## History of Our Business Evolution and Value Creation

Through manufacturing that leverages our unique technological capabilities in the rubber and plastic fields that we have cultivated since our founding, we respond to the needs of the times and provide new value to the world.

## Founding to 1970s

## Carrying on the spirit of Kiichiro Toyoda to develop rubber and plastic parts

In the late 1930s, Kiichiro Toyoda, who recognized the importance of rubber parts, established a rubber research department within the automotive division of Toyoda Automatic Loom Works. This was the origin of Toyoda Gosei. Kiichiro Toyoda would later go on to found Toyota Motor Corporation. Kiichiro's passion for research was carried over to Nagoya Rubber Co., Ltd., which was established in 1949. In the 1950s, Nagoya Rubber focused on the development and production of rubber parts for automobiles, and became the first JIS-certified plant in Japan to manufacture hydraulic brake hoses for automobiles. Nagoya Rubber also took on the

challenge of producing plastic steering wheels, which had previously been made of hard rubber. In 1954, the injection molding process was used to produce plastic steering wheels for Model FA trucks, and later, the same process was also used for the plastic steering wheels in the Toyopet Crown model. From the 1960s onward, Nagoya Rubber expanded its business as Japan's automobile industry continued to grow and develop. In 1967, the Company opened the Inazawa Plant to produce plastic parts by injection molding, and subsequently expanded its production bases mainly in the Owari area. In 1973, the Company changed its name to the current Toyoda Gosei Co., Ltd.

1949 1960 1970 1980

## **Knowledge in the Fields of Rubber and Plastics**



**1950** Weatherstrips



1953 Brake hoses



1954
Plastic injection steering wheels



1961 Piston cups





1977
Constant velocity joint boots



Sound insulating glass runs



Plastic fuel filler caps

## Experience in Developing New Businesses



Rubber Research Department, Toyoda Automatic Loom Works

## The challenge of developing plastic injection steering wheels

In 1952, at the suggestion of Toyota Motor Co., Ltd., one of our major customers, we installed a 48-ounce injection molding machine manufactured by Watson-Stillman Co. of the United States. While some were apprehensive about adopting injection molding, which was still an excessive investment even with financial support from Toyota Motor Co., Ltd., we took a leap of faith and succeeded in putting the equipment into operation. This marked the beginning of the age of plastics for automotive parts.



Injection molding machine



1986 Start of R&D for blue LEDs

## **Global Network**



1949 Nagoya Rubber Co., Ltd. is established as a spin-off of the rubber research division of Toyota Motor Co., Ltd.

1957 Haruhi Plant begins operation

1967 Inazawa Plant begins operation

1973 Company name is changed to Toyoda Gosei Co., Ltd. 1976

Morimachi Plant begins operation 1977 U.S. Office is established in Illinois



1980
Head office is relocated to present location (Kiyosu, Aichi Prefecture)

1982 Bisai Plant begins operation

## **1980**s to **2000**s

## Growing into a global company through commitment to research and development

As a member of the Toyota Group, our development and production of rubber and plastic parts for automobiles has expanded into various fields since the 1980s. As a polymer manufacturer, we aim to be a development-oriented company and have strengthened our development capabilities by establishing the Kitajima Technical Center in 1995 and the Miwa Technical Center in 2009.

We also turned our attention to fields in other industries, and based on our thin-film formation technology developed in the automotive parts business, from 1986, we took on the challenge of researching blue LEDs, whose development had numerous technological hurdles that were considered difficult to overcome. In 1995, we succeeded in achieving mass production of blue LEDs. Until the end of the 1980s, Toyoda Gosei's overseas markets consisted of Taiwan and North America under a four-company system, but in the 1990s, we accelerated our overseas expansion. Following North America and Asia, we expanded to Australia, Europe, Central and South America, and Africa, and have now grown into a global company with 62 overseas companies.

1990 2000



1989 Driver-side airbags



1997 Rubber recycling technology



1998 Curtain airbags



2003
Millimeter wave radar-compatible emblem



2008
Plastic fuel filler pipes

### The challenge of developing airbags

Toyoda Gosei boasts the top share in the Japanese airbag market. It is easy to assume that Toyoda Gosei began to produce airbags as part of its steering wheel manufacturing business, but in fact, the Company felt a sense of urgency over new commercial rights for Toyota Motor Corporation's first airbag, and the Company felt that it had to develop airbags as quickly as possible, resulting in a bold new challenge against fierce development competition.





1991 Successful development of blue LEDs is certified

### World's first! Successful development of blue LEDs

LEDs are being used in a growing range of fields as an environmentally-friendly light source because of their superior energy-saving performance. It was the commercialization of blue LEDs in the 1990s that made LED products possible. In 1986, under the guidance of Professor Isamu Akasaki of Nagoya University's Faculty of Engineering and with the cooperation of Toyota Central R&D Labs, Toyoda Gosei began developing a gallium nitride (GaN)-based blue LED, which was certified as a success in 1991. Until then, the development of blue LEDs was thought to be impossible. The challenge, which was the first of its kind in the world, was a series of uncertainties and obstacles.



