

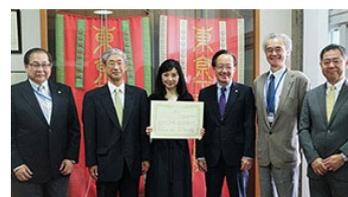
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Tokyo Tech Chronicle

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Assoc. Prof. Pham Nam Hai awarded German Innovation Award "Gottfried Wagener Prize 2019"

Associate Professor Pham Nam Hai of the Department of Electrical and Electronic Engineering, School of Engineering, has been awarded a "Gottfried Wagener Prize 2019" of the 11th German Innovation Award. This award is a formal recognition by nine German companies whose activities span the globe and have bases for research and development in Japan. Its goal is to support researchers in Japan, to promote science and technology, and to build up the network for industry-academia collaboration between Germany and Japan. Eligible research projects are those that are innovative and geared toward application in the three categories: Materials and Energy, Digitalization and Mobility, and Life Sciences.



German Innovation Award "Gottfried Wagener Prize 2019" award ceremony (© 2019 AHK Japan)

Pham developed the world's highest-performing pure spin injection source using a topological insulator. This achievement is a step in realizing the spin-orbit torque MRAM, a next-generation magnetoresistive memory technology using pure spin current and capable of high-speed writing while being highly durable.

The issue with heavy metals such as platinum and tungsten, which have been used as pure spin current sources, is that the spin Hall angle is small. Pham poured his attention into the BiSb topological insulator, and he established the thin-film growth technology and evaluated the performance as a pure spin injection source. As a result, he discovered the BiSb(012) surface that achieved a colossal spin Hall angle, even at room temperature. He further demonstrated magnetization switching of a perpendicularly magnetized film using an electric current density that is one to two orders of magnitude less than for existing options.

If BiSb is incorporated into spin-orbit torque MRAM, the electric current and energy required to write data would be reduced by one and two orders of magnitude, respectively. The recording speed will increase by 20 times, and the recording density, by one order of magnitude. This means it can replace existing volatile semiconductor memories such as SRAM and DRAM. This achievement will reduce the power consumption required by electronic equipment even more and has the potential to bring into existence a new spintronics industry worth trillions of yen. It is expected to have a great effect on the economy. Further, Pham is working enthusiastically with the industry on developing technologies for mass production of ultra-low-power spin-orbit torque MRAM using BiSb, which is expected to be realized in near future.

Associate Professor Pham's comments

I feel very honored to be selected for this prestigious German Innovation Award. The award selection committee kindly recognized my research on using a topological insulator to develop a pure spin injection source that can be put to practical use, that we are developing mass production technologies, and that we have been actively collaborating with the industry. I would like to take this opportunity



Assoc. Prof. Pham Nam Hai

to express my great gratitude for all the students who have toiled on the research together with me, all the companies with whom we do collaborative or commissioned research, and the Japan Science and Technology agency, who supports an on-going large-scale research project. We will continue committing ourselves to research and development so that this technology can be brought to practical devices and help reduce the power consumption of electronic equipment even more.

(Tokyo Tech news published : Associate Professor Pham Nam Hai, School of Engineering, Tokyo Institute of Technology · December 24, 2019)

Prof. Kenichi Okada awarded the 18th DOCOMO Mobile Science Award

Professor Kenichi Okada was awarded the 18th DOCOMO Mobile Science Award in a ceremony held on October 18th at the ANA InterContinental Tokyo. The Award is made to researchers of outstanding achievement, with the aim of further developing mobile telecommunications and encouraging the work of researchers under the age of 50.



commemorative photo

- **Research theme**

Ultra-High-Speed Millimeter-Wave Wireless Communication using CMOS Integrated Circuits

- **Citation for Award**

Okada achieved 16QAM wireless communication using direct conversion architecture in the millimeter-wave band, which had not previously been achieved with CMOS circuits, and then achieved a speed acceleration to 50Gbps using 64QAM. Furthermore, the world's highest wireless data rate of 120Gbps was achieved in the 70-105GHz band.

