2019／2020

Creating new value and revitalizing the community through research

Research Institute for Technological Science and Innovation (RITI)

Master technology, create technology

TOYOHASHI UNIVERSITY OF TECHNOLOGY

Greetings

The Research Institute for Technological Science and Innovation (RITI) was established on April 1,2016 as an initiative to improve our university's research abilities and achieve results in our research topics by working together with leading domestic and foreign companies and first-class research organizations.The institute is made up of three research divisions: the Emergent System Research Division, the Social System Research Division, and the Advanced Research Division These were established to further develop research activities based on our existing Electronics-Inspired Interdisciplinary Research Institute (EIIRIS) and four research centers, while also focusing on cooperation between our university, various companies, and the larger community. The topics researched in this institute were chosen by members of the school community, forming the Cooperative Project for Innovative Research. We are developing transparent collaborative research activities within the university by adopting 16 different collaborative research projects including three research topics that commenced in 2015 at our Advanced Research Collaborative Laboratory. At the same time, we are striving to train the researchers of tomorrow through collaborative research. These collaborative research projects are an important element in helping us to strengthen our university's role, which is one of the goals of our Third Medium-Term Objective/Medium-Term Plan launched in 2016. With the support of our university's office management and Research Administration Center as the basis, we are pushing forward with meaningful research.

Based on our university's basic philosophy – to conduct research and education in technological science, and to develop new technologies through scientific inquiry – we have always encouraged the formation of a base from which we can support industry-academia cooperation, and have developed research in educational practices to meet the demands of society and the economy. In October 2016, we celebrated the 40th anniversary of our founding and we wish to further enhance our research and development activities and continue pursue research that benefits the community, with the Research Institute for Technological Science and Innovation (RITI) at the center of our activities.

I hope that this collaborative research project initiative, which aims to promote industry-academia cooperation, will strengthen the ties between our university and the industrial world and lead to further integration of both talent and technology.

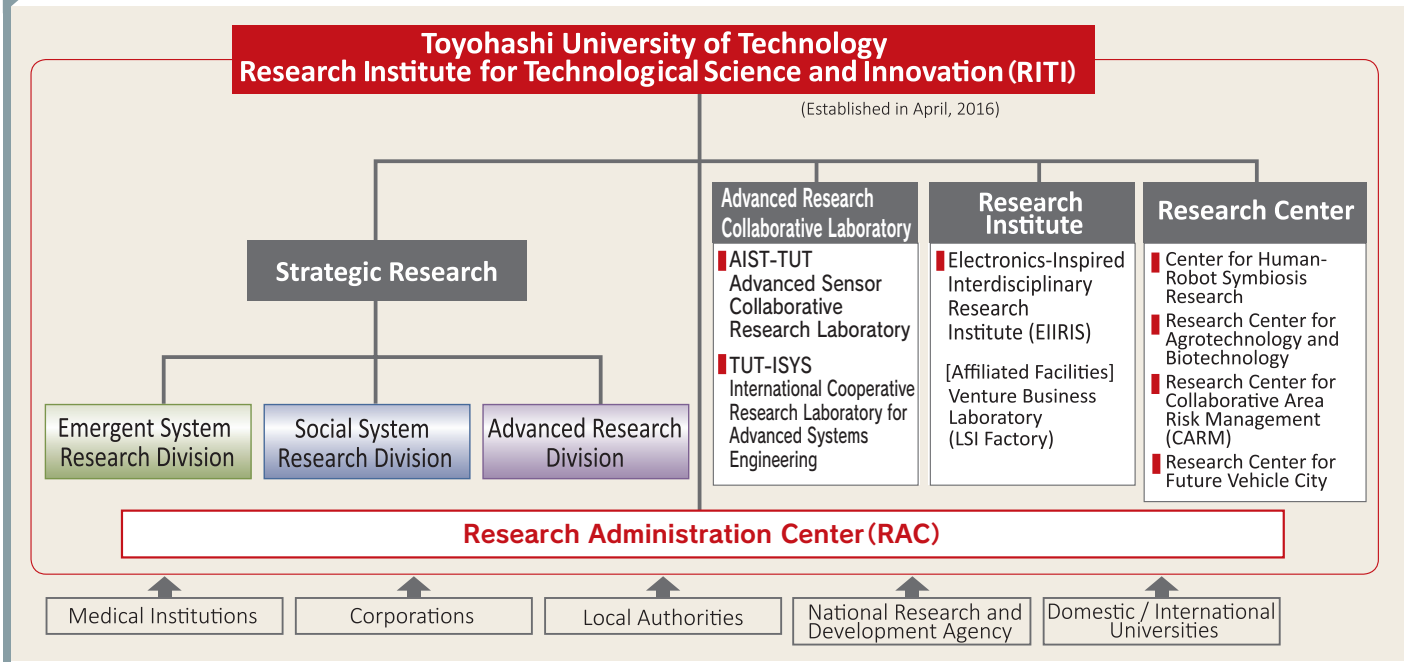
Takashi Onishi
President
Toyohashi University of Technology

