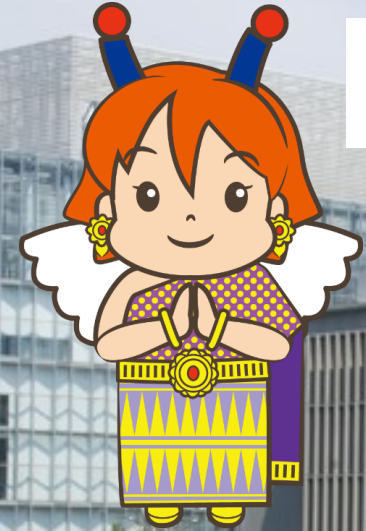


# TIRI's efforts to address Social Issues



**Headquarters**  
Aomi, Koto-ku, Tokyo Japan



29<sup>th</sup> Jan. 2026

Tokyo-Thailand Business Connecting 2026

**Tokyo Metropolitan Industrial Technology Research Institute (TIRI)**

President, Atsushi KUROBE

## Agenda

1. about TIRI
2. TIRI's efforts to address Social Issues
  - examples of Technical Seeds※ from our R&D
  - examples of our contribution to Product Developments



※ Our [technical seeds book](https://www.iri-tokyo.jp/research/seeds/#seedsbook) is published every year, which can be found at our website  
<https://www.iri-tokyo.jp/research/seeds/#seedsbook>

# about TIRI



Fully Leverage All Our Strengths to Become  
Dependable Technology Research Institute

## Mission

To promote SMEs especially in Tokyo through the support of technology

## Profile

【Staff】 (FY2025)

about 270 research engineers

【Technology Covered】

Materials, Devices, Equipments, 5G, IoT, Robots, IT  
Product design, Food, Human Life Engineering, etc.

【Testing Services】

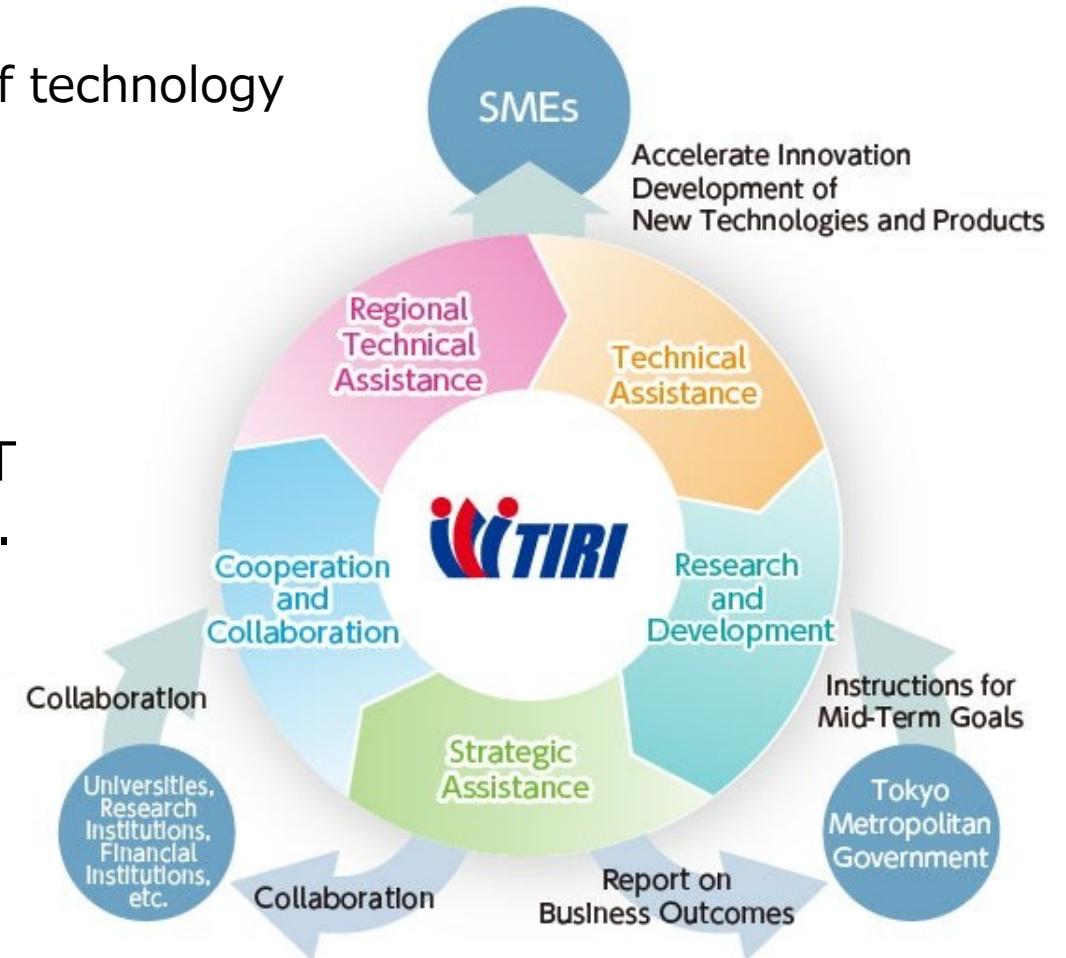
We provide “Testing services” and “DIY testing”  
for more than 9,000 companies per year

