

California Nanotechnologies Corp.  
For the fiscal six months ended August 31, 2021

## MANAGEMENT DISCUSSION AND ANALYSIS

This Management Discussion and Analysis (“MD&A”) should be read in conjunction with the Condensed Consolidated Interim Financial Statements and related notes of California Nanotechnologies Corp. (the “Company” or “Cal Nano”) for the fiscal quarter ended August 31, 2021. 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 27, 2021.

### 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 purchased a Fuji Mark V SPS for pilot-scale R&D production activities in 2017.

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. Results of Operations for the six months ended August 31, 2021

**Revenue:** For the fiscal six months ended August 31, 2021, the Company reported revenue of \$374,525 compared to \$445,305 from the prior fiscal year, a decrease of 16%.

Sales by segment are summarized below:

Sales Year	Division		
	Spark Plasma Sintering	Research and Development	Sport and Recreation
2021	81%	18%	1%
2020	85%	14%	1%

**Net Loss:** Net loss for the fiscal six months ended August 31, 2021 was \$32,133 compared to a loss of \$53,871 in the prior fiscal year. Depreciation expense continues to be significant as the Company operates the additional SPS equipment purchased for \$675,750 in October 2017.

**Operating Expenses:** Overall operating expenses for the fiscal six months ended August 31, 2021 was \$251,526 compared to the prior fiscal year which totaled \$260,646, a decrease of .3%.

**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, 2021, 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.

2,720,000 (2020 – 2,720,000) options were excluded in calculating the weighted-average number of diluted common shares outstanding for the six months ended August 31, 2021 and 2020, because the Company was in a net loss position and therefore any exercise would be anti-dilutive

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

All figures in US dollars unless noted.

	<b>For the six months ended August 31, 2021</b>	<b>For the six months ended August 31, 2020</b>	<b>% Increase (decrease)</b>
Revenue	\$ 374,525	\$ 445,305	(16%)
Cash flow from operations	6,999	15,633	(55%)
Net loss	(32,133)	(53,871)	(40%)

### Selected Quarterly Information

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

ALL FIGURES IN US DOLLARS UNLESS NOTED

	August 31, 2021	May 31, 2021	February 28, 2021	November 30, 2020	August 31, 2020	May 31, 2020	February 29, 2020	November 30, 2019
Revenue	\$168,155	\$206,370	\$148,164	\$201,102	\$287,768	\$157,537	\$174,395	\$235,899
Cash flow (used for) from operations	12,072	(5,073)	17,009	(7,757)	57,651	(42,018)	62,967	19,970
Net income (loss)	(22,414)	(9,719)	(37,546)	(29,554)	20,365	(74,236)	(61,964)	10,994

### Liquidity and Capital Resources

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

	<b>August 31, 2021</b>	August 31, 2020
Net cash from operating activities	<b>\$ 6,999</b>	\$ 15,633
Net cash used for financing activities	<b>5,626</b>	(12,066)
Net cash used for investing activities	<b>(7,721)</b>	-
Net (decrease)/increase in cash	<b>4,904</b>	3,567
Cash at the beginning of the period	<b>19,973</b>	41,951
Cash at the end of the period	<b>24,877</b>	45,518

At August 31, 2021, the source of liquidity was cash from operating activities. The cash balance was \$24,877. At fiscal year, the Company's working capital deficiency (current assets less current liabilities) was \$1,558,140 (2020 - \$1,459,246).

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

Cal Nano continues to focus on Spark Plasma Sintering and Cryogenic Milling as its main technologies and drivers for future development and growth. Cal Nano's pilot-scale SPS and cryomilling systems enable scale-up from small-scale R&D programs to low-volume production of powders and sintering products. Cal Nano's efforts are focused on the military applications along with the nuclear and aerospace industries.

In 2018, the Company became the exclusive marketing partner of SUGA Co. Ltd, a manufacturer of SPS equipment in Japan. 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 multiple large-scale R&D programs that have the possibility for future growth.

The Company has successfully installed multiple new SPS systems this past year in the U.S., Mexico and Canada for which it received commission and services revenue. More installations are schedule for the coming year.

In June 2014, the Company purchased a larger mill, increasing its cryogenic milling capacity by a factor of six, which is now operational. 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. Cal Nano has also received orders from multiple other industrial and national lab partners for cryomilling at this larger capacity. The Company has received a patent which outlines equipment designs and concepts which make the cryogenic milling economically feasible on a large scale. Cal Nano is currently working on important cryomilling programs and continues to evaluate scale-up opportunities.

## 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 in the commercial production phase of its growth, with the procurement of the large Fuji Mark V system in 2017. There is no assurance that it will achieve commercial levels of production or sales for any product.

## E. Risk Factors-continued

### **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.

## E. Risk Factors-continued

### **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, 2021, 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.

