– Change Drastically Beyond the Current Way –

In addition to technological changes such as the electrification of automobiles and expanded demand for semiconductors, other major changes such as protectionism and trade conflicts in major developed countries are occurring. Given these circumstances, in order to realize a sustainable society, we will need to make "changes that are not just an extension of the past."

In the past, we have focused on what we can do with ceramics as a manufacturing company, but going forward we will need to take on challenges facing the world that go beyond the realm of ceramics and beyond the imagination that already exists in the world and within ourselves, without relying only on what we can do with ceramics, to contribute to the realization of a better society.

By 2040 we aim to create a new Niterra Group with the vision of

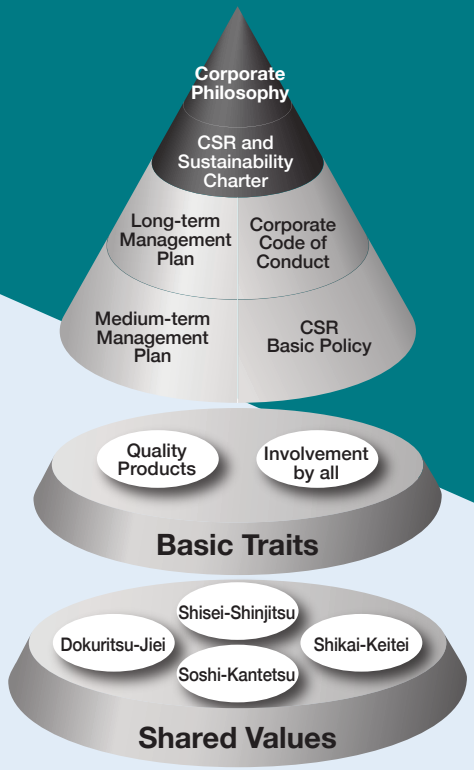
"Beyond ceramics, eXceeding imagination."

Corporate Message

IGNITE YOUR SPIRIT

The Nittoku Way

The Nittoku Way refers to a set of philosophies that includes values that are shared by the entire Niterra Group, and the actions based on those philosophies, as well as the manner in which those actions are carried out.



Corporate Philosophy

Three elements constitute our corporate philosophy.

Commitment
With full use of the most suitable technology and our accumulated experience, we continue striving to offer new values to the peoples of the world.

Management Policy
We offer a working environment in which each one of us is encouraged to make full use of his or her personality and capabilities.
With all our power we are dedicated to pursue management based on trust and confidence.

Action Guideline
Ever onward!
Always mindful of what is the best course, we swiftly put it into action.

Slogan
With established trust and confidence inside and outside the company, we aim to contribute to the peoples of the world by creating and putting at their disposal new values for the future.

CSR and Sustainability Charter

We contribute to develop a sustainable society, thereby improving our corporate value.

- We build relations of trust with our stakeholders while making highly transparent decisions and actions.
- We cocreate and provide new value to solving social issues.

Challenge and Transformation Steps and Business Models

Decade

Startup period (1930s)

Domestic automobile industry depending on imports

In Japan in the 1920s, when the domestic automobile industry was still in its infancy, the supply of automobiles was limited almost entirely to imports from the U.S. and Europe, and automotive parts, including spark plugs, were also imported. The first President, Magoemon Ezoe, decided to produce plugs using ceramics, a specialty product of Japan, and led initiatives to launch domestic plug manufacturing.

Growth period (1940s)

Automobile production growing rapidly

In the 1940s, domestic automobile production rose to 46,000 cars, as automobiles and related parts manufacturing developed into a major industry. Accordingly, demand for plugs also increased. After WWII, Japan entered a period of high economic growth in the late 1950s, when the country was rapidly becoming motorized.

Establishment period (1960s)

Impact of high economic growth

From the late 1960s, pollution problems emerged as a negative effect of the high economic growth, and the automobile industry was particularly called on to urgently address air pollution problems. Looking to fulfill needs related to such problems as well as resource conservation, we started research to develop new products that would help meet exhaust gas regulations. These regulations were made more stringent year by year, pushing up demand for high-performance plugs and sensors.

History of Value Creation

1936
NGK SPARK PLUG founded

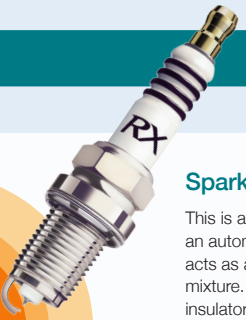
NGK SPARK PLUG was established through the spin-off of the spark plug division of NGK Insulators. The founding business of producing spark plugs has grown to make the company the world's top manufacturer of the product.