With the rapid spread of mobile terminals, wireless communication has become one of the basic underpinning the modern world. His research achievements greatly contribute not only to ultra-high-speed transmission, but also to miniaturization and low power consumption in millimeter-wave wireless transceivers. They are also expected to help bring 5G wireless technology to fruition and contribute to Beyond 5G.

Professor Okada made the following comment upon receiving the prize:

There are great expectations for millimeter-wave wireless communication, which will form an indispensable technology of tomorrow's world. The technology that came out of this research makes possible the use of ultra-high-speed millimeter-wave wireless communication on a smartphone. Currently, we are developing commercial products in collaboration with a company. Yet I could never have achieved this by myself, and would like to thank my many collaborators and students.



Kenichi Okada

(Tokyo Tech news published : Kenichi Okada • November 6, 2019)

Two staff members receive 2019 Special Contribution Award

Two Tokyo Tech staff members were acknowledged with the 2019 Special Contribution Award on November 22.

Each year, the Institute recognizes a number of staff members who have, over several years of service, contributed to the smooth advancement of research and education activities while demonstrating outstanding overall performance.

This year's Special Contribution Award recipients are:

Yasuyuki Nagamine

Senior Technical Specialist, Suzukakedai Design and Manufacturing Division, Technical Department

"For his significant, long-term contributions to division management and operations"

Akira Genseki

Technical Specialist, Ookayama Materials Analysis Division, Technical Department

"For his significant, long-term research support and contributions to the operations of shared analysis facilities"



Nagamine (front right) and Genseki (front left) with executive board members

The Tokyo Tech community offers its congratulations to this year's recipients.

(Tokyo Tech news published : Employee Relations Office, General Affairs Department • December 10, 2019)

2019 Tokyo Tech Award for Student Leadership

General Administration Group, Student Division, Student Services Department

Recipients of the Tokyo Tech Award for Student Leadership for the 2019 academic year were acknowledged on October 29. Awarded annually since 2002 to 2nd-, 3rd-, and 4th-year bachelor-level students with extraordinary intellect, humanity, creativity, and energy, the award aims to encourage highly motivated students to continue with their studies and work towards becoming global leaders.



2019 commemorative photo

Each of the students received certificates and prizes from President Kazuya Masu, after which they discussed their achievements and plans openly with the president, executive vice presidents, and deans.

Congratulations to all the winners!

2019 Tokyo Tech Award for Student Leadership recipients and award-winning activities

Akihito Kimura	4th year, Systems and Control Engineering	● Prosthetic leg development project team member at International Development Academy
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Akihito Kimura	4th year, Systems and Control Engineering	<ul style="list-style-type: none"> ● Team leader, winner of English presentation contest at Global HR Development Forum 2016 ● Organizer of VR space workshop for elementary school students
Yukika Hayashi	3rd year, Industrial Engineering and Economics	<ul style="list-style-type: none"> ● Moderator, student rep at AY2017 A Day in the Life of a Tokyo Tech Student event ● Manager of Handball Club ● Planning and volunteer at Children's Cafeteria ● Best final presentation in Tokyo Tech Abroad Short-Term Education program
Hajime Fujita	4th year, Life Science and Technology	<ul style="list-style-type: none"> ● iGEM Tokyo Tech team leader ● Second place at Stanford's Health Hackathon health++ 2018 ● Team leader and winner of IoT-focused student idea contest Babycathon
Shoki Hasegawa	3rd year, Architecture and Building Engineering	<ul style="list-style-type: none"> ● Finalist at Mars City Design Competition 2019 with TNL Space Architecture club ● TNL Space Architecture club rep at NASA and University of Houston events ● Head of student club Current Issues Society
Moe Kobayashi	4th year, Transdisciplinary Science and Engineering	<ul style="list-style-type: none"> ● Study abroad at Technical University of Denmark, internship at Japanordic. ● Tokyo Orienteering, Special Survival project leader at Student Association for Global Exchange ● Captain of Triathlon Club
Maythawee Ratchatawijn	4th year, Transdisciplinary Science and Engineering	<ul style="list-style-type: none"> ● Head of planning for research conference at Thai Students' Association in Japan under Royal Patronage ● Science Communication Internship in London, active participation in short-term programs at University of Washington, Georgia Institute of Technology



2019 Tokyo Tech Award for Student Leadership recipients

(Tokyo Tech news published : November 28, 2019)

Cycle-ballers win first all-Japan Collegiate Tournament in 14 years

The 2019 All-Japan Collegiate Cycle-ball Tournament was held on November 16 and 17 on Ookayama Campus, and Tokyo Tech emerged victorious for the first time in 14 years. Kakeru Masuda, a 4th-year Systems and Control Engineering student, and Keita Ishihashi, a 3rd-year Architecture and Building Engineering student, won the title after a nail-biting final.



