



**Ever Researching for a Brighter World**

# Brighten the future with “The NICHIA Way”



The origin of Nichia came from the inspiration of Nichia's founder, Nobuo Ogawa, to utilize limestones in his hometown, Tokushima, for the production of calcium compound used as pharmaceutical materials. Nichia has strived for *monotsukuri*\* with its original technologies, while expanding its product range from calcium compound to phosphors, LEDs, Laser Diodes, battery materials, and magnet materials. Despite many obstacles and difficulties, Nichia has succeeded in developing several of the world's best products based on the unfaltering foundational belief, “creating the world's best products by working earnestly and utilizing the technology, full of wisdom, and expertise of all Nichia employees.”

In keeping with this belief, Nichia's *monotsukuri* is now concentrated in two main fields: light and energy. Since its successful development of the world's first blue LEDs, Nichia has been an innovator in the field of LEDs. Nichia believes that the potential for the next innovation beyond all imagination must include the understanding of the fundamental nature of light and luminous/optical mechanism, “Light behaves as a particle and as a wave at the same time”. With this belief, Nichia has already started developing and selling new LEDs which pursue the ultimate quality of light.

Nichia's goal is to continue to contribute to society without ever forgetting the spirit that brought the company here: “Ever researching for a brighter world.”

President & CEO, **Hiroyoshi Ogawa**

\* The Japanese word describing creating, manufacturing, and developing activities that are not only focused on the simple process of manufacturing inside a factory but also include the creation, utilization, and combination of ideas, technologies, and expertise.

# The NICHIA Way



## Corporate Philosophy

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### **Ever Researching for a Brighter World**

The main point of Nichia's corporate philosophy is that Nichia will try to precisely understand the current needs of the world, pursue the best products, and contribute to society, as a company that strives for *monotsukuri*\*.

## Nichia's Mission

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Through continuous creation of innovative key materials & devices in the fields of light & energy, Nichia will add a new value to life & contribute to society.

## Work Principles

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### Slogan

- Let's study
- Let's think deeply and work hard
- And let's create the best products in the world

**The Three Cs** Thoughts for each individual to keep in mind.

### Challenge

Continuous challenge for the dream, which will lead to the growth of individuals and of the company itself.

### Credibility

To be a company that is needed and trusted, Nichia strives for authenticity.

### Collaboration

Collaboration of a variety of individuality makes a strong team and a strong company.

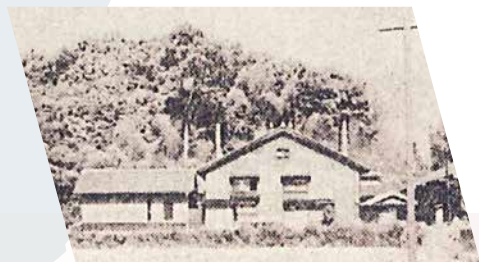


# Ever Researching for a Brighter World

Nichia, for any kind of light and future energy



# since 1956



## Inspiration from Anti-Tuberculosis Medicine

Nichia's founder Nobuo Ogawa was a graduate of the pharmaceutical chemistry department of Tokushima Technical High School (the predecessor of Tokushima University). His hometown, Tokushima, is an area where limestones are mined. Both streptomycin, the anti-tuberculosis medicine, and phosphor for fluorescent lamps are made from the same material, calcium compound obtained from limestones in Tokushima. These three coincidental factors determined the future path of Nichia. In 1948, Mr. Ogawa established the "Kyodo Pharmaceutical Laboratory", the predecessor of Nichia. From this new research institute, he established the production system for anhydrous calcium chloride used for streptomycin, which would lead to the development of anhydrous calcium phosphate, a raw material of phosphors for fluorescent lamps. In 1956, this small company set sail for the business of phosphor raw materials with a new name, Nichia Kagaku Kogyo, K.K. (currently Nichia Corporation).

