

## The Future of Energy Is Here

**N**ext-Generation Fuel Cell Research Center (NEXT-FC) conducts closely coordinated industry-academia-government collaborative research aimed at full-scale

dissemination of next-generation fuel cells. Pictured above are two fuel cell vehicles and a large 250kW-class solid oxide fuel cell (SOFC) power generation system.

## A New Integrated Platform for a New Energy Paradigm

**T**he Kyushu University Platform of Inter/Transdisciplinary Energy Research (Q-PIT) integrates researchers across different university departments to design a new concept for future energy systems and is working towards a paradigm shift in the way we think about energy for technology, industry, and society.

# Experience the Cutting-Edge Firsthand



On-campus experiments and demonstrations of research findings show firsthand the advanced technologies that are shaping our future.

## Robots Guide the Way

**T**he guidance robot, developed by Kyushu University, Living Robot Inc., and NTT Docomo Inc., is the first outdoor service robot in Japan to use the centimeter-class positioning reinforcement service (CLAS) of the Quasi-Zenith Satellite System (QZSS), known as "Michibiki" for short. Using 5G and a mounted omnidirectional 4K camera, Kyushu University provides guidance robot services through advanced video retrieval and remote monitoring technologies.



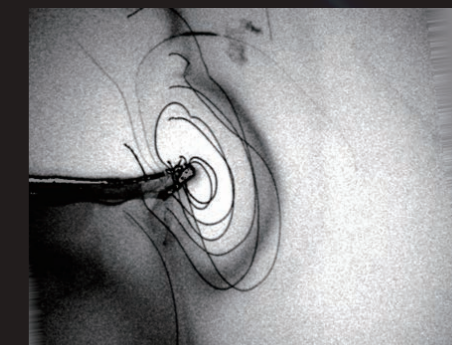
## All Aboard the AI Bus

**A**imo, a campus shuttle service at Kyushu University, is Japan's first attempt at an on-demand bus service that uses AI to predict optimal routes and calculate vehicle locations. It is also our first full-fledged example of social implementation since the university declared its plans to become a model campus for demonstration experiments.



## Exploring the Miniature World in Big Detail

**T**he Ultramicroscopy Research Center houses a sophisticated high-voltage electron microscope equipped with an in-column, omega-type energy filter and an SDD-type x-ray detector. It provides three-dimensional structural analysis of specimens thicker than 1 μm in both materials and biological sciences using electron tomography.



Transmission electron micrograph of crack tip dislocations (linear defects of atom positions) and their 3D image reconstructed by electron tomography in a Si single crystal (Masaki Tanaka, et al.)

## It's Elementary: Discovering What Lies Beyond Nihonium

**T**he Center for Accelerator and Beam Applied Science (CABAS) was established as a center for research into a wide range of fields that include the life sciences, energy engineering, and basic science as it relates to

quantum beam and nuclear science. A tandem accelerator (pictured below) is expected to aid in the development of particle detectors and in the study of reaction mechanisms for discovering new elements beyond nihonium (Nh).



Faculty of Science Professor Kosuke Morita gave nihonium its name, the first time scientists from Asia have discovered a chemical element.

