FuelGems

A Revolutionary Fuel Additive with Potential to Change the Fuel Industry
FuelGems: More Efficient and Cleaner Fuel for the $3.5 trillion market and a More Sustainable Planet.

Diesel and gasoline will power 80% of all vehicles by 2050. Fuel is not efficient, dangerous and deadly for the environment and human health. The world needs a solution today.

Revolutionary additive for instant and continuous increase in mileage for gasoline and diesel engines, emissions reduction and engine protection.

Innovative nanotechnology based additive to give users up to 1000% ROI.

Source: Energy Watch Group
There are major problems with gasoline and diesel

Deadly emissions
Contaminated air and toxic emissions from dirty fuel cause over 5 million people to die annually

Fuel is expensive
Fuel is a huge expense that every company wants to minimize

Fuel became more corrosive
Up to 70% more corrosive to the engine

Refineries need to differentiate fuel
Fuel is currently a commodity that provides no extra value
FuelGems decreases emissions
Decreases unburnt hydrocarbons by 50%
Decreases carbon monoxide by up to 15%
Decreases CO2 by up to 8%
Decreases particulate pollution

FuelGems increases lubrication
Increases engine life
Increases fuel pump life

Highly affordable
(2 cents extra per gallon)
Refineries can differentiate fuel and create new fuel class

Saves fuel
Up to 8% (users ROI up to 1000%)

Tiny amount needed
1-5 grams per 260 gallons (a whopping 800x less than competing additives)
Highlights

- Ready for world-wide expansion: LICENSING & OUTSOURCING
- Direct market opportunity: $40+ BILLION
- Fuel market: $3.5 TRILLION
- Strong returns & environmental impact: ROI UP TO 1000%, EMISSION REDUCTION UP TO 50%
- Key components of nanoparticle UP TO 95% MORE AFFORDABLE
- Traction: $25BN OIL&GAS COMPANY, $25BN FLEET OPERATOR, 90% OF HEAVY DAILY DRIVERS WOULD LIKE TO USE THE ADDITIVE
5 years in development and testing: **1 MILLION+ MILES DRIVEN WITH ADDITIVE**

**PATENTS** by top-tier IP firm Knobbe & Martens.

Nanoparticles can be sold and used in **SEVERAL MULTI-BILLION DOLLAR INDUSTRIES**

Technology: **NEXT GENERATION NANOPARTICLE AND ITS PRODUCTION METHOD**

Nanoparticle: **PROPRIETARY, CHEAP TO MANUFACTURE IN BULK AND ENVIRONMENTALLY SAFE**

Testing: **COMPREHENSIVE AND INTRICATE TESTS DONE AT VARIOUS RESEARCH CENTERS**
FuelGems pilot & pre-pilot potential clients are in USA, Europe and Asia

- **USA**
  - Petroleum market (P.M.) $700 bn
  - Price per gallon (P/g) $2.60

- **Europe**
  - Petroleum market (P.M.) $530 bn
  - Price per gallon (P/g) $6.0

- **China & India**
  - Petroleum market (P.M.) $620 bn
  - Price per gallon (P/g) $4.0

*P.M. — Petroleum market
P/g — Price per gallon

Source: BP plc, Bloomberg
Sales pipeline traction

Pilot stage

OMV
OIL&GAS $20bn+ revenue
interest from BOARD OF DIRECTORS

Ovostar Union
FARMING $100mln revenue
interest from BOARD OF DIRECTORS

MOU with Company
FLEET OPERATOR $25bn+ revenue
interest from VENTURE & LOGISTICS DIVISIONS
Pre-pilot stage

BP
OIL&GAS $300bn+ revenue
interest from CHIEF SCIENTIST

Marubeni
TRADING $60bn+ Revenue
interest from CEO

PKN Orlen
OIL&GAS $30bn+ revenue
interest from BOARD OF DIRECTORS

Suncor Energy
OIL&GAS $30bn+ Revenue
interest from CEO

Severstal
STEEL $6bn revenue
interest from INVESTMENTS DIVISION
Financial projections

Only 2 cents to treat 1 gallon of gasoline
We believe $400 million annual revenue represents only 15-20 clients

EBITDA $ (million) | REVENUE $ (million)
--- | ---
2021 | 1.5
2022 | 15
2023 | 95
2024 | 164
2025 | 260
2026 | 410

EBITDA 2026 $165 (million)

*Theses are forward-looking projections which CANNOT be guaranteed.*
Prospective clients and go to market strategy

FuelGems pilot projects are corporate fleets and refineries. Gas Station Operators and Auto Retailers are next.