## 1970

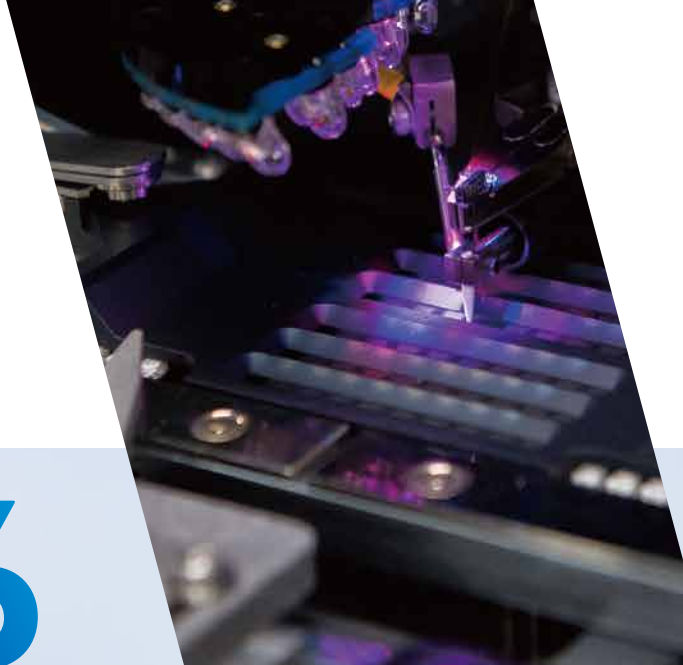


## Phosphors for color TVs

## 1989

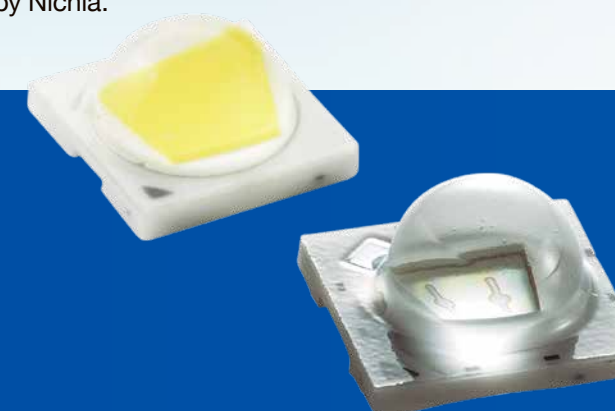
## R&D for Gallium Nitride based LEDs

## 1996



## The white LEDs that would eventually change the world

In 1996, Nichia developed the world's first white LED by combining a blue LED with yellow phosphor, utilizing the technology and experience that Nichia acquired through phosphor manufacturing. LED lighting, stylish LED headlights, full-color LCD display for smartphones, all these new products were developed and commercialized based on white LEDs developed by Nichia.



# Challenge and Pursuit of True Nature - That is The NICHIA Way

## 1966



## To be the World's No.1 Phosphor Manufacturer

In 1966, through significant R&D and the combination of competencies with the phosphor raw materials, production of calcium halophosphate phosphors for fluorescent lamps began. The corporate culture of applying its technical competencies and developing them into a new product began around that time and has continued to this day.



## The blue LED that surprised the world

Nichia succeeded in developing the world's first high luminous blue LED which was believed to be impossible to achieve within the 20th century and started the volume production and sales. This blue LED, that was one hundred times brighter than anything before, surprised the world. In 1994, Nichia succeeded in developing a high luminous bluish-green LED which led to the LED conversion of traffic signals. In 1995, Nichia developed a pure green LED which made it possible to make full-color displays by combining this green LED with high luminous blue and red LEDs that were already available in the market. Several larger full-color LED displays were installed around the world.

## 1993



# For the Future

## 2001

Begins sales of Laser Diodes

## 2009

Development of high-quality cathode materials for Lithium-ion batteries in automotive

### Creating the future with light and energy

Nichia will challenge various possibilities in the fields of light and energy.

For LEDs, Nichia is expanding its development of products by focusing on the "quality of light" and "function of light" as well as pursuing high brightness and low power consumption. For automotive applications, cutting-edge LEDs for headlights are expected to improve safety while driving. Laser Diodes are expected soon to be expanded into other applications such as lighting, processing, and heads-up displays for automotive.

Cathode materials for Lithium-ion batteries used in electric vehicles (EVs) and high-quality magnetic materials essential for small high-quality motors are key materials to realize a carbon-neutral society and will create a path towards using clean energy in the future.

Nichia will continue to make innovative products to create a bright future for the earth.



## 2019

Begins sales of UV LEDs to inactivate bacteria/viruses



## 2015

High-quality magnet using SmFeN powder adopted for automotive parts



### LED lighting also illuminates the path to carbon neutrality

White LEDs invented by Nichia, have been playing a central role in carbon neutrality. LED lighting can reduce power consumption to less than half compared to conventional light sources such as incandescent and fluorescent bulbs. By the 2030s, LED lighting is expected to replace most of the world's lighting. If this happens, more than 1 billion tons of CO<sub>2</sub> emission will be reduced compared to if conventional light sources had been used continuously. One billion tons per year is almost the same amount of CO<sub>2</sub> emitted by Japan in one year.



## Chemical Business

# Building the key materials of Light and Energy

Nichia's Chemical Business is responsible for the handling of cathode materials, phosphors, magnetic materials, vacuum evaporation materials, organometallic compounds, medical materials, and Semiconductor Materials. In each field, Chemical Business strives to develop competitive and environmentally friendly products and enhance its service based on the technologies and expertise accumulated over the years.

