

# Foundational Quantum Technology and Quantum Life R&D Hubs (QST)

## 1. Mission

Strengthen QST's R&D infrastructure, play a central role in the R&D for and supply of key materials for quantum devices, and take the lead in the R&D for and application of quantum life technologies as the integration of quantum technology with life science and medicine.

## 2. Activities

Through the application of quantum technology to medicine and industry, we contribute to the resilience and sustainability of a diverse society where the safety and well-being of all is ensured.

Establish testbed environments to accelerate the use in wide range of fields, promote the applications, industrialization and human resource development through industry-academia collaboration

### Foundational Quantum Technology

Based on materials science, spintronics, photonics, electronics, quantum beam and other technology, this hub develops and supplies quantum materials that demonstrate advanced quantum functions.

#### Takasaki Institute for Advanced Quantum Science (Takasaki, Gunma)



- Development and Supply of Advanced Quantum Materials
- Construction and Operation of Open Platform for Industry

#### Kansai Institute for Photon Science (Kizugawa, Kyoto)

- Development and Application of Spin Control Technology using Advanced Lasers

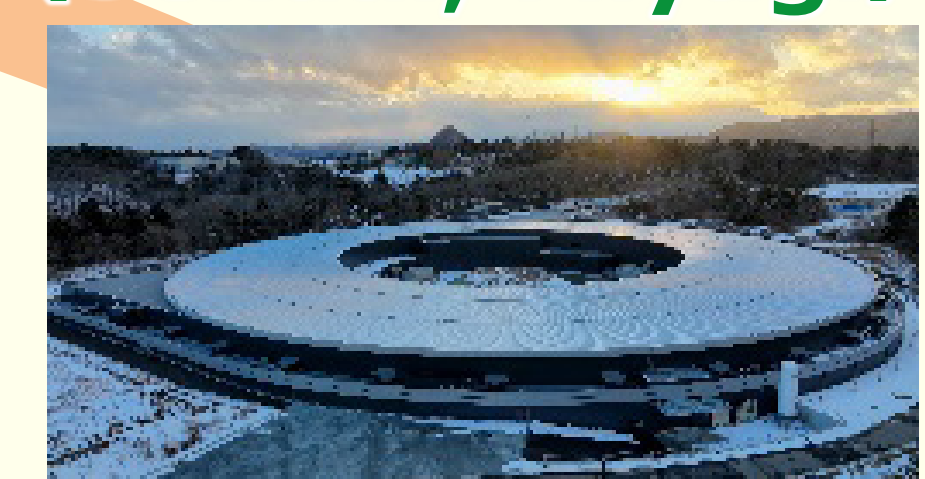


#### Satellite Labs.



- Construction and Operation of Open Platform for Industry

#### SPRING-8 (Sayo, Hyogo) NanoTerasu (Sendai, Miyagi)



- Advanced Evaluation of Quantum Materials and Devices

### Quantum Life R&D

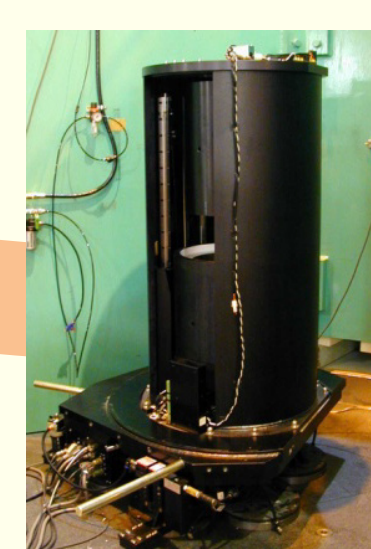
This hub develops cutting-edge base technologies for life science and medicine, such as quantum biosensors, and provides animal experiment facilities where they can be used.



