

2024 COMPANY PROFILE,

Water & Wastewater Technologies



At GI AQUA TECH, we strive to create a better future by providing innovative solutions that provide clean water to everyone and reduce the environmental impact of wastewater.



GI AQUA TECH positions itself as a leader in innovative wastewater treatment solutions, dedicated to driving sustainable technologies for the benefit of our planet and its diverse communities.

Our approach centers on human-focused innovation, with a team committed to continuously pushing the boundaries of technology and service excellence. Aligned with the Zero Waste philosophy, we implement a decentralized approach that processes and reuses waste at its source, contributing to both local and global circular economies. This dedication fuels our mission to build a more sustainable and environmentally responsible future.

Sh. Desouky

Sherif Desouky Executive Chairman







Water & Wastewater Solutions

4

6

Water & Wastewater Solutions

Introduction

Welcome to GI AQUA TECH, a pioneer in innovative and sustainable wastewater management solutions. Our patented G.Nano technology and zero total discharge solution set industry standards, offering highly efficient, environmentally friendly treatment processes. Founded to advance global circular economy efforts, we manage every aspect of the value chain. This enables us to guarantee optimal performance, costefficiency, and sustainability for every project across various sectors, including residential and industrial markets. Our holistic approach provides comprehensive, tailor-made solutions that are designed to meet the specific needs of each client.

Recognized globally, our achievements include winning the Industrial Project of the Year at the Global Water Awards 2024. As your partner, GI AQUA TECH is dedicated to sustainable development and technological innovation, helping clients worldwide meet their environmental goals with excellence.

Key Facts

G

000

Ů,

9

Ø

Wastewater Treatment Innovation: New-Generation Technology - GNANO

Comprehensive Services: EPC and O&M Capabilities

Product Diversity: Extensive Range of multiple Products and Services

Resource Recovery: 100% Reuse of water and solid waste.

Environmental Impact: Minimum carbon emissions and energy consumption

Custom Solutions: Water as a Service Offerings

Environmental Compliance: Compliant with international standards

Vision

Driving a transformative shift with GI AQUA TECH products & solutions by seamlessly integrating water and wastewater management into the global circular economy. We are dedicated to pioneering sustainable practices that address both today's environmental challenges and the specific needs of the industry. Our commitment is to lead the transition towards zero-waste, energy-efficient wastewater treatment technologies that enhance global water security and support ecological balance.

Mission

At GI AQUA TECH, we aim to create a better future by delivering innovative solutions for clean water and reducing wastewater's environmental impact. Our advanced nanotechnology ensures top-quality treatment that meets the highest standards. We are committed to providing cost-effective, cutting-edge solutions that protect the environment and support economic growth.

DOMESTIC WASTEWATER

> Municipalities and Household Wastewater

POULTRY **INDUSTRY**

INDUSTRIAL WASTEWATER

Wastewater from the Industrial Sector Liquid Waste Generated from Petroleum Processing

SLAUGHTER-

INDUSTRY

Wastewater with Blood & high Protein Content

HOUSE

Wastewater Treatment for Cement Washing

Your Waste Challenge, Solved

Wastewater Generated from Poultry Farms

GREY WATER

Hotel Wastewater Management

PETROL & OIL

SPECIAL CASES

Epoxy Production and Cosmetics Industry Wastewater

Wastewater Generated at Landfill Sites

Technical Capabilities

GI AQUA TECH's technical capabilities are driven by innovation and tailored engineering to meet the specific needs of our clients.

EPC

GI AQUA TECH's G-NANO technology provides custom, space-saving solutions tailored to site conditions and client needs. Our flexible, portable approach reduces construction demands and adapts to various operational requirements.

0&M

Our plug-and-play solutions require minimal labor, while regular maintenance extends equipment lifespan, ensuring long-term performance and reliability.

Manufacturing

We control the supply chain by manufacturing key wastewater treatment components in-house, ensuring quality and reducing risks. Our fast production meets urgent delivery needs.