Tournament group photo with champions in red

The All-Japan Collegiate Cycle-ball Tournament, sponsored by the Japan Federation of Indoor Cycling, brings together the best student cycle-ballers from around Japan. This year, 20 teams participated.

On their way to victory, Masuda and Ishihashi met another Tokyo Tech team — 4th-year Architecture and Building Engineering students Satoru Ikeda and Takashi Banba — in the semifinals. After defeating their classmates, Masuda and Ishihashi faced last year's winner, Osaka University of Economics, in the finals. The match went to sudden death penalty kicks, with Ishihashi producing the final save to bring home the victory.



Tokyo Tech (in red) hounding opponent in final match

Comments from Kakeru Masuda

Firstly, I would like to thank the Japan Federation of Indoor Cycling for organizing the event and the referees for dedicating their time to each match. This was my last all-Japan event, and I am delighted to have reached my goal of finishing first. I think last year's disappointing result reminded me to stay focused when the games were tough, and our home court advantage and the support of all our teammates were a huge help. Everyone believed we could win until the very last penalty kick. My bachelor-level studies are coming to an end soon, and I hope to make use of this experience as I move to the next phase of my life.



Tokyo Tech levels final match from corner kick

Comments from Keita Ishihashi

I am very pleased to have won this tournament. I would like to thank the members of the club for helping us improve through our friendly rivalries and the alumni from whom we learned most of what we know. Cycle-ball is a fast-paced sport which requires great levels of concentration. Each match is only 14 minutes long, and if you lose focus, you quickly find yourself trailing your opponent. I hope that I can utilize my improved concentration levels in my studies, and in becoming an active member of society.



Ishihashi stops sudden death penalty, clinching victory

What is cycle-ball?

Cycle-ball is a soccer-like sport played indoors by two teams of two players each. Five-a-side matches outdoors are also possible, but less common. Using a specially adjusted bicycle with no gears or brakes, players dribble, pass, and shoot the ball using the wheels of their bicycles. As most of the action takes place while standing on the pedals, the handlebars face upwards, and the bike allows players to pedal backwards.

The special cloth ball used during games is 17 to 18 cm in diameter and weighs 500 to 600 g. The court measures 11 m by 14 m, and teams of two play two seven-minute halves. Feet should never be touching the ground, and hands can be used only at the defensive end. Most players in Japan get to know the sport while at university.

At the All-Japan Collegiate Tournament, teams play two halves of seven minutes each. If the match is tied after regulation time, one additional overtime period of seven minutes is played. If a winner still does not emerge, the winner is determined through a penalty shootout, with each player shooting twice. If the tie is still not broken, penalty kicks go to sudden death.

Tokyo Tech Cycling Club

The Tokyo Tech Cycling Club is an official student club that includes members from not only the Institute, but also other universities such as Ochanomizu University and Tokyo University of Foreign Studies. The club consists of a touring group, a racing team, and a cycle-ball team, totaling over 100 members. The cycle-ball team trains at Ookayama Campus twice a week.

Tokyo Tech to sail in 470-class Japan Championships 2019

Second-year Life Science and Technology student Yuki Yakuwa and fourth-year Mechanical Engineering student Hiroyuki Watanabe, both members of the Tokyo Tech sailing team, will be competing in the 48th 470-class All Japan Championships from November 20 to 24. The competition brings together the best sailors in the country, both from educational institutions and companies. This is the first time since 2005 that Tokyo Tech students will be participating.

Skipper Yakuwa and crew member Watanabe have had a year to remember. The pair put in excellent performances at the Kanto regional competition in May and at the all-Japan qualifiers in late June. These successes earned them enough points to be selected as one of the 28 Kanto region pairs to join the nationwide competition. Through strong teamwork and a careful balance of studies and sports, Yakuwa and Watanabe have done well to reach this level of competitive sailing.

