



QuantoNano

working on the smallest things
with the biggest impact



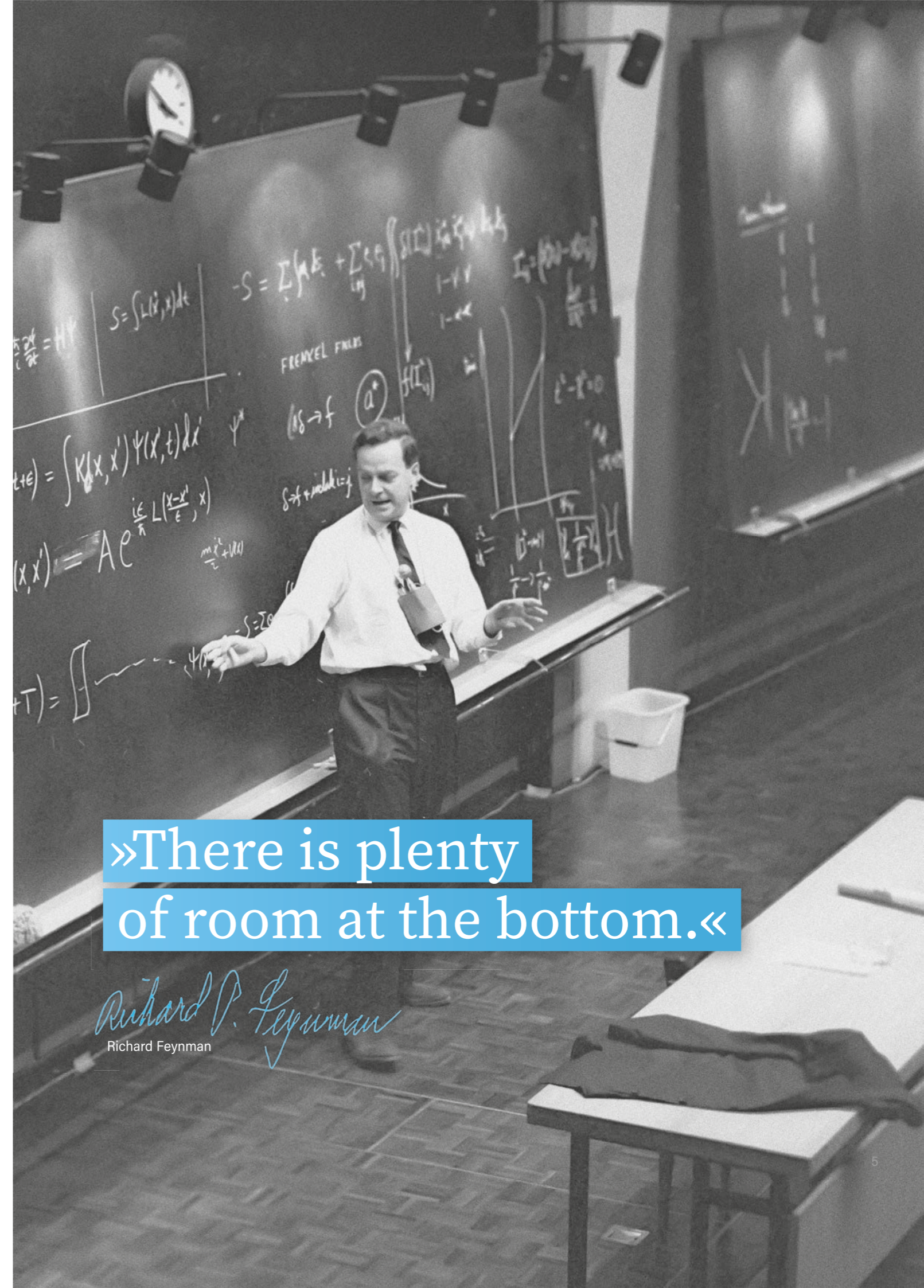
01 ——— ABOUT US ⁶
02 ——— MATERIALS ¹⁰
03 ——— SERVICES ¹²
04 ——— APPLICATIONS ¹⁴
05 ——— CONTACT ²²



NANOTECHNOLOGY POWERING THE NEXT INDUSTRIAL REVOLUTION

Richard Feynman, who was awarded a nobel price in physics for his fundamental work in quantum electrodynamics, meant in a prophetic lecture that exploring and manipulating materials almost atom by atom would create huge opportunities for new science and important new technologies.