<table>
<thead>
<tr>
<th>Refineries</th>
<th>ExxonMobil</th>
<th>Shell</th>
<th>bp</th>
<th>TOTAL</th>
<th>Chevron</th>
<th>Valero</th>
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<tbody>
<tr>
<td>Gas Station Operators</td>
<td>Sundco</td>
<td>Circle K</td>
<td>ARCO</td>
<td>Phillips 66</td>
<td>Pilot</td>
<td>Conoco</td>
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<tr>
<td>Corporate fleets</td>
<td>Walmart</td>
<td>Sysco</td>
<td>Coca-Cola</td>
<td>Pepsi</td>
<td>Halliburton</td>
<td>US Foods</td>
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<tr>
<td>Chemicals for Fuel</td>
<td>BASF</td>
<td>Dow</td>
<td>The Chemical Company</td>
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</table>
Prospective clients and go to market strategy

FuelGems pilot projects are corporate fleets and refineries. Gas Station Operators and Auto Retailers are next.
How FuelGems makes money

The cost of fuel additive is insignificant
2 cents treats 1 gallon of gasoline

$12 million Revenue for FuelGems
small gas station operator with 500 filling stations

$27 million Revenue for FuelGems
one refinery

220,000 gas stations and 220 refineries in USA and Europe
FuelGems market potential is $40 billion

Revenue from refineries and gas station operators
USA, Europe and Asia

$30 Billion

$1.85 Trillion X 8% Savings X 20% of Savings

Revenue from fleets
Fleet fuel consumption in top 20 countries

$10 Billion

$500 Billion X 8% Savings X 20% of Savings
Nanoparticles are amazing because they greatly enhance materials. Our nanoparticles improve gasoline and diesel.

Fuel market is enormous while nanotechnology is one of the fastest growth technology sectors.

- Nanoparticles will be used in products that represent over $2 trillion in the global economy.
- Fuel market is $3.5 trillion.

Nanoparticle market is red hot: $10 billion in 2018 to $50 billion in 2026. 15%+ CAGR Growth.
Development costs of bootstrapped phase equivalent to $2 million

- Technology developed, thoroughly tested, patented
- Ready for mass production

- Backed by a VC fund with follow-on commitment
- Pilots with clients (multi-billion companies)

- In-house and outsourced production
- Revenue of up to $20 million

- Revenue up to $400 million
- IPO
- Acquisition of the company

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## Industry exits and financings

**Fuel additives** were involved in 120 deals with deal value over $200 billion. Active buyers are multi-billion dollar corporations.

<table>
<thead>
<tr>
<th>Company</th>
<th>Acquired By</th>
<th>Value (in million)</th>
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<tbody>
<tr>
<td>Gulf</td>
<td>Houghton</td>
<td>$1 bn</td>
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<tr>
<td>FLINT HILLS</td>
<td>Huntsman</td>
<td>$415</td>
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<tr>
<td>Halliburton</td>
<td>Athlon Solutions</td>
<td>$100+</td>
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<tr>
<td>Afton Chemical</td>
<td>North American Fuel Additives Business</td>
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**Nanotechnology for energy conservation: selected financings**

- NanoMech: nanotechnology, energy and lubrication raised $40 million
- Nano-C: nanotechnology, renewable energy, electronics raised $17 million
- Nanotech Industrial Solutions: oil additives raised $97 million

Source: Capital IQ, Crunchbase
Current fuel additives are expensive and lack performance

For customers
FuelGems is an easy solution with high performance and low price.

FuelGems can price its additive up to 20 times cheaper than competitors and win a large market share very quickly.

- Restores engine to baseline performance levels
- Continuous performance above baseline
A tiny amount: 1-5 grams of nanoparticle "FuelGems" is needed per 1 ton (260 gallons) of fuel.

Easy for gas stations: just add to large fuel storage tank.

Easy for refineries: just add during the refining process.

Easy for drivers: just add to fuel tank when filling up.
How it works

✓ Proprietary reactors and methodology to produce high amounts of nanoparticles at very low cost
✓ 10-50 reactors fit in a small laboratory
✓ The technology and production is inexpensive and efficient
Proprietary and patented know-how

Unique and proprietary production method, unique nanoparticle and its stabilization

**Production method**
Unique knowhow in electricity usage to form and apply plasma

**Chemical compounds**
Synthesis of unique spherical carbon nano-sized clusters

**Stabilization**
Nanoparticle is stabilized to disperse easily in fuel and avoid agglomeration for long life of nanoparticle in fuel

Top-tier IP law firm, Knobbe Martens filed the patents
Technical validation

Extensive university testing

Nanotechnology, atomic, molecular and chemical testing
- Atomic force microscopy
- Transmission electron microscopy
- Scanning electron microscopy
- Raman spectroscopy
- Infrared spectroscopy
- Oxidation testing
- X-ray fluorescence spectroscopy
- Qualitative chemical analysis
- Energy-dispersive X-ray spectroscopy