#### Institute for Quantum Life Science (Chiba City, Chiba)

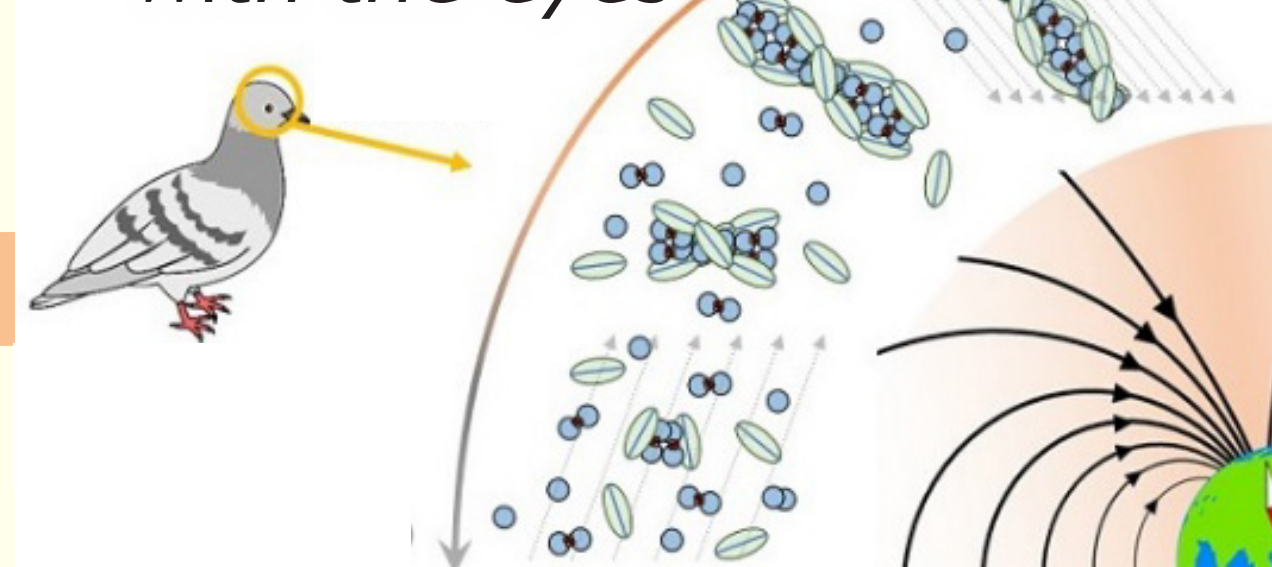
- Test Bed Equipment**
- ODMR Microscopes: 9 units
  - Hyperpolarized MRI/NMR: 6 units
  - Advanced Spectroscopy Equipment: 3 units

