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- ▶ Koji Muraki, Senior Distinguished Researcher, NTT Basic Research Laboratories

## Rising Researchers

- ▶ Shinobu Saito, Distinguished Researcher, NTT Computer and Data Science Laboratories

## Feature Articles

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## Front-line Researchers

### Koji Muraki, Senior Distinguished Researcher, NTT Basic Research Laboratories

#### ▼ Abstract

In the field of condensed-matter physics, it is often the case that a theory about a phenomenon is experimentally verified 20 or 30 years after it was proposed. Koji Muraki, a senior distinguished researcher at NTT Basic Research Laboratories, and his co-researchers were the first in the world to experimentally observe a phenomenon similar to Andreev reflection, which occurs at the interface between a superconductor and normal metal, in a material other than a superconductor. This observation was achieved through research on a many-body effect, which is a phenomenon by which electrons acquire the properties that an individual electron does not possess by interacting with each other. We asked him about this achievement, research on the fractional quantum Hall effect (one of many-body effects) that led to this achievement, and his mindset as a researcher engaged in basic research.



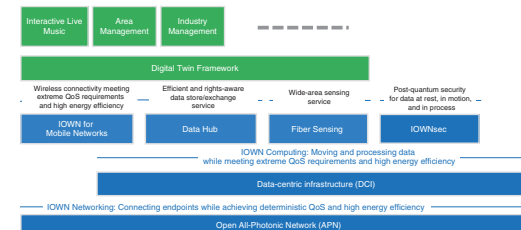
## Feature Articles

### Recent Developments in the IOWN Global Forum

#### Latest Activities in the IOWN Global Forum

#### ▼ Abstract

With a view to creating a smart world, the concept of the Innovative Optical and Wireless Network (IOWN) aims to create a next-generation communication and computing infrastructure that features ultra-high capacity, ultra-low latency, and ultra-low power consumption. With input from global member companies, the IOWN Global Forum has been developing technical architectures and use cases and conducting proof of concept (PoC) activities and implementation verification. This article introduces the latest activities of the IOWN Global Forum, as well as the PoC Reference documents and reference-implementation-model documents that reflect the results of these efforts.



## Global Standardization Activities

### Standardization Trends in IEEE 802.11be/bn

#### ▼ Abstract

We introduce the latest trends in the Institute of Electrical and Electronics Engineers (IEEE) 802.11be (11be), which will be the main standard of the next generation of wireless local area networks (LANs), and the IEEE 802.11bn (11bn), the following primary standard of 11be. The IEEE 802.11 standard is the most used unlicensed wireless LAN system globally, recognized as Wi-Fi. Wi-Fi is implemented in laptop computers and smartphones, Internet of Things devices, and home appliances. Its usage models also extend from consumer markets to business solutions such as industrial automation and intelligent agriculture in the 11bn era.