【Research activities】 (FY2024)

Fundamental research : 58 themes

Joint research : 27 themes

External funding research : 100 themes





# TIRI's efforts to address Social Issues



TIRI's efforts; aligned with each Technology Readiness Level

→ Fundamental research, Joint or Projected research, Technical supports

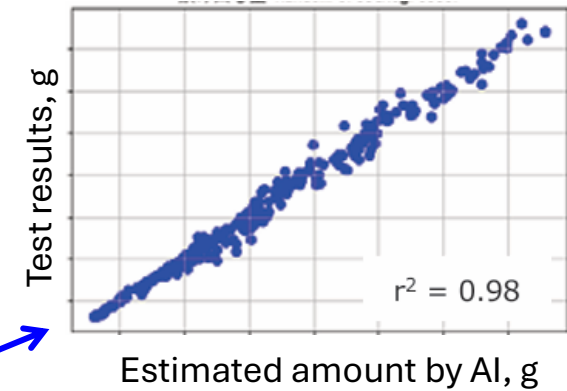
## AI & IoT application for plating process

### Subject

Optimized Control for the plating process

### AI estimation

- (1) Estimation of amount of plating solution during the process
- (2) Estimation of change in plating solution concentration

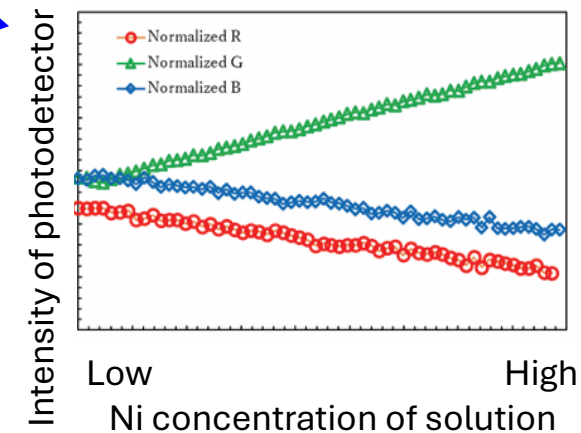


### IoT application

- (3) Reading instrument display value using camera image analysis during the process

