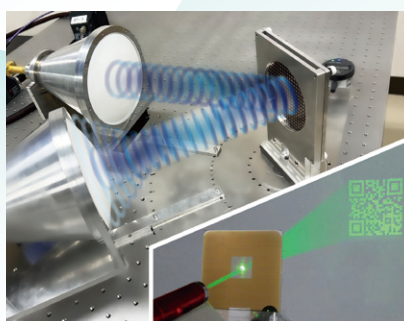


The Manufacturing SMEs “E, N, NO, SHI, TA” (unsung heroes) that Support Our Lives in the Near Future

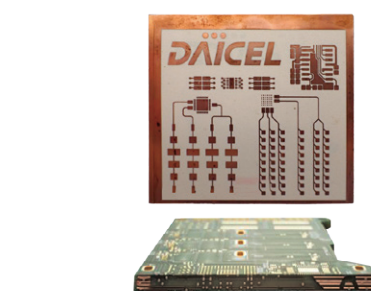
Surface modification technology pioneering the near future beyond 5G

Beyond 5G Surface Modification Unit

We are developing technologies related to the substrates, electromagnetic shielding, and metasurface reflectors that are essential for realizing the high-speed communications infrastructure described as "Beyond 5G." In the exhibition, we will introduce various technologies that contribute to the realization of Society5.0, including plating primer technology and pattern exposure technology that realize the control of electromagnetic waves in high frequency bands, and surface modification technology and plating technology that realize direct plating on low dielectric constant resins for next-generation high-speed communications.



Special substrate materials supporting the future of communications



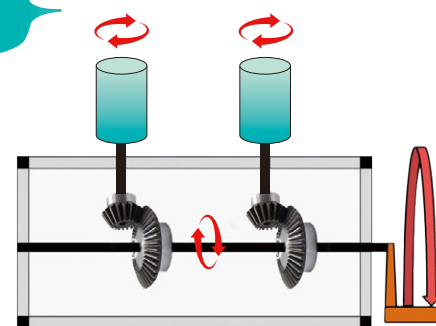
Beyond 5G materials development team

We are developing substrates that will be the key to the next-generation "Beyond 5G" communications infrastructure. The use of materials with low dielectric properties is necessary in order to realize the ultra-high speed, ultra-low delay, and multiple simultaneous connections that are the characteristics of Beyond 5G communications. In the exhibition, we will introduce materials such as resins and connector materials that improve the dielectric properties, which affect signal delay and transmission loss, balanced substrate materials that maintain their moisture absorption resistance, heat resistance, and dimensional stability while also having low dielectric properties, and materials that are made recyclable. Be sure to come and see the cutting-edge technologies that will contribute to the communications of the future.

Future lifestyles realized with old but new phenolic resin

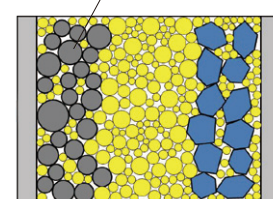
LIGNYTE CO.,LTD.

We will introduce the next generation of environmentally friendly gears, which are made by incorporating plant-derived materials into phenolic resin, which was the world's first plastic. We will also exhibit a prototype all-solid-state battery that uses carbides derived from phenolic resin as the negative electrode material. Phenolic resin was first created more than 100 years ago, but we will introduce technology to utilize it as an advanced material of the future that can contribute to carbon neutrality.



Environmentally friendly gears

Carbides derived from phenolic resin are used as the negative electrode material



All-solid-state battery

Realizing a prosperous society by coexisting with electromagnetic waves



Medical-Aid Co., Ltd.

With the spread of smartphones and various communication systems, EMC technology to prevent electromagnetic interference and equipment malfunction is becoming increasingly important. At the venue, we will show a video on the theme of "Realizing a prosperous society that coexists with electromagnetic waves" and we will exhibit items such as new special electromagnetic shielding materials that reduce the effects of reflection and resonance, a variety of medical and military-use clothing that protects against electromagnetic waves, and an electromagnetic wave shielding box where the inside can be viewed from the outside. Please be sure to experience the latest anti-electromagnetic wave technology at the venue.

Biologging and next-generation lithium-ion battery innovation

ATTACCATO LLC.

We will introduce the latest battery technology and the peripheral technologies that support it, through exhibits of biological models equipped with biologgers (devices attached to wild animals to obtain ecological data), exhibits of next-generation high-capacity lithium-ion batteries and others. We will show how we are contributing to the SDGs from the perspectives of contributing to clean energy and protecting biodiversity. We will also exhibit the battery development we are conducting in consideration of a circular economy, and the recycled materials from those efforts.



Reborn Challenge
Implementation Body

Osaka Research Institute of
Industrial Science and
Technology(ORIST)

We will exhibit prototypes and technologies that have been successfully commercialized using ORIST's technical support menu, showcasing the technological capabilities of Osaka's small and medium-sized enterprises (SMEs) to the world. For nearly 100 years, ORIST has supported a wide range of companies, including SMEs and startups, across various technical fields. We will highlight those companies that have achieved commercialization and technological advancements, presenting them as "the products and technologies that will support our life in the near future." We hope visitors will appreciate the exceptional technologies that Osaka's SMEs have to offer.

