

AIIST

NATIONAL INSTITUTE OF **A**DVANCED **I**NDUSTRIAL **S**CIENCE AND **T**ECHNOLOGY

“Integration for Innovation”

Introduction

Our Missions to Support National Policy

Basic Principle of AIST :

Contribution to society through the advancement of industrial technology

Missions :

- Contribution to a sustainable society
- Contribution to industrial competitiveness
- Contribution to local deployment of industrial policies nationwide
- Contribution to policy-making of industrial technology
- Contribution to development of human resources skilled in technological management

Organization Data

Year of Establishment :

2001

Head of the Organization :

Dr. Ryoji Chubachi

Annual Budget :

79,734 M JPY

Number of Research Institutes/Centers :

41 (21 Institutes, 20 Centers)

Number of Employees :

2,938 (total)

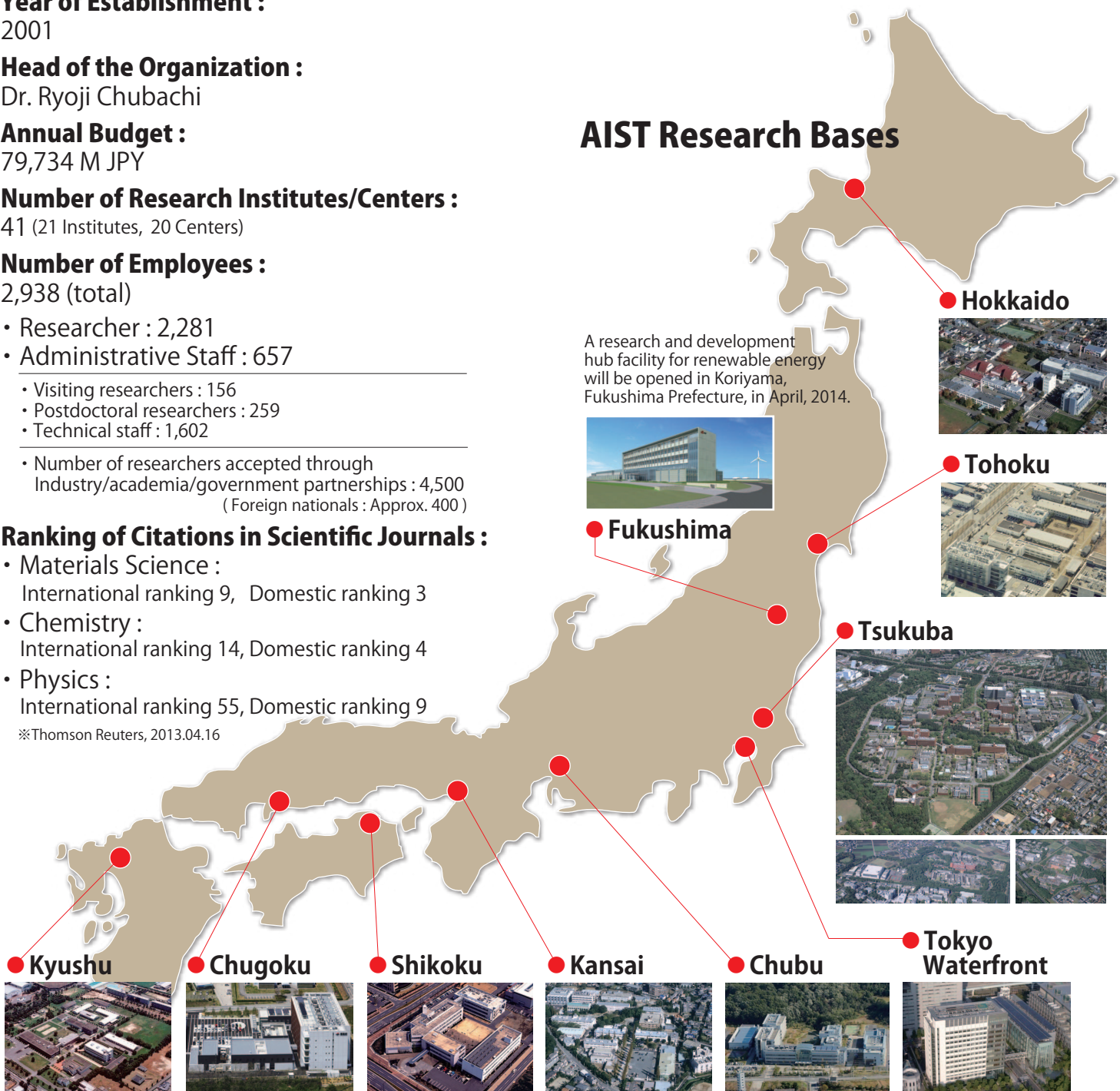
- Researcher : 2,281
 - Administrative Staff : 657
-
- Visiting researchers : 156
 - Postdoctoral researchers : 259
 - Technical staff : 1,602
-
- Number of researchers accepted through Industry/academia/government partnerships : 4,500 (Foreign nationals : Approx. 400)

