

California Nanotechnologies Corp.  
For the interim period ended November 30, 2012

## MANAGEMENT DISCUSSION AND ANALYSIS

This Management Discussion and Analysis (“MD&A”) should be read in conjunction with the financial statements of California Nanotechnologies Corp. (the “Company” or “Cal Nano”) for the interim period ended November 30, 2012 and the related notes. The Company’s reporting currency is in United States (“US”) dollars and all amounts in this MD&A are expressed in US 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 IASB. The Company’s functional currency is in United States (“US”) dollars and all amounts in this MD&A are expressed in US dollars. This discussion has been completed as of January 29, 2013.

### A. Company Overview

The Company is engaged in the development, processing, marketing and sale of nanocrystalline materials for coatings and bulk material applications. Target markets are the aerospace, defense, automotive, medical, resource development, and sports and recreation industries. The Company’s immediate short-term objectives will be to develop commercial applications for nanostructured materials and to continue collaborating with select universities in nanotechnology research.

The registered and head office of California Nanotechnologies Corp. is located at Suite 1600, 205 – 5th Avenue S.W., Calgary, Alberta T2P 2V7.

The operating office of California Nanotechnologies Corp. is located 17220 Edwards Road, Cerritos, California, 90703.

Cal Nano has been actively building industry recognition through published papers and other scientific endeavors. A listing of recent and planned activities are included below.

#### **Technical Paper for Journals, etc.**

[1] C. Melnyk, B. Weinstein, D. Grant, R. Gansert, Improved Properties of Light Alloys for Medical Devices Using Near-Nano and Nano-Based Materials, Materials & Processes for Medical Devices (MPMD), Nov. 2011;

[2] C. Melnyk, B. Weinstein, D. Lujan, D. Grant, R. Gansert, M. Watson, Investigation of Mechanical Properties of Coatings and Bulk Components of Various Grain Sized Tungsten-Carbide-Cobalt Based Materials, Proceeding of International Thermal Spray Conference, Sept. 2011, Hamburg, Germany;

[3] C. Melnyk, B. Weinstein, D. Lujan, D. Grant, R. Gansert, Cold Forged Nano-based Light Alloys and Composites Components, Fastener Technology Int., Aug. 2011;

[4] C. Melnyk, B. Weinstein, D. Lujan, D. Grant, R. Gansert, Production of Nano-based Light Alloys and Composites for Aerospace Fasteners, Adv. Mat. & Proc., Vol. 169, No. 5, May 2011, pp. 42-44;

[5] C. Melnyk, S. Schroeder, D. Grant, S. Keener, and R. Gansert, Improved Properties of Cryomilled Light Alloys Consolidated Using Spark Plasma Sintering and Hot Isostatic Pressing, JOM, Vol. 63, No. 2, pp. 65-68, 2011; (Collaboration with Boeing Phantom Works);

[6] M. Pozuelo, C. Melnyk, W. Kao, J.-M Yang, Cryomilling and Spark Plasma Sintering of Nanocrystalline Magnesium-Based Alloy, Submitted to Journal of Materials Research, Submission, Oct. 2010; (Collaboration with UCLA);

[7] C. Melnyk, B. Weinstein, D. Lujan, D. Grant, R. Gansert, Improved Mechanical Properties of WC-10%Co-4%Cr and WC-12%Co Coatings as a Function of Grain Size, Proceeding of International Thermal Spray Conference, 2011, Germany, Submission Oct. 2010;

[8] C. Xu, S. Schroeder, P. Berbon, T. Landgon, Principles of ECAP-Conform as a Continuous Process for Achieving Grain Refinement: Application to an Aluminum Alloy, Acta Materialia, Vol. 58, (4), 1379-1386;

[8] C. Melnyk, S. Schroeder, D. Grant, R. Gansert, and M. Watson, "Improved Mechanical Properties of Coatings and Bulk Components as a Function of Grain Size", International Thermal Spray Conference Proceedings, ASM International, Materials Park, OH., USA 2010;

[9] S. Schroeder, C. Melnyk, D. Grant, S. G. Keener, and R. Gansert, "Improved Properties of Light Alloys produced by Cryomilling (Nano) and Bulk Consolidation Processing", Proceedings of Aeromat 2009, Dayton, OH, USA;

[10] S. Schroeder, C. Melnyk, D. Grant, R. Gansert, G. Saha, and L. Glenesk, "Properties of Powders, Coatings, and Consolidated Components Produced from Nano-, and Near-Nano Crystalline Powder", Expanding Thermal Spray Performance to New Markets and Applications, Ed. R. Maple, M. Hyland, Y. Lau, R. Lima, G. Montavon, ASM International, Materials Park, OH., USA 2009;

[11] C. Melnyk, S. Schroeder, D. Grant, G. Saha, L. Glenesk, and R. Gansert "Nano Powders Produce Improved Wear Resistant Thermal Spray Coatings", American Welding Journal, July, 2009, pp. 50 – 55.

