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Front-line Researchers

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Rising Researchers

- ▶ Tomoki Murakami, Distinguished Researcher, NTT Access Network Service Systems Laboratories/NTT Network Innovation Laboratories

Feature Articles

Software Technologies in the Data-centric Era

- ▶ Software Technologies in the Data-centric Era
- ▶ Next-generation Data Hub for Secure and Convenient Data Utilization across Organizational Boundaries
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The Forefront of Nanomechanics Research

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Global Standardization Activities

- ▶ Standardization Activities Related to Fiber-optic Systems and Active Devices in International Electrotechnical Commission

Practical Field Information about Telecommunication Technologies

- ▶ Development of Loss-evaluation Tool for Efficient Characterization of Optical Fiber Cables

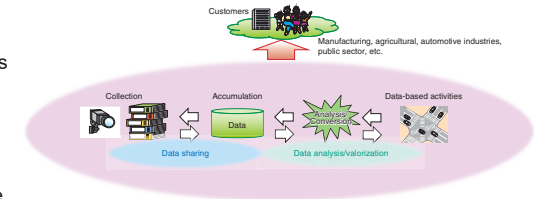
Feature Articles

Software Technologies in the Data-centric Era

Software Technologies in the Data-centric Era

▼ Abstract

With the arrival of a *data-centric society*, where various types of value are created from real-world data, demand for system infrastructure and software-development methods as business evolves has risen to an even greater level. In this article, we introduce various technological challenges and the efforts of NTT laboratories, particularly the NTT Software Innovation Center, in developing an information-processing infrastructure for the data-centric era to meet the requirements of business evolution and support a data-centric society.



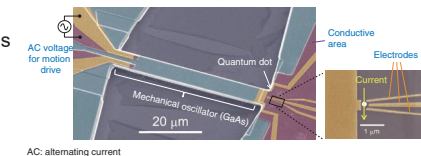
Feature Articles

The Forefront of Nanomechanics Research

Nanomechanics: Outline and Future Prospects

▼ Abstract

Microelectromechanical systems (MEMS) technology, which uses the mechanical motion of miniaturized structures artificially fabricated on a chip, has been used in various fields such as mobile communications and Internet-of-Things devices. This article introduces the concepts and future prospects of nanomechanics technology, which further extends the functionalities from MEMS technology, focusing on research activities conducted at NTT laboratories.



Regular Articles

High-speed Tunable Laser Based on Electro-optic Effect for Wavelength Switching

▼ Abstract

We developed a high-speed tunable laser, the lasing wavelength of which is tuned by the electro-optic (EO) effect of a semiconductor multi-quantum well. The laser exhibited a tuning range of 35 nm (full C-band), which is the world's first of an electro-optically tunable laser. Thanks to the low-thermal generation and high-speed response of the EO effect, we also achieved less-than-30-mW tuning-power dissipation and sub-nanosecond wavelength switching. The laser also showed a linewidth of less than 350 kHz, which is acceptable for conventional digital coherent systems. We also demonstrated unprecedented high-speed wavelength switching for 128-Gbit/s coherent signals with this laser, which will contribute to the All-Photonics Network.