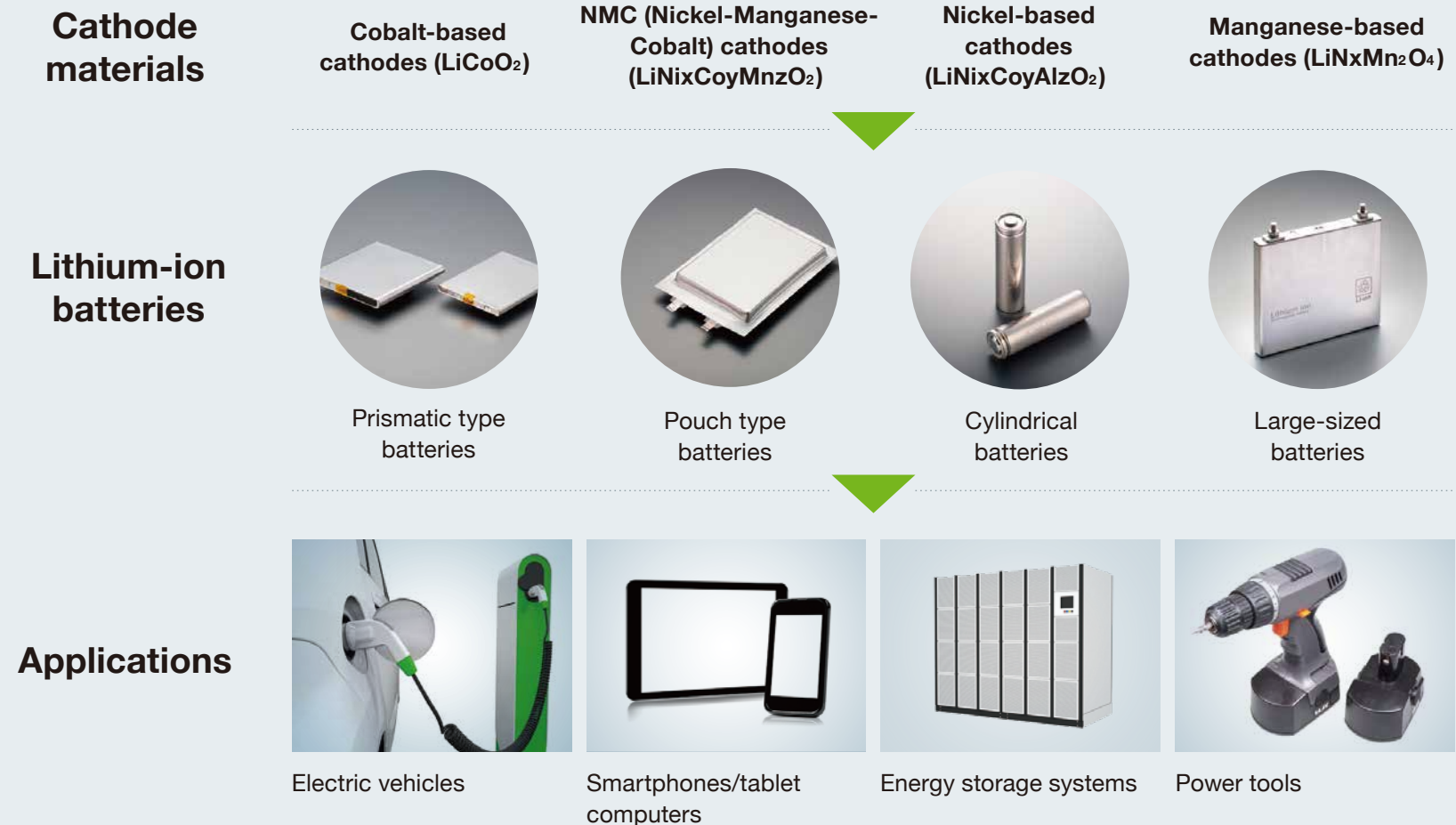


# Chemical Business



## Cathode materials

Nichia's cathode materials for Lithium ion batteries are widely used for secondary batteries for consumer products such as smartphones, laptops, and electric tools. In the future, Lithium ion batteries are expected to be used in other industrial applications including electric vehicles and energy storage. Nichia intends to expand its business as the world's leading manufacturer of cathode materials.



## Magnetic materials

Nichia's magnetic material is an anisotropic SmFeN plastic compound for injection molding. The SmFeN powder produced by Nichia's unique manufacturing technology is very fine, with a particle diameter of 3μm, and does not undergo a fine milling process which destroys the particles, defying the common wisdom of magnetic materials. Therefore, the plastic compound has excellent flowability and can be flexibly applied to complex shapes and integrated molding. In addition, Nichia's unique oxidation-resistant treatment makes it highly resistant to heat and water, and it is used for automotive applications as well.



# Chemical Business

## ■ Phosphors

Phosphors are substances that convert energy from electron beams, electromagnetic waves, and ultraviolet mainly into visible light. Nichia's phosphors are used in a variety of applications, including LEDs and medical X-ray applications. Nichia is proud of its world leading technology.



X-ray intensifying screen



White LEDs

## ■ Fine Chemicals

Nichia's calcium compound and iron salts are used as raw materials for high-purity pharmaceutical, chemicals and food additives.



## ■ Vacuum Evaporation Materials

Optical technology has accelerated in innovation during the 21st century, from optical products such as microscopes and conventional film-based cameras to electronics such as optical communications, semiconductors, DVDs, and projectors. One of the elemental technologies to support is optical thin film technology. Nichia has developed its production and application technologies for inorganic ceramic powders, including phosphors, which have been cultivated over many years, and offers a variety of evaporation materials that are suitable for creating high-quality optical thin films.



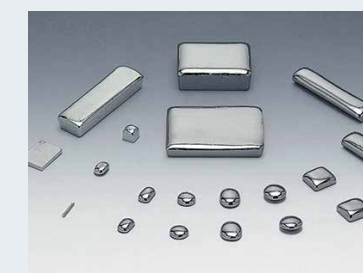
## ■ Organometallic Compounds

Nichia supplies high-purity Titanium, Zirconium, Nickel compounds, etc. produced by Nichia's proprietary techniques. These compounds have many applications such as catalysts for polymerization and organic synthesis and raw materials for high performance electronic materials.

Ni(COD)<sub>2</sub>

## ■ Semiconductor Materials

High-purity Gallium is used as a raw material for compound semiconductors such as substrates for LEDs and Laser Diodes.



High-purity Gallium

# Optoelectronics Business

## Development of key devices

Nichia's Optoelectronics Business is focused on the development and manufacturing of LEDs, and Laser Diodes. Nichia's basic principle for these optical device fields is "Satisfying customers by understanding their requirements and developing products that reflect their demands in a timely manner". To achieve this principle, Nichia maintains a consistent and integrated quality management system to deliver industry-leading products through every phase of development and manufacturing including product planning, development, design, prototype production, mass production, sales, and logistics.