2007 Start of R&D for e-Rubber



**1989**TG Missouri Corporation is established



1995 Kitajima Technical Center is established



**1999**Toyoda Gosei North America
Corporation is established



2000 Toyoda Gosei Europe N.V. is established



2001 Toyoda Gosei Asia Co., Ltd. is established



**2006**Toyoda Gosei
(Shanghai) Co.,
Ltd. is established



2008
Toyoda Gosei Minda India Pvt.
Ltd. is established



2009 Miwa Technical Center is established

## History of Our Business Evolution and Value Creation and Our Competitive Advantages

## 2010s to Future

## Contributing to the future with a focus on safety, comfort, and decarbonization

The 2010s brought new challenges for companies, such as measures to prevent global warming and the achieving of a sustainable society. In the automotive market, vehicles that do not rely on petroleum fuels, such as BEVs (battery electric vehicles), are expected to play a leading role in the future, forcing major changes.

We have developed high-pressure hydrogen tanks for FCEVs (fuel cell electric vehicles) using our polymer technology. This tank, jointly developed with Toyota Motor Corporation, is being used in Toyota's second-generation Mirai model, which started mass production in 2020. In response to the shift to BEVs, we will contribute to the reduction of traffic fatalities by offering

optimal solutions for airbags and seat belts that accommodate the changes in vehicle structure, and we will also innovate vehicle design and manufacturing with our polymer technology for realizing new mobility. Also, we will develop and recycle high-performance materials by utilizing our expertise in polymer materials, and will not only utilize our developed materials and technologies within the Company but also sell them outside the Company, and through these new businesses, we will contribute to achieving a decarbonized and recycling-oriented society. We will continue to provide value to society in the three areas of safety, comfort, and decarbonization through the use of polymer technology.

2010 2020

## **Knowledge in the Fields of Rubber and Plastics**



Lightweight opening trim weatherstrips



2017 Large radiator grilles



Plastic turbo ducts/ Battery cases



2020 Extra-large spindle arilles



High-pressure hydrogen tanks



2021 Driver-side airbags for better protection in angled frontal collisions/ Pedestrian protection airbags





Millimeter wave compatible emblem that emits light

Miniature wireless charging holder

#### **Experience in Developing New Businesses**



2010 Start of R&D for GaN power semiconductors



Development with EBM Corp. of the SupeR BEAT heart surgery simulator that uses e-Rubber



UV-C space disinfectors, which use UV-C (deep UV) LEDs, are launched. UV-C (deep UV) LEDs are confirmed to be highly effective in neutralizing COVID-19

### 2021 UV-C LED high-speed surface disinfectors

2023





2022 Success in making larger GaN substrates for next-generation power semiconductors

#### **Global Network**

#### 2013

Toyoda Gosei East Japan Co., Ltd. is established



2013 GDBR Industria e Comercio de Componentes Quimicos e de Borracha Ltda. is established



2014 Toyoda Gosei Irapuato Mexico, S.A. de C.V. is established



2018 PT Toyoda Gosei Indonesia is established



2019 Hubei Toyoda Gosei Zheng Ao Rubber And Plastic Sealing Technology Co., Ltd. is established



2020 Inabe Plant begins operation

## **Our Competitive Advantages**

## **Knowledge in the Fields of Rubber and Plastics**

## Materials, manufacturing methods, and mold technology that give our products an edge

We are leveraging our foundations in basic research, which have been ongoing for multiple generations since the rubber research department was established by Kiichiro Toyoda, the founder of Toyota Motor Corporation, to create materials and manufacturing methods that anticipate the needs of our customers and the times for enhancing our competitive advantage.



## **Experience in Developing New Businesses**

#### **Innovative Products**

Under our company creed of "Boundless Creativity and Social Contribution," we have had many successes over our 70-year history of quickly anticipating the needs of the times in areas such as safety and the environment, and developing suitable products. These experiences form the basis for our mindset of taking on challenges, as set out in the TG Spirit. We treasure this mindset that has been passed down to us by our predecessors, and will continue to evolve as a company by taking on the challenges of social issues.



Blue LEDs







SHS curtain airbag

radar-compatible emblem

Lightweight opening trim

**Global Network** 

# Value chain that leverages our network of 62 Group companies in 16 countries/regions

Following our entry into the global car market, we have established more than 40 Group companies in about 20 years. Utilizing this global network, we deliver reliable technology and quality in a timely manner based on an optimal production system that takes into account customer needs and political conditions.