Magoemon Ezoe, first president

1959
Overseas business expansion

Exports increased as Japan entered a period of rapid economic growth. The company established its first overseas office in 1959 at the invitation of the Brazilian government. This led to our overseas advancement ahead of competitors to build strong global networks.

Cerâmica E Velas De Ignição NGK Do Brasil Ltda



Spark Plugs

This is an indispensable component of an automobile's gasoline engine and acts as a lighter to ignite the gasoline mixture. Ceramics are used as insulators to withstand the harsh environment of engines.

Core Technology: Ceramic Material Technology

Automotive Components

1937
Production of NGK Spark Plugs started

In 1930, we released NG Spark Plugs, Japan's first domestically produced spark plug, and began producing NGK Spark Plugs in 1937.

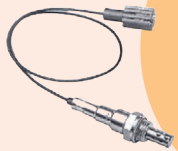
NGK Spark Plug

Core Technology: Disparate Material Bonding Technology

1982
Production of oxygen sensors for automobiles started

In Japan in the 1960s, as the full-scale motorization of society progressed, environmental degradation such as air pollution became a social issue. In response, exhaust gas regulations were made stricter. To help related industries ensure regulatory compliance, we began developing various sensors, primarily in association with exhaust gas, such as zirconia oxygen sensors and wide range oxygen sensors.

Oxygen sensors for automobiles



Core Technology: Application Technology for Harsh Environments

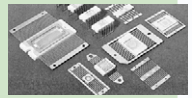
Ceramics

1949
Production of NTK Technical Ceramics started

After the post-war confusion had settled down and spark plug production had stabilized, we began applying ceramics to develop new technologies and products for the diversification of our business. The new segment development was promoted under the brand name of NTK. Following this, we gradually broadened our ceramic product range to include those for industrial and environmental uses.

1967
Production of ceramic substrates and IC packages started

In the late 1960s, the silicon semiconductor integrated circuit (IC) became a mainstream standard and its mass production began in Japan and the US. Following this trend, we started manufacturing ceramic substrates and IC packages by applying our ceramics technologies.



IC packages

1989
Sales of electrostatic chucks started

In the late 1980s, requirements for higher integration and lower cost of semiconductor elements intensified, which gave rise to a shift to ceramic components, characterized by the material's excellent heat and abrasion resistance, to be used for semiconductor production equipment. In response, we promptly introduced ceramic electrostatic chucks, and commenced mass production of the product in the 2000s to expand sales.

Electrostatic chucks

Development period (1990s)

Tackling new social challenges

From the 1990s, automakers began to focus on the development of electric vehicles, hybrid vehicles and fuel cell vehicles, as part of efforts to address environmental and energy issues. Those years also saw the explosive growth of information communication technologies bringing about significant changes in many people's lifestyle. In order to provide products that would meet new needs related to these societal trends, we promoted research and development based on our technologies built over many years.

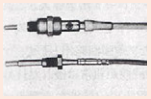
From present to future

Aiming to create a sustainable society

Our business environment is undergoing an enormous change brought about by a number of factors, such as AI and IoT-driven digitization, the once-in-a-century transformation of the automobile industry led by the concepts of CASE and MaaS, and mounting concerns over climate change and ESG-related issues. Recognizing this situation, we are striving to reduce our dependence on the production of automotive components for internal combustion engines, which account for 80% of our net sales, while creating new business projects aimed at achieving a sustainable society.

2023
The English trade name was changed to Niterra

Oxygen sensor



Temperature sensors for automobiles

Core Technology
Sensing Technology

2000
NGK Iridium IX spark plug was released

Hydrogen leak detection sensor

1999
Sales of medical oxygen concentrators started

We started research on the possibility of medical applications of bio ceramics in the 1970s, looking to future opportunities afforded by the progress of population aging. Related results included the rollout of the bone prosthesis Ceratite in 1990 and oxygen concentrators for medical use in 1999.

Medical oxygen concentrator

Solid oxide fuel cell (SOFC)

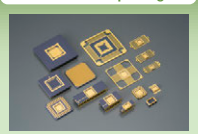
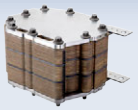
New Businesses

2000 -
Building new business pillars

Under the NITTOKU SHINKARON long-term management plan started in FY2010, we accelerated efforts to establish new business pillars. The 2030 Long-term Management Plan "NITTOKU BX" also started in FY2020, aiming to transform our business portfolio by 2040. We continue with these challenging efforts, seeking out every possible new field by applying our core ceramics technologies including hydrogen leak detection sensors and the solid oxide fuel cell (SOFC).