# Optoelectronics Business

## LED

### ■ Automotive

Nichia's LEDs for automotive have achieved high reliability and are certified to IATF16949 standards. Nichia's LEDs are used for exterior lighting in automotive (e.g. headlights, DRL [Daytime Running Lights], ADB [Adaptive Driving Beams], turn indicators, etc.) and for interior lighting (e.g. ambient lighting, instrument panels, switches, HUD [Heads-Up Display] etc.). Nichia will strive to further support the expansion of the market for electric vehicles and autonomous vehicles.



### ■ LCD Backlighting

Liquid Crystal Displays (LCDs) are used today in various TVs, smartphones, and laptops. LCDs can display images when combined with an LED backlight system. In recent years, due to the spread of display devices and higher quality requirement for them, the needs for higher performance LEDs have arisen. Aiming for wider spread and essential improvement of LCD displays, Nichia will keep developing products.



### ■ Lighting (General & Specialty)

Today, LEDs illuminate a wide variety of spaces, and with the discontinuation of fluorescent lamp production, they will further become a mainstream light source. Not only do LEDs with high energy-saving performance exist, but also LEDs that contribute to various aspects of human society, such as physical, hygienic, and physiological benefits, are now available. With LEDs as a starting point, we will explore the functions, sizes, and installation methods of lighting.



# Optoelectronics Business

## LED

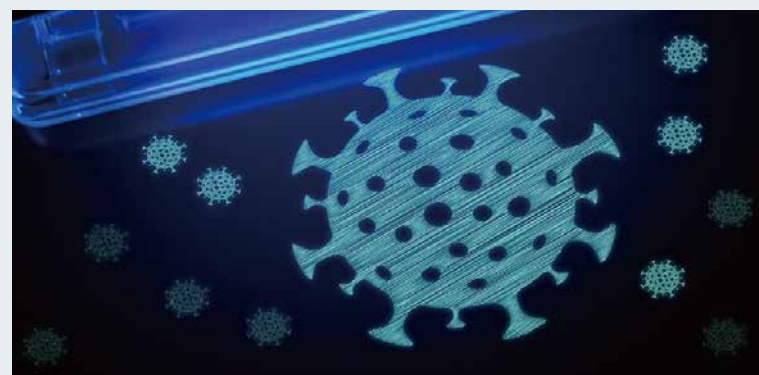
### ■ Display

Through Nichia's development of the industry's first high brightness blue LEDs and following that with pure green LEDs, Nichia's LEDs have contributed to the evolution of full-color displays. Today, Nichia's LEDs for display applications are used in various places around the world such as advertising displays in big cities, information boards in transportation facilities, world famous concerts, and electric scoreboards in stadiums. Nichia will continue to pursue higher luminosity, lower power consumption, higher resolution, and higher visibility for LEDs, and will develop products to further improve large-scale displays.

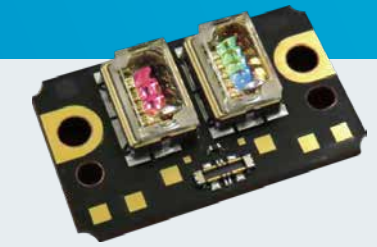


### ■ UV LED

It is known in the industry that it is often difficult to supply consistent quality for UV LEDs. However, Nichia ensures high reliability of its UV LEDs through integrated management of the entire process, from the wafer manufacturing to product shipment. Nichia's UV LEDs have been chosen for more than 20 years by a wide range of customers demanding high quality LEDs (e.g. currency detection devices, printer ink curing, and high precision curing).



