



NANO ONE MATERIALS CORP.

INTERIM MANAGEMENT DISCUSSION

AND

ANALYSIS – QUARTERLY HIGHLIGHTS

FOR THE PERIOD ENDED JUNE 30, 2018

INTERIM MANAGEMENT DISCUSSION AND ANALYSIS – QUARTERLY HIGHLIGHTS

The following Interim Management Discussion and Analysis – Quarterly Highlights (“Quarterly Highlights”) of Nano One Materials Corp. (“Nano One” or the “Company”) has been prepared to provide material updates to the business operations, liquidity and capital resources of the Company since its last management discussion & analysis, being the Management Discussion & Analysis (“Annual MD&A”) for the fiscal year ended December 31, 2017. This Quarterly Highlight does not provide a general update to the Annual MD&A or reflect any non-material events since the date of the Annual MD&A.

This Quarterly Highlights has been prepared in compliance with the requirements of section 2.2.1 of Form 51-102F1, by National Instrument 51-102 – Continuous Disclosure Obligations. This Quarterly Highlights should be read in conjunction with the Annual MD&A, the audited financial statements of the Company for the years ended December 31, 2017, and 2016 and the unaudited condensed interim financial statements for the six months ended June 30, 2018, together with the notes to it. In the opinion of management, all adjustments (which consist only of normal recurring adjustments) considered necessary for a fair presentation have been included. The results for the six months ended June 30, 2018, are not necessarily indicative of the results that may be expected for any future period. The information contained herein is presented as at Aug. 29, 2018 (the “Report Date”), unless otherwise indicated.

The unaudited condensed interim financial statements for the six months ended June 30, 2018, including comparatives, have been prepared in accordance with International Accounts Standards (“IAS”) 34, “Interim Financial Reporting” using accounting policies consistent with International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board (“IASB”) and Interpretations issued by the International Financial Reporting Interpretations Committee (“IFRIC”).

External auditors, appointed by the shareholders, have not audited or reviewed the financial statements for the six month periods ended June 30, 2018 and did not perform the tests deemed necessary to enable them to express an opinion on these unaudited condensed interim financial statements.

For the purposes of preparing this Quarterly Highlights, management, in conjunction with the Board of Directors, considers the materiality of information. Information is considered material if: (i) such information results in, or would reasonably be expected to result in, a significant change in the market price or value of Nano One’s common shares; or (ii) there is a substantial likelihood that a reasonable investor would consider it important in making an investment decision; or (iii) it would significantly alter the total mix of information available to investors. Management, in conjunction with the Board of Directors, evaluates materiality with reference to all relevant circumstances, including potential market sensitivity.

Additional information relevant to the Company’s activities can be found on SEDAR at www.sedar.com and the Company’s website at www.nanoone.ca. All dollar amounts included therein and in the following Quarterly Highlights are in Canadian dollars, the reporting and functional currency of the Company, except where noted.

FORWARD-LOOKING STATEMENTS

Certain statements contained in this Quarterly Highlights may constitute “forward-looking statements”. Such term is defined in applicable securities laws. The forward-looking information includes, without limitation, the success of research and development activities and other similar statements concerning anticipated future events, conditions or results that are not historical facts. These statements reflect management’s current estimates, beliefs, intentions and expectations; they are not guarantees of future performance. The Company cautions that all forward-looking information is inherently uncertain and that actual performance may be affected by a number of material factors, many of which are beyond the Company’s control. Such factors include, among others, risks relating to research and development; the Company’s intellectual property applications being approved, the Company’s ability to property its proprietary rights from unauthorized use or disclosure, the ability of the Company to obtain additional financing; the Company’s limited operating history; the need to comply with environmental and governmental regulations; fluctuations in currency exchange rates; operating hazards and risks; competition; and other risks and uncertainties. Although the Company has attempted to identify important

factors that could cause actual actions, events or results to differ materially from those described in forward-looking information, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. Accordingly, actual future events, conditions and results may differ materially from the estimates, beliefs, intentions and expectations expressed or implied in the forward-looking information. All statements are made as of the Report Date and, except as required by law, the Company is under no obligation to update or alter any forward-looking information.

