

## Congratulatory Remarks to Entering Students (October 2, 2020)

I would like to welcome the 29 students entering the master's course and the 40 new and continuing students entering the doctoral course of Graduate School of Science and Technology of NAIST today.

I am pleased to announce that the incoming class includes 51 international students from 11 countries/regions. In particular, along with the faculty and staff, would like to express a warm welcome to those of you who have chosen to leave your home country and study here in NAIST in Nara, an ancient capital of Japan. Including the entering class today, we now have 251 international students from 31 countries/regions.

This number is roughly 22% of our 1,136-student population, and I feel that we are even closer to NAIST's goal of achieving a global campus.

Currently, the entire world is facing the turmoil of a once-in-a-century massive infection disaster. In Japan, from when the new coronavirus was first confirmed in Japan in Nara prefecture in late January of this year, the infection gradually spread throughout Japan and, with a rise in the fear of an explosion of infections, NAIST had no choice but to cancel the April Entrance ceremony.

From early April when a state of emergency was declared for certain areas of Japan and in mid-April the state of emergency was then extended to all prefectures, Nara prefecture was under a state of emergency for about one month. Due to this, activities at NAIST were restricted in various ways. While the pandemic is still continuing, I am very pleased that we are able to hold today's entrance ceremony, while taking precautions measures and limiting in-person attendance. However, I regret to inform you that there are 25 international student classmates that are still not able to enter Japan at this time

NAIST celebrated its 29<sup>th</sup> anniversary yesterday and, with the aim of further developing academic curriculum, two and a half years earlier a structural reorganization

was undertaken to establish the Graduate School of Science and Technology through the merging of the existing 3 Graduate Schools of Information, Biological and Materials Sciences. You will create a new page of NAIST's history as the 3<sup>rd</sup> class of the Graduate School of Science and Technology.

To explain the background behind the establishment of the Graduate School of Science and Technology, first I would like to talk about the revolutionary era of science and technology we are approaching due to developments in ICT. Revolutions in science and technology will bring about huge changes in industry and society.

The most representative phrase expressing these developments in industry is "Industry 4.0."

The 1<sup>st</sup> industrial revolution in the 19<sup>th</sup> century was sparked by transportation methods that began with the invention of the steam engine and the mechanization of production and industry. The 2<sup>nd</sup> industrial revolution in the beginning of the 20<sup>th</sup> century was led by mass production making use of electricity. Following the 3<sup>rd</sup> industrial revolution in the late 20<sup>th</sup> century where further automation was made possible through computer technology, we are now entering the 4<sup>th</sup> industrial revolution through the autonomy of machines and systems brought about by the integration of the internet and sensing.

Additionally, in Japan, in a pattern corresponding to Industry 4.0, we have passed through the hunting, agricultural, industrial and information societal stages and are looking upon Society 5.0, a super smart society effectively achieving the advanced integration of the cyber world and the physical world.

A characteristic of the changes currently occurring in industry and society is that the speed of these changes is faster than ever experienced before on a global scale. For example, this can be felt when we see venture businesses appearing with new business models become global corporations in ten years and, in the blink of an eye, they expand to country-sized proportions.

It may be said that most of the revolutions in science and technology are arising from the synthesis of different fields. NAIST established basic education and research goals as: ‘The promotion of research in advanced fields of science and technology while producing human resources through specialized education based on outstanding research achievements to contribute to the continued development of science and technology and overall societal development.’ However, the subjects of education and research performed at NAIST and the research methodology of the forefronts of science and technology at the time of NAIST’s establishment and today differ greatly.

When the three Graduate Schools of Information Science, Materials Science and Biological Sciences, were established each academic area was seen as being an independent field of study. While there were the beginnings of Bioinformatics as an interdisciplinary field of information and biological sciences, collaborative research between the fields of each graduate school was rare I believe.

Now, with the collection of huge amounts of data of genome information and biomolecule spatio-temporal distribution, big data biology, an interdisciplinary area spanning information and biological sciences, is developing.

And, in the field of materials science, materials informatics is a new emerging interdisciplinary field with information science.

The campus and organization here are compact and the dividing lines between labs are thin, a distinctive characteristic of NAIST. Taking advantage of this, collaborative research spanning multiple divisions and laboratories is currently being actively performed.

This current situation was foreseen at the time of NAIST’s establishment and, in fact, the importance of promoting interdisciplinary basic research and the necessity of developing human resources to continue the pioneering of new fields can be found in the “Concept of Nara Institute of Science and Technology” for its establishment, written in August 1991 before the university’s creation.

The Graduate School of Science and Technology was established to further actualize NAIST's establishment ideals in a form relevant to the current times. The Graduate School of Science and Technology consists of 7 Education Programs, with 3 of them corresponding to the original 3 graduate schools and the other 4 in newly established interdisciplinary fields created through the structural reorganization.

You will be deciding which laboratory to join and which program you wish to enroll in after this and please do not limit yourself to your previous knowledge and experience; instead, I hope you make full use of the curriculum and classes of these new programs, always paying attention to the trends of surrounding fields and broadening your understanding. Please take a "large step forward" and challenge yourself to unlock new possibilities.

As you, our students, grow and develop, so will NAIST grow and develop. With this in mind, NAIST faculty and staff will make every effort to support you in undertaking new challenges.

In concluding my message, I hope you will have a successful student life and have great expectations for your future activities.

Congratulations once again on entering NAIST.

YOKOYA Naokazu, President  
Nara Institute of Science and Technology  
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