Ranking of Citations in Scientific Journals :

- Materials Science :
International ranking 9, Domestic ranking 3
- Chemistry :
International ranking 14, Domestic ranking 4
- Physics :
International ranking 55, Domestic ranking 9

※Thomson Reuters, 2013.04.16

AIST Research Bases



Research Units of AIST

6 Fields of Research Expertise and Highlighted Technologies



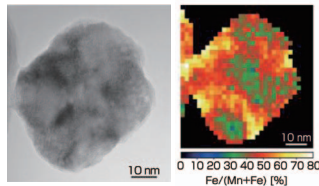
Environment and Energy

(12 Research Units)



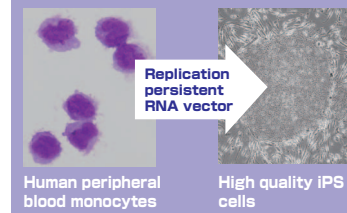
Novel applications of clay film (Claist®)

Cobalt-free electrode material for high energy density battery



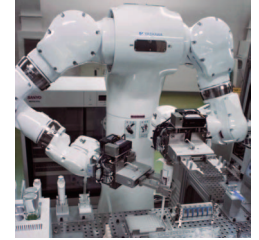
Life Science and Biotechnology

(8 Research Units)



Generation of high-quality iPS cells from peripheral blood

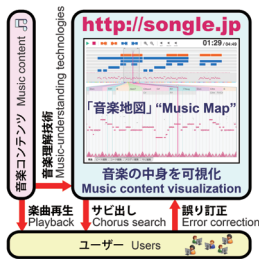
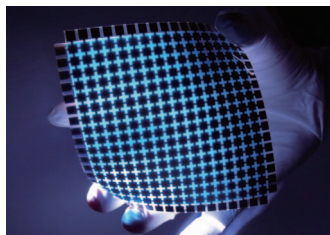
All-purpose humanoid robotic system for life science



Information Technology and Electronics

(10 Research Units)

Flexible printed pressure sensor



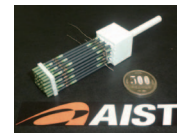
Songle: Active Music Listening Service



Nanotechnology, Materials and Manufacturing

(5 Research Units)

High performance Sm-Fe-N sintered magnets without heavy rare earth elements



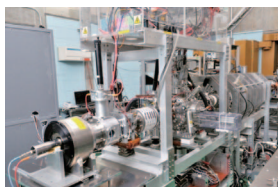
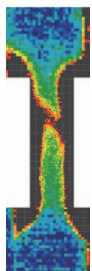
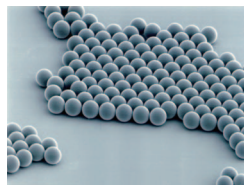
Handy solid oxide fuel cell (SOFC) system and micro tubular SOFC bundle



Metrology and Measurement Science

(3 Research Units)

Standard particles for calibration of nanoparticle measurement instruments



Positron Probe Microanalyzer

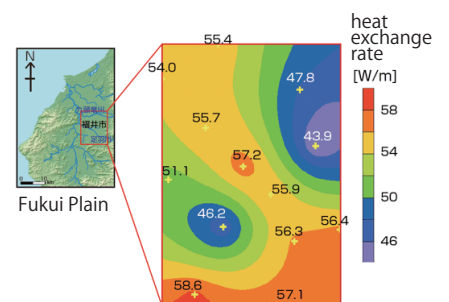


Geological Survey and Applied Geoscience

(3 Research Units)