The Japan Championships will include five races in the preliminary rounds, up to six races in the final rounds, and the medal races to determine the overall winners.

Comments from Yakuwa-Watanabe pair

Yuki Yakuwa

2nd year Life Science and Technology

This success is the result of our regular practice sessions. In a sense, dedicating every weekend to sailing has been tough, and during my first year, I struggled with the idea of not having Saturdays and Sundays off. However, I now realize that this schedule is precisely what allowed me to focus fully on my studies on weekdays, and to let off some steam on weekends.

Honestly, I never thought we would qualify for the Japan championships, and I feel both excited and nervous. I am not sure how far our abilities will take us, but I will do my best to make this last race with Hiroyuki an unforgettable one, not least for all the people who tirelessly support us.

Hiroyuki Watanabe

4th year Mechanical Engineering

This is the first time in 14 years that a Tokyo Tech pair makes it to the Japan championships, and my feelings of enjoyment and expectation are helping me overcome my nerves. As a fourth-year student, I was very busy with research until July, and it was difficult to find time to sail. The Independent research project was particularly demanding. It cut into my sailing time, but still I was able to make it to practice sessions now and then, and I am proud of our achievements at the qualifiers in June. Thankfully, I had time to concentrate fully on my sailing over the summer break. I will strive to achieve a good result at our last race, and look forward to everyone's support.



Hiroyuki Watanabe



Yuki Yakuwa



Yakuwa-Watanabe pair

About Titech Sailing Team

The Titech Sailing Team is a group of ocean-loving sailors who polish their seafaring skills off the Hayama coast in Kanagawa Prefecture. The team has access to five 470-class dinghies and five Snipes, as well as two rescue motorboats in case the seas get rough. Members often head to the seaside on Saturday morning and only return to Tokyo on Sunday evening. The group is strongly supported by a 400-member group of alumni whose motto is "developing full-fledged sailors, full-fledged members of society."

The 470

The 470 (four-seventy), so named due to its 4.7-meter length, is a sailboat designed to plane easily. Sailing the boat efficiently requires strong teamwork from its two members. Designed in 1963 by Frenchman André Cornu, the 470 has been an Olympic sailing class since 1976, and is said to suit pairs with a total body weight of approximately 130 kg.



Watanabe (front) and Yakuwa

(Tokyo Tech news published : Public Relations Section • November 18, 2019)

Tennis team promoted to Division 2 of Kanto polytechnic universities league



Tokyo Tech Tennis Team

The Tokyo Tech Tennis Team has been promoted to Division 2 of the Kanto Polytechnic University Hardball Tennis Federation league after finishing in first place in Division 3. During a busy match schedule throughout October, the Institute's players beat Kanagawa Institute of Technology 8-1 and defeated Kitasato University 7-2. They then overran Tokyo City University 9-0 to earn promotion.

About the Kanto Polytechnic University Hardball Tennis Federation league

A total of 51 higher education institutes compete in the 13 divisions of the Kanto Polytechnic University Hardball Tennis Federation league. Divisions hold annual tournaments each of which include three doubles matches and six singles matches. The winner of each tournament is determined based on the number of match victories, while the winner of the division is the team with the most tournament wins.

This year, Tokyo Tech already secured victory in Division 3 after the second tournament, and completed their move to Division 2 with a win over Tokyo City University.

Comments from captain Atsushi Urushibara

3rd year, Earth and Planetary Sciences

This was our first official tournament after the 4th-year students left us last month to focus on their studies and research, and we are very pleased with the result. The whole team would like to thank the alumni and guardians of the students who support us on a daily basis.

Last year, we were not able to gain promotion to Division 2, which was a tough pill to swallow. Achieving it this year has united the team further and encouraged us to continue studying and practicing harder.