We help industries to explore and capture this room at the bottom on a nano scale to improve their products and drive the next industrial revolution economical viable and sustainable.



»There is plenty of room at the bottom.«

Richard P. Feynman
Richard Feynman

UNLEASHING THE POWER OF NANOTECHNOLOGY

Welcome to the frontiers of sustainable innovation, where scale is measured in billionths of a meter and the possibilities extend far beyond the conventional.

01



QUANTO NANO GmbH

NUREMBERG (GER)

OPERATIONS & PRODUCTION



QUANTO NANO RnD doo

ZAGREB (CRO)

RESEARCH & DEVELOPMENT



QUANTO NANO AG

VADUZ (LIE)

HOLDING

As a deep tech company specializing in nanoparticle production and advanced material synthesis, we leverage the power of nanotechnology to accelerate decarbonization and enable true net zero. Our solutions offer improved performance and cost-effectiveness across diverse industries, pushing us closer to a sustainable, eco-friendly future.

Our motivation is to accelerate the clean energy transitions, support clean fuel initiatives, and enable with our solutions the support of various industries towards major global agendas such as the EU Green Deal and the US Inflation Reduction Act.

At our core, we understand and exploit the phenomenal properties of nanomaterials to deliver groundbreaking solutions across diverse industries. From nanoparticle production and tailoring to nanomaterial synthesis and nanoengineering, we integrate our vast knowledge and expertise to help shape a future that's smarter, safer, and more sustainable.

About Us

We are building up on over 20 years of experience in the nanotechnology space and advanced manufacturing and rapid prototyping with several unique achievements along the way. We are soon out of stealth mode, enabling the world to benefit from our products and know-how and IP.

EXPERTISE AND KNOW-HOW

Founded by a team of visionary scientists and engineers, we have always been at the cutting-edge of nanotechnology. Our passion for exploration and innovation fuels our drive to transform the nanoscale world into macro scale solutions.

Our proprietary production methods for nanoparticle production and tailoring set us apart in the industry. These enable us to control the size, shape, and composition of nanoparticles, allowing us to precisely engineer materials with bespoke properties.

OUR MISSION

We are committed to harnessing nanotechnology to enable a more sustainable future. Through our research and development, we create tailored nanomaterials to enhance current technologies in numerous ways, such as improving efficiency, increasing capacity, boosting conductivity, and enhancing durability. This versatile approach allows us to develop solutions that can be scaled down in size and weight without compromising their performance, significantly contributing to our vision of a decarbonized future.

OUR VISION

„Empowering a Sustainable Future through Nanotechnology: We envision a world where nanotechnology is harnessed to its fullest potential, driving breakthroughs across industries, reshaping the future of our planet, and enabling a more sustainable, efficient, and equitable society. Establishing ourselves as leading provider in nanoparticle production and advanced material synthesis, we are committed to pioneering innovation that not only enhances performance but also upholds environmental stewardship and social responsibility.“



Collaboration & Validation

We believe in the power of partnerships. We collaborate with leading academic institutes and industrial partners across the globe to validate our innovations. These independent validations ensure the efficacy and reliability of our solutions, while these partnerships foster the practical application of our innovations and significantly contribute to the advancement of the field of nanotechnology, promoting rigorous scientific validation and ensuring our nanotechnological solutions deliver genuine, measurable benefits.

Through these partnerships and our relentless pursuit of innovation, we affirm our commitment to unlocking the potential of nanotechnology and reshaping industries for a more sustainable future. On successful validation, we empower our industrial partners by equipping them with the capability to incorporate our nanotechnology into their next-generation product lines.

EMBRACING THE POWER OF PARTNERSHIPS

At the heart of our company is a firm belief in the power of partnerships. We actively collaborate with leading academic institutes and industrial partners across the globe, a strategy that allows us to validate and refine our innovations.

INDEPENDENT VALIDATION FOR CREDIBILITY

These independent validations, performed by esteemed institutions and partners, provide crucial assurance of the efficacy and reliability of our solutions. They serve to enhance our credibility in the market, ensuring our solutions not only meet but exceed industry standards.

EMPOWERING INDUSTRIAL PARTNERS

Upon successful validation, we go a step further to empower our industrial partners, equipping them with the necessary tools and knowledge to incorporate our advanced nanotechnology into their next-generation product lines.

