</b>	<b>\$ (39)</b>	<b>\$1,895</b>	<b>\$ 1,226</b>
February 28, 2018	\$ 50,126	\$ 43,468	\$ 5,463	\$ -	\$1,195	\$ -

### K. Capital Disclosures

The Company manages its capital to maintain its ability to continue as a going concern and to provide returns to shareholders and benefits to other stakeholders. The capital structure of the Company consists of cash and equity comprised of issued capital, contributed surplus and deficit.

The Company manages its capital structure and makes adjustments to it in light of economic conditions. The Company, upon approval from its Board of Directors, will balance its overall capital structure through new share issues or by undertaking other activities as deemed appropriate under the specific circumstances.

The Company is not subject to externally imposed capital requirements and the Company's overall strategy with respect to capital risk management remains unchanged from the fiscal period ended August 31, 2018.

### L. Conferences

#### CONFERENCES ATTENDED IN 2018

- 4<sup>th</sup> International Workshop on Spark Plasma Sintering, Cagliari, Italy, co-sponsor, May 23-25, 2018

#### CONFERENCES ATTENDED IN 2017

- The Minerals, Metals & Material Society (TMS) 2017, San Diego, CA, exhibitor, February 26, 2017 – March 2, 2017
- International Conference on Thermoelectrics 2017, Pasadena, CA, exhibitor, July 31, 2017 – August 3, 2017
- International Conference on Sintering 2017, San Diego, CA, exhibitor, November 12-16, 2017

## CONFERENCES ATTENDED IN 2016

- Ceramics Expo 2016, Cleveland, OH, exhibitor, April 25-27, 2016
- Materials Science & Technology (MS&T) 2016, Salt Lake City, UT, exhibitor, October 23-27, 2017

### **Intention of management's discussion and analysis**

This MD&A is intended to provide an explanation of financial and operational performance compared with prior periods and the Company's prospects and plans. It provides additional information that is not contained in the Company's financial statements.

### **Additional information**

Further information regarding California Nanotechnologies Corp. can be accessed under the Company's public filings found at [www.sedar.com](http://www.sedar.com).

*The information contained in this discussion may be considered to contain forward-looking statements. Such forward-looking statements address future events and conditions and are subject to risks and uncertainties that could cause actual results to differ materially from those contemplated. There is no representation by the Company that actual results will be the same in whole or in part as implied by the forward-looking statements provided.*