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Tomoyuki Kanekiyo, Senior Vice President, Head of Service Innovation Laboratory Group, NTT, Inc.

▼Abstract

NTT Service Innovation Laboratory Group plays a vital role in transforming cutting-edge technologies into tangible value in the form of services and implementing them practically in society. We spoke with Tomoyuki Kanekiyo, senior vice president, head of NTT Service Innovation Laboratory Group, about the laboratory group's notable achievements and new challenges for fiscal year 2026.

Front-line Researchers

Shingo Tsukada, NTT Fellow, Basic Research Laboratories, NTT, Inc.

▼Abstract

NTT Fellow Shingo Tsukada at NTT Basic Research Laboratories, a pioneer in the interdisciplinary field of medicine and ICT, has been one of the earliest adopters of ICT in the medical field. We spoke with him about his participation in an international project aimed at creating the "human metaverse," the details of tensor cardiography, and his motivation—despite being a surgeon—for pursuing basic research at NTT.

Feature Articles
Keynote Speeches at NTT R&D FORUM 2025—IOWN∴Quantum Leap

Akira Shimada, President and Chief Executive Officer, NTT, Inc.

▼Abstract

This article presents NTT's research and development efforts toward innovation in computing powered by photonic technology. It is based on the keynote speech given by Akira Shimada, NTT president and chief executive officer, at the "NTT R&D FORUM 2025—IOWN∴Quantum Leap" held from November 19th to 26th, 2025.

Regular Articles

Cavity Optomechanics Using Fiber-type Microbottle Resonators

▼Abstract

Fiber-type microbottle resonators are tiny glass "bottles" formed on standard optical fibers, with diameters comparable to that of a human hair, that confine both light and mechanical vibrations that interact with each other via radiation pressure. This optomechanical interaction enables ultrasensitive readout of the mechanical displacement using strongly confined light. A key feature of microbottle resonators is that their mechanical modes can be naturally scaled from a single resonator to extended optomechanical arrays. This multimode capability enables highly sensitive mass and liquid-level measurements, as well as controlled synchronization with novel topological structures in phase space, pointing toward ultrasensitive biochemical sensing and energy-efficient neuromorphic information processing. This article reviews recent progress in cavity optomechanics based on fiber-type microbottle resonators, mainly focusing on our recent work.