



DOING MORE WITH LESS USING NANOTECHNOLOGY

DEFINE → DISCOVER → DEVELOP → DEMONSTRATE



**WASTEWATER  
TREATMENT**



**LIGHT WEIGHT/MECHANICAL  
REINFORCEMENT AND  
COATINGS**



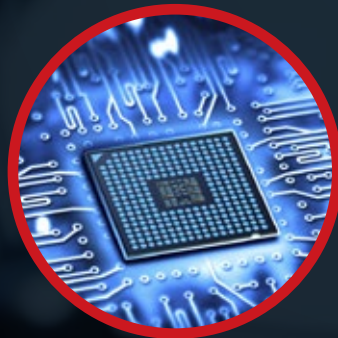
**ENERGY STORAGE/  
ELECTRODES**



**TRANSPORTATION  
AND MILITARY**



**CIVIL ENGINEERING/  
CONSTRUCTION**



**ELECTRONICS**



**DRINKING WATER  
TREATMENT**



**MINE/INDUSTRIAL  
TAILINGS**

# **SABINANO** **TECHNOLOGY APPLICATIONS**

# WHO WE ARE

SabiNano (Pty) Ltd (SabiNano) is a privately owned South African nanotechnology company that manufactures and supplies carbon-based nanomaterials such as carbon nanotubes (CNTs), graphene and other nanotech-based materials and technologies for research and innovation (R&I) and industrial applications.

The company also conducts strategic R&I projects and consultancy services for nanotech-based products and services through private-private (B2B) and public-private partnerships (PPPs). We also provide nanotech laboratory analytical services for a wide range of industries including chemicals, energy, automobile, coatings, water/wastewater treatment, advanced materials, mining, electronics, amongst others.

The company was founded in 2008 but officially became fully operational in 2018 with support from the Industrial Development Corporation (IDC). The Directors of SabiNano boast of extensive know-how and professional knowledge in the development and application of carbon nanomaterials (e.g., multiwalled CNTs, doped CNTs, graphene, graphene oxide, carbon spheres) and diverse forms of other nanostructured materials (e.g., nanocellulose, electrospun nanofibers, nano-titanium dioxide, etc) with a wide range of dimensions (shapes and sizes).

SabiNano's offices and manufacturing facilities and laboratories are currently located inside Mintek\* in Strijdom Park, Randburg, Johannesburg, South Africa.

Our nanotech products and technologies have applications in energy storage, batteries, energy devices, water/wastewater treatment, mine/industry tailings, sand stabilization, lightweight/mechanical reinforcement, heat dissipation materials, civil engineering and construction, electronics, transportation, and other environmental and health related applications.

Nanomaterials enable the creation of new products and technologies as well as improve the properties of existing products and technologies.

The company has at its disposal a wide range of technologies and extensive know-how in all water-related, energy storage and environmental sectors that will guarantee its clients cost-efficient solutions meeting customer requirement.



\* Main entrance to Mintek in Randburg, South Africa.



## COMPANY MISSION

Our mission is to be a leading producer and supplier of high-quality carbon nanomaterials (e.g. carbon nanotubes and graphene), related materials, and nanotechnology services in Africa and other parts of the world, providing excellent customer service at an economical price to improve the lives of all people.

## COMPANY VISION

Our vision is to create new wealth through the manufacturing and supply of high-quality carbon-based nanomaterials and related goods, technologies and services in Africa and beyond, creating thousands of sustainable employment opportunities.

## COMPETITIVE ADVANTAGE

- High quality, consistent properties, performance and supply.
- Scalable production to meet demand.
- Products can be supplied in powder form and in solution (dispersion).
- High aspect ratios, surface area, electronic and mechanical properties.
- Delivery within 24 hours for smaller orders locally.
- Customer tailor-made materials.
- After-sales support and application innovation.

## BUSINESS PHILOSOPHY

Honesty, integrity and compliance to regulations are our leading principles. Operation excellence, implementation of quality controls, and lean management practices are our in-house precedence to assure product consistency and customer satisfaction.

# THE TEAM



**Boitumelo Makgabutlane**

MTech, UNISA  
Production Scientist



**Sabelo Mhlanga**

PhD, Wits  
Chief Executive and Technical Officer



**Florence Musundwa**

BA (Hons), NWU  
Commercial Director

SabiNano consists of a growing team of professionals that is committed to utilizing its expertise to add value to the attainment of the company's vision and mission through the execution of different roles that comprise of management, technical, and advisory. The organization's personnel have a wide range of competencies that expand to innovation capacity, as well as remarkable marketing and administration that aid in advancing the company's market and production capability. SabiNano's directors are well-versed in the research and development of carbon-based nanomaterials for research and industrial applications which enables them to seamlessly contribute to innovation by harnessing nanotechnology.