RECOGNITION AND ADVANCEMENT WITHIN THE INDUSTRY

The success of our efforts resonates within the industry and is further affirmed by the leading research institutes we collaborate with. These strategic partnerships foster the practical application of our innovative solutions and significantly contribute to the advancement of the field of nanotechnology.

INTERDISCIPLINARY EXCHANGE AND RIGOROUS VALIDATION

These collaborations serve as robust platforms for interdisciplinary exchange, promoting a rigorous process of scientific validation. They ensure our nanotechnological solutions deliver tangible, measurable benefits that make a real difference.

OUR COMMITMENT TO UNLOCKING NANOTECHNOLOGY POTENTIAL

Through these synergistic partnerships and our relentless pursuit of innovation, we are committed to unlocking the vast potential of nanotechnology. Our vision is to reshape industries, drive sustainable practices, and ultimately contribute to a more sustainable and prosperous future.

Our Unfair Advantage

LOWEST COST NANO PRODUCTION AT SCALE

We are providing the world's lowest cost production of nano particles at 1/10th of the cost of the competition at a fraction of the space and manpower required through our own proprietary production process.

HIGHEST QUALITY AND PURITY

We are currently able to produce in a single module around 25kg of tailored nano particles per day in a single step at the highest quality and purity (3N - 5N) in the market.

FULLY SCALABLE FOR INDUSTRIAL APPLICATIONS

We are able to scale modules with up to 10 tons per day output

We are providing nano materials tailored to the need of the customer and application and its specific challenge in the size range from 1nm - 1000nm, with a fine and tuneable distribution i.e. from 80nm - 100nm according to the desired output, enabling new applications in a never before met economical approach that can scale to any size required to support the commercial production.

TAILORED TO CUSTOMER AND APPLICATION NEED

We can engineer particles and solutions, tailored to the needs of the customers in their size, distribution, morphology (specialized in high surface area) and purity at the most competitive price and timeline.