OVERVIEW

The Company was incorporated on November 5, 1987. The Company is engaged in developing novel, scalable and low-cost processing technology for the production of high performance nano-structured materials. Nano One's mission is to establish its patent pending technology as a leading platform for the global production of a new generation of nano-structured composite materials. Nano One is building a portfolio of intellectual property and technology "know-how" for applications in markets that include energy storage, specialty ceramics, pharmaceutical, semiconductors, aerospace, dental, catalysts and communications. The technology simplifies the assembly of complex formulations of organic and inorganic ceramic powders and is suited to growth markets where the commercialization of advanced materials is inhibited by costly and entrenched industrial fabrication methods. Nano One's first market is lithium-ion cathode materials in the energy storage sector, where its advantageous technology can bring sustainable differentiation and value to early adopters.

OVERALL PERFORMANCE

The Company has no revenues, so its ability to ensure continuing operations is its ability to obtain necessary financing to complete the development of novel, scalable and low-cost processing technology for the production of high-performance nano-structured materials.

Nano One's innovative processing technology can be used to produce materials used in a wide range of markets. Nano One's first addressable market is cathode materials for lithium-ion rechargeable batteries for electric vehicles (EV) and energy storage systems (ESS). There is growing demand in the lithium-ion battery market for more cost effective and higher performance energy storage solutions. Nano One is well positioned to address these needs with its patented and patent-pending technology and anticipates growth potential for the technology in many other materials markets beyond energy storage, including dental, catalysts, specialty ceramics, pharmaceutical, semiconductors, agriculture, aerospace and communications.

Nano One has developed a new process of producing high-performance cathode materials, which uses standard equipment and simple methods that are known to scale in a wide range of industrial applications. The process can produce higher performance composite materials while using lower cost feedstock and simpler processing. Nano One's patented and patent-pending technology is a flexible manufacturing platform that enables lithium carbonate (or hydroxide) to be used as feedstock alongside other raw materials such as nickel, manganese, cobalt, iron, phosphate and aluminum. It is a water-based process operating at mild pH and temperature that forms the energy storing cathode materials used in lithium-ion batteries. The process can be configured to produce a range of different nanostructured materials and has the flexibility to shift with emerging and future battery market trends and a diverse range of other growth opportunities.

The process consists of three stages, and the major innovations lie in the first stage where a special mode of combining reactants controls crystal nucleation and growth of particles. Nucleation is the self-assembly of molecules into an organized structure. The desired nano-scale or superfine structure is formed in the initial stage of the production cycle and eliminates many steps common to the incumbent industrial processes.

The underlying structure and morphology of the materials are preserved through a wide range of thermal processing steps, eliminating the need for long and repeated firings and indicative of robust and more durable material. The process produces materials with stable phase composition and high porosity, but which is configurable to meet a variety of energy density requirements.

The presence of nano-structures early in the process and before calcination (i.e., heating to high temperature) simplifies processing and is advantageous for material performance, process throughput, and scale-up. Characterization of the materials by electron microscope and x-ray characterizes the size, the composition and

the kind of structure, providing evidence of a robust structure that withstands the rigors of drying and calcination and maintains the integrity of its advantageous structure through thousands of charge cycles.

Typically, synthesis of nanomaterials at the bench scale are performed in small quantities anywhere from milligrams to grams of material. Subsequent scale-up from these small quantities often leads to detrimental changes in thermodynamics (heat, temperature, energy, work) and reaction kinetics (reaction rates and chemical change). Nano One recognizes that synthesis of materials must begin at a larger scale where the properties of the system are much closer to production conditions. For this reason, Nano One designed a 6-litre bench scale reactor that is capable of producing up to 150 grams per hour (150 g/hr) or 3 kilograms per day (3 kg/day), with drying and firing stages easily scaled to match. At this scale, there is sufficient volume to emulate the thermodynamic and reaction kinetics expected in the pilot and full-scale production.

The Company announced the addition of Hamutal Ben Bassat as VP Business Development in July 26, 2018.

