NITech Topics 2022

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https://www.nitech.ac.jp/eng/

At NITech / Associate Prof. Yoshinori Natsume and the students of Natsume Laboratory


Students of New Mongol Institute of Technology

TOPIC 01

Online meeting with New Mongol Institute of Technology, supported by JST Sakura Science Exchange Program

We had an online meeting with New Mongol Institute of Technology throughout following five days in February 16, 17, 23, 24, and March 2, 2022.

We conducted this research exchange as “Science and Technology Experience Course” with the students of New Mongol Institute of Technology, supported by JST Sakura Science Exchange Program. New Mongol Institute of Technology is a private technology university and founded in 2014, using the university education of Japan and the United States as it’s model. The University has 8 faculties including Chemistry, Electrical and Electronic and others, and aiming to have education for engineers that applies to the world.

Initially, we had planned to invite the students from the other university to Japan in August, 2021, however, those students could not come to Japan because of effected by infection of coronavirus which was spread worldwide, so we decided to have an online meeting instead.

The online meeting included with experiment of landscape review with the students of New Mongol Institute of Technology, using the 360°landscape video of Tokai area which was created beforehand by Associate Prof. Yoshinori Natsume, NITech who is in charge of this event, and the students of Natsume Laboratory. Through this meeting, we had comments from the students of New Mongol Institute of Technology that they found more interests in Science, Culture, Research, etc. of Japan, as well as, the motivation of going to Japan to study was increased, and it is sure thing that the global awareness of the students from both universities are improved.

[Reference] JST Sakura Science Exchange Program
https://ssp.jst.go.jp/en/index.html

TOPIC 02

JSPS Japanese-German Graduate Externship Program Joint Seminar was Held Online

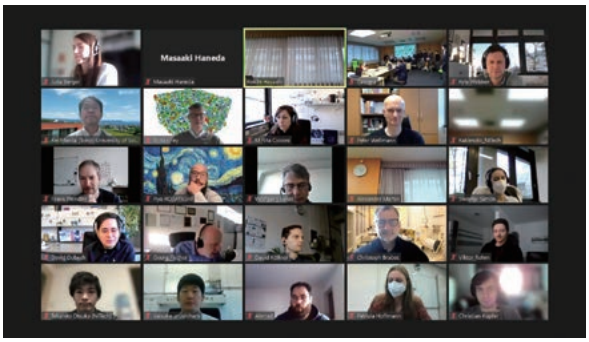
On March 1 and 2, 2022, a Japan-Germany joint seminar (Yearly school: Energy Systems School III) was held. Like last year, it was held online in response to the global outbreak of the COVID-19. 75 faculty staff and students from both the University of Erlangen-Nuremberg (FAU) and Nagoya Institute of Technology (NITech) attended the seminar. After the opening remarks by German coordinator Prof. Kyle Grant Webber and Japanese coordinator Prof. Ken-ichi Kakimoto, invited lectures were delivered by Prof. Kei Maeda from Tokyo University of Science, Japan and Prof. Hana Uršič from Jozef Stefan Institut, Slovenia.

Over the course of two days, the program students gave presentations respectively about 12 research projects and four joint promotion projects, and the Q&A session became lively among participants. On the last day, the Young Research Award was awarded to the three students who made excellent research presentations. Even though the second consecutive year of online events, it was a good opportunity to further deepen understanding among members of both Germany and Japan.

The next joint seminar will be held in Japan in March 2023.

Japanese-German Graduate Externship Program
http://jgge-eng.web.nitech.ac.jp

Commemorative photo of diverse members



During the meeting online

TOPIC 03

Professor Akihito Sano Received Awards for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology 2022

On April 8, 2022, Prof. Akihito Sano received the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology 2022. Award-winning category is Commendation for Science and Technology (Development Category), and title of the Achievement is “Development of a non-powered walking assistance device derived from the passive walking principle”.

This achievement is based on the ACSIVE, a non-powered walking assistance device derived from passive walking that does not use a motor or battery, which was developed by Prof. Sano in collaborative research with Imasen Engineering Corporation since 2011. It is lightweight, easy to use, and highly evaluated by users, such as “It became fun to walk”.

Along with Prof. Sano, Mr. Masaru Ueda and Ms. Yuko Mori of Imasen Electric Industrial Co., Ltd., also received the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology.

In response to the Commendation, NITech has recognized Prof. Sano with a special prize for his particularly

outstanding achievements. At the special prize awarding ceremony, President Takatoshi Kinoshita praised Prof. Sano's excellent achievements to date, including the development of a non-powered walking assistance device, and congratulated him, saying, "It is a great honor for a researcher at our university to receive such a prestigious commendation."

After the special prize awarding ceremony, President Kinoshita handed certificates of commendation from the Minister of Education, Culture, Sports, Science and Technology to Prof. Sano, Mr. Masaru Ueda and Ms. Yuko Mori.

