SHAPING THE FUTURE WITH "TSUNAGU" TECHNOLOGY.

FUJIKURA NEWS

Exhibition

Fujikura Exhibits at CEATEC 2019

Dates
October 15 (Tue)-18 (Fri) 2019
10:00-17:00

Venue
Fujikura Booth G043,
Device/Technology area, Hall 5, Makuhari Messe

We are pleased to announce that Fujikura will be exhibiting at CEATEC 2019 to be held from October 15 (Tuesday) to 18 (Friday) at Makuhari Messe. This year's CEATEC aims to provide opportunities where people, technology, and information meet under a roof and create businesses under the theme of "CPS/IoT and co-creation by every industry" to realize a super-smart society (Society 5.0) that promotes Japan's economic development and solution to issues.

Fujikura's booth showcases how our products contribute to the realization of Society 5.0 to our clients, students and ordinary visitors in an easy-to-understand manner. We look forward to seeing you at our booth.
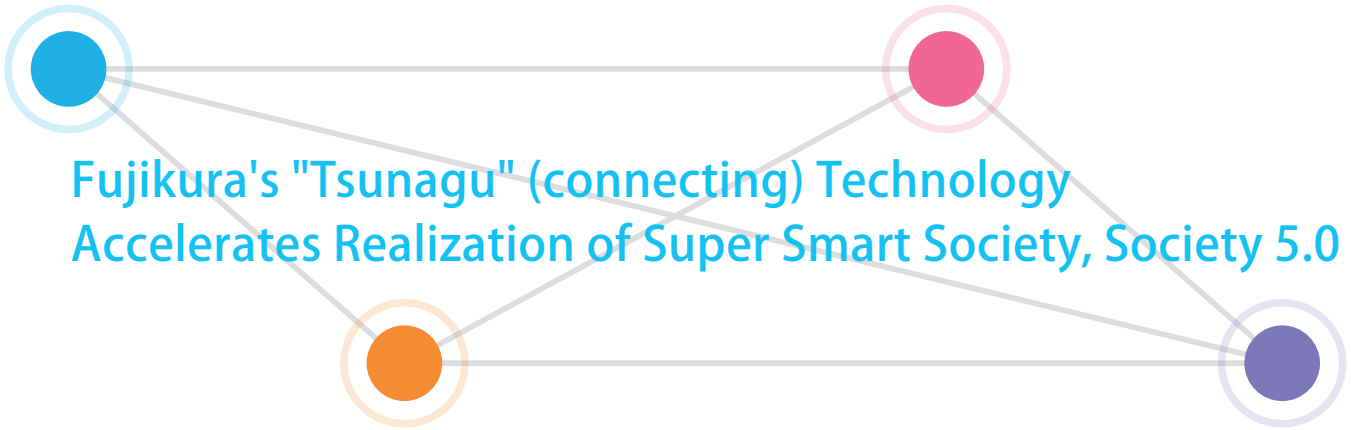
Fujikura's "Tsunagu" (connecting) Technology Accelerates Realization of Super Smart Society, Society 5.0

A super-smart society (Society 5.0) is Japan's national vision of an ideal human-centric future society that brings about Japan's economic development and solution to social issues by a system highly integrating cyber space (virtual reality) and physical space (reality). The figure below illustrates how our products contribute to Society 5.0. Specifically, our products for power and telecommunication networks are used as infrastructure facilities that are the base of Society 5.0. These products are classified and displayed in four sections for visitors' easy understanding. The details about each section and its exhibits are introduced on the next page.

Fujikura's "Tsunagu" (connecting) Technology Accelerates Realization of Super Smart Society, Society 5.0

Telecommunication solutions connected to 5G

● Telecommunication infrastructure
  Optical fiber cable system
  Millimeter-wave radio products
● Telecommunication devices
  Electronic components for smartphones

Our fiber-optic cable systems are used in telecommunication infrastructures as optical transmission lines for public telecommunications. Our ultra-high-fiber-count optical cables are commercially available as easy-to-install lightweight fine optical cables are becoming mainstream for high-speed high-capacity transmission. Furthermore, we also develop wireless devices for millimeter wave bands.

Safe reassured healthcare solutions using IoT

● Power-supply-free IoT Cloud application
  using EH sensor system
● Stretchable membrane
  (demonstration of sole pressure sensor)
● Fuel cell, new material (CNT) heater
● tock control system combining LCX and RFID

OThe products using our sensor systems provide new services combining different companies' technologies, including power-supply-free energy harvesting sensors and sensor systems preventing children from heatstroke.

We have established an image inspection system using AI. The semiconductor laser chip that was produced using the technology is used as a fiber laser. Metal processing machines that use our fiber lasers have started to be used in the world, enabling high-speed, high-accuracy machining.

● Image inspection system by AI
● Pulse fiber laser

Smart factory solution using AI

We have manufactured wire harnesses (braided electric wires for vehicles) for a long time. In current years, high-voltage harnesses for EVs and next-generation devices contributing to energy saving are being developed. Furthermore, superconducting wire rods that have the world's-top-class current density are also under development.

● Next-generation automotive products
● High-temperature superconductivity

Next-generation mobility and energy solution

Smart factory solution using AI

AI

AI (artificial intelligence) is said to be essential to a super-smart society.
We have already started to introduce AI into our actual manufacturing process. The following are some examples.