## **PATENTS**

[1] US Patent 7,481,091 B1, January 27, 2009, Material Processing System, D. Grant, P. Berbon, T. Wang, P. Burkey.

### **CONFERENCES ATTENDED IN 2011**

- [1] TMS 2011, San Diego, CA; Presented Two (2) Presentations;
- [2] Aeromat 2011, Long Beach, CA; Presented Two (2) Presentations;
- [3] MPMD 2011 (Minneapolis, MN); Presentation on Nano Light Alloys for Medical Applications at conference;
- [4] ITSC 2011 (Hamburg, Germany); Thermal Spray Powders & Coatings presentation at conference;
- [5] ASM 2011 (Orange County, CA); Nano-materials for Biomedical Applications

### **CONFERENCES ATTENDED IN 2012**

- [1] ITSC 2012, Houston, TX, Thermal Spray Powders and Coatings Presentation for Oil & Gas Industry, May 13-15, 2012
- [2] State University of SUNY Stony Brook, Stony Brook, NY; Nano Carbides Presented within Invited Electronics Presentation, June 6-8, 2012
- [3] Thermal Spray Presentation Accepted, FABTECH, Las Vegas, NV, Oct. 2012
- [4] AWS, Fabtech, Las Vegas, NV, November 13-14, 2012

### **CONFERENCES PLANNED IN 2013**

- [1] ITSC 2013, Busan, South Korea, May 13-15, 2013
- [2] TMS 2013, San Antonio, CA; March 3-7, 2013
- [3] Aeromat 2013, Long Beach, CA; April 2-5, 2013

## **B. Markets**

Cal Nano currently services customers in the aerospace, defense, automotive, medical, resource development and sports and recreation industries. A related company, Omni-Lite Industries, has many long-standing relationships in these areas, providing further access to future key customers.

## **C. Financial Results**

**Revenue:** For the interim period ended November 30, 2012, the Company reported revenue of \$221,278, compared to \$115,191 from the prior interim period for an increase of 92%. The main sources of revenue are from the application of white solar reflective coatings, research projects from universities and research centers interested in advanced materials, and the sales of parts made from advanced materials.

**Net Loss:** Net loss for the interim period ended was \$367,801. Amortization and depreciation expense and salaries, wages and benefits, research and supplies were the greatest expense items. As the Company purchased the necessary equipment to be successful in the nanotechnology field, depreciation expense will continue to be high. Salaries, wages and research may continue to be high as the Company develops expertise in the various fields. Supplies increased due to the increase of revenue from roof coatings, research and nano materials.

**Operating Expenses:** Overall operating expenses increased by 34% to \$546,808 compared to the prior year interim period. This increase is in response to the new sales

and expenses relating to white solar reflective coatings and research, salaries, wages and benefits due to the growth of the Company.

**Loss per share:** Basic loss per share was \$0.01 (\$0.01 CDN). The weighted average number of shares was 25,820,000.

Basic loss per share has been calculated using the weighted average number of shares outstanding during the interim period and the loss attributable to common shareholders. For all periods presented, loss attributable to common shareholders equals reported loss.

Diluted earnings per share is calculated based on the treasury stock method, and reflects the potential dilution of securities by including stock options and contingently issuable shares, in the weighted average number of common shares outstanding for a period, if dilutive. Diluted earnings per common share have not been presented as the effect of options and warrants on basic loss per share would be anti-dilutive.

### SUMMARY OF FINANCIAL HIGHLIGHTS (US \$)

All figures in US dollars unless noted.

<b>Basic Weighted Average Shares Issued And Outstanding : 25,820,000</b>	<b>For the interim period ended November 30, 2012</b>	<b>For the interim period ended November 30, 2011</b>
Revenue	\$ 221,278	\$ 115,191
Cash flow from operating activities	(371,216)	(260,922)
Net Income (Loss)	(367,801)	(324,376)
EPS (US)	(0.01)	(0.01)
EPS (CDN)	(0.01)	(0.01)

(Note: at 11/30/12, \$1US = \$0.992 CDN; 11/30/11, \$1US = \$0.9688 CDN)