Survey of active faults



A resource potential map showing suitable areas for installation of ground-source heat pumps

AIST's Priorities

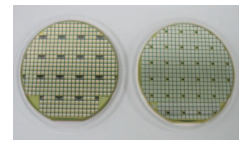
Solution for 21st Century Issues

Promotion of Green Innovation :

- Renewable energy
- Energy saving
- Reservation and effective use of resources
- Fundamental materials/devices
- Reduction of environmental loads by industry
- Assessment/management technology



Field evaluation facilities of solar cells



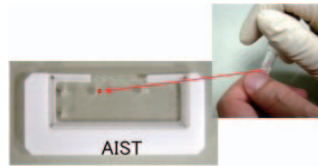
Prototype of SiC device chips



Recovery of rare metals from disposed printed circuit boards

Promotion of Life Innovation :

- Securing health
- Supporting healthy life style
- Ensuring safety in life



Health check from a single drop of blood



Autonomous running chair equipped with assistive service robotic arm



Infant injury prevention

Challenge to Advanced Technology Development :

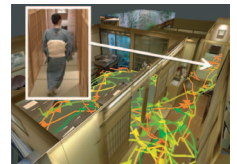
- ICT devices/systems
- Innovative materials/systems production
- Support to service industry



MEMS devices



Carbon nanotube strain sensor



Service innovation enabled by IT

Securing Intellectual Infrastructure :

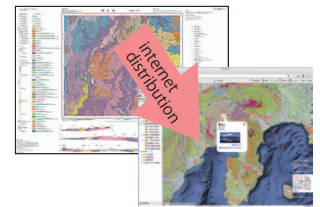
- Platform of measurement assessment
- Measurement standards
- Geological survey



High-stability compact standard resistor



Certified reference materials distributed by NMIJ, AIST



Geological maps

Enhancement of Open Innovation Hub Functions

Construction of a new innovation system :

- Promoting research, evaluation technology, and standardization by furthering industry-academia-government partnerships utilizing AIST's "human resources" and "platforms".
- Number of joint research projects with industry and academia : 3,260



Closed-type transgenic plant production system



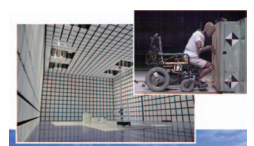
Reliability evaluation of photovoltaic modules

Establishing open innovation centers :

- Tsukuba Innovation Arena for nanotechnology (TIA-nano)
- Photovoltaic Device Research Center
- R&D center for safety assessment of robots
- Technology research associations (participation in 19 associations)



Tsukuba Innovation Arena collaboration center (Tsukuba West)



Verification on robot safety (Robot Safety Center)







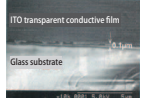


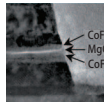



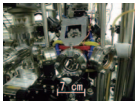


Brief History

Establishment of AIST

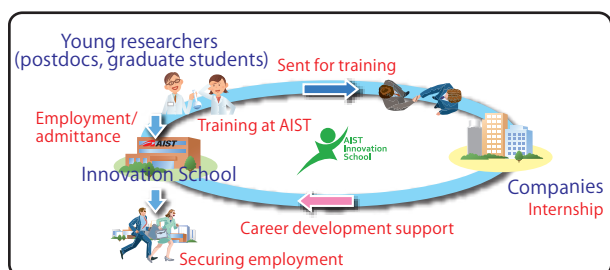
The history of AIST starts with the Geological Survey of Japan established in 1882 under the Ministry of Agriculture and Commerce. After a succession of name changes and reorganizations, 15 research institutes of the former Agency of Industrial Science and Technology and the Weights and Measures Training Institute, all under the former Ministry of International Trade and Industry, were integrated and reorganized in April 2001 into its present form as an incorporated administrative agency.