I was appointed to serve as the head of the Research Institute for Technological Science and Innovation (RITI) when it was founded on April 1, 2016. This institute was established for the strategical planning, promotion, management, and presentation of the Electronics-Inspired Interdisciplinary Research Institute (EIIRIS), research centers, Advanced Research Collaborative Laboratory, and the Cooperative Project for Innovative Research. The Advanced Research Collaborative Laboratory,which was newly established in 2015,combines scientific technology gathered from prestigious overseas universities, domestic research institutes and leading companies to pursue globally cutting-edge research. The Cooperative Project for Innovative Research is also a new endeavor aimed at producing innovative research funded equally by the universities and companies involved. The project is run by the Research Administration Center which is responsible for the planning, contracts, legal issues, and management of intellectual property as well as support for research activities.

Since this university was incorporated, it has been utilized for the Ministry of Education, Culture, Sports, Science and Technology's The 21st Century Centre of Excellence Program (Intelligent Human Sensing), the Global Centre of Excellence Program (Frontier in Intelligent Sensing), the Program for Promoting the Enhancement of Research Universities' Research Administration Centre, and the doctoral education leading program Training Brain Information Architects. In the future, we aim to produce prominent research by actively incorporating different fields such as robotics, artificial intelligence and IoT, life sciences such as medicine and biotechnology, chemistry and new materials, earthquake and natural disaster prevention, and the environment and infrastructure, all using the open application method with electronics at the core.

Kazuhiko Terashima
Executive Trustee, Vice President
(Research and Educational Affairs)
Director of Research Institute for
Technological Science and Innovation
Toyohashi University of Technology

Organization Chart of Research Institute for Technological Science and Innovation (RITI)



Creating new value and Revitalizing the community Through research

Outline of the Research Institute for Technological Science and Innovation (RITI)

Toyohashi University of Technology was built on the philosophy that it will contribute to the development of mankind by discovering scientific principles that support the evolution of technology, the production of modern and innovative technology, and the creation of new value that leads us to the solutions of today's challenges and further into the future.

To put this philosophy into practice at a high level, we especially focus on developing the following:

1. Research into emerging systems to create new value that incorporates artificial intelligence, an area of research showing rapid development
2. Problem-solving research into social systems
3. State-of-the-art research through close cooperation with leading foreign and domestic companies and research institutes

Therefore, we chose to combine our existing Electronics-Inspired Interdisciplinary Research Institute (EIIRIS) with the work of our four research centers, and established the Research Institute for Technological Science and Innovation (RITI) that aims towards achieving open innovation.

We have established three strategic research departments within the institute, and have also founded The Cooperative Project for Innovative Research which is composed of research topics that were selected by members of the school community.

Strategic Research

Emergent System Research Division	Social System Research Division	Advanced Research Division
Research that creates new value for social implementation	Research to solve the problems society and communities face	Globally cutting-edge research in specialized areas

Cooperative Project for Innovative Research
(Research Collaborative Project, Advanced Research Collaborative Laboratory)

The Cooperative Project for Innovation Research is composed of the Research Collaborative Project, which promotes effectively interdisciplinary research, and the Advanced Research Collaborative Laboratory, a project that pursues specific cutting-edge research utilizing facilities from domestic and overseas research institutions. It is funded equally by domestic and international research organizations and corporations, and is designed to develop the forefront of specialized fields and reinforce the application of research results in society.

The Research Institute for Technological Science and Innovation (RITI) also acts as a research space for graduate school students studying under the 5-year Leading Program Training Brain Information Architects.

Main Research Policies

1. **Reinforcing the development of application and interdisciplinary research based on sensory research using the open application method***
2. **The creation of new, top global research fields**
3. **Reinforcement of research abilities through the Research Administration Center**
4. **Improving the research ability of all members of the faculty at the university to reinforce overall research capability**
5. **Establishment as an international base for science and technology**

*Open Application Method
This refers to pursuing interdisciplinary research aimed at actual application in society that makes maximum use of systems for open recruitment of research topics and open funding.