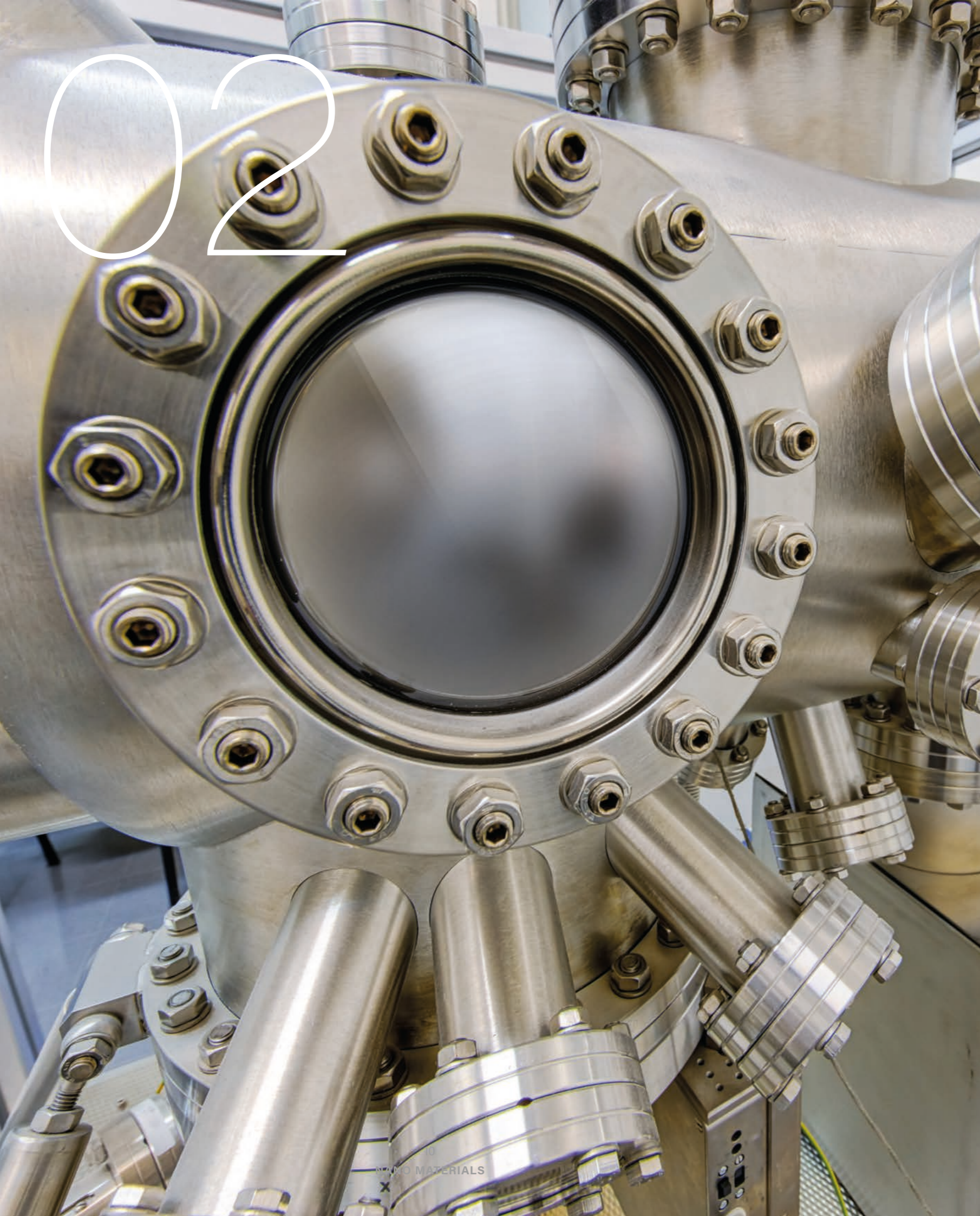
MOST SUSTAINABLE NANO PRODUCTION TODAY

We are delivering these nano particles with 1000 times less environmental footprint, without any chemicals and only water compared to what the industry is achieving today.

We are using kW in electricity and only water where others are using MW and chemicals which helps us to be more cost efficient and with less environmental impact for a sustainable and scalable production.

INDUSTRY AGNOSTIC

Our services span across various sectors and industries from hydrogen, energy storage, heating and cooling, waste conversion, advanced materials, aerospace, paints and coatings to medical, all contributing to the goal of decarbonization and net-zero emissions. The solutions are designed to exceed the performance standards of traditional technologies, making us a trusted partner in the quest for a sustainable future.



Nano Materials & Synthesis

NANO MATERIALS

We provide customer and application specific tailored nano particles and our team has processed close to 100 different materials on nano sizenable. As we continue to unravel and harness the potential of this powerful combination, we remain committed to driving innovation and sustainability across industries for a more prosperous future.



Proteins

REVOLUTIONIZING INDUSTRIES WITH PROTEINS AND NANOTECHNOLOGY

Proteins, with their remarkable diversity and complexity, possess an untapped potential that can revolutionize a wide range of industries, particularly when combined with the transformative power of nanotechnology. This nexus of biology and nanotechnology offers an exciting frontier, promising to spawn a new generation of advanced materials and systems.

Proteins, by nature, are self-assembling, programmable materials that can form an array of complex, hierarchical structures. When coupled with nanomaterials, they can offer unique capabilities such as self-healing, responsiveness to environmental stimuli, and improved durability. These hybrid materials - combining the robust, customizable structures of proteins with the unique quantum effects of nanomaterials - are opening the door to unprecedented possibilities.

In the energy sector, these protein-nano composites could play a crucial role. For instance, they could lead to the development of more efficient photovoltaic cells, better energy storage solutions, and more sustainable fuel production processes. In the construction industry, self-healing materials could drastically extend the lifespan of structures and reduce maintenance costs.

Additionally, in the field of advanced materials synthesis, the application of proteins and nanotechnology can bring about entirely new classes of materials, with properties tailored at the nanoscale for specific applications. This includes materials with enhanced conductivity, reactivity, and durability. The amalgamation of proteins and nanotechnology stands to redefine the landscape of material science, offering solutions with a level of sophistication and functionality that was previously unimaginable. As we continue to unravel and harness the potential of this powerful combination, we remain committed to driving innovation and sustainability across industries for a more prosperous future.

03

Services

We are providing a variety of services to support the engineering effort of industry internal RnD teams to establish product validation and integration in existing production processes.

