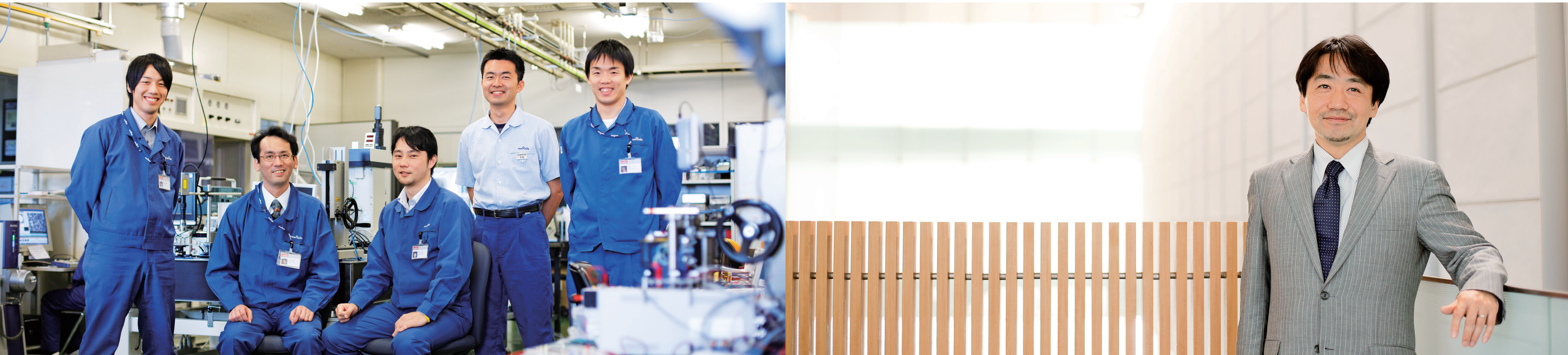


# Feature article [New Businesses and CSR]

We strive to create business domains that contribute to society, such as new energy and health.

- Activities to Fulfill Product Responsibility
- Meeting Customer Needs
- Measures to Improve Product Quality



## Small amounts of energy hold big possibilities Our challenges for energy harvesting

The new future is ours to create!  
Employees willing to take on a challenge join the project

“Energy harvesting” is a technology used to generate a small amount of electric energy from vibration or heat. MIRAI\* project team members are developing four types of devices to make this possible.

The first device utilizes piezoelectric material and the second device use electret material. The third device is a thermoelectric conversion element based on multilayer technology developed by Murata, and the fourth device is a photovoltaic cell capable of efficiently generating electricity from room light. Energy around us exists in minute quantities, usually less than 1 milliwatt; but by effectively managing it, we can operate equipment without the need for wires or batteries. In addition to our current target of wireless sensor networks, this technology has potential for a vast range of applications.

MIRAI\* project team members are volunteers that have gathered from diverse departments with the hope of contributing to

businesses and society through ideas that reach beyond the mere implementation of technologies at hand. Although the amount of energy generated by energy harvesting technology is very small, we have the big dream of making new energy available to the world.

\*MIRAI means “future” in Japanese

Photo, from left to right

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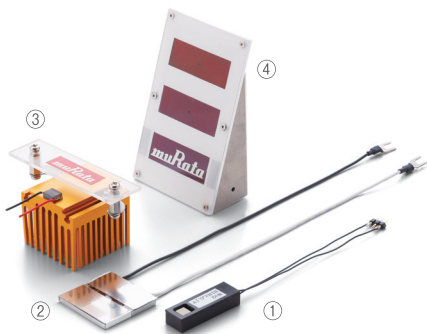
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- ①Piezoelectric device
- ②Electret device
- ③Thermoelectric device
- ④Photovoltaic device



## Electronics to make people healthy Murata’s own technology introduced to the healthcare market

The key phrase is “anytime, anywhere.”  
Emergence of the new health culture

We encountered the healthcare market as we researched new fields of application for Murata’s sensing and wireless communication technologies. Examples of products in this field are home appliances aimed at the promotion of health, such as fitness games, or health management equipment for home use. We can contribute to society through health if we make it possible for everybody to check or care for their health anytime, anywhere. We have developed our vital sign sensor with this concept in mind. Just by touching the sensor with both the right and left index fingers, pulse and blood oxygen content can be measured by detecting minute voltage change from heart activity or change in the concentration of hemoglobin, based on electrocardiographic and plethysmographic methods. By combining low energy-consumption wireless technology such as Bluetooth® Low Energy with this sensor, we can create new type of device for healthcare services. With this technology,

measurement results can be recorded on a server for consultation with specialists or one can check the results anytime, anywhere by smartphone. This may even evolve into a new communication tool for people where they can be aware of each other’s health or emotional conditions by estimating “fatigue level,” “tension,” and “excitation.”



Vital signs sensor



Vital signs sensor demonstration kit  
Biosignals (such as heart rate) can be measured by touching the sensor with index fingers.

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