**Yttrium-Based Superconducting Wire**
Fujikura has worked in development, production and sale of Yttrium-based high-temperature superconducting wire. Yttrium-based superconducting wire could be applied in wide ranges of operating temperature and magnetic field. Including electrical power equipment such as power cables and fault current limiters, rotating machines like motors, and medical and analytical equipment using superconducting coils, verifications of various industrial applications have started. For practical use of yttrium-based superconducting wire, we have supplied our wires and have been focusing on development of superconducting coils.
Fujikura will contribute to the high efficient energy society by supplying high-quality superconducting wires.

**ARIB Standard Multi-Fiber Optical Connector for Ultrahigh-definition Imaging Devices**
Fujikura has developed a multi-fiber optical connector for ultrahigh definition imaging devices including 4k/8k super-high vision broadcasting devices used at studios and started delivering the product. Association of Radio Industries and Businesses (ARIB) has established the standards of Interface for UHDTV Production Systems B-58 ver. 1.0, which standardized our optical connector. Being attachable to both ends of a 24-fiber optical cable, the connector contributes to the realization of high-density optical interconnection and reductions in time needed for connecting and disconnecting.

**Fiber Laser**
Fiber laser is the laser machine that is available for various materials processing such as cutting, welding, drilling, marking. It is attracting attention as the ideal laser which can realize high peak energy, excellent beam quality, compact and reliability.
We prepare a wide line of product from the pulse fiber laser which is effective for semiconductor processing to a high output fiber laser of the kilowatt grade and will meet needs to a customer.
By this exhibition, we display the latest model of the pulse fiber laser which renovated design and realized high pulse energy, high beam quality and compact.

**Introduction to Our Products**
We truly appreciate your continued patronage of our products.
Fujikura will be exhibiting at CEATEC JAPAN 2014 to be held at Makuhari Messe from Tuesday, October 7.
CEATEC JAPAN is a noteworthy exhibition, bringing together the latest and most advanced products and technology in the IT and electronics fields and providing information to the world.
This year’s exhibition has the theme of "NEXT - Technology Makes the Future".
Our electronics section will offer flexible printed circuit boards and ultra-thin coaxial cable assemblies used in digital and mobile devices, components that use thermal technology, and pressure and oxygen sensors.
The new energy section will include a cable for solar power generation, cable and connector for electric vehicle charging, fuel cell and environmental sensor system. There will also be a special display of a superconducting wire rod.
The fiber optics section will put on display a fiber laser and 8K BNC optical connector.
In addition, DDK Ltd., an integrated components manufacturer and a member of the Fujikura Group, will also be exhibiting various connectors. The connectors are designed for mobile and small terminals, telecommunications and storage devices, FA and machine tools, and automotive electric/electronic components.
Please take this opportunity to stop by our booth and let us know your comments and needs.

**JIMTOF2014**
The 27th Japan International Machine Tool Fair

**Date**
October 30 (Thu.) - November 4 (Tue.) 2014
9:00a.m. - 17:00p.m.

**Venue**
Makuhari Messe, Hall 5
East Hall, Tokyo Big Sight

Fujikura will be exhibiting fiber lasers at the 27th Japan International Machine Tool Fair to be held at the end of October. JIMTOF is one of the three largest exhibitions in the world, where many machine tools and related devices are on display.
At Fujikura booth, we will introduce to customers a kW fiber laser, pulse fiber laser, and CW fiber laser, all of which are highly tolerant to back reflection*. We will also propose new machining suitable for various applications. We are very looking forward to meeting you at our booth.

**White FPC**
Fujikura’s white FPC has high reflectivity rate, thermo stability, and lightfastness. The product increases the luminance of an LED module when used in LCD backlight and LED illumination. In addition, the FPC is suitable for 3-D modularizing in the use of the vehicle-mounted lamps typified by DRLs (daytime running lights). DRLs are currently mounted on European vehicles.
Two varieties of FPCs are available, one using white coverlays with high bendability, and the other using white ink to suit cost-reduction demands.
Thermal Solution

- Heat pipes are widely used for cooling electronic devices and automotive LEDs due to the high thermal conductive property and flexibility in design. Fujikura has developed small-diameter heat pipes and thin heat pipes, which can be used in small portable devices, such as smartphones.

- Cold plate is used for cooling ISBT and CPU of super computer which have high heat generation. Fujikura's cold plate is adopted for super computer "K8".

