

# We will accelerate growth in response to advances in AI and IoT and other changes in our operating environment.

We wish to offer everyone our sincerest gratitude for their unwavering and exceptional support. The following explains our performance in the fiscal year ended March 31, 2018, as well as the measures in which we are currently engaged and our management policies going forward.



**Shigeo Yoshida**  
President & COO

**Ippei Takeda**  
Chairman & CEO

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## Performance in the Year Ended March 31, 2018

### Favorable Performance of Products for Automobiles and Industrial Equipment, as Well as Household Energy Storage Systems

During the fiscal year ended March 31, 2018, the Japanese economy continued its modest expansion, fueled by improvements in capital investment and personal consumption. Looking overseas, favorable corporate performance led to solid employment in the United States. In Europe, corporate earnings improved, rebounding gradually despite economic uncertainty. The pace of growth eased in China and emerging markets, but performance was solid, buttressed by the effects of government policies in individual countries.

Against this backdrop, the NICHICON Group continued to focus on the four important fields of energy, the environment (ecology) and medical equipment; automotive and railway-car related appliances; household electrical appliances and industrial inverters; and information and communications equipment, which are diversifying with the development of new key technologies such as the

Internet of Things (IoT) and artificial intelligence (AI). As a result, net sales rose 14.3% year on year, to ¥114,768 million; operating income surged 105.3%, to ¥6,197 million; and ordinary income grew 47.5%, to ¥7,006 million. The net loss attributable to owners of the parent was ¥10,905 million, compared with net income of ¥2,624 million in the preceding fiscal year, owing to the posting of losses relating to antitrust laws.

By product category, sales of capacitors for electronics rose due to higher sales for use in automotive and industrial equipment, as well as to a recovery in demand for capacitors for inverter-type home electrical equipment. Sales of capacitors for electric apparatuses and power utilities & applied systems and equipment also grew. Sales of circuit products rose as a result of expanded sales of the “Home Power Station”, our household energy storage system.

By region, in the Asian market we saw a rebound in sales of products used in inverter equipment, and sales of products for automotive equipment increased in Europe. As a result, overseas sales amounted to ¥67,034 million, up 16.3% year on year, and accounted for 58.4% of net sales, up 1.0 percentage point. The NICHICON Group is continuing to chart a course toward expanding its overseas sales.

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## Management Policy and Business Strategy

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### Top Notch Management

First-class performance in every aspect of our business, including quality, cost, delivery, service and technology

### Growth Strategy Based on Structure of Two Business Headquarters

For each business headquarters, completing an organizational structure for thoroughly integrated management from development through to sales

### Three Core Product Lines and Targets

Aluminum electrolytic capacitors / Film capacitors / Circuit products





### **Expanding Sales in Growth Markets and Entering New Markets by Balancing the Capacitor and NECST Businesses**

The NICHICON Group has a policy of pursuing “Top Notch Management,” which refers to first-class performance in every aspect of our business, including quality, cost, delivery, service and technology. We are switching our emphasis from being a manufacturing business to “Koto-Zukuri” (proposing value that exceeds customer expectations), thereby moving to the “creation” business. Based on this policy, we are working toward the balanced growth of the capacitor business and the NECST business, which provides stable power and helps preserve the global environment.

In the fiscal year ended March 31, 2018, in the capacitor business we worked to introduce new products and expand their sales in growth markets. In the automotive and industrial equipment sectors, we sought to meet demand for higher-performance aluminum electrolytic capacitors by offering products capable of withstanding high temperatures, having long life and handling high ripple current. We also developed and launched conductive polymer hybrid aluminum electrolytic capacitors. We made capital expenditures as strategic investments to augment production capacity.

In the NECST business, we focused on expanding sales of the “Home Power Station”, our household energy storage system. Customer interest increased for our 11.1kWh standard single-function type and other models that sell for less than ¥300,000 per kWh, cultivating demand even for products on which subsidies are not available. These efforts were successful in boosting sales. We provided the products on an OEM basis to solar panel manufacturers and under the NICHICON brand to home manufacturers. In addition to

these existing sales routes, we opened up new routes, using direct-selling and construction companies. As a result, as of March 31, 2018, unit sales reached a cumulative 44,000 units, driving industry growth. In addition, in preparation for an era in which power generation is becoming more commonplace among general households, we developed the Tribrid Energy Storage System. This next-generation power storage system is capable of effectively using power from three types of battery: solar cells, the large batteries in EVs and PHVs, and storage batteries. We also developed a portable energy storage system that can be installed without construction and meets demand by people who wish to introduce a simple energy storage system, thereby creating a new market. In response to increasingly frequent natural disasters, in the EV-related category we have begun mass-producing the Power Mover portable power feeder that facilitates the use of electricity from the large batteries of EVs, FCVs and PHVs to power lighting, communications and air conditioning at evacuation centers.