Tokyo Tech Tennis Team

The Tokyo Tech Tennis Team, affiliated with the Kanto Inter-Collegiate Tennis Federation and Kanto Polytechnic University Hardball Tennis Federation, has a 100-year history. The men currently play in Division 6 of the Kanto Universities Tennis League. They were recently promoted to Division 2 of the polytechnic universities league. Tokyo Tech's women play in Division 5 of the former and Division 4 of the latter. In addition to normal practices, the Tokyo Tech Tennis Team holds trial sessions with interested high school students.

(Tokyo Tech news published : Public Relations Section • November 8, 2019)

Tokyo Tech student wins special prize in business development contest

Ryo Hiraga, a first-year master's student in Materials Science and Engineering, has won the Special Prize in Toppan Open Innovation 2019, a business development contest sponsored by Toppan Printing Co., Ltd. (Toppan) and implemented through co-necto, a new business co-creation program open to the public.

Hiraga, who created a smartphone-based road anomaly detection system, was the only student to receive a prize. Three companies received the Top Prize and two



companies were awarded the Special Prize.

What is co-necto?

co-necto is an open innovation program that allows startup companies to match their creative ideas with the resources of Toppan and effectively roll out innovative products and services to the public, thereby creating new value. In the 2019 contest, the program called on contestants to present ideas in eight broad areas — food, logistics, localities, e-commerce, finance, energy infrastructure, medical and health care, and sports — which support the achievement of targets in the United Nations Sustainable Development Goals.



Hiraga presenting

Hiraga's invention focused specifically on helping localities achieve SDG 11 — to "make cities and human settlements inclusive, safe, resilient and sustainable."

Innovative road anomaly detection system

Until recently, road anomaly detection has proved difficult without visual observation or the use of expensive equipment. This has now changed. Smartphones and newly developed apps and web technologies have made detection possible and fair simple.

By utilizing the XYZ-axis accelerometer and gyroscope built into smartphones, Hiraga's creation measures the degree of vibration of the device, which is displayed in waveform. A newly created system then performs an analysis using the generated data and images.

At a time of aging roads, tighter budgets, and a dwindling work force, the car-mounted creation will make the survey of roads more efficient.

Comments from Ryo Hiraga

1st-year master's student, Materials Science and Engineering

I am very happy to receive this award and to share this joy with my family members, lab mates at the Hosoda Laboratory, and Professor Hideki Hosoda himself. I feel that the knowledge and expertise I have gained while carrying out research on metals and materials at the lab has led me to this award. I would like to thank everyone for their support.

This result has encouraged me to set up my own company, GoMA Co., Ltd., in November. GoMA is short for "go marketing," which implies the creation and provision of services to the world with the help of accelerated marketing.

In the near future, I will be working with Toppan and local governments to carry out verification experiments, and hope to put smiles on people's faces by making cities more sustainable.

**Go
MA Inc.**

Logo of Hiraga's company

(Tokyo Tech news published : Public Relations Section • November 15, 2019)

Tokyo Tech third in JAMSTEC underwater robot competition

—Tokyo Tech High School of Science and Technology second in Junior Division—

Tokyo Tech finished third and Tokyo Tech High School of Science and Technology finished second at *Japan and the Sea: Underwater Robot Convention in JAMSTEC 2019*, a competition for underwater robots held at the facilities of the Japan Agency for Marine-Earth Science and Technology (JAMSTEC) from August 23 to 25.

This year, the competition consisted of three divisions: the Freestyle Division, the AI Challenge Division, and the Junior Division.

Freestyle Division

As its name suggests, this division focuses on original ideas and technologies utilized in underwater robots. Teams create their own robots from scratch and are awarded points based on presentation, weight, and competitiveness. This year, ten teams participated.

Team *gen*, made up of members of the Aqua Lab from the Society for the Study of Robotics, an official Tokyo Tech student club, finished third in this division with their robot *gen4*.

Team 18 from the Aqua Lab also participated with their robot *Water gun Taro*, as did a Tokyo Tech High School of Science and Technology team with their robot *Drepana Unit 1*.

AI Challenge Division

In this division, teams develop algorithms and compete based on processing ability. These algorithms are applied to autonomously controlled robots that attempt to burst underwater balloons spread around the course. Team can use either original robots or ones provided in advance by the organizers. Points are awarded for course performance and presentation. This year, seven teams participated, including one from the Aqua Lab with their robot *Mark3*.