NANO PARTICLE PRODUCTION

We specialize in the high-volume production of a broad range of nanoparticles. Leveraging our advanced manufacturing facilities and proprietary production methods, we ensure a consistent, high-quality nanoparticle output, perfectly suited for various industrial applications.

NANO PARTICLE TAILORING

Our particle tailoring capabilities allow us to custom-design nanoparticles to specific requirements. Whether you need particles of a particular size, shape, or functionality, we have the knowledge and the tools to deliver nanoparticles precisely tuned to your needs.

NANOMATERIAL SYNTHESIS

Our expertise extends to the synthesis of advanced nanomaterials. We employ sophisticated techniques to create nanomaterials with unprecedented properties, opening up novel applications in fields like electronics, energy storage, and healthcare.

ADVANCED NANOMATERIAL SYNTHESIS AND PROTEIN INTEGRATION

Our expertise reaches far into the synthesis of advanced nanomaterials, standing at the intersection of cutting-edge nanotechnology and biological science. With sophisticated techniques, we engineer nanomaterials with unprecedented properties, expanding their applications across a multitude of fields, from electronics to energy storage and healthcare.

The addition of proteins into this nanomaterial landscape brings an exciting new dimension to our capabilities. Proteins, with their diversity and inherent ability to form complex, hierarchical structures, complement the transformative power of nanomaterials, enabling us to create hybrid protein-nano composites with unique capabilities. This allows us to delve even deeper into the realm of 'smart' materials, paving the way for creations such as self-healing structures, materials responsive to environmental stimuli, and more.

By leveraging these biological materials in nanomaterial synthesis, we open up the potential for advanced manufacturing capabilities. We can tailor the properties of these composite materials at the nano-scale, creating bespoke solutions for specific applications. This integrated approach significantly enhances the potential for advancements in areas such as energy efficiency, healthcare diagnostics and treatments, and sustainable industrial processes.

Our relentless pursuit in this innovative field underlines our commitment to remain at the forefront of nanomaterial synthesis. Through the fusion of proteins and nanotechnology, we are not just shaping the future of material science, but also creating solutions that have the power to reshape industries and contribute to a sustainable future.

NANO ENGINEERING

In the realm of nanoengineering, we strive to create solutions that truly revolutionize the way we live and work. Through the careful manipulation of nanoscale structures, we design and develop materials and devices that bring about a new era of technological innovation.

TURNKEY INDUSTRIAL PROJECTS + PROJECT DEVELOPMENT

In our group we are able to deliver comprehensive, turnkey industrial projects across a multitude of sectors. We collaborate with leading Engineering, Procurement, and Construction (EPC) partners and top-tier technology providers to ensure our solutions are at the forefront of innovation and best practice.

Our turnkey solutions are designed to streamline operations, reduce risks, and maximize efficiency. Furthermore, we actively engage in project development through Special Purpose Vehicles (SPVs) and Public-Private Partnership (PPP) models. This approach allows us to leverage shared resources and expertise, fostering a collaborative environment that drives project success and delivers superior value to our clients for a long-term successful relationship with impact.



04

Applications

We are developing in some of the most exciting areas of technology in a variety of sectors.

ENERGY EFFICIENCY AND ENVIRONMENTAL IMPACT

In the field of energy, our nanoparticles boost the efficiency of batteries and fuel cells while simultaneously reducing environmental impact. Our tailored catalysts are revolutionizing hydrogen production and fuel catalysis, leading to more sustainable and efficient processes.



PIONEERING MEDICAL APPLICATIONS

Our nanotechnology solutions are driving breakthroughs in the medical field. Our nano-based solutions are making strides in the fight against Alzheimer's disease and advancing the field of targeted drug delivery, opening up new horizons in personalized healthcare. Through these diverse applications, we remain steadfast in our commitment to advancing nanotechnology, reshaping industries, and ultimately, driving progress towards a more sustainable future.

- ANTI-ALZHEIMER
- ANTI-CANCER
- DRUG DELIVERY
- TOPICAL CREMES
- RF TREATMENT DEVICES
- BIO ANTIBIOTICS
- REPROGRAMMED WATER



INNOVATING IN ADVANCED MATERIALS

In the realm of advanced materials, we're redefining the standards. Our nano-enhanced cement offers unique charging, heating, and conducting capabilities, reducing the need for traditional wiring systems. Our composite materials leverage the power of nanotechnology for improved performance, leading to more durable and sustainable construction materials.