The Company has been admitted into the Nasdaq International Designation program under the symbol OTC – Nasdaq International Designation: NNOMF since July 30, 2018. This is an over-the-counter (OTC) platform designed for non-U.S. companies. The program provides member companies with Nasdaq's visibility offering, allowing for greater access to U.S.-based investors.

Pilot Plant Project

In 2016, Nano One, NORAM Engineering and Constructors Ltd. ("NORAM") and B.C. Research Inc. ("BCRI") entered into a collaboration agreement whereby the parties would design, procure, construct, optimize and operate a pilot production plant. The goal of the pilot plant is to simulate full-scale production of lithium-ion cathode materials, showcase Nano One's patented technology and demonstrate the cost, scalability, performance, and novelty of Nano One's technology to strategic industry players. The pilot plant is capable of producing hundreds (100's) of kilograms batches of various lithium mixed metal cathode materials that are strategically critical to an electric vehicle, grid storage, and consumer electronic batteries. The procurement and construction phase of the pilot project began on June 1, 2016. The construction and commissioning of the pilot plant were completed in June 2017.

A scaled-up production of lithium-ion cathode materials that meet Nano One's processing and battery capacity targets has been demonstrated. Preliminary analysis of the pilot scale process is consistent with the chemistry and operating parameters developed in the laboratory. Evaluations of the pilot produced cathode materials shows crystallinity, elemental composition and battery capacity in line with Nano One's laboratory scale process and materials.

The pilot plant project is being supported by the Government of Canada through grants of up to \$2.08M from Sustainable Development Technology Canada ("SDTC") and up to \$1.9M from the Automotive Supplier Innovation Program ("ASIP"), a program of Innovation, Science and Economic Development Canada ("ISED").

SDTC funds will be payable in installments over the three (3) phases of the project, namely: "build", "optimization" and "validation" with a 10% holdback awarded upon completion of the project in mid-2018. The funds are dispersed at the beginning of each phase, and are subject to Nano One meeting milestones and having matching funds in place. To date, the Company has received three instalments totaling \$1,873,167, (2018 – one instalment of \$760,145) for three phases of a lithium battery materials pilot plant project. A total of \$333,539 was offset R&D expenses for the period ending June 30, 2018.

ASIP funds will be applied to the three project phases described above with an additional phase 4 involving the validation of materials specific to the electric vehicle market. To date, a total of \$1,286,920 has been claimed.

During the period ended June 30, 2018, the Company received additional government grants for training and employment grants totaling \$34,040 (2017 - \$Nil).

As at July 25, 2018, the Company entered into a contribution agreement with NRC-IRAP. NRC-IRAP will support Nano One's project to develop Coatings for High Durability Lithium-ion Battery Cathodes and will contribute up to \$349,000 in non-dilutive and non-repayable funds between August 1, 2018 and May 31, 2020.

Technology

The electric vehicle industry is demanding higher energy density lithium-ion cathode materials at a lower cost. This is being achieved with increasing proportions of nickel relative to cobalt, manganese or aluminum. Current industrial methods require higher cost lithium hydroxide as feedstock for these nickel-rich cathode materials. The flexibility of Nano One's process enables the use of lithium feedstock in the form of either carbonate or hydroxide for the production of high-performance cathode materials which could reduce constraints on the supply of battery grade lithium by enabling new sources.

Nickel-rich cathode materials include nickel cobalt aluminate (NCA) and nickel-manganese cobaltate (NMC-532, 622 and 811). Note: "NMC-xyz," where x, y, and z refers to ratios of nickel, manganese and cobalt, respectively. These materials are expected to play an increasingly dominant role in the lithium-ion batteries used by major electric vehicle manufacturers.

During the period ended December 31, 2017, Nano One demonstrated the synthesis of high energy cathode material for electrical vehicles using lithium carbonate feedstock with energy densities on par with industry standards. This demonstration underlines the opportunity of Nano One's technology to enable a wider range of lithium sources for the rapidly growing electric vehicle market and supplements Nano One's other opportunities in the space including improved cathode material durability, power, energy, and processing cost.