R&D

GI AQUA TECH's R&D continually improves G-NANO technology, focusing on efficiency and performance to give clients a competitive edge in sustainable water management.

Value Creation

Maximize space efficiency with our compact wastewater treatment designs.

Ensure clean, odor-free environments with our advanced treatments.

Reduce both capital and operational costs through optimized processes.

Adapt seamlessly to diverse industrial requirements with our versatile technologies.

Durable systems for consistent, long-term performance.

Smart treatment with closed-loop system and efficient handling of high influent fluctuations.

Achieve optimal results with solutions customized to specific needs.

Fast Proce

Experience rapid water purification thanks to our quick-processing technologies.

We Offer Customized Solutions

We are committed to pioneering the future of wastewater management through our advanced and customized treatment solutions. Each solution prioritizes optimal performance, sustainability, and adaptability to various operational needs.

Mobile & Portable Wastewater Treatment units.

Stationery Wastewater **Treatment stations**

Integrated sludge treatment and recycle

On-site special treatment applications

Advanced Chemicalmechanical (non-biological) treatment technology

Upgrading and expanding Old Plants

Mobile Stations

O Modular & Compact Design

- Modular, compact structure for easy transport. •
- Serves multiple l ocations in a single day. •
- Ideal for treating <1000 cubic meters/day. •
- Solves small community wastewater issues. •

Seamless Installation & Operation

- Simple setup: connect pump to treatment tank.
- Fast, efficient operation across locations. Features:
- * Predictive alarm system.
- * Built-in water testing.
- * Automatic control & remote operation.

Versatility & Applicability

- Suitable for various applications and environments.
- Odorless, hygienic operation vs. traditional plants.
- Transforms health risks into opportunities for water reuse. •

S Environmental Responsibility & Benefits

- Optimized for low electrical energy consumption. •
- Promotes safe water reuse and disease prevention. •
- Supports sustainable water management. •
- Enhances public health and safety.

Te

Portable

Modular & Compact Design

- Fits within one or more standard shipping containers.
- Customizable to handle up to 3,000 m³/day of wastewater.
- Ideal for remote and temporary sites.

Seamless Installation & Operation

 No construction required; ready for immediate deployment.

Unit

- Quick setup: transport, connect, and operate.
- Suitable for a variety of environments, including industrial and remote locations.

Wersatility & Applicability

- Perfect for:
- * Remote industrial sites.
- * Construction and mining camps.
- * Disaster relief and military bases.
- * Temporary urban facilities.
- Adaptable to different logistical and environmental conditions.

Environmental Responsibility

- Designed to meet stringent environmental regulations.
- Reduces environmental impact by treating polluted
 wastewater effectively.
- Supports sustainability by ensuring treated water is safe for discharge or reuse.

Key Benefits

- Portable, easy to deploy and operate.
- No need for construction; minimal setup time.
- Scalable to meet varying capacity needs.

Scalable Stationery

Modular & Compact Design

- Designed to tackle inefficiencies of old plants. •
- Compact units to raise existing plant capacity by 4x. •
- No need for additional land; integrates •
- with current systems. .
- Scalable design allows for size expansion •
- and capacity increases. •

O Seamless Installation & Operation

- Simple integration with existing infrastructure.
- Enhances plant efficiency without major overhauls.
- Features:
- * Predictive alarm system.
- * Built-in water testing.
- * Automatic control & remote operation.

Versatility & Applicability

- Ideal for small cities, large compounds, and . traditional stations.
- Can be developed to further increase efficiency . and capacity.
- Solves health and environmental issues caused • by outdated plants.
- Prevents untreated wastewater from worsening • public health crises.

Environmental Responsibility & Benefits

- Reduces the need for new sewage plants.
- Suitable for upgrading existing traditional stations.
- Mitigates destructive environmental impacts.
- Promotes sustainable wastewater . management.
- Ensures healthier communities for future generations.