Commemorative photo with the winners of the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology
(Executive Director Eryu, Ms. Mori, Mr. Ueda, Prof. Sano and President Kinoshita from left)

ACSIVE (left) and aLQ co-develpoed by Prof. Sano and Imasen Engineering Corporation

TOPIC 04

Professor Yuji Iwamoto was awarded the title of Fellow by the American Ceramic Society (ACerS)

Prof. Yuji Iwamoto was nominated as a Fellow of the American Ceramic Society (ACerS) for 2021 and was determined to receive the award in April 2022. The title of Society Fellow is awarded by ACerS, which brings together researchers in ceramics from the United States and around the world, to individual members who have made outstanding achievements in advancing the field of ceramics.

He has continued working on structure control of ceramics using chemical structure design of organometallic precursors, which he started in earnest in 1995 at the Fine Ceramics Research Association Synergy Ceramics Laboratory, to which he belonged. Reports on the research results made at NITech include the creation of hydrogen energy materials, such as novel hydrogen affinity materials, hydrogen-responsive chemical valve membranes and organic/inorganic hybrid membranes for solar hydrogen purification, and oxynitride-based ceramic phosphors.

As an active member of ACerS, he has been involved in organizing symposia on Polymer-Derived Ceramics (PDCs) and Porous Ceramics at international conferences organized by ACerS (Annual meeting, MS&T, ICACC, PacRim, etc.) as one of the organizers for many years.

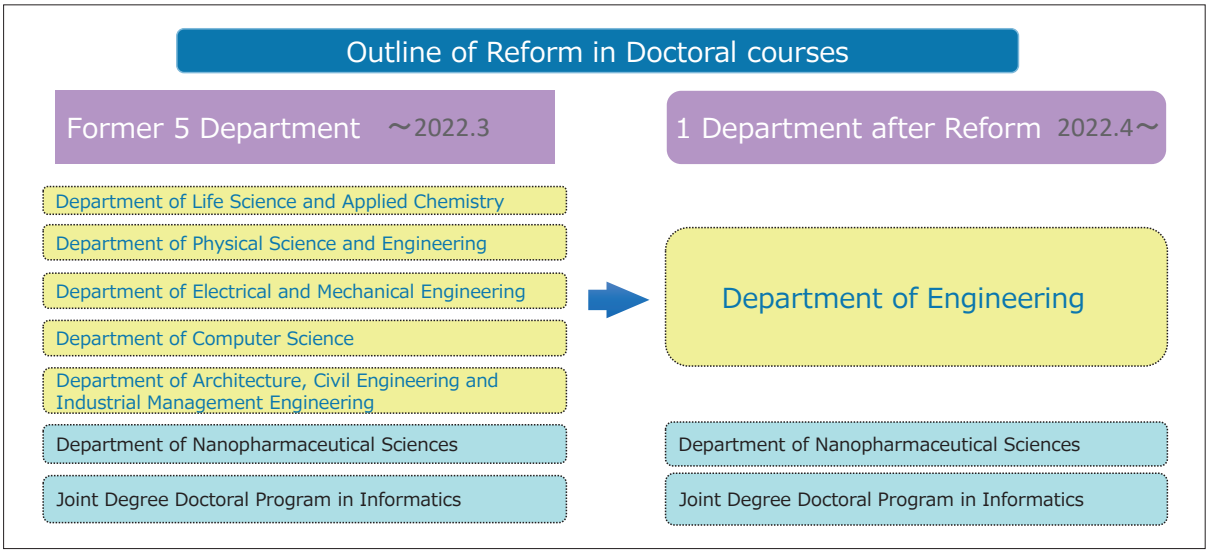
Prof. Iwamoto said "I was able to receive the Society Fellow award thanks to being nominated by professors from Clemson University (U.S.), the Technical University of Darmstadt (Germany), CNRS-IRCER (France), the University of Padua (Italy), the Slovak Academy of Sciences (Slovakia), FAU (Germany), and Seoul National University (Korea), with whom I have exchanges in my research fields described above, and researchers from the National Institute of Advanced Industrial Science and Technology (AIST) and corporate institutions in Japan. I would like to take this opportunity to thank them all."