Nano One successfully piloted NMC111 and NMC622 with nickel content at 33% and 60%, respectively. These pilot tests were conducted at approximately 100 times normal lab scale, and the results provide added confidence that these nickel-rich materials can be manufactured at commercial scale. Electrochemical testing of battery cells made with these pilot materials is showing initial energy capacity measurements in excess of that achieved in the laboratory.

Nano One has successfully synthesized LNMO (High Voltage Spinel) in the pilot plant and has filed a patent application in respect to the process that coats the LMNO with a protective material which improves the stability of LMNO at higher temperatures. This coating may prove to also improve the interface between LMNO and solid-state electrolytes currently in development by a number of players for the next generation of lithium-ion batteries.

Nano One has filed a patent application in respect to a process for high-quality Lithium Iron Phosphate (LFP) at a reduced cost. This process has been successfully piloted and generates LFP that is already carbon coated thereby eliminating additional process steps. Further, the process generates material with small particle size which is desirable and with an initial energy capacity in excess of 160mAhg^{-1} which is higher than that of other LFP material available.

Nano One is developing coating and doping techniques for high nickel and high voltage spinel materials with the objective of improving both the durability and stability of these materials. The Nano One process is suitable for component gradients within crystals and surface coatings without the need for additional process steps.

Operating the pilot has also enabled Nano One to complete preliminary engineering plans for a modular 3,300 tonnes/year cathode production unit that could supply materials for roughly 24,000 60kWh electric vehicle batteries. Nano One has also begun work on detailed plant engineering in support of technology licensing proposals to global industrial interests.

LIQUIDITY AND FINANCIAL CONDITION

The Company has not yet realized profitable operations and has relied on non-operational sources of financing to fund operations. The ability of the Company to achieve its objectives, meet its ongoing obligations and recover its investments in granted and pending patents, and other assets will depend on management's ability to

successfully execute its business plan, achieve profitable operations and obtain additional financing, if or when required. There is no assurance that these initiatives will be successful.

Loss and comprehensive loss for the period ended June 30, 2018, increased by \$350,754. The change was primarily due to the following:

- General and administrative costs of \$1,555,546 (2017 - \$1,251,361) increased as follows:
 - Research and development increased by \$223,083 primarily due to work performed in connection with the pilot plant. Total government assistance recognized for the period ended June 30, 2018 was \$382,987 (2017 - \$586,340). The amount is offset against research and development expense on the statement of loss and comprehensive loss;
 - Consulting increased by \$18,689 primarily due to consulting fee paid to for corporate development consulting services and IT consulting services.
 - Shareholders' communication and investors' relationship decreased by \$24,357 primarily due to decreased services from Benchmark Mineral Intelligence.
 - Salary and benefits increased by \$88,212 due to the hiring of employees.
 - Office and general increased by \$4,383 due to an overall increase in activity.
- The Company recorded a non-cash share-based payment of \$177,155 (2017 – \$125,352) relating to the fair value to the current period.

Research and Development Expense For The Fiscal Period Ended June 30, 2018, Compared To June 30, 2017:

	Period Ended June 30, 2018 \$	Period Ended June 30, 2017 \$
Analytical services	5,438	4,106
Consulting	40,849	321,511
Depreciation	337,174	225,546
Government grant recovery	(382,987)	(586,340)
Lab rent	28,918	31,360
Office and lab expense	178,285	162,193
Salaries and benefits related to R&D	535,318	363,343
Travel	13,032	11,226
	756,027	532,945

Liquidity risk is the risk that the Company will not be able to meet its obligations associated with its financial liabilities. The Company has historically relied upon equity financings to satisfy its capital requirements and will continue to depend heavily upon equity capital to finance its activities. The Company's approach to managing liquidity risk is to ensure that it will have sufficient liquidity to meet liabilities when due. The Company started 2018 with working capital of \$4,643,789, and as at June 30, 2018, the Company had working capital of \$3,923,968. The decrease in the working capital of \$719,822 was primarily due to:

- 356,325 warrants with an exercise price of \$1.25 were exercised for gross proceeds of \$445,406;
- 400,000 stock options with an exercise price of \$0.35 were exercised for gross proceeds of \$140,000;
- total government assistance recognized \$382,987; and
- general and administrative costs of \$1,555,546.