# SABINANO PRODUCTS & SERVICES

## CARBON NANOTUBES

SabiNano manufactures and supplies high-quality carbon nanotubes (CNTs) on a commercial scale. Our multiwalled carbon nanotubes (SabinanoTubes™) have purities ranging between 90% (industrial grade) and >98% (research-grade) depending on customer needs and the end-use of the materials. Our unique CNT production process entails using a novel, environmentally friendly and economically viable process in a specially designed reactor. We supply in various quantities from grams to kilograms.

## GRAPHENE AND GRAPHENE OXIDE

SabiNano has a dedicated inhouse team and strategic partners for design, R&D and production of nano materials with advanced material technologies and conducting studies on new generation products. These products are, but not limited to, carbon nanotubes and graphene for academic research and commercial projects. Graphene and graphene oxide have a wide range of applications across many industrial sectors including modern 4th industrial revolution (4IR) technologies. We have partnered with one of the largest graphene mass production facilities in the world, with an annual graphene production capacity of 100 tons. Our goal is to reach this production scale in SA to enable many of the 4IR technologies in which graphene finds its applications. Our high-quality graphene products are already applied in anticorrosion and light-weight composite materials.

## NANOPARTICLES

Besides carbon nanotubes and graphene, we supply a wide range of nanoparticles for research and commercial projects. These include nanocellulose, single metal oxide nanoparticles, magnetic nanoparticles, element and alloy nanoparticles, multi-element oxide nanoparticles, rare earth materials etc. A complete list can be found in our e-commerce website ([www.sabinano.co.za](http://www.sabinano.co.za)).

## BIONANOMATERIAL-BASED WATER AND WASTEWATER TREATMENT TECHNOLOGIES

We supply the most environmentally friendly, profit-friendly technology for water/wastewater treatment and other industrial applications. If you are a small or large company/organization that purifies drinking or wastewater, or a mining company that is unable to purify its wastewater to acceptable standards, then you need to contact us. Our technology is the ideal choice because of its high efficiency and economic value. It is biodegradable, simple to apply, and has flexible properties. We have local and international partners that have vast experience in water treatment technologies and compliance to international standards.