New Generation

Modular & Compact Design

- Engineered for medium & large wastewater treatment capacities.
- Occupies 80% less land compared to traditional plants.
- Compact design minimizes the need for extensive piping, fittings, and equipment.
- Reduced excavation and installation time.

Seamless Installation & Operation

- Quick and efficient installation process.
- Closed-loop feedback system ensures precise G-Nano dosage control.
- Requires fewer human resources, reducing operational complexity.
- Odorless operation for a cleaner, more pleasant environment.

Versatility & Applicability

- Ideal for various scales, from medium to large wastewater treatment facilities.
- Flexible configurations optimize power and chemical usage.
- Perfect for facilities looking to enhance efficiency and lower operational costs.

Environmental Responsibility & Benefits

- Significant savings in power and chemical consumption.
- Lower operating costs through efficient resource usage.
- Supports sustainable practices with minimized land and resource requirements.
- Reduces environmental
- impact with less land
- usage and a smaller
- carbon footprint.

information, please visit our website

WINNER

Industrial Project of the Year 2024

Slaughterhouse Saudi Arabia

Industrial Project of the Year

ISDB 🐗 البنك الإسلامي للتنمية Islamic Development Bank

DUZCE

XQ مــوان MWAN المركز الوطني لإدارة النفايات National Center for Waste Manacement

National Center for Waste

water, promoting sustainable operations

G-NANO Technology

Designed with precision, the G-NANO system is a comprehensive, technology-based treatment series developed specifically to efficiently address critical wastewater issues of high organic content, nutrients, pathogens, and pollutants through a series of advanced processes:

Flow Equalization: Manages inflow rates to ensure consistent treatment.

- Capsulation and Adsorption: Captures and isolates contaminants for subsequent removal.
- Coagulation and Flocculation: Facilitates the removal of suspended solids, oils, and greases.

The system's primary and secondary treatment stages eliminate up to 90% of Biochemical Oxygen Demand (BOD) and effectively remove chemical impurities. The tertiary treatment employs activated carbon filters to eliminate metals, phosphorus, and nitrogen compounds, ensuring compliance with discharge standards.

Compared to other traditional systems, G-NANO is efficient and economical-requiring 30% less capital expenditure and reducing operational costs by 40%. It is energy-efficient with a low carbon footprint and operates effectively across temperature variations and ground levels (above or under) ensuring consistent performance under diverse environmental conditions.

The G-NANO system reduces the necessary operational footprint, adapts easily to regulatory changes, and the sludge produced is reclaimable for various applications, underscoring our vision of sustainability.

How G-NANO Works

- (1) PH Buffering & Optimization. (2) Organic Compounds Oxidation. (3) Positive Charge Cloud. **4** Double Layer Formation. (5) Increase in Particle Size. 6 Flocculation. (7) Sludge Formation.
- (8) Compact Sludge.

G.NANO Mechanism How G.NANO Works

Mechanical System

Utilizing a mechanical system to apply nanoscale materials in wastewater treatment offers several benefits, including enhanced mixing, distribution, and pollutant removal. The system also features sensors for real-time monitoring, enabling performance adjustments as needed.

tailored for G-Nano Technology, Our mechanical with each device system is uniquely optimized for maximum efficiency. While the exterior maintains standard equipment design, the internal components reengineered productivity. have been to boost

Key features include

Precision Mixing:

Ensures thorough integration of treatment materials for effective pollutant reduction.

Real-Time Monitoring:

Integrated sensors monitor the treatment process continuously, allowing for immediate adjustments to maintain optimal performance.

Efficient Design:

 $\langle \checkmark$

Each component is specifically engineered to maximize productivity and efficiency, from the standard external configuration to the innovatively redesigned internal mechanisms

Control System

We offer various control levels to suit customer needs:

Semi-Automatic: Provides Reliable and simple but requires human oversight for process monitoring and water quality control.