Recent developments in the capital markets have restricted access to debt and equity financing for many companies. As the Company has no significant income, cash balances will continue to decline as the Company utilizes these funds to conduct its operations, unless replenished by capital fundraising.

	June 30, 2018	December 31, 2017
Working capital	\$ 3,923,968	\$ 4,643,789
Deficit	(14,367,112)	(12,644,499)

Subsequent to June 30, 2018, The Company issued 55,000 common shares pursuant to the exercise of stock options for gross proceeds of \$16,000.

FUTURE PLANS

Nano One will continue to develop, optimize and demonstrate the benefits of producing various cathode materials using its processing technology, for use in lithium-ion batteries including the development of high voltage cobalt free cathode materials.

Nano One will continue to collaborate with NORAM and BCRI to operate the pilot plant to demonstrate the production of lithium-ion battery cathode powders and to demonstrate technology improvements as they arise. The engineering design and specifications of equipment follow from commercial scale concepts developed by Nano One and NORAM. Nano One will continue to provide preliminary output and optimization of cathode materials. Nano One will also continue the evaluation of other next-generation lithium-ion battery materials as dictated by commercial interests. Nano One intends to ramp up the internal testing requirements with test cell assembly and electrochemical characterization.

Nano One has collaborated with Simon Fraser University to advance the understanding of the physical and chemical characteristics of lithium-ion batteries as they charge and discharge. The two-year collaboration with SFU will be supervised by Associate Professor Dr. Byron Gates and Dr. Stephen Campbell, Nano One's Principal Scientist, with financial support from the Mitacs Elevate Postdoctoral Fellowship Program.

As the lithium-ion battery market evolves, Nano One believes its key opportunities lie in (i) manufacturing of value-added and differentiable cathode materials, (ii) enabling lithium feedstocks that others cannot use, and (iii) customizing materials for solid state, fast charging and next-generation batteries. Nano One is adjusting financial models and development programs to pursue these opportunities.

Nano One intends to leverage progress on these plans and approach potential strategic interests and key market pull players to collaborate as partners in the demonstration pilot.

RELATED PARTY DISCLOSURES

Key management personnel is the persons responsible for the planning, directing and controlling the activities of the Company and includes both executive and non-executive directors, and entities controlled by such persons. The Company considers all Directors and Officers of the Company to be key management personnel.

(a) Purchases of services

	June 30, 2018	June 30, 2017
	\$	\$
Bedrock Capital Corp., an entity controlled by Paul Matysek, an executive director is an officer, for consulting fees	30,000	30,000
Sterling Pacific Capital, an entity controlled by John Lando, an executive director is an officer, for miscellaneous operating expenses	4,321	4,575
Center Cut Capital, an entity controlled by John Lando, an executive director is an officer, for employee benefits	-	11,418
Patent Filing Specialists Inc, an entity where a Joseph Guy, a director, is a director, for legal fees	51,198	-
	85,519	45,993

(b) Key management compensation

Key management includes directors (executive and non-executive), the, Chief Executive Officer President and Chief Financial Officer. The compensation paid or payable to key management for employee services is shown below:

	June 30, 2018	June 30, 2017
	\$	\$
Salary and benefits to the CFO	48,220	40,667
Salary and benefits to the President and Director	40,167	37,500
Salary and benefits to CEO and Director	66,295	62,500
	154,682	140,667

(c) Payable to related party

As at June 30, 2018, accounts payable to related parties consists of \$9,192 (2017 – Nil) owing to a director and company controlled by a director and officer of the company.

RISK AND UNCERTAINTIES

Risk is inherent in all business activities and cannot be entirely eliminated. Our goal is to enable the Company's business processes and opportunities by ensuring that the risks arising from our business activities, the markets and political environments in which we operate is mitigated. The risks and uncertainties described in the Annual MD&A for the year ended December 31, 2017, are considered by management to be the most important in the context of the Company's business and are substantially unchanged as of the Report Date. Those risks and uncertainties are not inclusive of all the risks and uncertainties the Company may be subject to, and other risks may apply.