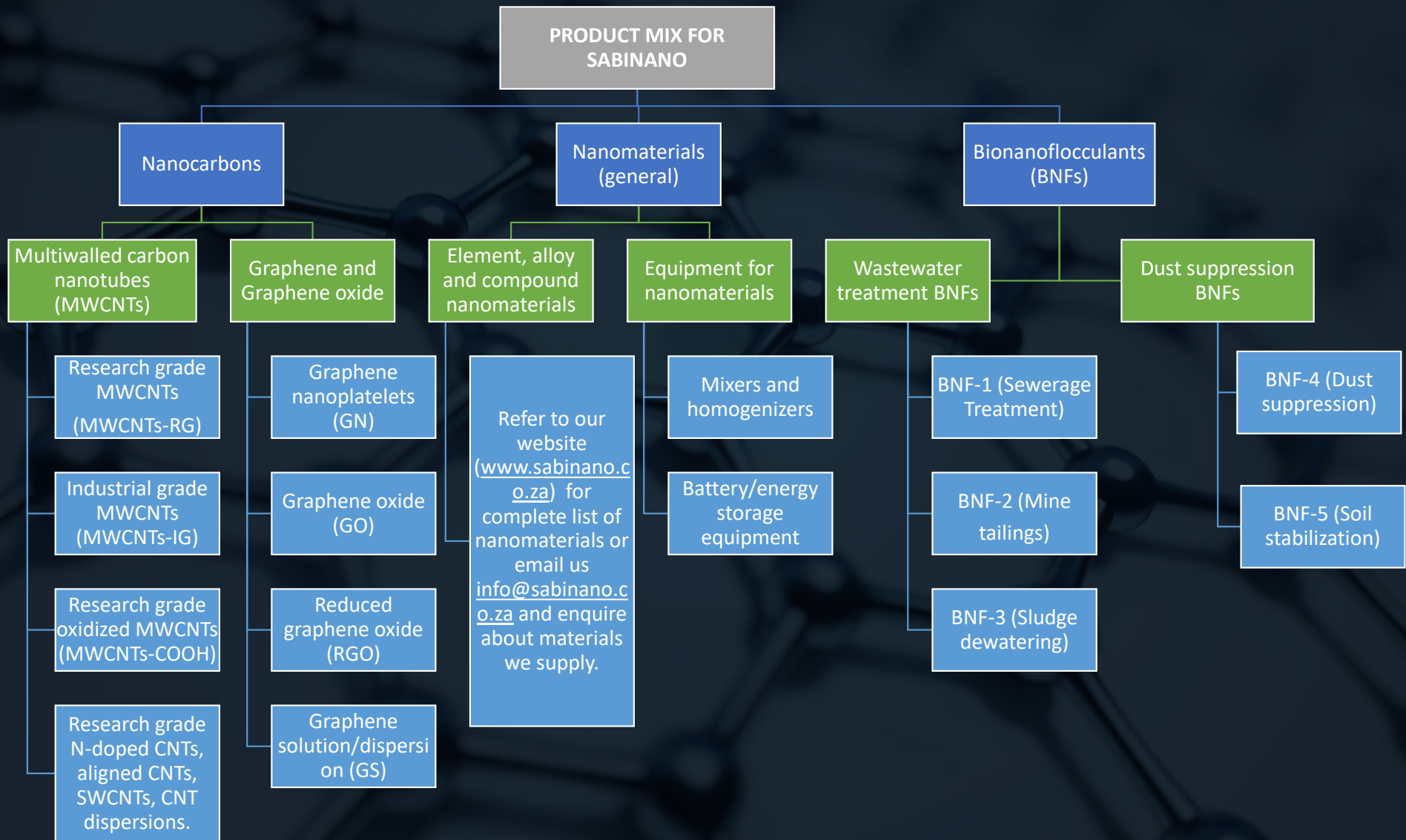
## EQUIPMENT

We supply high technology equipment for research laboratories, institutes, nanotechnology, and biotechnology companies. Our three-roll mills can serve various purposes such as homogenizing, venting or grinding nano and microparticle dispersions. It is an ideal tool for mixing electronic thick film inks, high performance ceramics, cosmetics, paints, printing inks, adhesives, epoxy, sealants, pharmaceuticals, chemicals, dental cosmetics, carbon/graphite, foods and many other viscous materials.

## APPLICATION INNOVATION

Nanotechnology is a fast-growing field in research and industry with more applications discovered daily in the fourth industrial revolution (4IR). It presents an opportunity to solve complex problems such as those associated with the water-energy-food nexus. SabiNano's R&I division focuses on developing innovative carbon nanomaterial-based technologies for energy, environmental and other applications including advanced nano-enhanced materials for various applications including building and construction, polymers, separation/filtration, adsorption, energy-storage, coatings, automotive/transport industries, electronics, amongst others.

# PRODUCT MIX



# VALUE PROPOSITION

## Customer Needs / Problem

Nanomaterials are applicable in a wide range of applications; from improving material properties, reducing raw materials required to creating new products and technologies. However, they are not readily available in South Africa (SA) and Africa in general because of their complexity in manufacturing, yet they (nanomaterials) have been shown to be materials that can help solve many of our 21st century problems. They are an enabler of the fourth industrial revolution (4IR) due to their unique and exceptional chemical, physical, electronic and biological properties.

## Customer Promise (Solution)

We make a wide range of nanomaterials readily accessible to researchers and manufacturers through our efficient manufacturing and distribution channels. Materials are available at small (research-scale) and large (industrial) scale at affordable price, making their use economically viable. The goal is to enable our clients to produce new products and technologies based on nanomaterials with ease and value for money. Our focus is on providing high quality nanomaterials and nanotechnology solutions (products and services), making it easy for customers to get what they need in a short period of time. We either produce locally and supply to our customers (e.g. carbon nanotubes and graphene) or source from our reputable strategic collaborators (e.g. a wide range of other nanomaterials). Keep stock of commonly used nanomaterials makes it possible to deliver within 24 hours.

## Product Solutions

Through inhouse research and development/innovation, we develop new products such as building and road construction products, anticorrosion coatings, ultracapacitors, etc based on carbon nanomaterials, as well as customization of bionanomaterials for wastewater treatment and related applications.





## Get In Touch

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**We are B-BBEE level 1 contributor**

