



TSX: GRA  
OTCQX: NNXP

# nanoXplore

Performance Through Carbon Chemistry

## Investor Presentation

Last Updated October 19, 2021

# Forward-Looking Statements

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This presentation contains express or implied forward-looking statements, which are based on current expectations of management. These statements relate to, among other things, our expectations regarding management's plans, objectives, and strategies. All statements other than statements of historical fact could be considered forward-looking, including, but not limited to, any projections of financial information; any statements about historical results that may suggest trends in our business and results of operations; any statements of the plans, strategies and objectives of management for future operations, including the timing, funding and construction of planned manufacturing facilities and sales offices; any statements of expectation or belief regarding future events, potential markets or applications, the sizes of addressable markets, expected technology developments, strategic partnerships and collaborations, or enforceability of our intellectual property rights; any statements about the projected or expected economic or other benefits of our products compared to petroleum-derived equivalents, future sales and any statements of assumptions underlying any of the foregoing.

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Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the events and circumstances reflected in the forward-looking statements will be achieved or occur and the timing of events and circumstances and actual results could differ materially from those projected in the forward-looking statements. Accordingly, you should not place undue reliance on these forward-looking statements. All such statements speak only as of the date made, and we undertake no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

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# Company Overview

**Specialty chemical company founded in 2011 by CEO, Dr. Soroush Nazarpour**

**Manufacturer and supplier of advanced components and solutions based on proprietary graphene technology**

**Largest graphene producer in the world, with approximately 35%\* of worldwide nameplate capacity**

**Global company headquartered in Montreal employing approximately 400 people**

8 facilities in:

- Canada
- Switzerland
- United States

**Serving blue chip customers in important markets**

- Transportation: Volvo Truck, Volvo Bus, Paccar, Daimler, Caterpillar
- Renewable energy: GE
- Industrial: Itron

\* IDTechEx Research, Dr. Richard Collins:

[Is the Tipping Point for Graphene Commercialization Approaching?](#)

# Management



**Dr. Soroush Nazarpour, Ph.D**  
**President and Chief Executive Officer**

Expert in the field of graphene. Co-author of “Graphene Technology From Laboratory to Fabrication” (published by Wiley & Co in 2016). Ph.D in Nanotechnology from the University of Barcelona, Spain.



**Rocco Marinaccio**  
**Chief Operating Officer**

More than 20 years of experience in operations. Previously with Martinrea International Inc. (TSX:MRE).



**Luc Veilleux, CPA, CA**  
**Chief Financial Officer**

Over 20 years of executive management. Financial and operational experience in manufacturing and mining industries.

**Supported by a strong Board of Directors**

# Our Main Product : Graphene

Pure carbon consisting of carbon atoms arranged in a few-layer honeycomb lattice

- Discovered at Manchester University in 2004 (2010 Nobel Prize)

Used in thermoplastic, thermoset and molded products; also available in powder

Greatly improves mechanical properties

Excellent barrier and weatherability to UV, harsh chemicals, water, and gases

Improves thermal and electrical conductivity

Unique electromagnetic properties

Sustainable alternative to other carbon additives

Global market size expected to grow at 39% CAGR between 2020-27 to reach nearly US\$3 billion\*

\* Source: "Graphene Market Size, Share & COVID-19 Impact Analysis, By Product, By End-Use", Fortune Business Insights, August 2020



GRAPHITE

EXFOLIATION



GRAPHENE

# Manufacturing Footprint and Process

**Eight facilities in Canada, the United States and Switzerland**

**New state-of-the-art graphene facility in Montreal**

**Natural flake graphite (>100,000 layers of carbon) exfoliated via a mechanical-liquid proprietary process**

- Low cost, high volume, highly scalable

**Production of very consistent and high-quality graphene in volume**

- 6-10 atomic layers in thickness with 96-98% purity





# Montreal Graphene Facility Ramp-Up



## **Capacity of 4,000 tons/year**

- Capable of producing different grades of GrapheneBlack™

## **Fully automated facility**

- Managed by Programmable Logic Controllers, ensuring product consistency and highest level of quality assurance

## **Building expansion underway**

- Increase of graphene production capacity is possible by increments of 4,000 tons/year when current output is fully committed

## **Potential redundancy expansion at other facilities**

- Bring capacity closer to OEM customers locations

# Graphene as a technology platform

## One material for many industries



- **Transportation**
- **Energy Storage & Batteries**
- **Renewable energy**
- **Industrial, building, and construction**
- **Agriculture**
- **Consumer Packaging**
- **Paints & Coatings**
- **Pipes & Tubes**



