

## “Doctoral Program for World-leading Innovative & Smart Education”

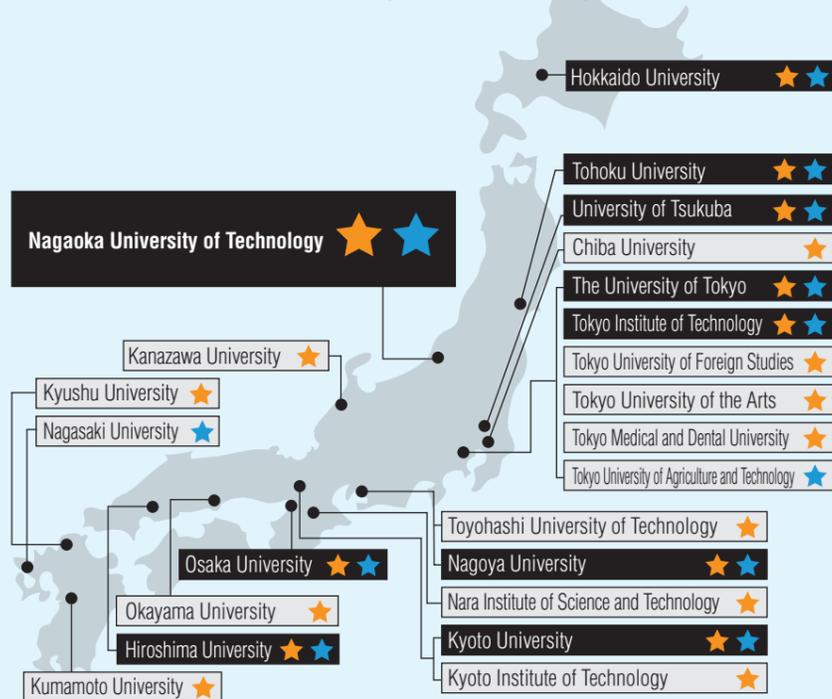
“WISE Program” proposed by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) creates hubs to continuously expand new collaborative research by cultivating exceptional doctoral talent in various sectors such as “leading researchers of world-class academia”, “prominent innovators in industry”, “entrepreneurs who concoct the social implementation of new knowledge”, and “public sector personnel in Japan and around the world who devise policy planning”. Its purpose is to promote innovation encompassing the entire graduate school by systematic collaborations with outside organizations, including top overseas universities and private corporations. These endeavors will build a five-year integrated doctoral degree program that leverages world-class education and research faculties. 54 applications were submitted (44 from 28 national and 10 from private universities). Of these, 15 applications (14 from 12 national and 1 from private universities) were selected.

MEXT certifies universities with top level of education and research.

(As of October 3, 2018)

★ Universities selected for Top Global University Project (21 national universities)

★ Universities selected for WISE Program (12 national universities)



### Top Global University Project

This program provides priority support for top Japanese universities with world-class education and research through collaborations with outstanding overseas universities.

#### Our University's program:

**The Education Program for Innovative Global Engineers ~ Toward the development of an integrated global campus with collaboration between industries, academia, business and government ~**

### WISE Program

This project produces exceptional doctoral talent through a five-year integrated doctoral degree program that leverages world-class educational and research capabilities using our university's strength and systematic collaborations with organizations in Japan and around the world.

**Our University's program:**  
**Global Pro-Active Root Technology Program**



## MEXT WISE Program Global Pro-Active Root Technology Program

**Participate in research and education to nurture professional talent together!**



**Sustainable mobility**



**Smart factory**



**Clean manufacturing**



## President's Message

With the “Global Pro-Active Education” in collaboration with overseas institutions, our vision is to produce exceptional experts with an innovative spirit gained through knowledge about information engineering. This is the fundamental technology for modern business and industries related to materials science and power engineering (specifically, control engineering and power electronics). As our university is at the forefront of these fields internationally, we are delighted to receive such a high evaluation.

Through this program, we strive to educate global experts who will become the core of future business systems and will help create new industries for economic prosperity. We appreciate your support of our efforts.

**Nobuhiko Azuma, President**



### Contact

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# To Global Companies

How can your company find the right talent who believe in your mission? By participating in the WISE Program with industry-academia cooperation research, you will not only discover and employ outstanding graduates of Global Pro-Active Education, but your industry will move toward a smarter, better, and more inclusive world for all nations.