→ Adequate process management and defect improvement

Reducing environmental impact and costs



# Technical seeds by fundamental research (DX)

## Development of a sensor to detect the sign of Landslides

### Subject

#### Early detection of Landslides

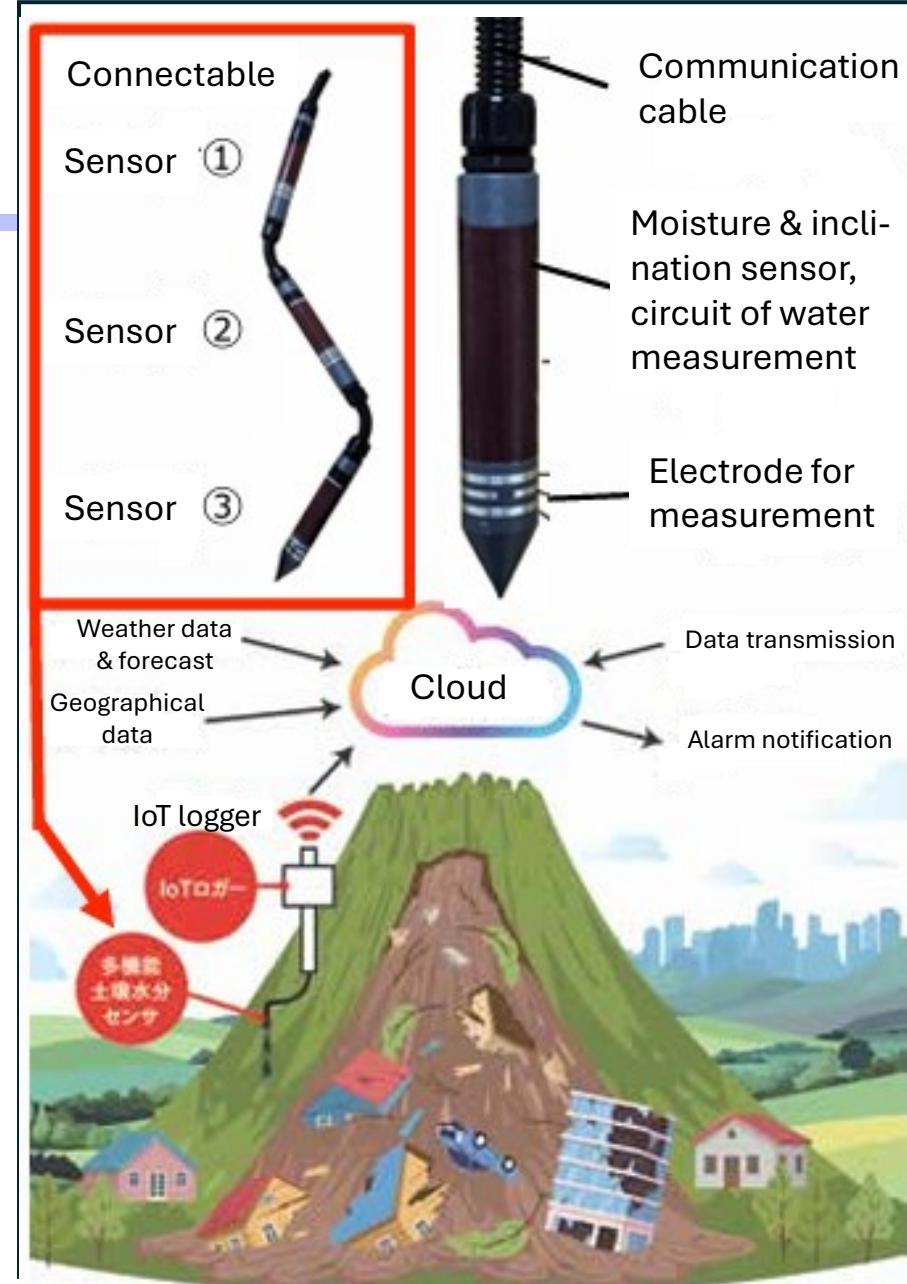
- Moisture measurement of soil
- Inclination measurement of ground slope

### Development of the integrated sensor

- (1) **Moisture sensor** measured by water dielectric constant
- (2) **Inclination sensor** with  $0.01^\circ$  resolution
- (3) **IoT logger** send the data to cloud system (AI judgement)