Junior Division

This division is for middle school students, high school students, and technical school students only. Teams are provided with a robot kit that they must assemble and remodel as they see fit. Robots then compete by collecting cans submerged in water within a time limit. This year, 12 teams participated

Team Piyopiyo Soul from Tokyo Tech High School of Science and Technology finished second in this division.

Team *gen*, Aqua Lab, Society for the Study of Robotics, Tokyo Tech

Third place in Freestyle Division

- Takeshi Moriya, 3rd year, Mechanical Engineering
- Hayato minamoto, 3rd year, Mechanical Engineering
- Takamaru Saito, 3rd year, Mechanical Engineering
- Yusuke Mizukami, 1st year, School of Science

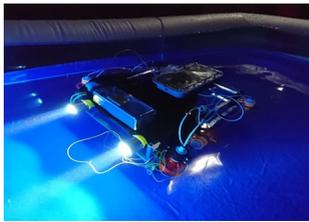
Comments from team leader Takamaru Saito

Our robot was originally developed as an autonomous underwater vehicle that can withstand long distances and long use periods stably. We tried to keep the body slim to reduce resistance in water. When a robot arrives at its destination, its operators need to be able to insert a variety of components. Therefore, we created a mechanism that allows the automatic opening and closing of the top cover. We also created an automatic draining mechanism.

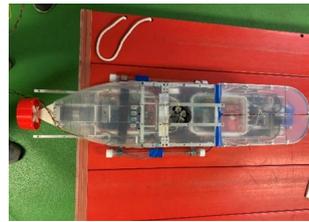
Waterproofing is obviously an important technology in underwater robots, as elements such as the battery, motor, and electric circuits must be protected. Shielding the component that transmits power from the motor to the propellers is particularly challenging, as the rotating shaft straddles both parts that require waterproofing, and parts that do not. To solve this, we applied magnetic coupling to avoid physical mechanical connection.

Our robot was fully tweaked on the day of the contest, and our pilots operated the mechanisms with outstanding timing. The shapes of the fuselage and screw were designed based on knowledge we had gained at Tokyo Tech. Overall, it was an excellent experience, as we were able to apply what we had learned during our lectures. I am very pleased that our robot was so highly evaluated.

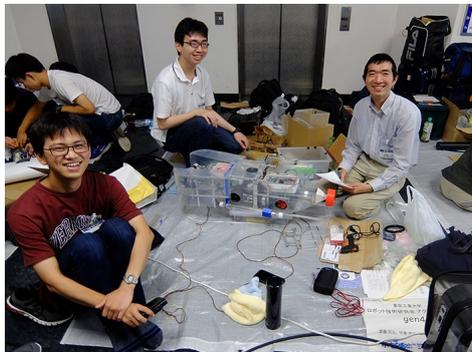
In the future, we aim to develop robots that can work underwater, for example with the use of a robot arm, and underwater robots that can accomplish tasks through autonomous control.



Mark3 competed in AI Challenge Division



gen4 placed 3rd in Freestyle Division



Team gen members during maintenance break

Team Piyopiyo Soul, Tokyo Tech High School of Science and Technology Runners-up in Junior Division

- Ryoya Sato, 1st year, Department of Science and Technology
- Kokoro Ikeda, 1st year, Department of Science and Technology
- Midori Okabe, 1st year, Department of Science and Technology
- Yui Kakuta, 1st year, Department of Science and Technology
- Kanon Yamaguchi, 1st year, Department of Science and Technology
- Issei Hamanaka, 1st year, Department of Science and Technology
- Shotaro Hirano, 1st year, Department of Science and Technology
- Ryutarō Kawashima, 1st year, Department of Science and Technology

Comments from team leader Ryota Sato

Our team members are all students of Class C in Year 1. We were able to assemble the robot just fine, but could not get it to move for days on end. Two days before the actual competition, we finally achieved movement. On the day of the contest, everyone contributed to our team strategy and the adjustments required on the robot, and we advanced to the finals. There, only one of our motors worked, and we were forced to settle for second place.



Second-place robot in Junior Division

During the design process, we learned that we could solve difficult problems using teamwork and the programming skills we had learned at school. Next year, we hope to win the competition by applying new ideas that reduce failures and achieve better control our robot.



