AIST
Create the Future, Collaborate Together

About AIST:

The National Institute of Advanced Industrial Science and Technology

We are one of Japan’s largest research institutes dedicated solving key social issues and strengthening Japan's industrial competitiveness by leveraging its collective capabilities across diverse research domains.

AIST has about 2300 researchers at 12 locations across the country doing research and development based on national strategies formulated around an evolving innovation ecosystem.

We actively build a global network through comprehensive partnerships with major research institutions and universities around the world.

Managing energy, environmental, and resource limitations

Coping with a declining population and an aging society

Realizing a resilient society

AIST and HPC

Since the early 2000s, AIST has engaged in R&D on parallel and distributed computing. Building on these research achievements and expertise in system construction and operation, AIST started operating ABCI in 2018, a cloud-based computing infrastructure, to accelerate AI research and development.

In 2025, ABCI was reborn as “ABCI 3.0” to support the R&D of emerging AI technologies such as large language models and multimodal AI. Leveraging the HPC technologies developed through ABCI, ABCI-Q was introduced to provide a computing infrastructure that supports the creation of quantum-classical hybrid computing use cases.

Also in 2025, AIST launched a new, complementary infrastructure project NAPA (Next-generation AI Platform Advancement) focused on deploying a testbed of emerging AI accelerator hardware for evaluation and development of technologies to improve the utilization of new architectures.



ABCI 1.0
0.55 EFLOPS
NVIDIA V100 x 4,352

ABCI 2.0
0.85 EFLOPS
+NVIDIA A100 x 960



ABCI 3.0
6.22 EFLOPS
NVIDIA H200 x 6,128



ABCI-Q System H
2.1 EFLOPS
NVIDIA H100 x 2,020

2016 Project Start
2018.8 ABCI 1.0
2021.5 ABCI 2.0
2025.1 ABCI 3.0
2025.10 ABCI-Q

AIST and Quantum

AIST established G-QuAT (Global Research and Development Center for Business by Quantum-AI technology) in 2023 with the aim to socially implement a new computing technology that combines quantum technology and AI. G-QuAT is engaged in creating use cases utilizing quantum computers, evaluating and standardizing high-quality components and materials, and advancing the large-scale integration of qubits. To support R&D and business development, G-QuAT operates following three services:

G-QuAT

ABCI-Q Hybrid Computing Infrastructure



Qufab Quantum Device Foundry



Qubed Evaluation & Testing Platform



ABCI-Q is the computing infrastructure by G-QuAT to enable the creation of new use cases. It integrates a GPU-based supercomputer and several types of quantum computers with different modalities. ABCI-Q launched its services in Japan in October 2025 and plans to expand internationally from 2026 onward.

AIST SC Website