* CASE (connected, autonomous, shared, electric): A new trend in the automotive industry.
* Mobility as a service (MaaS): A concept that considers mobility as a service.

Business Model

Business segments	Automotive Components		Ceramics			New Businesses	
Main products	Plugs 	Sensors 	Products for semiconductor manufacturing equipment 	Oxygen concentrators 	Semiconductor packages 	SOFC cell stacks 	Silicon nitride ceramic bearing ball 
Strengths	■ Integrated production system from materials development to manufacturing ■ Unique sales channels around the world		■ Ceramic material technology that can withstand high-power plasma ■ Ceramic sheet lamination technology that contributes to surface temperature homogenization, particle reduction, and wide-ranging surface temperatures	■ Product lineup including portable and stationary oxygen concentrators and cardiopulmonary diagnostic equipment ■ Worldwide sales channels for rental operators and hospitals	■ Ceramic multilayer technology customized for various applications ■ High reliability with excellent heat resistance and hermeticity ■ Short delivery times to meet customer needs	■ Catalytic electrode and ceramic materials technologies cultivated in the sensor business ■ Disparate material bonding and film formation technologies for highly efficient power generation ■ Broad product lineup, from home use to industrial use	■ Development capabilities, processing technology and mass production technology for ceramics ■ Production system that ensures stable supply in both quality and quantity
Customers	Automobile and motorcycle manufacturers General purpose engine manufacturers Components distributors		Semiconductor production equipment manufacturers	Rental operators Medical institutions	Semiconductor manufacturers Assembly manufacturers Semiconductor inspection components manufacturers	Machine manufacturers	Bearing manufacturers
End-users	Automobile and motorcycle manufacturers General purpose engine manufacturers Components distributors		Semiconductor industry Communication industry Automobile industry	Home patients Outpatients	Electronic device industry Automobile industry	Power generation business operators Plants Data centers Public facilities Retail facilities Households, etc.	Automobile industry Wind power generators Semiconductor production equipment manufacturers Aircraft manufacturers Machine tool manufacturers, etc.
Value offered	Higher fuel economy Cleaner exhaust gas Contribution to a convenient mobile society		Enhanced performance of semiconductors Contribution to a digital society	Improvement of symptoms Higher quality of life	Higher performance of electronic devices	Distributed power sources BCP preparedness Contribution to a decarbonized society	Measures against electrochemical corrosion, improvement of energy efficiency

Change of the English Trade Name and Group Name

Our Group was renamed as the Niterra Group in accordance with the change of our English trade name to Niterra Co., Ltd., effective April 1, 2023.

Niterra

Niterra is a word that we have coined by combining “niteo,” which means “shine” in Latin, and “terra,” which means “earth.” This name expresses our desire and stance to become a company that contributes to a sustainable society and lets the Earth shine.

Background of the English trade name change

The Company has, since its inception, expanded its business, mainly the internal combustion engine related business such as spark plugs. Meanwhile, as outlined in the “2030 Long-Term Management Plan NITTOKU BX” formulated in 2020, the Company focuses on the four business domains of Environment & Energy, Mobility, Medical, and Communication, and aims to realize business portfolio transformation. Accordingly, we changed our English trade name, which used the spark plug brand, from ‘NGK SPARK PLUG CO., LTD.’ to ‘Niterra Co., Ltd.’ on April 1, 2023. Our group has made a brand new start as the Niterra Group, and the Group will work together to transform its business portfolio and accelerate global transformation and challenges.

Business Fields to Focus On

We take on challenges in new fields, striving to improve corporate value through ceramics materials technology and other core competencies.

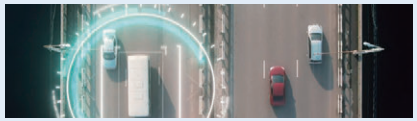
We focus on four areas of business:
Environment & Energy, Mobility, Medical,
and Communication.
These areas include not only new business pillars,
but also current businesses.
Our core competencies consist of ceramics materials technology, sensing technology, global production and sales systems, and numerous other areas.
Leveraging these core technologies, we seek to add value through *Something New* and the use of open innovation to grow our four areas of business.

Business areas to focus on

Environment & Energy

Energy and environmentally friendly

- Use sensing technology that improves industrial efficiency
- Supply stable renewable energy



Mobility

Fun and convenient mobility

- Services to meet the needs of users' lifestyles
- Improve electricity with ceramic components
- MaaS to meet special needs

Medical

Bring advanced medical care to people all over the world

- Non-invasive diagnosis and treatment, provision of preventive equipment and services

Communication

High-speed communication to connect the real and the virtual

- Support high-speed communication and its infrastructure