### Selected Quarterly Information

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

ALL FIGURES IN US DOLLARS UNLESS NOTED

	November 30, 2012	August 31, 2012	May 31, 2012	February 29, 2012	November 30, 2011	August 31, 2011	May 31, 2011	February 28, 2011
Revenue	\$22,434	\$136,705	\$ 62,139	\$ 29,164	\$ 25,626	\$ 58,762	\$ 30,803	\$ 15,306
Cash Flow from operating activities	(125,993)	(101,200)	(90,023)	(42,525)	(74,756)	(110,940)	(75,226)	(47,704)
Net Income (Loss)	(157,190)	(103,092)	(107,519)	(139,497)	(113,411)	(101,161)	(109,804)	(97,576)
EPS(US)	(.006)	(.004)	(.004)	(.006)	(.004)	(.004)	(.005)	(.004)
EPS(CDN)	(.006)	(.004)	(.004)	(.006)	(.004)	(.004)	(.005)	(.004)

## Liquidity and Capital Resources

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

	November 30/2012	November 30/2011
Net cash used for operating activities	\$ (371,216)	\$ (260,922)
Net cash from financing activities	311,362	338,129
Net cash used for investing activities	(12,870)	(50,000)
Net increase (decrease) in cash	(18,724)	27,207
Cash at the beginning of the interim period	26,967	5,818
Cash at the end of the interim period	8,243	33,025

At November 30, 2012, the sources of liquidity were cash from financing activities. The Company had cash of \$8,243. At the end of interim period, the Company's working capital deficiency (current assets – current liabilities) was \$1,037,136.

-Cash flow used for operating activities increased to \$371,216.

-Cash flow from financing activities was \$311,362. To continue operations, the Company is being funded by a related party.

-Cash flow used for investing activities was \$12,870. The Company acquired the assets of White Roof Systems of Culver City, California, and started a newly formed wholly owned entity named White Roof Solutions Inc. White Roof Systems developed the protocol necessary for the application of a patented new white solar reflective roof coating system.

The Company's functional and reporting currency is in US 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 US dollar.

**Foreign Exchange:** 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 United States dollar.

**Off-Balance Sheet arrangements:** The Company does not have any off-balance sheet arrangements.

### D. Future Developments

With the successful introduction of the adidas adizero prime SP shoe which features Cal Nano's nano-material spikes, it is expected that orders for these spikes will increase for 2013. In conjunction with the nano-material spike, Cal Nano has developed a spike coating that improves wear resistance. Currently, trials will be conducted at a local college track team to evaluate the improvements qualitatively and quantitatively. It is anticipated that there will be significant interest in this product.

Cal Nano will be applying for a patent covering applications for nano-carbide thermal spray coatings.

After receiving successful results from testing CNO102 nano-carbide coatings in a sub-surface oil and gas application, Cal Nano will begin marketing CNO106, a nano-enhanced, economy grade product. CNO106 will be used in commercial applications that could benefit from high wear and scratch resistance or enhanced grip surface, but do not need the extreme performance of CNO102.

To further utilize the experience that Cal Nano has gained in SPS processing, Cal Nano is in the final stages of discussion to become the Technical Service Agent in North America for the largest OEM and inventor of SPS technology.

White Roof Solutions has been incorporated as a subsidiary of Cal Nano and has completed a number of "cool roof" projects. Current efforts are directed towards completing the marketing materials and website.

On January, 2012, a meeting was held at the Company to kick off a new collaboration between UCLA Fusion Sciences to develop and produce spark plasma sintered ("SPS") pebble bed "fuel cells" for the International Thermonuclear Experimental Reactor ("I.T.E.R.") which is a €13 Billion (euro) international project. If successful samples are produced, additional phases will be outlined on established collaborative research programs with UCLA, Navy Air Command, The Aerospace Corp and UCI after successful deliverables in recent months. CNO will evaluate the feasibility of purchasing equipment for the large scale production of these critical components, if required.

## 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 is a research and development firm with limited history of production or sales. There is no assurance that it will achieve commercial production of any product or the sale of any such 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 will be engaged in the technology industry. There is a high degree of competition in Cal Nano's industry which impacts Cal Nano's ability to find and keep customers.

## **Potential Fluctuations in Financial Results**

In the future, if Cal Nano's expected revenues are not realized on a timely basis as anticipated, 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 implement and subsequently improve its operations and financial systems successfully and in a timely manner in order to manage any growth it experiences. There can be no assurance that Cal Nano will be able to manage growth successfully. 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 Chief Financial Officer have concluded, based on their evaluation as at November 30, 2012, 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 Chief Financial Officer 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.

### Internal Controls over Financial Reporting

The Chief Executive Officer and Chief Financial Officer of Cal Nano are responsible for designing internal controls over financial reporting in order to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with Canadian GAAP. We assessed the design of our internal controls over financial reporting as at November 30, 2012. During this process, management identified certain potential weaknesses in internal controls over financial reporting.

Due to the limited number of staff, which is typical of a company our size, it is not feasible to achieve the complete segregation of the duties of all employees.