## G. Outstanding Share Capital

At August 31, 2021:

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

<u>Description</u>	<u>Number</u>
Options outstanding at August 31, 2021	2,720,000
Options exercisable at August 31, 2021	1,626,658

## H. Transactions with Related Parties

Advances from related party are from a related entity that owns 19.1% of the Company's shares. The Company has received advances totaling \$1,045,522 which bear interest at 2.89% per annum and is due on demand. There are no set terms for repayment and the loan is secured by all the assets of the Company. Total accumulated interest on the advances is \$127,383 (2020 - \$81,636) which includes interest expense of \$21,835 incurred during the year.

On March 15, 2020, the Company's line of credit of \$250,000 was called by its bank and repaid by a related party. Concurrent with such settlement, the company entered into a promissory note with the related party of \$250,000 with an interest rate set at the US Prime Rate plus 1.0%. The promissory note is payable on demand and interest expense of \$6,198 (2020 - \$nil) was paid to the related party during the year.

The transactions are considered to be in the normal course of operations.

## 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, accounts payable and accrued liabilities, interest payable, bank indebtedness and advances from related parties.

	August 31, 2021		February 28, 2021	
	Carrying Value	Fair Value	Carrying Value	Fair Value
<b>At FVTPL</b>				
Cash	\$ 24,877	\$ 24,877	\$ 19,973	\$ 19,973
<b>At amortized cost</b>				
Accounts receivable	58,835	58,835	45,044	45,044
Accounts payable and accrued liabilities	104,444	104,444	129,501	129,501
Interest Payable	127,383	127,383	107,292	107,292
Bank indebtedness	181,836	181,836	238,809	238,809
Advances from related party	1,295,522	1,295,522	1,295,522	1,295,522

Fair value represents the price at which a financial instrument could be exchanged in an orderly market, in an arm's length transaction between knowledgeable and willing parties who are under no compulsion to act. The Company classifies the fair value of the financial

instruments according to the following hierarchy based on the amount of observable inputs used to value the instrument.

#### J. Financial instruments-continued

Level 1 Quoted prices are available in active markets for identical assets or liabilities as of the reporting date. Active markets are those in which transactions occur in sufficient frequency and volume to provide pricing information on an ongoing basis.

Level 2 Pricing inputs are other than quoted prices in active markets included in level 1. Prices in level 2 are either directly or indirectly observable as of the reporting date. Level 2 valuations are based on inputs, including quoted forward prices for commodities, time value and volatility factors, which can be substantially observed or corroborated in the marketplace.

Level 3 Valuations in this level are those with inputs for the assets or liabilities that are not based on observable market data.

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

The carrying values of accounts receivable, accounts payable and accrued liabilities, interest payable and current portion of bank indebtedness approximate their fair value due to their short-term nature.

The fair value of the Company's long-term portion of bank indebtedness approximate its fair values due to the interest rates applied to these instruments, which approximate market interest rates. The fair value of the Company's advances from related party approximate their fair values due to the amounts being due on demand.

The Company holds various forms of financial instruments. The nature of these instruments and the Company's operations expose the Company to various risks. 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 make use of off statement of financial position 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 mitigated by managing the cash flow by controlling receivables and payables to vendors and related parties. At August 31, 2021, the Company had a working capital deficiency of \$1,558,140 (2020 – \$1,465,643).



## K. Financial instruments-continued

### Liquidity Risk-continued

The following table provides an analysis of the financial liabilities based on the remaining terms of the liabilities as at:

<b>August 31, 2021</b>	<b>≤ 1 year</b>	<b>&gt; 1 year ≤ 3 years</b>	<b>&gt; 3 year ≤ 4 years</b>	<b>&gt; 5 years</b>	<b>Total</b>
<b>Accounts payable and accrued liabilities</b>	\$ 104,444	\$ -	\$ -	\$ -	\$ 104,444
<b>Bank indebtedness</b>	118,918	62,918	-	-	181,836
<b>Advance from related party</b>	1,295,522	-	-	-	1,295,522
<b>Total</b>	<b>\$ 1,518,884</b>	<b>\$ 62,918</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,581,802</b>

  

<b>August 31, 2020</b>	<b>≤ 1 year</b>	<b>&gt; 1 year ≤ 3 years</b>	<b>&gt; 3 year ≤ 4 years</b>	<b>&gt; 5 years</b>	<b>Total</b>
<b>Accounts payable and accrued liabilities</b>	\$ 119,628	\$ -	\$ -	\$ -	\$ 119,628
<b>Bank indebtedness</b>	112,707	244,136	-	-	356,843
<b>Advance from related party</b>	1,348,589	-	-	-	1,348,589
<b>Total</b>	<b>\$1,580,924</b>	<b>\$ 244,136</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,825,060</b>

### 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 believes its exposure to foreign currency risk to be minimal. At August 31, 2021, the Company had the following balances denominated in CAD. The balances have been translated into U.S. dollars in accordance with the Company's foreign exchange accounting policy.