Tribology and friction
- Tribology and friction testing: measurement of friction
- Tribology and friction testing: liquid phase electron microscopy
- Tribology and friction testing: differential-phase laser scanning profilometer
- Tribology and friction testing: fuel pump, testing surfaces of various fuels

Internal combustion engine testing
- Internal combustion gasoline engine bench test
- Internal combustion diesel engine bench test
- Internal combustion engine gas analyzer tests
- Real-life testing over 1,000,000 miles driven in real cars

Comprehensive testing to fully examine the nanoparticles, their mechanism of action and effects: anti-friction and anti-oxidation
Technical validation

Nanotechnology analysis

Scanning Electron Microscope

RAMAN Spectroscopy

Atomic Force Microscopy: the nanoparticles are separated and packaged, ready to be added to fuel

Transmission Electron Microscope and High Resolution Transmission Electron Microscopy: Nanoparticles sized 5-80 nm

X-Ray Diffraction Analysis and X-ray Photoelectron Spectroscopy
Technical validation
Testing at research centers and in real life

Fuel no additive
Fuel pump shaft

Fuel with FuelGems
Wear profilogram
Technical validation
Testing at research centers and in real life

Liquid phase electron microspore

Surface friction of regular fuel – rough surface

Surface friction of fuel with FuelGems – smooth surface
**Surface scan of friction of fuel with additive**

<table>
<thead>
<tr>
<th>Trial</th>
<th>The appearance of the friction trace</th>
<th>Average wear, micron</th>
<th>Profilogram of the trace</th>
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<th>Average wear, micron</th>
<th>Profilogram of the trace</th>
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*8 kg axial load, the rotation speed of the contra-sample 300 rpm.

Nanoparticles reduce friction wear by up to 80%
Technical validation

Engine cell testing at Coventry University

- Jaguar Land Rover (JLR) engine used for testing
- Dosing: 3 to 5 grams per 1 ton of fuel
  - Reduction of Unburnt Hydrocarbons: 50%
  - Reduction of Carbon Monoxide: 14%
- There were no adverse effects to the engine

Research institute snapshot testing using diesel engine (reduction of fuel use/increase in mileage)

<table>
<thead>
<tr>
<th></th>
<th>Fuel no additive</th>
<th>Fuel with FuelGems</th>
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</thead>
<tbody>
<tr>
<td>Dosing</td>
<td>0</td>
<td>8%</td>
</tr>
</tbody>
</table>

Research institute snapshot testing using gasoline engine (reduction of fuel use/increase in mileage)

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<thead>
<tr>
<th></th>
<th>Fuel no additive</th>
<th>Fuel with FuelGems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosing</td>
<td>0</td>
<td>7.5%</td>
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Real life testing

Cars drove over 1 million miles with the additive
Our nanoparticles can be used in multiple large markets

We believe FuelGems can sell its nanoparticles 90% cheaper than competition

$3.5 trillion
petroleum fuel increases mileage by reducing consumption of gasoline and diesel

$24 billion (2023)
capacitors improves performance

$50 billion (2023)
industrial catalyst increases production of styrene

$140 billion (2026)
lithium ion batteries improves performance

$165 billion (2021)
lubricants improves lubricating effect

Source: Beilstein Journals, Researchandmarkets, Knowledge Sourcing Intelligence, Marketsandmarkets
Team

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Microsoft
EastOne (venture capital)
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Raiffeisen/Lazard
Deloitte
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British Gas
Cranfield University
Team

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National Aviation University

Roman Tarasov, Ph.D. candidate
Chemical Engineer
National Academy of Sciences of Ukraine
National University of Food Technologies
Kirill Gichunts has successful venture experience and startup exits

Managing Partner at EastOne’s VC accelerator; Invested and mentored over 15 companies. Selected investments:

- Kabanchik acquired by Prom.ua
- Preply, growth stage, raised 15 million USD
- PromoRepublic, growth stage, raised 4.3+ million USD
- Poptop, Series A stage, raised 1 million USD
- Founding team member of Silicon Valley start-up inFreeDA acquired by AT&T (NYSE:T)
- Advised Microsoft on launching technology accelerator Cloud Business City
- Semifinalist of Cleantech Open

During his career, Kirill has developed relationships with corporations and governments
Use of funds and next steps

Done

✓ Designed a unique nanoparticle
✓ Secured patent
✓ Designed cost-effective technology to manufacture the nanoparticles
✓ Treated and stabilized the nanoparticle to effectively dissolve and disperse in fuel
✓ Modeled mass production of nanoparticles
✓ Verified the technology via numerous tests at multiple universities
✓ Built core management and scientific team
✓ Built business model and proved high customer demand
✓ Pilot projects with multi-billion corporations around the world

Next Steps

- Set-up mass production of the additive
- Grow revenue
- Secure further patents
- Build sales and marketing to increase revenue growth
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