This program aims to produce professionals with profound knowledge of **fundamental technology**, which is the basis of modern business and industries related to the intermix of materials science and power engineering, **help solve SDGs**, and nourish the following four categories of international-level faculties.



長岡技術科学大学  
Nagaoka University of Technology

**Department of Science of Technology Innovation**  
(five-year integrated doctoral program)  
Maximum number of admissions: 15 per year

**Degree:**  
Doctor (Engineering)

Fields expected to benefit from the program			
Informatics	Materials Science	Environment	AI
Electronics	Control	Manufacturing	Energy

- 1 Pioneering power in academic fields**  
where doctoral researchers cultivate their original research ideas
- 2 Leading-edge IT capacity**  
where knowledge continuously progresses instead of impromptu cramming
- 3 Pioneering human power**  
where unknown areas are explored through broad human networks
- 4 Social implementation and execution abilities**  
where challenges facing various industries and businesses are solved

The common keyword in 1-4  
**Global Pro-Active Education**

## Global Pro-Active Education Infrastructure

For the Pro-Active Education in this Program, we set up a consortium with overseas practical education universities and research institutions, corporate research labs, and cooperation factories in collaboration with public organizations in order to provide research opportunities such as open innovation campus, creative hubs and business accelerators.

**Target**

Industrial fields linked to the core of our future

**Academic Collaboration**

**The International Engineering Practical Education Consortium**



- Mutual Internships
- Joint Short-term School Programs
- Place to Revise Educational Methods from International Perspectives
- Guidance for International Collaborative Research

Overseas consortium universities

- University Deusto (Spain)
- TH Köln – Technology, Arts, Sciences (Germany)
- University of Antwerp (Belgium)
- University of Bordeaux (France)
- Aalto University (Finland)
- Indian Institute of Technology Madras (India)

Collaborations with world-leading universities to promote practical education



MEXT WISE Program  
**Global Pro-Active Root Technology Program**

Global Pro-Active Education ... It goes beyond self-initiated active-learning. Instead, experiences are gained while learning from failure, leading teams through obstacles, and demonstrating problem-solving skills in international settings. It is extremely important to learn to overcome setbacks, rather than simply staying overseas or at a company for an extended time. Students re-learn in a subsequent stay called a **“repeat practicum”** to address issues after reflecting on the initial experience.

**Study Model – Global Pro-Active Root Technology Program**

- Sustainable mobility fields
- Smart factories fields
- Clean manufacturing fields

Fifth year	Become a knowledge professional at the international level
Fourth year	Second practicum period
Third year	Complete a research project and application/practice subjects
Second year	First practicum period
First year	Decide on a target and chief supervisors from each of three organizations, complete basic/application subjects

Global Pro-Active Education Subjects

Project leader practicum

Overseas research internship

Project leader practicum (corporation)

Overseas research internship (university/research institute)

Another challenge    Self-expression

↑ Repeat practicum ↑

Setback    Realization

Gain real-world experience beyond active-learning while overcoming obstacles by leading an organization and demonstrating solutions to real-world problems.

**Talent image**

Strong and innovative personnel with the capacity to create new industries using advanced knowledge of information systems

**Career paths for graduates**

- ✓ Strategists who can pioneer new fields of various industries and business practices
- ✓ Global leaders with a wide range of vision
- ✓ Developers who revive devastated areas around the world

**Unique subjects**

- IT practical exercise
- International summer school...

**Set the program quality guarantee**

**Sustainable Development Goals (SDGs) Initiative at Nagaoka University of Technology**

SDGs are international goals set for 2016–2030 according to the 2030 Agenda for Sustainable Development adopted by the United Nations (UN) General Assembly in September 2015. They are the successor of the Millennium Development Goals (MDSs) established in 2001.

Nagaoka University of Technology has been appointed as the SDG Hub for Goal 9 by the UN, and its “GIGAKU SDG Institute” was certified as UNESCO Chairs Programme.







Sharing a Culture of Intellectual Social Responsibility

- A commitment to the opportunity for every interested individual to acquire the skills and knowledge necessary for the pursuit of higher education
- A commitment to building capacity in higher education systems across the world
- A commitment to promoting sustainability through education

Member of United Nations Academic Impact  
<https://en.academicimpact.jp/nagaokaut/>