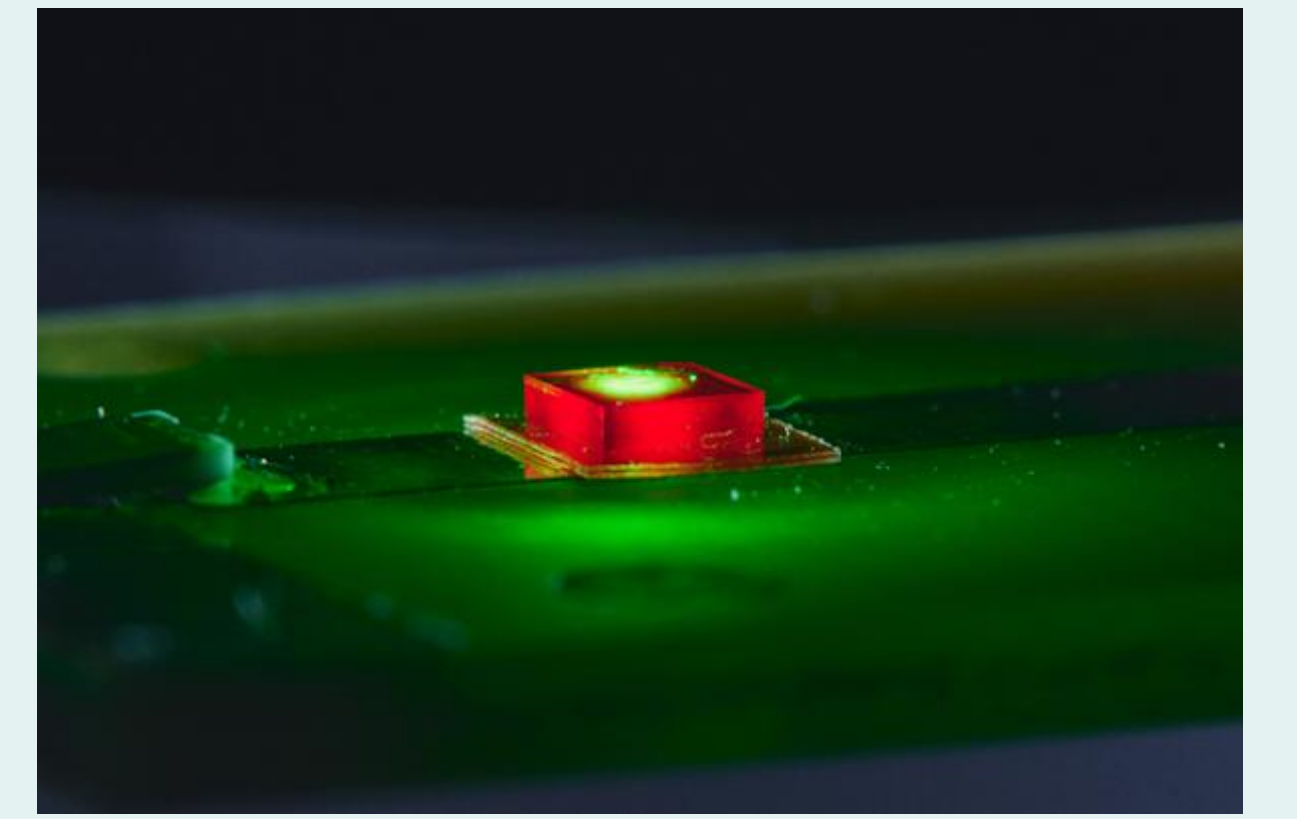


Quantum Sensors

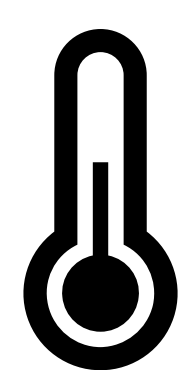
Diamond Quantum Sensors for Precision Measurement

Measure What Matters. Non-Contact. Nanoscale. Room Temperature.

Diamond quantum sensors enable **highly sensitive measurement of magnetic fields and electrical currents**. Recent work demonstrated a unified AC/DC current comparator with 10^{-8} level measurement uncertainty.

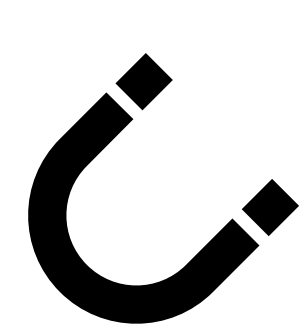


Key Features



Room-Temperature Operation

No cooling needed;
compact & low-power



Nanoscale Sensitivity & Resolution

Visualizes nano- to
micro-scale signals



Non-Contact & Safe

No electrical contact:
measurement without
disturbing the target

Applications

Semiconductors



Power Electronics/ EV



Power System Calibration



Research & Metrology



LATEST RESULT

Published August 2026

10⁻⁸

**AC/ DC Current
Ratio
Measurement
Demonstrated**
in a Single Configuration



Release in JPNS

Demonstrated 10^{-8} -level uncertainty for AC/DC current ratio measurements in a single configuration.

WHY DIAMOND QUANTUM SENSORS?

- ✓ Ultra-High Sensitivity
- ✓ High Spatial Resolution
- ✓ Room-temperature Operation
- ✓ Compact Architecture

TES (Transition Edge Sensor)

Entering Customer Development Phase

Ultimate Sensitive Detection for Bio & Healthcare

An ultra-sensitive sensor using the superconducting transition edge

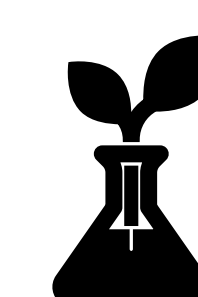
Why TES?

- Detects extremely weak signals
- High energy resolution
- Enables new bio measurements



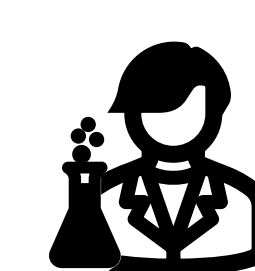
Drug Discovery

Trace analysis



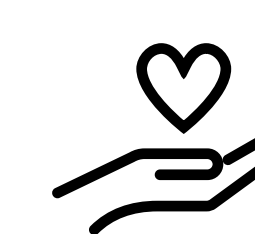
Bio Research

Single-molecule imaging



Diagnostics & Medicine

Biomarker detection



Regenerative Medicine

Cellular and protein analysis

Looking for Partners



Global Research and Development Center
for Business by Quantum-AI Technology (G-QuAT), AIST

Contact: M-G-QuAT-plan-ml@aist.go.jp