Original image   Heat map image
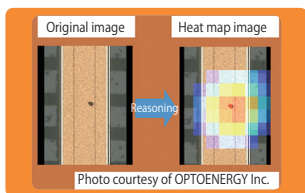Reasoning
Photo courtesy of OPTOENERGY Inc.

Image inspection system by AI

Fujikura is actively introducing AI into the manufacturing process under a "manufacturing innovation" initiative. AI is gradually being applied to the inspection of laser diode devices, the key components of fiber lasers, achieving and maintaining a high judgement accuracy exceeding that of engineers for a long time. This section will introduce AI technologies and our efforts to apply AI in the manufacturing industry.


Pulse fiber laser

Fiber lasers are laser oscillators that have high energy efficiency and excellent beam quality. At our booth, laser marking are demonstrated along with the introduction of the features of our fiber lasers.

Reassuring and safe healthcare solution using IoT

IoT

Ultra-smart society enables various things to be connected to the Internet through IoT. This time,
energy harvesting sensor systems and RFID tags and relevant IoT products and wearable products for healthcare are on display.
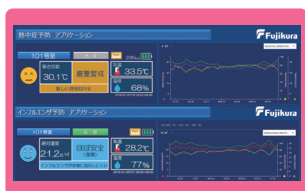
Power-supply-free IoT Cloud application using energy harvesting sensor system

We provide comprehensive IoT sensing services from energy harvesting sensor systems that consist of dye-sensitized solar cells for a 920 MHz band to applications using IoT Cloud. The demonstrations of applications of CO_2 concentration and heatstroke monitoring take place at the booth.


Stretchable membranes

The technology to form stretchable electronic circuits in fabrics such as for sportswear and socks are under development. The technology is expected to be applied to wearable devices to measure vital signals for exercise management and health management. Sole pressure sensors to measure walk balance are demonstrated at the booth.

Fuel cells, new material (CNT) heater

Portable fuel cells can supply power to smartphones and secure telecommunications, which is one of the most important measures to minimize damage in case of natural disasters or emergencies. These cells, which can also charge smartphones at the time of power failure, will be demonstrated at our booth. In addition, next-generation solutions related to safety and reassurance are also presented.


RFIDタグ
ZLCX1.5D
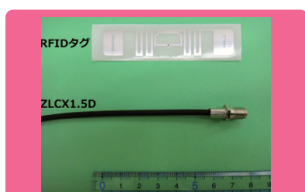
Stock control system consisting of LCX and RFID

We have proposed a system where the signals from RFID tags are read out by freely wiring leaky coaxial (LCX) cables and emitting electric waves only in the proximity of the cables.
With everything connected by RFID tags, connecting things and people through networks is believed to enrich peoples' lives.

Telecommunication solution connected to 5G

5G

Our products are used for the construction of telecommunication networks as the basis to realize an ultra-smart society
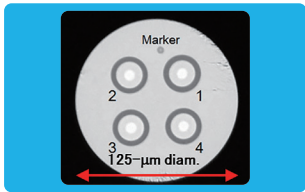
Optical fiber cable system

While data traffic has been increasing rapidly in step with the spread of smartphones, the distribution of moving images and the use of big data, 5G and IoT, almost all the devices are connected by the backbones of optical cables. Ultra-high-fiber-count, small-diameter, high-density fiber-optic cables that deal with increasing data traffic are put on display. In addition, the development of multicore optical fibers, which include multiple-cores in a fiber, is also ongoing.
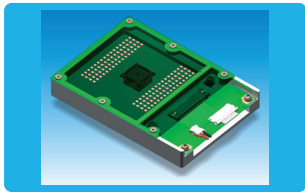
Millimeter-wave radio products

We are developing highly value-added products for upcoming 5G network.
Our key technologies are wideband and long distance transmission at mmWave radio frequency. We will be releasing built-in mmWave communication modules, which can realize high-speed internet services in areas where optical fibers are difficult to be deployed.

Electronic components for smartphones

Smartphones are indispensable for modern life. To enable them to include multiple functions, we provide electronic components including FPCs, electronic wires, thermal components and connectors. At our booth, videos explain the purpose of the use, required specifications, lineup of these products for easy understanding.

Next-generation mobility and energy solution

CASE

In a super-smart society, electric vehicles will be connected to electric outlets at home, and the batteries will also be incorporated in the power supply network. The section also presents superconductivity, which will contribute to a future high-efficiency energy society.

Next-generation automotive products

A major transformation such as electrification, autonomous driving, and connectivity is underway in next-generation vehicles. In addition to our in-vehicle products, the exhibit features a next-generation low-cost device, which is especially suitable for electrification and consists of a seat belt reminder and an energy-saving, moisture-keeping, skin-friendly seat heater.

High-temperature superconducting wires

Rare-earth-based high-temperature superconducting wires are expected to be applied to various industrial applications including the medical field. In recent years, high-temperature superconducting technologies have been attracting attention in the mobility and energy solution fields as well. We will contribute to the next-generation smart society by providing high-performance and high-quality superconducting wires. This exhibit gives an introduction to our superconducting technology through a demonstration.