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#### **Initiatives during and after the Year Ending March 31, 2019**

### **Moving Forward with New Product Development and Sales Expansion under a Slogan of Moving from Structural Reform to a Period of Growth**

In the electronics industry, changes are taking place at dizzying speed. In the automotive field, they include advanced driver assistance systems (ADASs) and autonomous driving. In power electronics, shifts are occurring in the fusion of technologies with IoT and the use of AI in robotics, as well as simulation technology that makes use of virtual reality (VR). In the move toward a low-carbon society, the shift toward EVs in China, Europe and other parts of the world, and the transition toward the generation of renewable energy among general households is prompting major changes in the business environment.

To date, the NICHICON Group has introduced numerous structural reforms in response to such changes. We are now in a period of transition from structural reform to growth, and I believe we need to boldly accelerate the pace of our business growth. We will continue striving for steady business growth by introducing and expanding sales of products in four key fields: energy, the environment (ecology) and medical equipment; automotive and railway-car related appliances; household electrical appliances and industrial inverters; and information and communications equipment.

The capacitor business is a mature market overall, but we are expanding by focusing on growth fields, such as products for automotive and industrial equipment. For the automotive sector, we are leveraging such highly reliable product groups as aluminum electrolytic capacitors for onboard electronics and film capacitors for motor drives, and we are succeeding at vertical integration. We are focusing in particular on film capacitors for motor drive inverters used in EVs and HVs, an area where we aim to double sales. In products for industrial equipment, we are concentrating on large can type aluminum electrolytic capacitors for servo systems used in factory automation equipment and robots, as we aim to capture demand related to automating production lines in China and growing demand for capital investment in Japan. We are experiencing increased orders for aluminum electrolytic capacitors for inverters from air conditioner manufacturers in Japan and China. In information and communications equipment, we are responding to robust demand related to data center servers and 5G telecommunication substations. We are developing and working to commercialize small lithium-ion secondary batteries for the burgeoning IoT and wearable device markets. We plan to make capital expenditures to increase production capacity in areas such as these, where capacitor demand is growing.

In the NECST business, we are working to develop new products, introduce new technologies and cultivate new markets in preparation for the proliferation of EVs and an era in which power generation by individual households is commonplace. Worldwide, markets are shifting toward EVs, which do not emit CO<sub>2</sub> during travel. For example, the United Kingdom and France are planning to ban sales of gasoline and diesel vehicles by 2040, and China has announced plans to introduce environmental restrictions from 2019. Inherent in the accelerating shift toward EVs is the contradiction that although EVs do not emit CO<sub>2</sub> during travel, CO<sub>2</sub> is produced in generating the electricity that charges their batteries. The NICHICON Group has addressed this situation by introducing the Tribrid Energy Storage System. This system—the industry’s first—provides a direct connection to three types of battery: solar cells, large EV batteries and storage batteries. In addition to use in the home, this system enables electricity from solar generation to power EVs. During power outages, the system can be used to harness EV and storage batteries as backup power sources. As this system allows solar power to serve as the ultimate source of energy, both for homes and automobiles, we believe it will encourage the proliferations of EVs and make a major contribution toward a better global environment.

**Priority Initiatives in the Year Ending March 31, 2019**

Business	Strategy	Key Products/Technologies
<p><b>Capacitor Business</b></p>	<p>Focus on growth fields of automobiles and industrial equipment</p>	<p>[Automobiles]</p> <ul style="list-style-type: none"> <li>● Vibration-resistant structure</li> <li>● Low ESR support</li> <li>● Conductive polymer hybrid aluminum electrolytic capacitors</li> <li>● Film Capacitors for EVs and HVs</li> </ul> <p>[Industrial Equipment]</p> <ul style="list-style-type: none"> <li>● Smallest size in industry</li> <li>● Highest withstand voltage in industry</li> <li>● Permissible abnormal voltage</li> <li>● Longer life</li> </ul>
<p><b>NECST Business</b></p>	<p>Product development and introduction of new technologies in preparation for an era in which power generation is becoming more commonplace for individual households and the EV popularization phase</p>	<p>[Power Storage Systems]</p> <ul style="list-style-type: none"> <li>● Tribrid Energy Storage System</li> <li>● Portable energy storage systems</li> <li>● Hybrid energy storage systems</li> <li>● Single-function energy storage systems</li> </ul> <p>[EV-related]</p> <ul style="list-style-type: none"> <li>● Power Mover portable power feeder</li> <li>● EVPower Station V2H System</li> <li>● 10-50kW quick chargers</li> </ul>

## Message from the Chairman and the President

To encourage the spread of energy storage systems, we are also concentrating on portable systems that are compact, lightweight, inexpensive and can be installed without construction. We offer a wide range of solutions and are a leader in this field. In EV-related products, we offer the EVPower Station, a vehicle-to-home (V2H) system that is growing more popular as EVs become more commonplace. We also offer quick chargers and the Power Mover. This portable power feeder facilitates the use of electricity from the large batteries of EVs, FCVs and PHVs to power evacuation centers, a useful feature in the face of increasingly frequent natural disasters. In public and industrial power storage systems, we are expanding our product offerings to meet market needs in response to revised business continuity plans and the diversification of power sources. On the sales front, we are complementing conventional sales channels—manufacturers of solar panels and homes—with new channels, including direct-selling and construction companies. By building strong partnerships in each of these channels, we aim to expand sales of “Home

Power Station”, our household energy storage system.