## LD



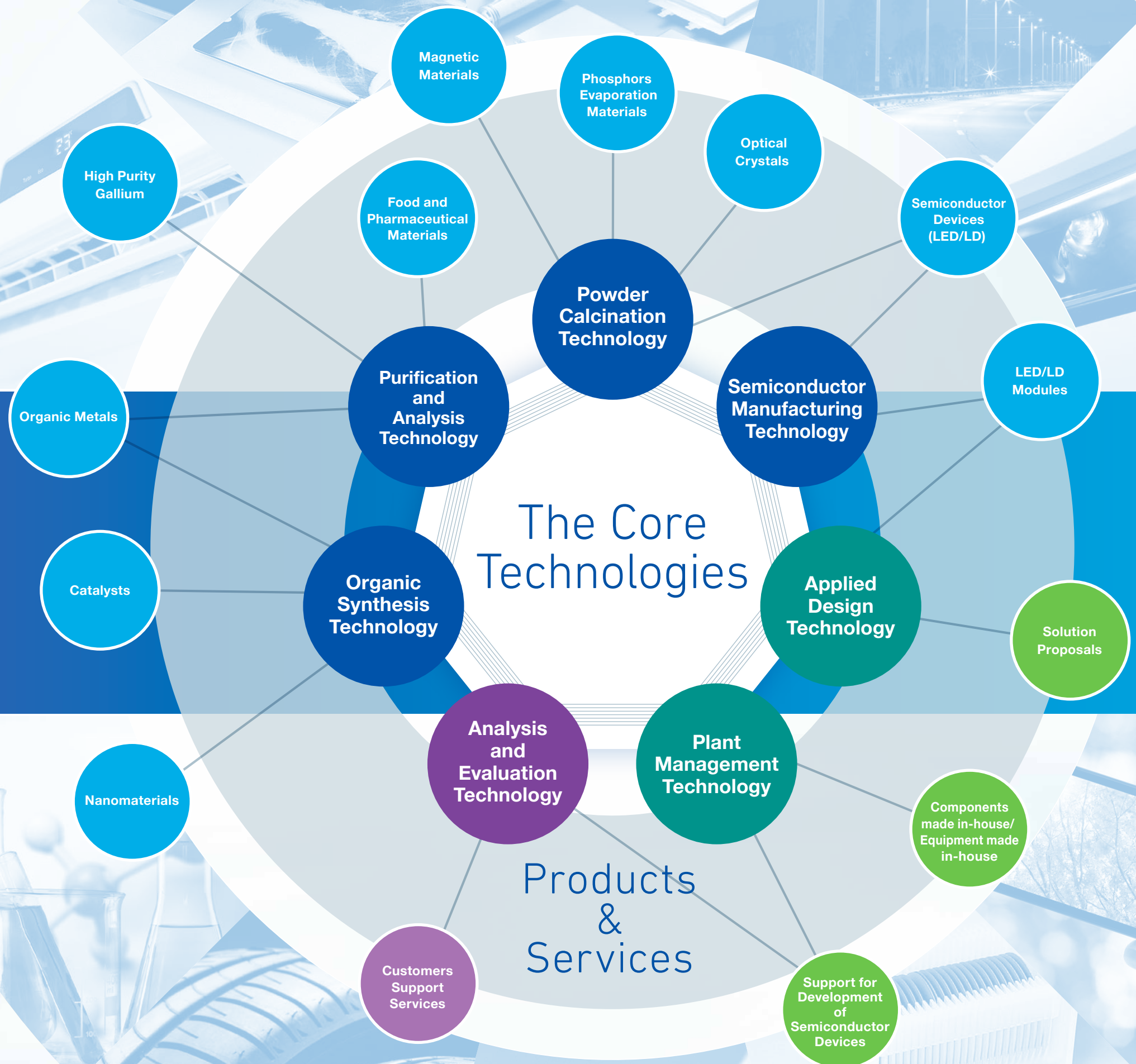
In recent years, great success has been achieved in the development of GaN-based semiconductor lasers by diversifying the wavelength range and enhancing the optical output power. The oscillation wavelengths range from the UV region to visible blue and green regions, and with the successful in-house production of red LDs, Nichia is now capable of producing all three primary color LD chips in-house. LDs are primarily used as light sources for projectors, as well as in industrial equipment such as exposure machines and endoscopes. Additionally, they are expected to be applied in various new fields, including automotive headlights, head-mounted displays, and laser processing. With the industry's leading product quality, a variety of product groups, and stability of supply, Nichia will keep producing Laser Diodes that meet a wide range of customer needs.



Nichia has developed diverse products in various fields. Tracing back this evolution, it is easy to see that the origin of Nichia's products stemmed from the production of anhydrous calcium chloride produced from limestones mined in Tokushima. The series of "Core Technologies" shown in the right diagram was developed through a history of challenges starting from that origin.

## Innovation Dreams are Expanding from Core Technologies Developed Through Challenges

All Nichia products are manufactured by the combination of these "Core Technologies", especially the powder calcination technology and crystal growth. The core competence of Nichia's products is cultivated by an integrated production system based on wide-ranging expertise and the combination of Nichia's core technologies.



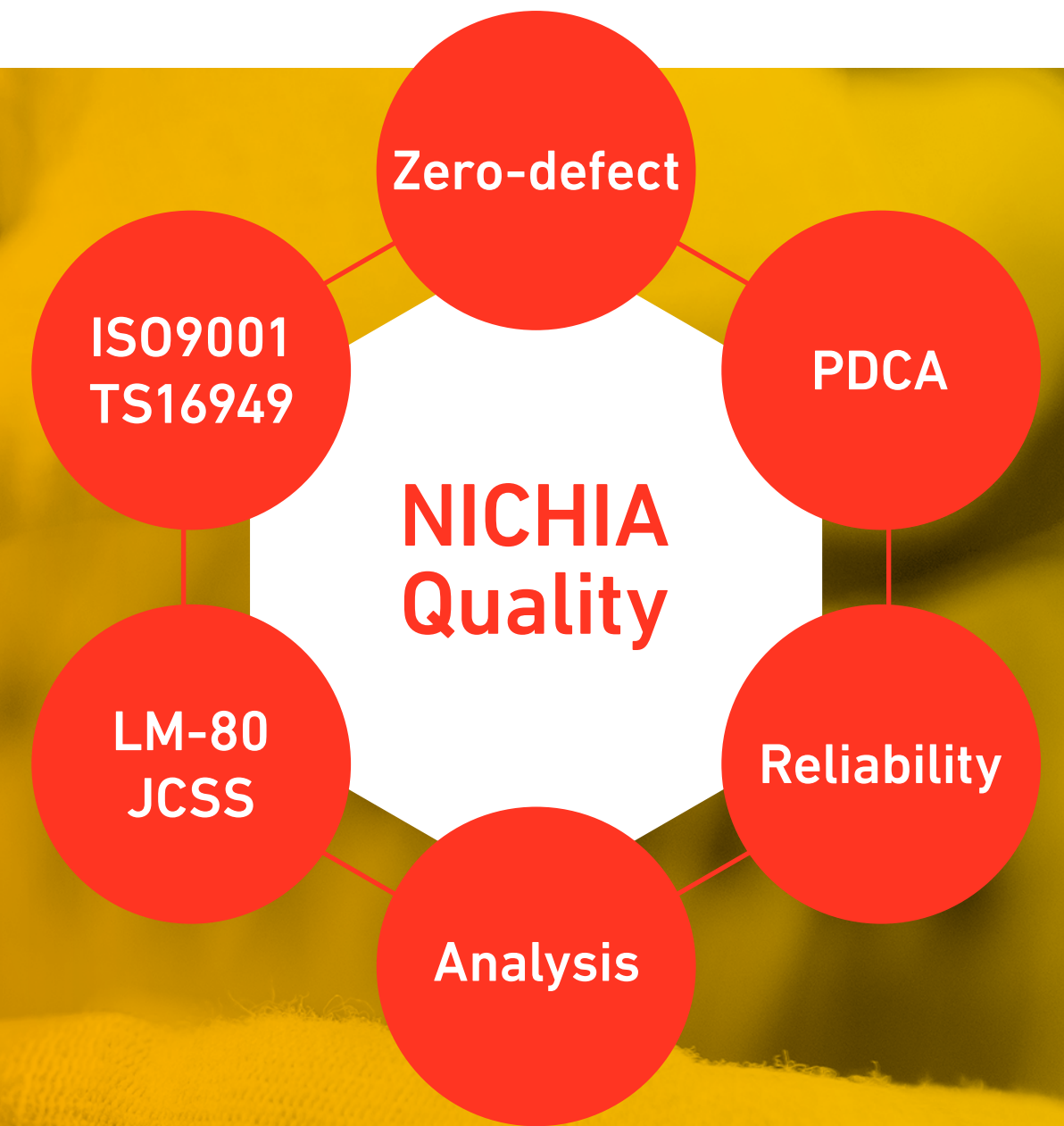
# Pursue an Interesting Path For the Globally Unique *Monotsukuri*