#### Neutron Facilities for Life Science (Tokai, Ibaraki)

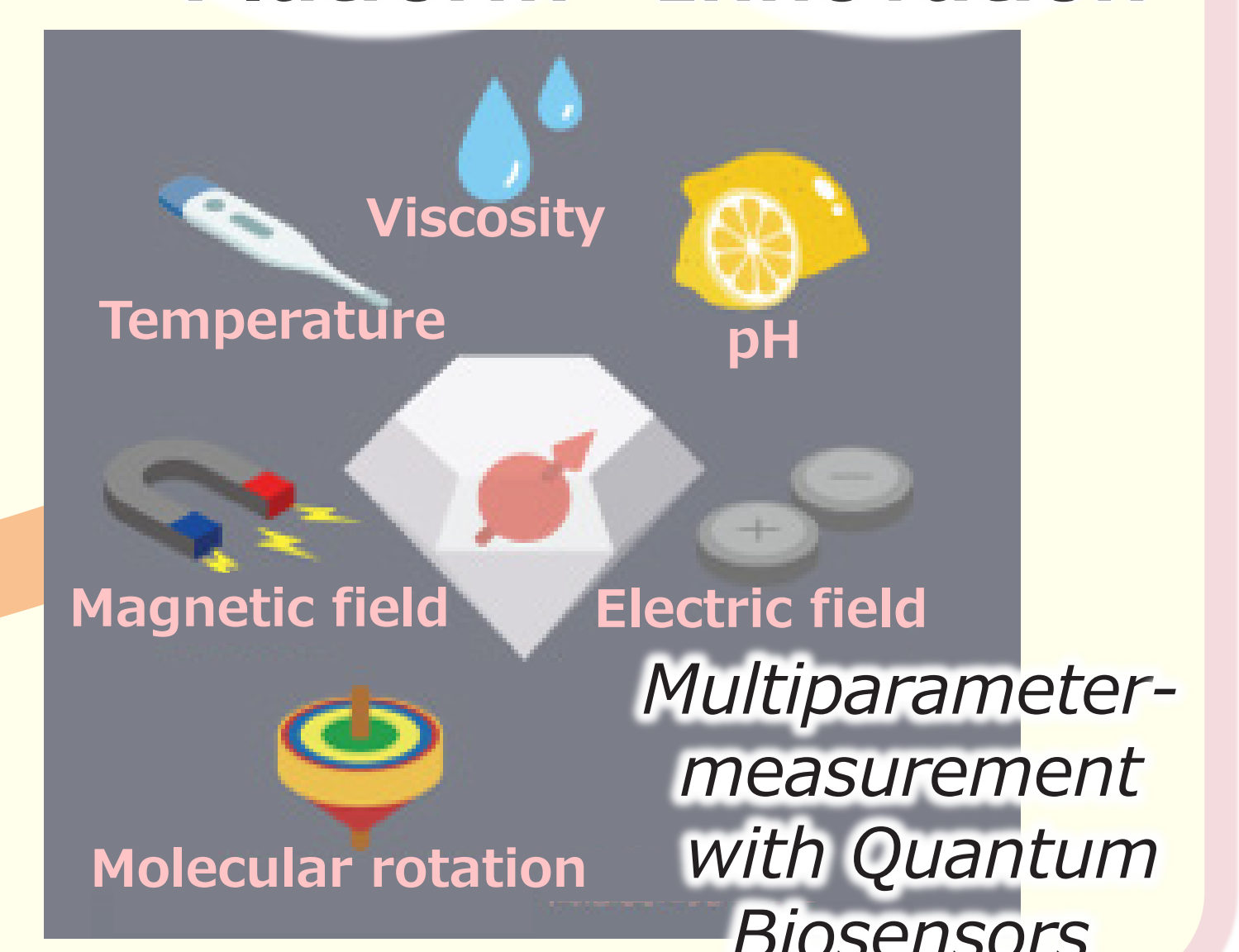


- Development and Application of
  - Nanoscale Quantum Biosensors
  - Hyperpolarized MRI/NMR
- Elucidation and Biomimetics in Quantum Life Science

Magnetoreception with the eyes

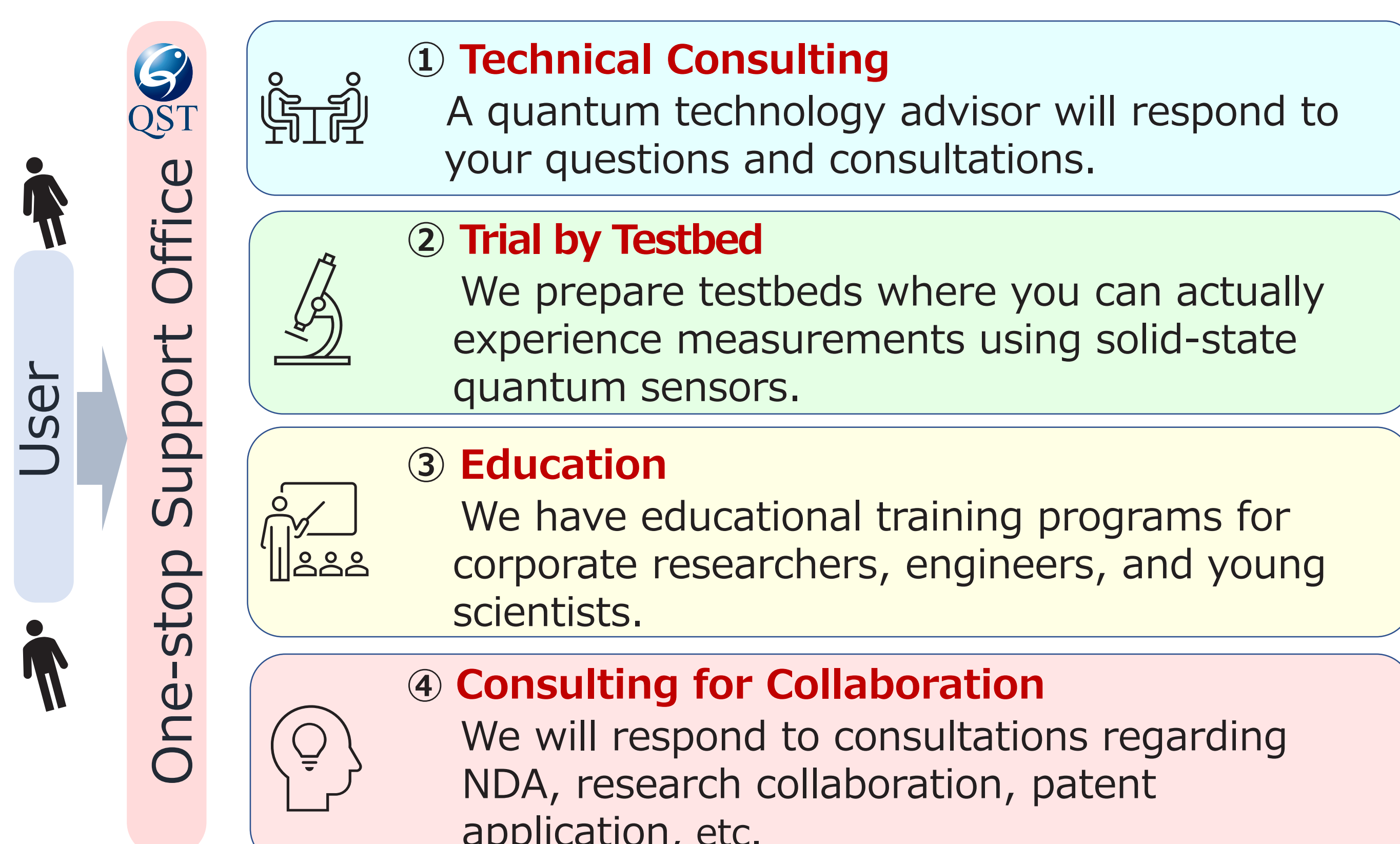


#### Open Platform Open Innovation



### Support Programs for Industry

- ✦ We provide education, consultation, and environment for trials on quantum technologies through a one-stop support office in QST.



### Human Resources Development