# Graphene composites for Transportation

**Technology:** Sheet Molding Compound (SMC)



**Compressive Strength**



**Light weighting**



**Processability**



**UV Resistance**



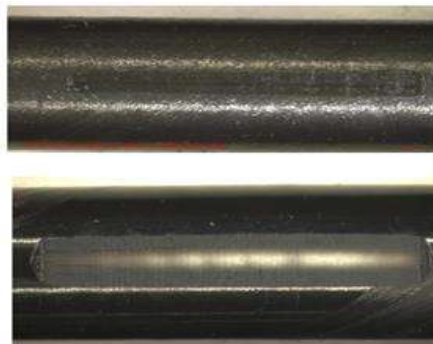
Light-weight composite hoods made with graphene demonstrate smoother surface finish compared to traditional ones. Graphene also increases the strength and stiffness of the composite hoods, enabling weight reduction for molded parts.

# Graphene coatings for Transportation

Fuel and  
Brake Lines



NanoXPlore



Material	Number of abrasion cycles	Improvement
Nylon/Graphene	>150,000	30X



Abrasion Resistance



Extend Lifetime

# Graphene for Lithium-ion Batteries



**Additive that extends lifetime**

**Improves energy density, charge rate, and cycle life**

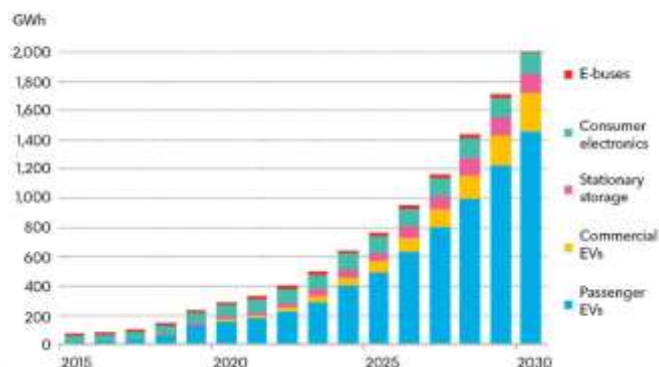
**Favourable trends in the battery market**

- Move toward larger cylindrical cells
- Nickel rich cathode formulation
- Silicon rich anode formulation

**Our graphene battery initiative**

- Over five years of R&D, internally and with partners
- Secured a strong IP portfolio for multiple applications
- Add GrapheneBlack™ to current Li-ion chemistries to improve energy capacity and charging speeds
- Applications in electric vehicles, trucks, buses and energy storage systems
- Dedicated R&D laboratory to support a pilot line for graphene-based anodes and Li-ion batteries through a joint venture called VoltaXplore Inc.<sup>1</sup>
- Low-cost technology enables us to potentially replace spherical graphite from Li-ion battery anodes, eliminating cost bottlenecks for commercial adoption

Annual lithium-ion battery demand

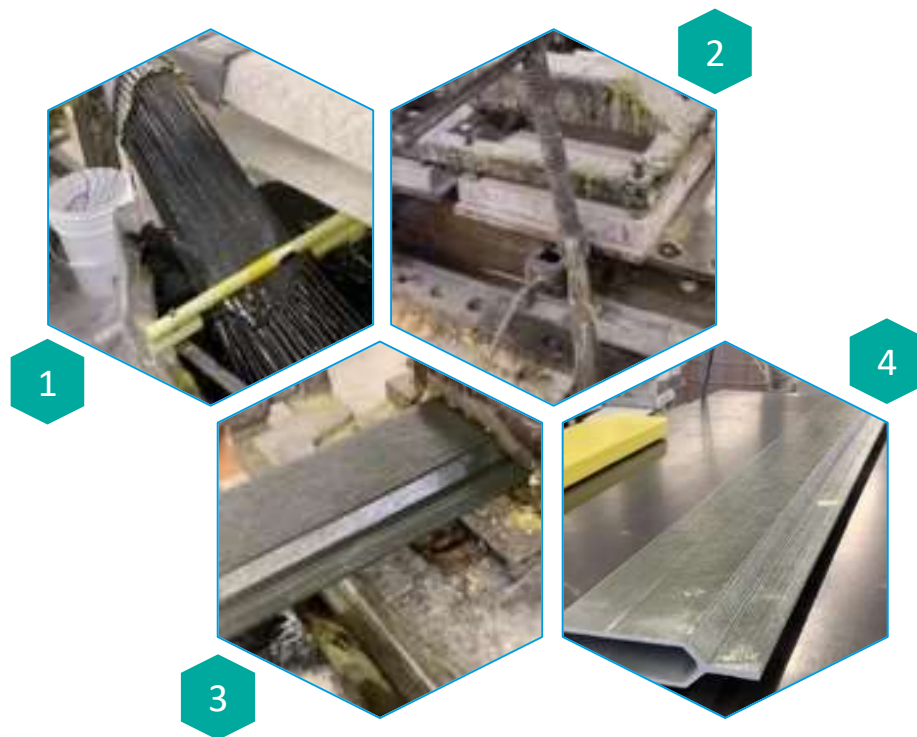


<https://energycentral.com/c/ec/world-battery-production#:~:text=As%20a%20dec%202019%2C%20the,40%20million%20EVs%20by%202028.>