- CEMENT
(CHARGING / HEATING / CONDUCTING TO ELIMINATE WIRES)
- COMPOSITES



ACCELERATING THE CLEAN ENERGY STORAGE REVOLUTION

In the domain of batteries and energy storage, our advanced nanotechnologies are transforming the industry. Our hybrid, super-cap, and Li-ion batteries, as well as our solid-state, silica-based, and redox flow solutions, significantly enhance energy storage capacity and efficiency. Our nanomaterials also enable us to develop anode and cathode for diverse chemistries and compositions, driving innovation in battery technology.

- HYBRID BATTERIES (SUPER CAP + LIION)
- SOLID STATE BATTERIES
- STRUCTURAL BATTERIES
- SILICA BASED
- REDOX FLOW
- ANODE CATHODE DEVELOPMENT

For various chemistries and compositions



REVOLUTIONIZING AEROSPACE TECHNOLOGY

Our nanotechnology solutions are propelling advancements in the aerospace industry. From dry rocket fuel to advanced shielding and energy harvesting systems designed to protect against space radiation, our innovations are playing a pivotal role in space exploration and technology.

- SHIELDING & ENERGY
HARVESTING FROM SPACE RADIATION
- DRY ROCKET FUEL



RESHAPING HEATING AND COOLING SYSTEMS

We leverage nanotechnology to drastically improve the efficiency of heating and cooling systems. Our nano-improved water boilers provide an environmentally friendly alternative to traditional oil and gas boilers and offer a competitive alternative to heat pumps. Our advanced nanomaterials are also finding applications in air and floor heating systems, making them more energy-efficient and sustainable.

NANO IMPROVED WATER BOILER*

AIR HEATING

FLOOR HEATING

*to replace Oil & Gas and alternative to Heat Pump



ADVANCING WASTE CONVERSION PROCESSES

Our nanotechnology-enabled waste conversion technologies are contributing to the circular economy. Our innovative solutions efficiently convert coal and municipal solid waste (MSW) into valuable syngas and H₂, transforming waste management practices and creating cleaner, more sustainable energy sources.

COAL TO SYNGAS / H₂

MSW TO SYNGAS / H₂



ENHANCING PAINTS AND COATINGS

In the paints and coatings industry, our advanced nano-based solutions provide anti-fouling and anti-mold properties, ensuring enhanced durability and functionality. Our offerings are not only superior in performance but are also eco-friendly, contributing to a greener future.

ANTI FOULING

ANTI MOLD

OTHERS



DRIVING SUSTAINABILITY IN HYDROGEN PRODUCTION

Our nanotechnology plays a crucial role in the decarbonization of the energy sector, particularly in hydrogen production. We have developed a suite of advanced solutions, including H₂ catalysts and next-generation electrolyzers, that contribute to the emergence of a hydrogen-based economy.

H₂ CATALYSTS

NEXT GENERATION ELECTROLYZERS

SUN TO HYDROGEN (PEC / PC)





POWER-TO-X AND CLEAN FUEL SYNTHESIS

The application of nanotechnology is integral to our innovative approach in propelling alternative and clean fuel synthesis forward. We capitalize on our in-depth knowledge of nanoparticle manipulation, using this in our RnD to produce sustainable, high-quality fuels in a more efficient way.

In our 'Power-to-X' initiatives, we perform RnD to use excess renewable energy and transform it into storable and transportable fuels like Synthetic Aviation Fuel (SAF), eMethanol, and clean diesel. We are developing new methods to use renewable waste feedstock in highly efficient gasification processes that can be powered by renewable energy and without carbon footprint, reducing the dependency on non-renewable resources and aligning with global sustainability goals.

Our proprietary reactors and designed nano catalysts are fundamental to these processes, creating a paradigm shift in traditional hydrogen production methods and fuel synthesis. By accelerating chemical reactions at the nano scale, we are able to enhance the efficiency of these processes, saving energy and reducing environmental impact.

Through these innovative applications of nanotechnology, we not only bridge the gap between renewable energy sources and the global energy infrastructure, but also foster the creation of cleaner, more efficient fuel pathways. This further strengthens our commitment to a sustainable future and supports the industry and society in their clean energy revolution.