### Merits

High accuracy, no excavation required



## Development of Thermoelectric material

### Subject

Materials converting waste heat into electricity as energy saving

**Thermoelectric materials** without including harmful elements

Novel Thermoelectric material **at mid temperature range**

(1) Phosphorus-based thermoelectric material

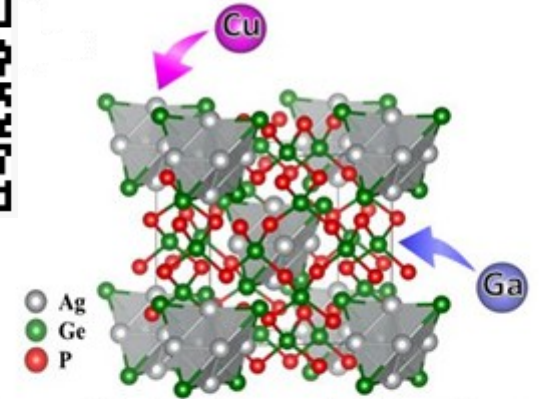
without including harmful elements

(2) Excellent mechanical and thermal expansion properties

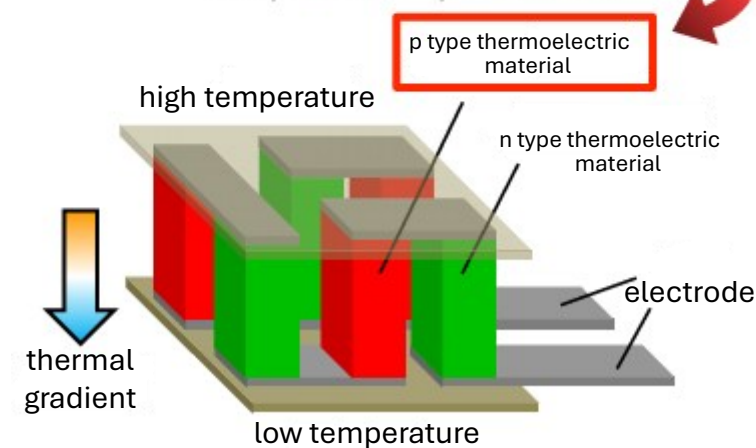
against thermal stress

(3) Proposal of n-type thermoelectric material and metal electrodes

→ **Power generation using exhaust heat from factories and automobiles, stand alone power source for IoT sensors, etc.**



p type phosphorus-based thermoelectric material



# Examples of product developments (1/2)

【GX product】

## Earth leakage monitoring device (So Brain Co. Ltd.,)

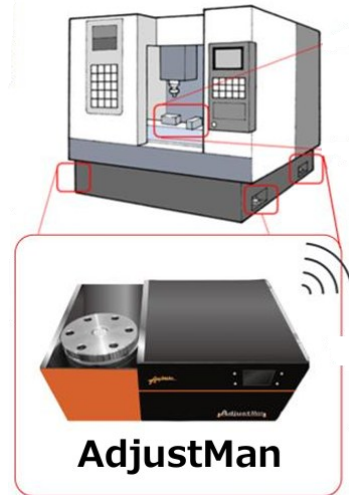
The company obtained TIS certification by the support of TIRI  
The company began local production in Thailand  
by the management support of Tokyo SME  
→ Sales began in early 2025



【DX product】

## AdjustMan (Any Design Co. Ltd.,) *TIRI Innovation partnership award!!*

Leveling instrument that dramatically reduces work time  
from over 60 minutes to less than 3 minutes  
→ Sales began in November 2024





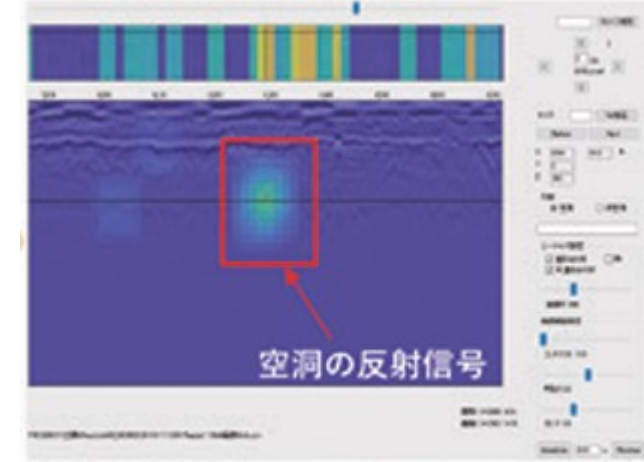
# Examples of product Developments (2/2)

【AI product】

**WISE** (WALNUT Co. Ltd.)

AI-based analysis software for civil engineering structures developed through the "Iot Promotion Project for Small and Medium-sized Enterprises"

→ Sales began in end of 2020



【DX product】

**L5G series** (iDAQS Co. Ltd.,)

Local 5G base station experiment kit developed through the "5G, IoT, and Robot Promotion Project for Small and Medium-sized Enterprises"

→ Sales began in summer 2022



# Conclusion

## 1. The difficulties of addressing social issues

- It takes time to build up technology (it usually takes several years)
- It's easily influenced by trends (efforts may end in vain)

## 2. Accumulation and integration of elemental technologies

will be required to overcome those

## 3. Important TIRI's roles

Supporting SME and start-up, as well as the promotion of Open Innovation



**Thank you for your kind attention!!**



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