<sup>1</sup> Refer to slide 14 and a press release dated April 15, 2021 for more details

# Graphene composites for Renewable Energy

**Technology:** Pultrusion



**Windmill Blades**



Graphene increases the strength  
and reduces the weight

# Graphene for Industrial and Agricultural products



## Recyclability



- Flooring parts made with 100% recycled plastics
- Graphene enables the use of recycled polypropylene without any virgin plastic
- Parts are fully recyclable at the end of life





# Developments

## **August 2021: U.S. subsidiary enters into a consent order with U.S. EPA**

- NanoXplore entered into a consent order with the U.S. Environmental Protection Agency under the Toxic Substances Control Act (TSCA) which allows for the commercial use of its GrapheneBlack™ as an additive for thermoplastics, thermosets and rubbers, with no annual volume limitation.

## **July 2021: NanoXplore graduated from the TSX-V to the TSX, GRA symbol remains**

## **June 2021: Multi-year supply and distribution agreement with Gerdau Graphene (Brazil)**

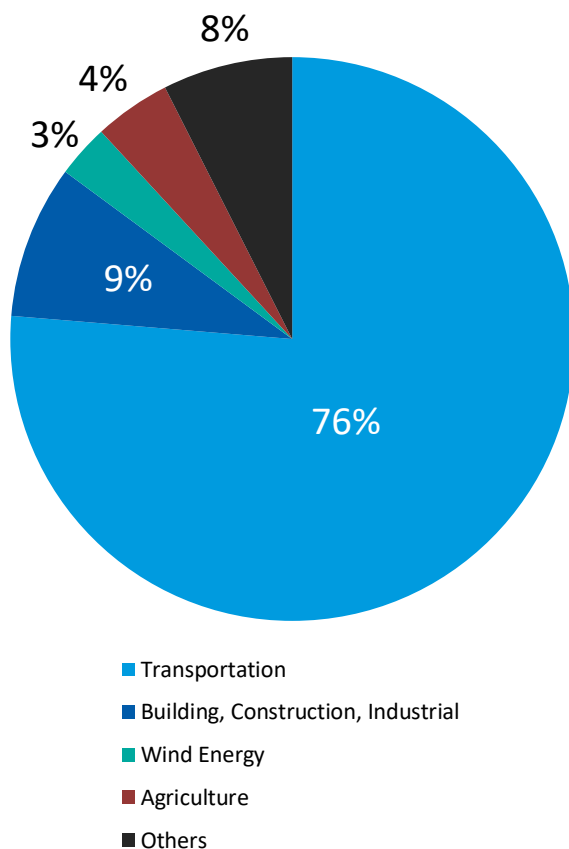
- Expands graphene applications on an industrial scale
- Targets customers mainly in the concrete and construction markets
- Further enhances NanoXplore's leading position in the global graphene market

## **June 2021: Agreement with Techmer PM (U.S.) to supply GrapheneBlack™**

- Includes a customer-based exclusivity
- Techmer to market graphene-enhanced compounds for many applications in various industries
- Leverages NanoXplore's leading-edge technology

# Operating Results

## Fiscal 2021 Sales Breakdown



## REVENUE<sup>(1)</sup>

Periods ended June 30, 2021

Three-month \$20.9 M

Twelve-month \$72.3 M

(1) audited financial data

**Cash and cash equivalents  
of \$50.5 million as at  
June 30, 2021**

# Analyst Coverage



Rupert Merer



Amr Ezzat



MacMurray Whale



Ahmad Shaath



Marvin Wolff



Michael Glen

# Why Invest in NanoXplore?



- Largest graphene powder producer in the world (IDTechEx Research, [www.idtechex.com](http://www.idtechex.com))
- Graphene market expected to grow significantly
- Solid business relationships with large OEM customers
- Provider of sustainable solutions
- Powerful combination of experience with state-of-the-art technology and methodologies to continuously improve products
- Committed to bring the best-in-class technology and processes to customers at a lower cost without sacrificing quality
- Sound financial position



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