### Promoting Industry–Academia–Government and Industry–Industry R&D Collaboration to Create New Value and Expand Businesses

In the leading-edge medical field, our ultra-high-precision power supply technology is used in the accelerator power supply at the heart of SACLA, RIKEN’s X-ray Free Electron Laser (XFEL) facility. This technology is also used in corpuscular ray cancer treatment systems. Also installed at the Kyoto Prefectural University of Medicine and the Osaka Heavy Ion Therapy Center, our accelerator power supplies are used at 14 of 18 such facilities in Japan. Overseas, we have delivered products to six facilities—four in North America and one each in Hong Kong and Singapore.

In cutting-edge technology areas, we promote collaborative development with universities. We are continuing our joint research with the University of Tokyo’s Institute of Industrial Science on next-generation capacitor

## Major Technology and Product Developments Resulting from Collaboration

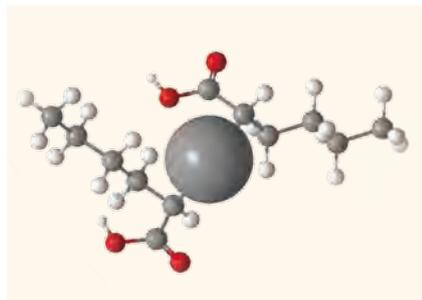
### University of Tokyo

Research on next-generation capacitor materials



### Mie University

Development of electrolytes for aluminum electrolytic capacitors



### Ritsumeikan University

Development of digital control technology, MOT training



### Osaka University and Others

Development of a SiC power conversion module



materials that exhibit innovative characteristics for use in electrolytes, solid electrolyte materials and electrode foils. We are collaborating with Mie University on the development of electrolytes that should enable higher withstand voltages on aluminum electrolytic capacitors, a characteristic in demand by the power electronics market. NICHICON won the Semi-Grand Prix in the “community innovation” category of the CEATEC AWARD 2017 for its SiC power module on the V2H stand of its Tribrid Energy Storage System. This development was the result of R&D conducted in collaboration with Osaka University and other parties on a NEDO project. Going forward, we plan to increase the number of products using SiC.

Meanwhile, we have acquired from Murata Manufacturing Co., Ltd. a portion of its AC-DC switching power supply business and a high-voltage power supply business. By combining these businesses with our strength in low-voltage power supplies, we expect to further leverage our strengths as a manufacturer with a wide-ranging power supply and expand our power supply business.

#### Human Resource Development Initiatives

### Instilling an Awareness of “Ko-Do” (Think and Work) among Employees, Bolstering Productivity and Reinforcing Market Competitiveness

The business environment in which the NICHICON Group operates is changing with remarkable speed, and the intricate interweaving of a host of technologies is giving rise to host of new possibilities. This situation has spawned the acronym VUCA, which is short for volatility, uncertainty, complexity and ambiguity. To help its employees keep abreast of these changes, the NICHICON Group cultivates a code of “ko-do” (think and work) for responding swiftly to customers’ needs. We believe this sense is essential for ongoing marketplace survival. To this end, our employees follow such behavioral guidelines as “keep corporate performance top of mind,” “create aficionados” and “do not give up” as they strive to surpass client expectations.

With labor shortages and rising personnel costs becoming increasingly serious issues in Japan, the need to increase worker productivity is rising, including in back-office jobs. With a view to the coming Fourth Industrial Revolution, when it is said that many human jobs will be handled by AI, IoT and robots, NICHICON is promoting manufacturing technologies and facility development and stepping up initiatives to help employees make the shift toward

\* “ko-do” (Think and Work): NICHICON has coined this word (in the Japanese original), which refers to thinking and working.



higher-value-added work.

The NICHICON Group understands that human resources are a most important management resource. As they provide the energy for our growth, we are focusing on strengthening our human resource foundations. In HR development, we are working with Ritsumeikan University on a masters of technology (MOT) training program aimed at cultivating engineers who can manage and managers who understand technology. To date, 300 employees have taken part of this program, which has served as a springboard for the development of a number of products in the NECST business. We will continue to emphasize MOT training, linking this education to the development of new products.

In addition to these growth strategies, we are working to ensure thorough compliance. While optimizing our operations, we are enhancing systems to ensure the reliability of our financial information, as well as putting in place and further strengthening our internal control systems in the aim of enhancing corporate value.

The NICHICON Group recognizes returning profits to shareholders as an important management issue, and we are working to steadily increase dividends by maximizing corporate value and strengthening our business structure. The annual dividend for the year ended March 31, 2018, was ¥22 yen per share.

We ask our stakeholders, including our shareholders and investors, for their ongoing support.

June 28, 2018

**Ipppei Takeda**  
NICHICON CORPORATION  
Chairman & CEO

**Shigeo Yoshida**  
President & COO