SEAWATER DESALINATION FOR FRESH WATER PRODUCTION

We have developed a patent pending technology that produces fresh water directly in the sea and without any external additional power required, being powered self-sufficient by renewable energies and in a maintenance free design to significantly reduce CAPX and OPEX compared to today's technologies in the market, helping countries to recapture agricultural land and provide affordable, sustainable and clean drinking water to the public & Industry.

GREEN HYDROGEN PRODUCTION - CATALYSTS

We are producing industry leading catalysts from abundant earth material that allows for a more efficient, cheaper and cleaner production of real green hydrogen, consuming a fraction of current technologies on energy and is enabling the clean fuel and clean energy transition.

OPTIMIZING POWER GENERATION AND PROPULSION

We combine nanotechnology with other innovations and combine it with mechanical engineering for 4 stroke and 2 stroke combustion systems to reduce the fuel consumption and emissions and optimize the engine performance.

FUEL TREATMENT FOR EMBEDDING WATER, ALCOHOL AND HHO

We have developed fuel conditioning systems that enables any liquid fuel (fossil or clean fuel) to be blended with water and optionally also Methanol while enabling the possibility to embed hho gas in nano water droplets directly into the fuel structure to a more stable emulsion without an emulsifying agent and overcoming the deterioration of the caloric value in real time with ultra low energy consumption in the cavitation chamber and without the need to store and transport any hydrogen.

INNOVATING WITH NANO ECO LUBRICANTS

Our nano eco lubricants are designed to reduce friction, wear, and heat generation, extending the lifespan of engine components, improving fuel economy, and reducing environmental impact. They are an excellent example of how nanotechnology can drive performance improvements while preserving the environment.

ADVANCING CATALYTIC AFTER-TREATMENT SYSTEMS

We are at the forefront of developing advanced catalytic after-treatment systems using nanotechnology. Our nano-based catalysts can significantly reduce harmful exhaust emissions, improving air quality and contributing to a cleaner environment.

LOW-ENERGY SYNGAS PRODUCTION

Our unique approach to nanotechnology also facilitates low-energy syngas production, a critical step towards more sustainable industrial processes. This approach not only produces high-quality syngas but also dramatically reduces the energy input required, making it an environmentally-friendly and economically viable alternative to conventional methods.

PROPELLING WITH ALTERNATIVE IMPLISSION PROPULSION TURBINES

In the realm of propulsion, we leverage nanotechnology to develop innovative impliosition propulsion turbines. These turbines, enhanced with our nano solutions, offer higher efficiency and performance, marking a significant advancement in propulsion technology and opening up new possibilities for the future of transportation.

In each of these areas, our application of nanotechnology is making substantial contributions to the decarbonization of the energy and transportation sectors. By creating more efficient and sustainable processes, we are actively contributing to the global transition towards a cleaner and more sustainable future.

05



Corporate Governance & ESG Commitment

ETHICAL, SAFE AND RESPONSIBLE PRACTICES

At the heart of our organization lies an unwavering commitment to ethical, safe, and responsible practices in nanotechnology. We ensure full compliance with all relevant regulatory standards. The health and safety of our workforce, our customers, and the environment form the pillars of our corporate governance.

EXCEPTIONAL CAPABILITIES FOR SUSTAINABLE SOLUTIONS

Our core belief is that nanotechnology is the key to optimizing performance, conductivity, reactivity, and durability across a multitude of markets. Leveraging our unique expertise, we create breakthrough solutions with quantum effects, high surface area, and precise nano-scale optimization. Our transformative capabilities extend across various industries, acting as the stepping stones towards a sustainable future.

SUPPORTING ESG OBJECTIVES

As a responsible corporate entity, we actively support companies in meeting their Environmental, Social, and Governance (ESG) objectives. We understand the importance of aligning business practices with broader societal goals and work hand-in-hand with companies, both directly and indirectly, to help them meet their sustainability targets. Our nanotechnological solutions are designed not only to drive performance but also to contribute to a cleaner, greener, and more equitable world.



WE WORK ON
THE SMALLEST THINGS
WITH THE BIGGEST IMPACT

Contact

SHAPE YOUR NANO FUTURE WITH US

Are you ready to tap into the potential of nanotechnology or Pioneer a sustainable future with nano technology?
Contact us today and let's explore how we can help bring your nano-inspired ideas to life for a sustainable and cost effective value added use of nanotechnology. Let's advance the field!