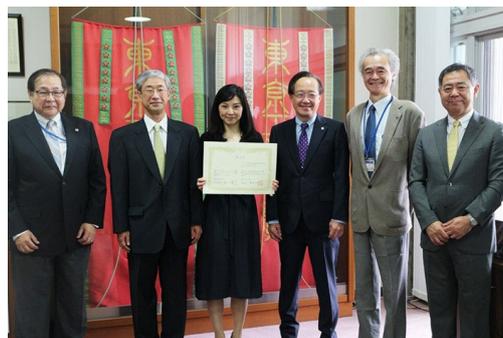
Team Piyopiyo Soul, runners-up in Junior Division

Society for the Study of Robotics

Tokyo Tech's Society for the Study of Robotics, an official student club, focuses on the research and development of robotics, including circuit and software technology. Currently, the club has 184 members, who all have access to a milling machine, lathe, oscilloscope, and other equipment. While many focus on robot creation, club members are free to create whatever they want. The environment is such that even students with no prior knowledge can learn design-related mathematical aspects and circuit-related practical methods from scratch.

(Tokyo Tech news published : Public Relations Section • November 11, 2019)

First Hitotsubashi student completes Tokyo Tech AGL course



(from left) Nakamura, Nunoi, Watanabe, Masu, Satoh, Yamada

In September 2019, Mayu Watanabe became the first Hitotsubashi University student to complete

Tokyo Tech's Academy for Global Leadership (AGL) program. A ceremony to recognize her achievements was held on October 15 by President Kazuya Masu in the presence of Provost and Executive Vice President Isao Satoh, AGL Director Satoshi Nakamura, Tokyo Tech Academy for Leadership (ToTAL) and former AGL Professor Keisuke Yamada, and Professor Chihiro Nuno from the Hitotsubashi University Graduate School of Law.

AGL's Global Leadership Education Program, established in 2011 and backed by the Japanese government as a Program for Leading Graduate Schools, comprehensively trains students into highly skilled international leaders alongside their chosen master's and doctoral programs. Numerous Hitotsubashi students have studied courses offered by the demanding program, but Watanabe is the first such student to complete all prescribed AGL credits in addition to her doctoral degree requirements.



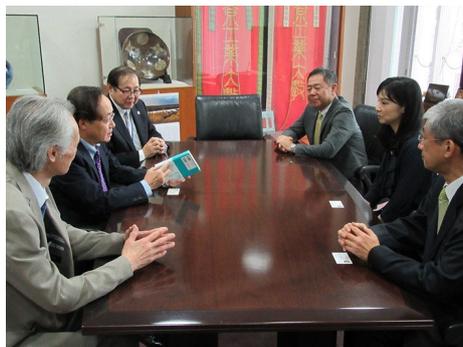
Watanabe (left) receiving AGL completion certificate from Masu

After accumulating work experience, Watanabe enrolled in the doctoral program at Hitotsubashi University Graduate School of International Corporate Strategy (ICS). However, she also wanted to explore the trinity of business, science and technology, and government while taking full advantage of the broad perspectives shared at AGL by Tokyo Tech faculty and students. Hence, she joined the academy in the fall of 2013 as a member of the third cohort.

In addition to equipping her with knowledge regarding various leadership philosophies, the AGL journey took Watanabe around the world, including to Stanford and Harvard Universities for training programs. In the future, she aims to incorporate ideas from technology and design to prevent, manage, and resolve conflicts, and to exercise her leadership abilities in the field of online dispute resolution.

"This is the first time that a student from Hitotsubashi University has completed the AGL program — a truly outstanding achievement," Masu commented during the ceremony. "While completing your doctoral studies at Hitotsubashi University, you also completed a program here at Tokyo Tech, and you should be proud."

"I am delighted to witness the first Hitotsubashi University student to graduate from the AGL program, a collaboration between Tokyo Tech and Hitotsubashi University. Keep doing what you are doing and you will change the world," Satoh said.



Watanabe in discussion with Tokyo Tech president and other ceremony participants

(Tokyo Tech news published : Academy for Global Leadership Administration Office • November 5, 2019)

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