For Nichia's ultimate goal, the world's best *monotsukuri*, Nichia places the highest importance on R&D. Nichia's corporate culture is not focused on short-term profits, but instead on research and development through earnestly conducting continuous experiments with enthusiasm, courage, and patience, even if it requires a longer period. Nichia has dedicated itself to R&D in order to create, control, and be an expert of light, through the cooperation of the following facilities: the headquarters plant and Tokushima Research Center (TRC) with many R&D staff members, the Yokohama Research Center (YRC) responsible for fundamental research and study about "LIGHT", the design and development of LED applications, and the Suwa Technology Center (STEC) in charge of the development of applied products based on new concepts. Over the course of ten years beginning in 2014, 356 billion yen was invested in R&D. Nichia continues to encourage an environment where all employees can attempt anything that they find interesting.

## R&D Centers



# Quality Assurance Building Quality





# Quality Assurance

## ■ Quality Assurance

To be the world's best company that consistently develops innovative, high-performance, and quality products, Nichia is focused on strict quality assurance. To ensure the safety and quality of its products for all customers around the world, Nichia established an integrated management system led by its Quality Assurance Department.

## ■ International Standards and Certifications: ISO9001/IATF16949/LM-80/JCSS

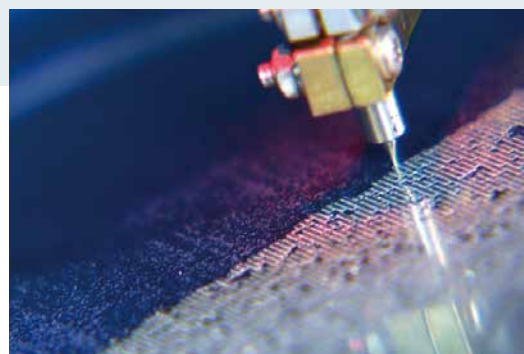
Nichia has obtained certification as a manufacturing (*monotsukuri*) company in compliance with international standards ISO9001 and IATF16949. Additionally, Nichia is accredited with LM-80 and JCSS, demonstrating its technical capabilities as a testing and calibration institution in accordance with international standards.

## ■ Zero-defect Quality and Continuous Improvement (PDCA)

Nichia prioritizes its customers in all aspects of its products and strives to improve and maintain quality. To achieve zero-defect quality (manufacturing with zero defects), the Quality Assurance Department supervises every stage from design to production, ensuring Nichia quality through rigorous monitoring and actions.

## ■ Reliability/Analysis

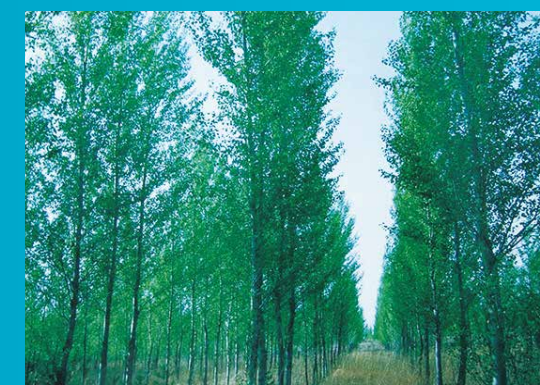
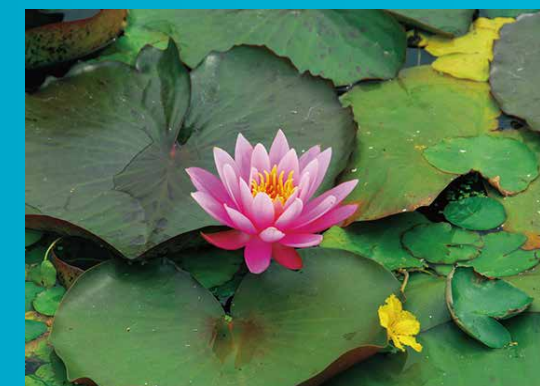
Stable manufacturing requires technology that quantitatively evaluates products. In the Quality Assurance Department, Nichia conducts various reliability tests that simulate customer usage conditions, as well as develops analysis and evaluation techniques specific to the products. Nichia ensures product performance and reliability through the pursuit of advanced technology and precise data.



