# About AIST:

## The National Institute of Advanced Industrial Science and Technology

AIST is one of the largest public research organizations in Japan, focusing on the creation and practical realization of technologies useful to Japanese industry and society, and on “bridging” the gap between innovative technological seeds and commercialization.

AIST is a pioneering core of the national innovation system with about 2300 researchers across 12 research bases in Japan, performing research and development based on the national strategies formulated to address a dynamic innovation environment.

AIST is also actively building a global network through a variety activities including signing memorandums of understanding for comprehensive research cooperation (MOUs) with major research institutes around the world.

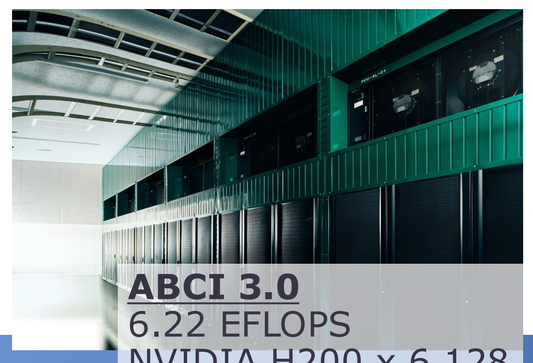
## AIST and HPC

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

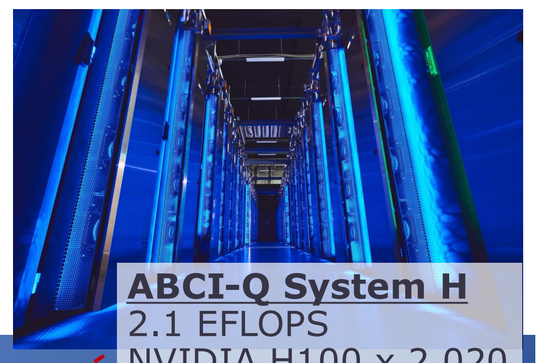
In 2025, ABCI was reborn as “ABCI 3.0” to support the research and development of cutting-edge AI technologies such as large language models and multimodal AI. Furthermore, leveraging the HPC technologies developed through ABCI, ABCI-Q was introduced to provide a computing infrastructure that supports the creation of quantum-classical hybrid computing use cases.

**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

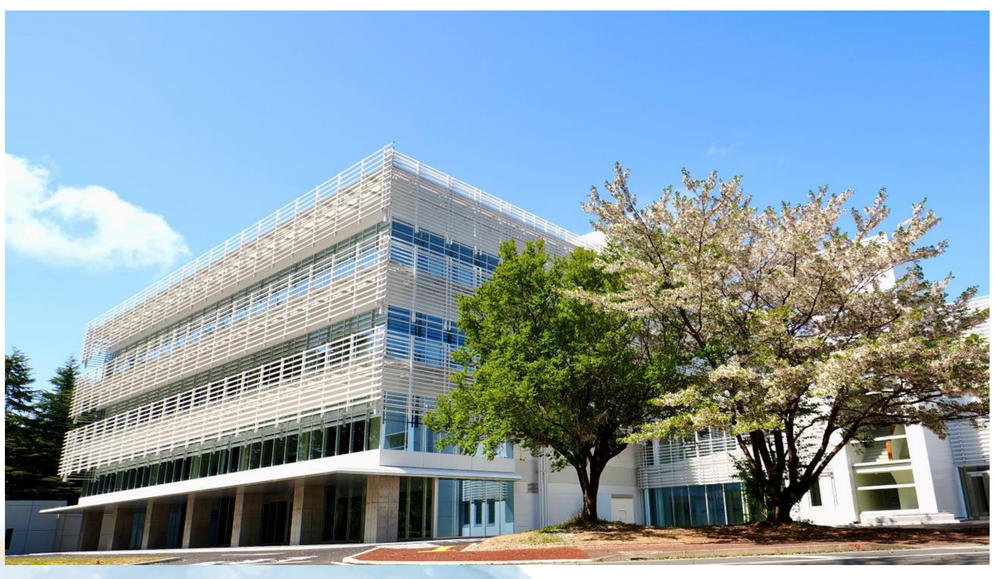
AIST established G-QuAT (Global Research and Development Center for Business by Quantum-AI technology) in 2023 with the aim to socially implement a new computing technology that combines quantum technology and AI. G-QuAT is engaged in creating use cases utilizing quantum computers, evaluating and standardizing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

G-QuAT

ABCI-Q is the computing infrastructure being developed and operated by G-QuAT to enable the creation of new use cases. ABCI-Q is composed of 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.

**G-QuAT activities for building global quantum business ecosystem**

- R&D for large-scale quantum computing
- Use-case creation
- Supply-chain development
- Standardization activities
- Cultivation of quantum talent



AIST SC25 Website