	<b><u>U.S Dollar August 31, 2021</u></b>	<b><u>U.S. Dollar February 28, 2021</u></b>
Accounts receivable	<b>1,639</b>	1,884
Accounts payable and accrued liabilities	<b>19,784</b>	33,913

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>\$ 181</b>
U.S. Dollar Exchange Rate – 10% decrease	<b>(181)</b>

## K. Financial instruments-continued

### 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 six months ended August 31, 2021, the Company was engaged in contracts for products with zero (2020 – three) customers in excess of 10% of revenue, which accounted for \$0 (2020 - \$285,600) or 0% (2020 – 64%) of the Company's total revenue. The maximum exposure to credit risk is the carrying value of accounts receivable and cash. Five (2020 – seven) customers had outstanding balances in excess of 10% of accounts receivable, which accounted for \$50,395 (2020 - \$31,500) or 86% (2020 52%) of the Company's total accounts receivable balance. The table below provides an analysis of our current and past due but not impaired accounts receivables.

	Total	Current	≤ 30 days	> 30 days ≤ 60 days	>60 days ≤ 90 days	> 90 days
August 31, 2021	\$ 58,835	\$ 42,203	\$ 9,960	\$ 6,400	\$ -	\$ 269
February 28, 2021	\$ 45,043	\$ 28,730	\$ 15,663	\$ 216	\$ -	\$ 434

As at August 31, 2021, the average expected credit loss on the Company's accounts receivable was 0% and as a result the provision for expected credit losses is \$nil.

### Interest rate risk

The Company's revolving line of credit is subject to floating rates. The floating rate debt is subject to interest rate cash flow risk, as the required cash flows to service the debt will fluctuate as a result of changes in market rates. As at August 31, 2021, the increase or decrease in (loss) income before taxes for each 1% change in interest rates on floating rate debt amounts to approximately \$1,818 (2020 - \$3,563). The related disclosures regarding these debt instruments are included in Note 8 of these condensed consolidated interim financial statement

## L. 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 six months ended August 31, 2021.

## M. Conferences

### CONFERENCES ATTENDED IN 2021

- PowderMet 2021, Orlando, CA, exhibitor, June 20-23, 2021
- Ceramics Expo, Cleveland, OH, exhibitor, August 31-September 1, 2021

### CONFERENCES ATTENDED IN 2020

- **The Minerals, Metals & Materials (TMS) 2020**, San Diego, CA, exhibitor, February 23-27, 2020

## N. 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.

## O. Subsequent events

The Company applied for and received loan proceeds in the amount of \$62,600 ("PPP Funds") and entered into a second loan agreement with Manufacturers Bank pursuant to the Paycheck Protection Program ("PPP") for the same amount in March, 2021. The PPP was established as part of the Coronavirus Aid, Relief and Economic Security Act ("CARES Act") in order to enable small businesses to pay employees during the economic slowdown caused by COVID-19 by providing forgivable loans to qualifying businesses for up to 2.5 times their average monthly payroll costs. The amount borrowed by the Company under the PPP is eligible to be forgiven provided that (a) the Company uses the PPP Funds during the 24-week period after receipt thereof, and (b) the PPP Funds are only used to cover payroll costs (including benefits), rent, mortgage interest, and utility costs. Principal and interest payments on any unforgiven portion of the PPP Funds (the "PPP Loan") will be deferred for six months and will accrue interest at a fixed annual rate of 1%. Additionally, the PPP Loan balance will carry a two-year maturity date. There is no prepayment penalty on the PPP Loan.

The Company has qualified and applied for an Employee Retention Credit of \$31,299 for the first quarter of 2021. The Employee Retention Credit ("ERC") was also established under the Coronavirus Aid, Relief and Economic Security Act ("CARES Act") as further economic relief in the form of employer tax credits. Requirements under this program for 2021, include either a partial or full business suspension because of government mandate, or a 20% reduction of receipts measured by quarter for years 2021 vs 2019, or 2021 vs 2020. For quarters that meet this requirement, and the quarter immediately following, the ERC is calculated by taking 70% of qualified wages up to \$10,000, per quarter, per employee. The maximum credit per employee, per quarter is \$7,000.

In April, 2021, the Company engaged a third party to perform a Research and Development study to determine if any business activities met the qualifications and be eligible for tax credits pursuant to IRS (26 U.S. Code 41). This credit provides tax savings for activities that pursue development, design, or improvement of products, processes, formulas, or software applications. The results of the study confirmed that some activities did qualify in 2019 and 2020, and tax credits of \$33,352 and \$29,829 respectively, will be claimed in Quarter 4, 2021.

The Company applied for and received a \$15,000 Grant Award administered by the California office of the Small Business Advocate (CalOSBA). The award proceeds were received on August 13, 2021. The Company has agreed to all terms and conditions pursuant to the California Small Business COVID-19 Relief Grant Program Grantee Agreement, which states that the grant funds be used to cover employee expenses including payroll costs, and related benefits, overhead costs, costs associated with complying with COVID-19 guidelines, and safety protocols

### **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.*