Environmental Preservation

# Building Environment

Based on one of the policies since its foundation, respecting the environment, Nichia has been working on the following environmental activities. In 2013, Nichia established the Nichia Furusato Promotion Foundation with the aim of promoting public welfare, particularly focusing on natural environment conservation. Nichia also has contributed to the protection and preservation of the Kawabata-moroko (golden venus fish), an endangered freshwater fish. In 2015 Nichia received the “Good Life Award” which is a special award sponsored by the Ministry of the Environment. Additionally, at Nichia's HQ, Nichia owns a breeding facility for fireflies and a small aquarium to preserve and breed rare organisms such as the Oya-nirami (Japanese perch), one of the endangered species in Japan.



## ■ Nichia Furusato Foundation

Nichia invested to establish the Nichia Furusato Foundation in 2013. Since 2015, this foundation has been supporting organizations in Tokushima that engage in activities to conserve the natural environment. This foundation has subsidized 19 million yen for 45 organizations in 2024, and a total of 171 million yen since its foundation.

## ■ Environmental Preservation Activities

- Contribution to the Tokushima Kizuna-no-mori Reforestation Project
- Sponsorship of Uyun-no-mori desert greening activities
- Support for areas without electric lighting in Nepal
- Contribution to Anan-city for the improvement of river water quality
- Promotion of environmental preservation around plants
- Contribution to the protection and preservation of an endangered species, the Kawabata-moroko (golden venus fish).

(In 2015 received the “Good Life Award” which is a special award sponsored by the Ministry of the Environment.)

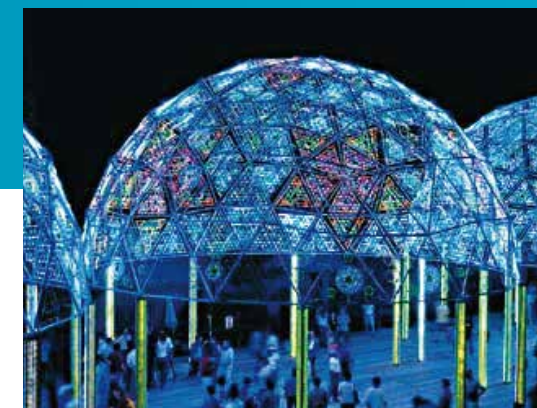
## Social Responsibility

# Building a Prosperous World

Tokushima is not only the birthplace of Nichia, but also the place where all Nichia's Japanese manufacturing sites are located. To be a good corporate citizen of Tokushima, Nichia has been focused on supporting educational and research institutes, scholarships for students who show potential for future innovations, various regional promotion measures, and the people in the community who wish for a safe and comfortable life in Tokushima. Though these activities are limited to Tokushima for now, Nichia hopes to expand these activities to areas around its sales offices abroad in the future.

## ■ Grants for Educational Facilities and Scholarships

- Support for Tokushima University
  - Donation to the research grant fund
  - Donation to the construction of the “Nichia-Kaikan” the regional and international community building
  - Establishment of Nichia Scholarships for the department of science and technology
  - Establishment of an endowed course about nanomaterial technology
  - Donation to construction of the new building for outpatient care and the west ward in the University Hospital
- Donation of a large display system to Kyoto University
- Establishment of an endowed course in Tokyo University about photon information technology
- Donation to fund the renovation of the student dormitory for the Kamiyama Marugoto College of Design, Engineering and Entrepreneurship



## ■ Contributions to Local Communities

- Donation of LED displays to public facilities and institutions
- Donation to the Tokushima Prefecture to improve traffic conditions
- Donation to the Anan City Parks project “Ushiki Castle Ruins Park Development”
- Donation to enhance Anan City's child-rearing support policy
- Participation in the Awa-Odori dance festival as a Nichia Ren (team)
- Participation in local cleanup activities (volunteers)
- Donation to the Anan Medical Center
- Donation to Tokushima prefecture and Anan city for infection control and prevention measures of COVID-19.

# Tokushima, Japan

To achieve the goal of providing industry-leading products through the combination of the wisdom and expertise of all employees, Nichia concentrates its manufacturing sites in Tokushima, where the company was founded. In this environment where professionals from various fields can learn from and motivate each other, this “chemistry” fosters unique ideas which lead to seamless and rapid monotsukuri, one of the Nichia's core competences.

