ZEN Graphene Solutions

Who We Are & What We Do

- Creators of next-gen graphene-enhanced technology
- Developers of IP for practical applications
- Pursuers of better products for people and the environment

Why Graphene?

200x stronger than steel	Composite materials & alloys, Additive to rubber, plastics, concrete
Extremely high surface area-to-mass ratio	Transport antimicrobial agents to target viruses, bacteria and fungi
Stretches to 120% of its original size	Coatings, additives & wearable technologies
10x thermal conductivity of copper	Composite materials, polymers, coatings, concrete, heat sinks/spreaders
Impermeable to hydrogen	Filters, H_2O purification, desalination, gas storage, hydrogen generators
1000x current capacity of copper	Longer battery life, faster charge times, semiconductors

Our Priorities:

- ✓ Commercialization of our proprietary graphene-based biocidal coating for the PPE and filtration markets
- ✓ Pursuing commercialization of our potential medical breakthrough: a proprietary, graphene-based compound with antibiotic, antiviral and antifungal properties for potential future human use
- ✓ Developing high-impact graphene applications and building our IP portfolio
- ✓ De-risking our supply chain by vertically integrating graphite and graphene oxide production, including permitting and environmental baseline study at our Albany graphite deposit

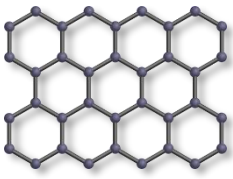
How We Create Value Today – *From Ground to Market*

Where It Starts

- Mined by open pit and underground methods in several countries around the world
- Vast majority of graphite production is metamorphic in origin vs. igneous which exfoliates better (Albany Pure™)

What It's Refined Into

(not exhaustive)



- Graphene (varying number of layers)
- Graphene nanosheet
- Graphene nanoplatelets
- Graphene oxide
- Reduced Graphene oxide
- Graphene quantum dots

What We're Doing With It

PPE Market
- ✓ Biocidal coating on masks, gloves and other PPE to protect front-line workers, the public and reduce spread of pathogens

Air Filtration
- ✓ Biocidal coating on air filters to kill airborne pathogens in homes, schools, hospitals and commercial and industrial spaces

Therapeutics
- ✓ Antiviral, antifungal and antibacterial treatment of respiratory tract infections, sinusitis and topical wounds

How We Grow in the Future – *Limitless Potential*

Current Research Projects & Collaborations

ADVANCED MATERIALS

Aluminum – increased strength, thermal properties and electrical conductivity
Steel – highly effective corrosion protective coating
Rubber – enhanced strength and heat resistance
Concrete – enhanced strength and longevity
Polymers – stronger, more conductive, heat dissipation, acoustic improvement, EM shielding

SAFETY & HEALTH

Therapeutics – other potential human-pathogen targeting applications
Protection – additional potential applications for biocidal coating to be applied to PPE
Detection – rapid antibody and antigen detection

GREEN ENERGY & CLEAN TECH

Batteries – increased capacity, higher performance, lighter and lower cost
Dehumidification – significant energy savings in HVAC systems

GRAPHENE SYNTHESIS

Electrochemical, chemical and mechanical exfoliation; synthesis of graphene quantum dots

World-Class Partnerships Focused on Graphene-Enhanced Solutions

Academia

University of Guelph
The University of British Columbia
McMaster University
uOttawa
University of Waterloo
University of Toronto

Government

OCI – Where Next Happens
NSERC CRSNG
NGen – Next Generation Manufacturing Canada
Défense nationale / National Defence
IDEaS IDEeS
Royal Canadian Navy / Marine Royale Canadienne
MITACS
Ontario

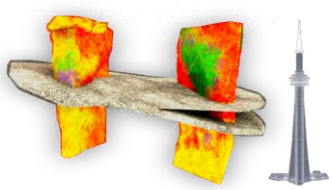
Corporate

TREBOR Rx Corp.
evercloak.
DLR

Our Vertically-Integrated Advantage – *Ensuring We Can Execute*

Unique & Rare Deposit

- Ideal precursor material for conversion to high-value graphene products
- Large graphite resource



Ideally Located

- Northwest of Hearst, ON
- Easily accessible and near all required infrastructure

In Partnership with First Nations

- Active and regular engagement with CLFN
- MOU for project development
- Collaborative environmental baseline study underway

Constance Lake First Nation (CLFN)

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