Noteworthy research results

 <p>1890s Establishment of Japanese system of weights and measures (Japanese national prototype of the kilogram)</p>	 <p>1890s One million scale geological map</p>	 <p>1950s Transistor computer MARK-IV</p>	 <p>1950s PAN based carbon fiber</p>	 <p>1960s Senior Researcher Kondo announced the theory of the resistance minimum.</p>	 <p>1960s Development of production process of glucose isomerase used to produce high-fructose corn syrup</p>	 <p>1960s Production method of transparent conductive film (ITO film)</p>	 <p>1980s Nickel metal hydride batteries</p>
<p>2001~</p>  <p>Seal-type therapeutic robot "PARO"</p>	 <p>TMR device optimal for magnetic head</p>	 <p>Closed-type transgenic plant production system</p>	 <p>Seamless digital geological map of Japan (1:200,000)</p>	 <p>Bio-surface active agent "Bio-surfactant"</p>	 <p>Optical lattice clock using ytterbium becomes candidate for the definition of the second.</p>		

Human Resource Development

Advanced industrial technology career development through industry-academia-government collaboration



Outline of the Innovation School



Tsukuba Nanotechnology Human Resource Development Program, a scene of the special seminar

International Activities

Global Collaboration

Global Network :

- 35 MOUs on comprehensive research cooperation
- Workshops held abroad mainly in South East Asia
- Examples of research collaboration
 - R&D of humanoid robots with CNRS of France
 - R&D of biodiesel fuel with NSTDA and TISTR of Thailand
 - R&D of photovoltaic power generation with NREL of USA

Promotion of International Standardization :

- 77 proposed national standards and 64 proposed international standards (total of the past 5 years)
- 48 researchers serving as officials (chairperson, etc.) and 179 as experts at ISO and IEC (As of the end of FY2012)



Contact AIST

■ Collaboration/Intellectual Property

http://www.aist.go.jp/aist_j/collab/

■ Technical Consultation

https://www.aist.go.jp/aist_e/inquiry_e/form/col_inquiry_form.html

■ Nationwide AIST Network

● AIST Hokkaido

2-17-2-1, Tsukisamu-Higashi, Toyohira-ku, Sapporo, Hokkaido 062-8517, JAPAN

● AIST Tohoku

4-2-1, Nigatake, Miyagino-ku, Sendai, Miyagi 983-8551, JAPAN

● AIST Tsukuba Headquarters (AIST Tsukuba)

AIST Tsukuba Central 2, 1-1-1, Umezono, Tsukuba, Ibaraki 305-8568, JAPAN

● AIST Tokyo Headquarters

1-3-1, Kasumigaseki, Chiyoda-ku, Tokyo 100-8921, JAPAN

● AIST Tokyo Waterfront

2-3-26, Aomi, Koto-ku, Tokyo 135-0064, JAPAN

■ Job Opportunities

http://www.aist.go.jp/aist_e/humanres/index.html

Tel:029-862-6282

■ Exhibitions/Tours

http://www.aist.go.jp/aist_j/inquiry/visitor/visitor.html

Tel:029-862-6214

● AIST Chubu

2266-98, Anagahora, Shimo-Shidami, Moriyama-ku, Nagoya, Aichi 463-8560, JAPAN

● AIST Kansai

1-8-31, Midorigaoka, Ikeda, Osaka 563-8577, JAPAN

● AIST Chugoku

3-11-32, Kagami-yama, Higashi-hiroshima, Hiroshima 739-0046, JAPAN

● AIST Shikoku

2217-14, Hayashi-cho, Takamatsu, Kagawa 761-0395, JAPAN

● AIST Kyushu

807-1, Shuku-machi, Tosu, Saga 841-0052, JAPAN

Exhibition Facilities



■ Science Square Tsukuba

http://www.aist.go.jp/aist_e/sst/

● Regular holidays: Mondays

(or Tuesdays when a national holiday falls on a Monday),

Dec.28-Jan.4

● Opening hours: 9:30a.m. to 5:00p.m.

● Inquiry: Public Relations Department



■ Geological Museum

<http://www.gsj.jp/Muse/eng/>

● Regular holidays: Mondays

(or Tuesdays when a national holiday falls on a Monday),

Dec.28-Jan.4

● Opening hours: 9:30a.m. to 4:30p.m.

● Inquiry: Geological Museum