Full-Automatic: Operates autonomously with remote monitoring and control, except for water quality checks.

Professional: Fully automated, adjusting operations to meet output quality requirements without human intervention

Each system is designed to integrate seamlessly with existing workflows, providing scalable solutions that drive productivity and sustainability in wastewater treatment processes.

Recent Achievements

💽 Global Water Awards 2024: Industrial Project of the Year

GI Aqua Tech won the Industrial Project of the Year at the Global Water Awards 2024, hosted by Global Water Intelligence. The award highlights our advanced slaughterhouse wastewater treatment project in Makkah, Saudi Arabia. This zero waste project effectively managed wastewater from over 500,000 animal sacrifices during the 84-hour Hajj season. Traditional

wastewater treatment methods, including biological treatments, were too slow and inadequate for managing the large volume of waste generated quickly,

Our innovative solution involved a mobile, 1000m³/day capacity station using nanotechnology, achieving 100% water reuse. It also significantly reduced carbon emissions and supported local environmental initiatives, like planting 40,000 trees every 2.5 years and achieving 80% energy savings and 90% land use reduction.

Featured in COP28 Under the Saudi Green Initiative

At the COP28 conference in Dubai, GI Aqua Tech marked a significant milestone, highlighting its innovative G-Nano technology in collaboration with the Royal Commission for Makkah City & Holy Sites. Our technology drew considerable attention, emphasizing the company's dedication to environmental stewardship.

The exhibition was part of the Saudi Green Initiative, a major government-led effort designed to lessen environmental impacts and encourage sustainable practices throughout the region. Our feature underscores the relevance of GI Aqua Tech's advancements in water technology, positioning the company at the forefront of environmental innovation.

The recognition at COP28 not only highlights GI Aqua Tech's contributions but also paves the way for expansion into new markets and sectors, consistent with the Saudi Green Initiative's mission to foster sustainable practices globally.

Dr. Sherif Desouky

is the CEO of GI Aqua Tech Saudi, bringing a wealth of expertise and a visionary approach to the firm. With a distinguished background in environmental sustainability and business innovation, he previously served as the General Manager for Environment and Sustainability at the Royal Commission for Makkah City and Holy Sites, where he contributed to strategic initiatives such as the development of environmental strategies and the Green Makkah program. Prior to this, Bogari was the Head of Innovation and Business Development at LafargeHolcim (Alsafwa Cement), leading the company to receive two prestigious regional Golden Awards in Green Building and Water and Waste Management. In addition to his corporate achievements, Bogari boasts extensive experience in the consultancy sector, where he has provided strategic guidance to numerous organizations seeking to enhance their performance and growth

Dr. Waleed H. Sufe

Key People

is the President of GI Aqua Tech and the Executive Chairman of GP Green Power Holding, which developed GI Aqua Tech. An expert in innovation management, he brings over 30 years of experience in managing large portfolios and investments across industries like clean technologies, renewable energy, and sustainable urban development. Formerly CEO of Al Aboud for Development, he led significant growth in Saudi Arabia's contracting, services, and maintenance sectors. Dr. Desouky is renowned for his strategic leadership and commitment to environmental innovation.

Abdullah Bogari

is head of research at GI Aqua Tech. He is also the President of GP Tech and a distinguished Board Member at GP Green Power Holding. He brings over two decades of scientific research and innovation to his role, built on a foundation as a former chemistry professor. Dr. Sufe is at the helm of the research and development work in nanotechnology, where his profound academic and scientific insights fuel the pursuit of pioneering solutions across diverse sectors. His leadership extends to directing a team of researchers focused on developing cutting-edge solutions in water and wastewater treatment, eco-friendly materials, healthcare, painting and coating, and waste-to-energy

GI AQUA TECH GmbH Münchener Straße 18-22, 64521 Groß-Gerau

Phone +49 65452 977 38 40 Email info@giaquatech.de Visit Online → giaquatech.de