Electronic Wires

- Fujikura's electronic wires have been used as proven data transmission cable assemblies in and between electronic devices.
- We will exhibit the following cable assemblies at the upcoming show.
  - High flexibility USB3.0 cable assembly: newly developed for easy handling.
  - Long-distance data transmission camera module with a high-strength slim cable, capable of transmitting video signals over long distances.
  - In-car coaxial cable: less weight while maintaining the same transmission property as conventional products.
  - Noise suppression cable: capable of suppressing noise when pressed or vibrated.

Millimeter-Wave Devices

- 60 GHz wireless applications such as WiGig IEEE802.11ad came into the spotlight. Unlicensed bandwidth of 60 GHz-band is wider than that of current WiFi by 150 times, which enables high speed and large volume wireless communication.
- We have been developing underlying technologies relating to antenna-in-package (AiP) for realization of applications such as kiosk-download and uncompressed wireless video transmission. We have been developing unique post-wall waveguide (PWW) in glass substrates, low-loss and broadband transformer between RF planar circuit and PWW, broadband and high gain antenna realized by PWW, and interposers.

Membrane Switch

- An array of membrane switches will be displayed in the exhibition.
- Our extensive range includes membrane switches for keyboards, typical input devices for electronic equipment, previously impossible to mount on PET film.
- Fujikura has developed a membrane circuit board with fine circuits using gravure offset technology. This gravure offset printing is more suitable than screen printing for forming fine-pitch circuits.

Sensor

- Used in various medical equipment, Fujikura pressure sensors and oxygen sensors considerably contribute to QOL (quality of life) improvement. Small pressure sensors using a silicon MEMS technology and an oxygen sensor using a ceramics technology are on display at the exhibition.
- The products find a wide range of applications in different equipment such as medical, nursing and healthcare equipment, industrial equipment, and consume equipment.
- Moreover, on show are our newly developed pressure sensors (TO) of digital output type as well as conventional sensors of analog output type.
- The new products provide a high degree of accuracy in a wide temperature range and are connectable to a device without AD converters, and thusallow lowering the total cost of the system.

PV Connector Cable for Photovoltaic Power Facility

- In photovoltaic power facilities, PV connector cable is used for the electric wiring of between junction box and PV shingles. By the assembly processing in the factory, this product can plan labor saving of the on-site terminal processing and stability of the quality.
- The assembly processing of various connectors (MC3, MC4, PV-G, H4, etc.) which accepted a customer demand to various cables and constructions, (DC1500V, SOLAR-CQ, etc.) which is possible. On the both ends of the PV connector cable installs marking-tubes, for discriminating place and cable length.
- Furthermore, to a schedule of the construction, we can perform packing and the delivery of the junction box unit.

Direct Methanol Fuel Cell

- Direct methanol fuel cell (DMFC) is a kind of fuel cell that fuel is diluted methanol. Methanol has advantage such as does not freeze at low temperature, long term storage ability and safety feature.

- Also fuel cell itself has noiseless feature. Therefore, it is expected for emergency, passenger service of transportation vehicle and portable power source. We developed higher power output DMFC by improving energy conversion efficiency for various requirement of customer. Fujikura achieved 1kW output DMFC with 60x40x33 cm of dimension and 50kg of weight.

- 1kW output DMFC that is achieved world highest level power output of DMFC, will be exhibited.

Power & Telecommunication System Strategy & Sales Engineering Department

Wireless Environmental Sensor System Using Energy Harvesting Technology

- A dye-sensitized solar cell (DSC) is one of the photovoltaic cells with excellent power generation characteristics even in low light or diffused light as well as in high light. The cell can be used under low illumination conditions for example, in the shade, near windows, inside a room. Thus the cell has been attracting attention as an optimal power generation device in the energy harvesting field. A wireless environmental sensor system powered by a DSC has advantages in easy installation and cheap maintenance costs because it does not require a battery change or wiring.

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**Superconductor Business Development Division**

Fujikura NEWS

**"Tsunagu" Technology New Product News**

**Fujikura NEWS**

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*back reflection : Applied laser light is reflected off the surface of a piece of work.

**Fiber Laser Business Development Division**

fiber_laser@jp.fujikura.com

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**Printed Circuit Board Division**

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**Printed Circuit Board Division**

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