## Naruto plant (N-PLANT)

LEDs and applied LED products

## Headquarters

Laser Diodes, magnetic materials

## Aratano plant (A-PLANT)

Lithium ion battery materials

Suwa Technology Center ●

Tokyo Sales Office ●  
Yokohama Research Center ●

Nagoya Sales Office ●

● Osaka Sales Office

## Tokushima plant (V-PLANT)

Transition metal catalysts and electronic materials

## Tatsumi plant (TN&TS-PLANT)

LEDs, phosphors, battery materials, pharmaceutical ingredients, and evaporation materials



# Company Summary

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<b>Company Name</b>	NICHIA CORPORATION
<b>Address</b>	491 Oka, Kaminaka-Cho, Anan-Shi, TOKUSHIMA 774-8601, JAPAN
<b>TEL</b>	+81-884-22-2311
<b>FAX</b>	+81-884-21-0148
<b>Established</b>	December, 1956
<b>Paid-up Capital JP</b>	¥52,026,441,000
<b>President</b>	Hiroyoshi Ogawa
<b>Employees</b>	Total 9,353 (As of December, 2023)
<b>Main Business</b>	Chemicals ■ Cathode Materials    ■ Magnetic Materials    ■ Phosphors    ■ Organometallic Compounds ■ Fine Chemicals (Electronics Materials, Pharmaceutical Materials, Food Additives) ■ Vacuum Evaporation Materials    ■ Semiconductor Materials Optoelectronics ■ LED (Light-Emitting Diodes)    ■ LD (Laser Diodes)
<b>Plants (All in Tokushima Pref.)</b>	■ Headquarters ■ A-PLANT ■ TN-PLANT ■ TS-PLANT ■ V-PLANT ■ N-PLANT
<b>Domestic Sales Offices</b>	■ Tokyo Sales Office ■ Osaka Sales Office ■ Nagoya Sales Office
<b>R&amp;D Centers</b>	■ Tokushima Research Center (Tokushima Pref.) ■ Yokohama Research Center (Kanagawa Pref.) ■ Suwa Technology Center (Nagano Pref.)
<b>Subsidiary Locations</b>	■ United States (Detroit, Los Angeles, Atlanta, San Jose) ■ Germany (Frankfurt, Aachen) ■ China (Shanghai, Shenzhen)    ■ Taiwan (Hsinchu)    ■ Korea (Seoul) ■ Malaysia (Selangor)    ■ Singapore    ■ Indonesia (Jakarta) ■ Thailand (Bangkok)    ■ Vietnam (Ho chi minh city)    ■ India (Gurgaon)



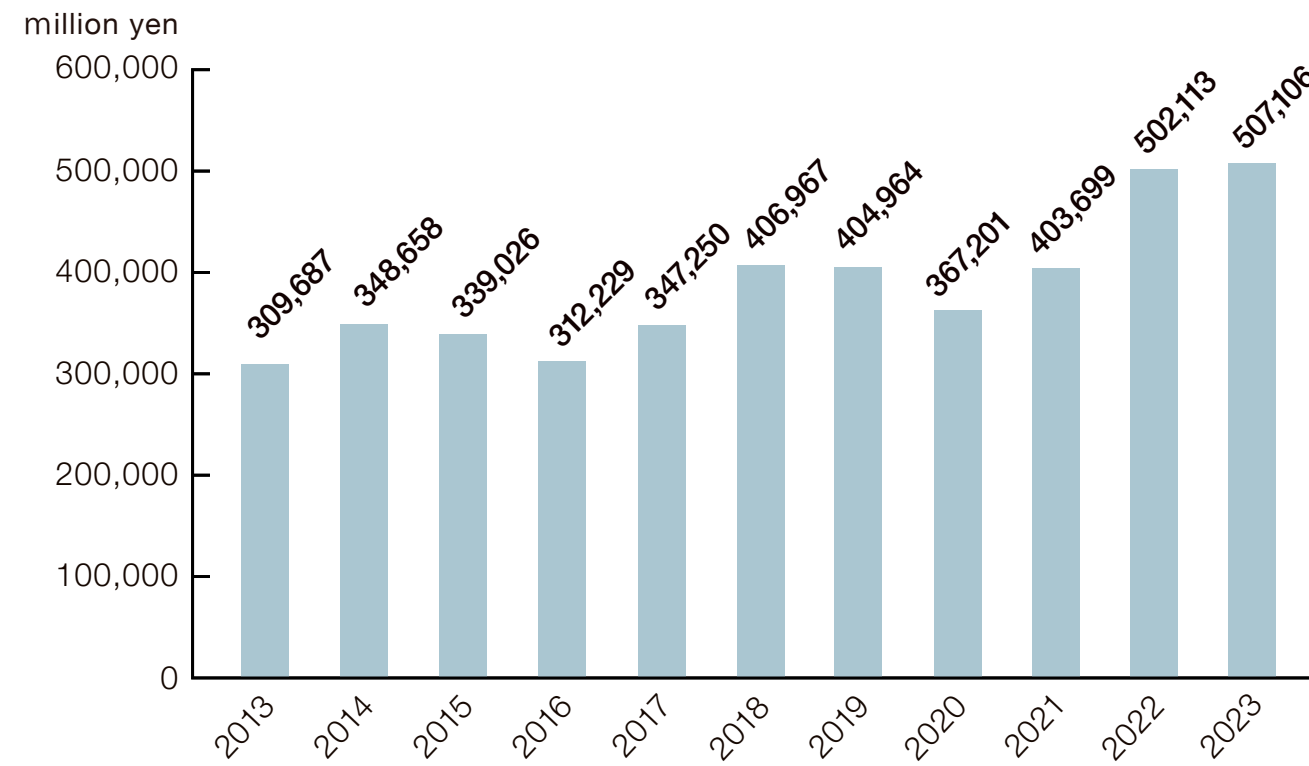
# Organization (As of June, 2024)



# Sales and Employees



## ■ Sales



## ■ Employees (December of each year)