Management and the board of directors work to mitigate the risk of a material misstatement in financial reporting; however, there can be no assurance that this risk can be reduced to less than a remote likelihood of a material misstatement. Management does not intend to remediate the noted weakness at this time due to an adequate control environment existing in the Company.

## G. Outstanding Share Capital

As at January 29, 2013:

- 25,820,000 Common Shares issued and outstanding
- Stock options:

<b>Description</b>	<b>Number</b>
Options outstanding at November 30, 2012	1,395,000
Options - granted	-
- exercised	-
- forfeited	-
- expired	(300,000)
Options outstanding at January 29, 2013	1,095,000
Options exercisable at January 29, 2013	248,329

## H. Transactions with Related Parties

For 2012 and 2011, the Company did not pay the Chief Executive Officer (“CEO”) or Chief Financial Officer (“CFO”) a salary for their roles. It is management’s estimate that the fair value of these salaries would be \$65,000 each year. Due to the lack of independent evidence with respect to the fair value of these services, these transaction has been recorded at the carrying amount of \$nil.

The amounts of advances from related party are owed to an entity related through common control. The loan received from the related party bears interest at 5 percent per annum and is due upon demand.

## I. Third Party Investor Relations Contracts

No third party investor relations arrangements were made in 2012.

## J. Investments

At July 31, 2012, a complaint was filed by the Company with the Superior Court of the State of California by California Nanotechnologies Inc. versus SRL Nano Corporation (“SRL Nano”), Scott Liu, and Dr. Liu’s other affiliated companies. The Company is seeking compensation for damages resulting from breach of contract with the worldwide exclusive license to the patents warranted in a license agreement between the Company and SRL Nano in the amount of not less than \$250,000, interest, and the legal costs of the suit. Punitive damages for fraud, breach of fiduciary duty and injunctive relief for the material patent rights from SRL Nano are also being sought. At January 27, 2013, impairment, if any, cannot be reasonably estimated.

## K. Board of Directors

The Company’s directors are material shareholders.

## L. Financial instruments

The Company as part of its operations carries 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 its exposure to these risks by operating in a manner that minimizes its exposure to the extent practical.

Financial instruments of the Company consist of cash, accounts receivable, accounts payable and accrued liabilities, and advances from related party.

	November 30, 2012		February 29, 2012	
	Carrying Value	Fair Value	Carrying Value	Fair Value
<b>At fair value through profit or loss</b>				
Cash	\$ 8,243	\$ 8,243	\$ 26,967	\$ 26,967
<b>Loans and receivables</b>				
Accounts receivable	41,620	41,620	12,262	12,262
<b>Available for sale</b>				
Investment	250,000	250,000	250,000	250,000
<b>Other liabilities</b>				
Accounts payable and accrued liabilities	47,223	47,223	67,892	67,892
Advances from related parties	1,075,862	1,075,862	764,500	764,500

The table below sets out fair value measurements using fair value hierarchy at November 30, 2012.

	Total	Level 1	Level 2	Level 3
<b>Assets</b>				
Cash	\$ 8,243	\$ 8,243	-	-
Investment	250,000	250,000	-	-

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

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 obligations associated with financial liabilities. 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, until the Company emerges from the development stage. At November 30, 2012, the Company had a working capital deficiency of \$1,037,136 (February 29, 2012 – \$790,149).

### Foreign currency risk

A portion of the Company's operations are located outside of the United States 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 and receivables to offset foreign currency payables and planned expenditures. The Company reports in its functional currency, the United States dollar. At November 30, 2012, the Company had the following balances denominated in Canadian dollars. The balances have been translated into United States currency in accordance with the Company's foreign exchange accounting policy.

	USD November 30, 2012	USD February 29, 2012
Cash	\$ 303	\$ 24,557
Accounts Payable	22,333	34,152

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:

	Impact on Net Loss
U.S. Dollar Exchange Rate – 10% increase	\$ 2,203
U.S. Dollar Exchange Rate – 10% decrease	(2,203)

### 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 November 30, 2012, the Company was engaged in contracts for products with three (November 30, 2011 – three) customers in excess of 10% of revenue, which accounted for \$136,695 (November 30, 2011 - \$69,739) or 62% (November 30, 2011 – 61%) of the Company's total revenue. The maximum exposure to credit risk is the carrying value of account receivable. The table below provides an analysis of our current financial assets and the age of our past due but not impaired accounts receivables by type of credit risk.

Total	Current	≤ 30 days	> 30 days ≤ 60 days	60 days ≤ 90 days	> 90 days
\$ 41,620	\$ 12,849	\$ 2,236	\$ -	\$ -	\$ 26,535

## M. 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 year ended November 30, 2012.

### **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.*