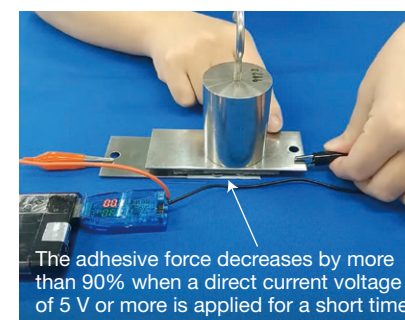
[Contact]

Contact Window: Planning Division, Corporate Management Headquarters
TEL : 0725 - 51 - 2525 E-mail : keiei@orist.jp

Special Website



Strange adhesive tape that can be peeled off easily with the power of electricity



The adhesive force decreases by more than 90% when a direct current voltage of 5 V or more is applied for a short time

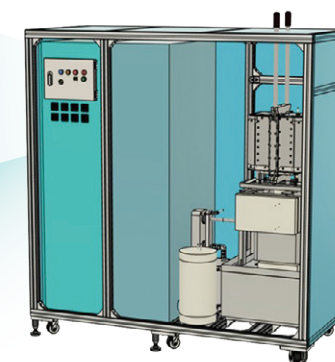
VIGteQnos Co., Ltd.

"Electro-peeling adhesive tape" has the characteristics that it forms a strong bond during its use, but after use, simply applying a voltage of 10 V for 10 seconds reduces the adhesive strength by more than 90%. Furthermore, it can be used repeatedly, so our aim is to have it implemented in the future as a sustainable technology in terms of its recycling and the environment. At the venue, we will demonstrate how the tape can be easily peeled off with electrical stimulation.

The future of on-demand hydrogen: produce it whenever, wherever, and in any quantity.

SOEC Green Hydrogen Development Consortium

The SOEC (Solid Oxide Electrolysis Cell) technology, which generates hydrogen by electrolyzing water at high temperatures, enables the production of low-cost and environmentally friendly green hydrogen. At the exhibition, we will showcase a compact and highly efficient "SOEC Green Hydrogen Production Unit" that utilizes renewable energy. Additionally, we will explain its potential to evolve into a multi-energy supply system capable of producing methane and ammonia using the generated hydrogen.



A sustainable diet realized with a superheated steam cooker

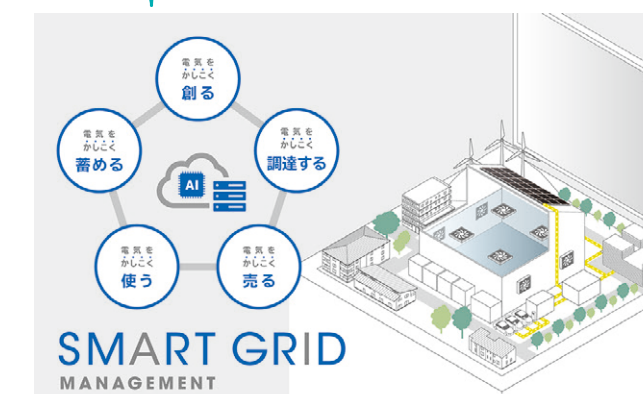


ACE SYSTEM CO.,LTD.

We will introduce food processing technologies that create delicious, long shelf-life foods that also contribute to health. This includes the use of "superheated steam cooking technology," which does not cause much destruction of the food cells during processing, and "steam control technology," which preserves the taste and nutrients of the ingredients. We will explain the mechanism by which these processed foods contribute to food loss reduction. We will also provide a futuristic food coordinator experience for the visitors by combining superheated steam cooking with an AI chef that performs food management to fit with the health condition of the individual.



At that time, AI determines the ideal electric power to use so that it is used wisely!



mirai-no-koto Co.Ltd

"SMART GRID MANAGEMENT" is a system in which an AI linked to weather information refers to information on the Japan Electric Power Exchange (JEPX). It then performs the optimal operation of the power. In the exhibition, we will use models and LCD screens to explain how the weather forecast and the equipment such as photovoltaic power generation, storage batteries and air conditioning equipment are linked together to generate, store, use, procure, and sell electricity wisely. We will also explain the effectiveness of this system.

Various power control technologies that will realize a carbon neutral society

WAKOH DENKEN Co.,Ltd

We are developing technologies for the efficient conversion of renewable energy into electrical energy, and for the social implementation of the use of electrical energy generated by using hydrogen and ammonia as energy sources. In the exhibition, we will introduce our power control technologies such as a highly efficient bi-directional power supply that controls the flow of electricity in both directions, and a DCDC converter for fuel cells that stabilizes the output voltage of the fuel cell.



The world of forging technology, which has endless possibilities

HI-TEN INDUSTRY COMPANY ,LTD

When die sets (the jigs and tools for fixing molds) that have improved heat insulation performance are combined with die processing technology, it becomes possible to perform highly accurate and precise metal processing. At the venue, we will have visitors experience the world of advanced forging technology through exhibits of daily necessities such as kitchen knives and incense holders that are made from a titanium alloy by hot forging at 900°C.