Prof. Iwamoto receiving the certificate (right)

TOPIC 05

Interdisciplinary "Department of Engineering" Launched in Doctoral Courses in April 2022

NITech reformed five former departments in Doctoral courses, Graduate School of Engineering and launced "Department of Engineering" in April 2022.
In the field of engineering, it has been all the more required to acquire interdisciplinary technology and knowledge in order to resolve issues in the real world and industry. It means that a learning environment where students are able to participate actively is also urgently required.
Therefore, in the new department, we did not establish individual education programs so that students can select a main supervisor according to their research theme and plan approaches to solve issues on the research. Furthermore, it is a flexible system which enables students to broadly receive advice from experts in various engineering fields by the involvement of other faculty members from different five fields* in NITech as subsupervisors, also, researchers such as from other research institutes, companies, and invited researchers from abroad as advisors.
With acquiring advanced knowledge and technique and incorporating advice from experts from various fields, NITech will foster human resources who are able to collaboratively reform the society while creating new values by planning new approaches on problem-solving from wide ranges of knowledge in engineering, technology and method and cultivating abilities to ingenious research.
* Five fields: Life Science and Applied Chemistry, Physical Science and Engineering, Electrical and Mechanical Engineering, Computer Science, Architecture, Civil Engineering and Industrial Management Engineering



TOPIC 06

"VOICEs from NITech", an introduction movie and promotional video of our university has been released

We have released Introduction video for those who would like to learn at NITech, and promotional video showing the image movie of our university.
You can watch from here; https://www.nitech.ac.jp/eng/news/2022/9574.html
This introduction movie shows that our education and each research field of our university, and also shows real voices and real people of the enrolled students, the

faculty and the alumni at the university in daily life.
The promotional video, which was taken by Micro Drone, is very realistic and exciting. Please enjoy!

TOPIC 07

Concluded an Agreement on Comprehensive Partnership regarding the "Artful Campus" with the Aichi University of the Arts

Nagoya Institute of Technology and Aichi University of the Arts have concluded a comprehensive partnership agreement of new collaboration through art. On April 1, 2022, an agreement signing ceremony was held, and President Toshiki Toyama of Aichi University of the Arts and President Takatoshi Kinoshita of Nagoya Institute of Technology have signed the agreement.
Both universities have co-created "Artful Campus", and since FY 2021, have been conducting a joint project, which is related to improving campus life quality brought by art entitled "F+Project – bringing the winds of art to Gokiso hills".
This project was realized when the concepts of both universities have corresponded; "Artful Campus" of Nagoya Institute of Technology, which is part of the campus creation as a platform for "Engineering with heart and mind for humanity", that will nurture rich sensibilities in students, faculty and staff by incorporating art into the campus and getting familiar with art, and the hope of Aichi University of the Arts, which to create more opportunities for contemporary diversified artistic expression to interact with society.
Until now, with the cooperation with students, faculty and staff, and alumni of both universities, building wall arts and paintings have been produced in various parts of the campus, and new arts are still being created.


TEI YOUYOU "Desert Garden"


Hiromi Oka "One Day Thoughts"


Akari Mitsumura "MEET A NEW SELF"

TOPIC 08

Created Vision/Strategy FY2022 – 2027

Since its founding, NITech has been a driving force in the industry in the Chukyo region. With the start of the Fourth Mid-term Goals Period (FY2022 - 2027), we formulated a new vision for the Institute as follows.

Vision

~Aiming for the university to lead social innovation through "Engineering with heart and mind for humanity"~

Co-creation with Chukyo area industries

For engineering to build a healthy future society, technological development through dialogue with people must be emphasized. In the fourth period, we set a goal to be a university that declares and promotes "engineering for creation of happiness." It means that we pursue how engineering can best perform as communication of "Engineering with heart and mind for humanity" to establish a future vision or ideal society through dialogue, rather than simply by technological development. We cultivate engineers from various aspects to create a new social infrastructure through dialogues with various people from objective and panoramic viewpoints while remaining close to stakeholders. We also promote world-level advanced research based on global and diverse cooperation to facilitate technological development and business solution by "Co-creation with Chukyo area industries" while leading the regional industries.

Strategy

Social Co-creation

Strategy 1

Contribute to creation of future society

~Partnership with communities, Return of research achievements~

We lead the establishment of engineering technology that supports social innovation by co-creatively utilizing and promoting our accumulated advanced and sophisticated research achievements in line with the requirements and expectations of our stakeholders.

Engineer Cultivation (Education)

Strategy 2

Practice education based on "Engineering with heart and mind for humanity," remaining close to stakeholders

~Cultivation of diverse human resources with rich cultural perspective to create a future society~

We cultivate autonomous engineers and researchers who can cooperatively contribute to technology creation and business solutions in light of composite viewpoint/values while realizing the responsibility of engineering with a rich cultural perspective and consistently high-level expertise/ability in place.

Research and Development

Strategy 3

Promote world-level advanced research required by the region

~Creation of scientific knowledge and innovation that responds to the regional industries~

We focus on world-level research promotion and cultivation of young researchers by expanding our research functions and further enhancing global collaboration toward the creation of scientific knowledge that will contribute to the creation of a regional future society.

Organizational Enhancement

Strategy 4

Create a foundation to maximize functions of education/research/social contribution

~Securing governance with autonomy and transparency~

While increasing autonomy and transparency, we smoothly promote each strategy of social co-creation, engineer cultivation, and R&D to enhance the foundation for realizing our vision. We also pursue the system and environment by which we earn credibility and support from our stakeholders.