

Japan-Asia Youth Exchange Program in Science Promotion Office

Sakura Science Plan

2014 Survey Report of Special Course
for Senior High School Students



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独立行政法人

科学技術振興機構

Japan Science and Technology Agency

Sakura Science Plan

“Report of Special Course for High School Students in 2014”

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Sakura Science Plan “Special Course for High School Students”

Counselor to the President, Japan Science and Technology Agency (JST)
Director, Japan-Asia Youth Exchange Program in Science Promotion Office

Kazuki Okimura



The Sakura Science Plan assists Asian youth (high school students and adults under 40 years old) by nurturing their aspirations in science and technology, improving their levels of knowledge in these fields, and contributing to the development of their home countries and Asia as a whole. We expected that these objectives would be achieved by inviting them to our country and providing them with access to Japan’s science and technology.

This project features a grass-root movement in principle. Participating universities and research institutions express their willingness to invite and accept applicants from designated universities and research institutions in Asia. Therefore, we expect that they will establish, strengthen, and continue the collaborative relationships

initiated. This project has numerous supporting bases across the country, and the number of activities is expectedly increasing. Since it is difficult for high school students to initiate and conduct this kind of a grass-root movement, JST has launched the “Special Course for High School Students” to invite them to Japan.

In designing this course, we aimed to nurture the dreams of Asian high school students to become scientists. For this purpose, we made every efforts to prepare the best program in Japan.

First, students have a chance to learn about Japan’s cutting-edge technology at institutions such as the Japan Aerospace Exploration Agency, Japan Agency for Marine-Earth Science and Technology, RIKEN, National Institute of Advanced Industrial Science and Technology, National Institute for Materials Science, High Energy Accelerator Research Organization, and National Museum of Emerging Science and Innovation (Miraikan).

Second, students have the opportunity to learn from top researchers in Japan including Nobel Prize recipients such as Dr. Hideki Shirakawa, Dr. Ryoji Noyori, Dr. Akira Suzuki, Dr. Ei-ichi Negishi, Dr. Toshihide Maskawa, Dr. Akito Arima (former President of the University of Tokyo, former Minister of Education and Director General of Science and Technology Agency.) and Dr. Mamoru Mohri, Chief Executive Director of the National Museum of Emerging Science and Innovation.

Third, students visit and learn at prestigious universities in the metropolitan area such as the University of Tokyo, Tokyo Institute of Technology, University of Tsukuba, Tokyo University of Science, Keio University, and Waseda University.

We proposed each Asian country to participate in the program, and excellent students from the most competitive high schools who had won awards in various contests, took part in this program. They are the future leaders of their home countries.

It was a surprise to the lecturers, including the Nobel Prize recipients, that the students asked advanced questions mostly in English. There were lively exchanges of questions and answers at all places the groups visited.

High school students in the Southeast Asia group forged friendships across borders. Some of participating Japanese students were stimulated by these overtures.

We conducted a survey of participated students and found out the followings:

- Almost all students regarded Japanese researches as advanced, and they recognized the prominence of Japanese universities.
- Almost all students were surprised by the kindness of Japanese people, cleanliness of cities, and sophistication of culture; in other words, they were impressed with Japan and its people.
- Almost all students impressively learned from those Nobel laureates about the difficulties to continue experiments and researches, the importance to become fond of doing researches, to keep the dream to become a researcher, and to hold the confidence and pride as an Asian.

Although the program was planned and implemented in only two months, and there must be some insufficiencies, we believe that most of the objectives were accomplished with the assistance of those who have supported the program. Therefore, we would like to express our sincere appreciation for the hard work of those who were involved with the implementation. Additionally, we would like to express our sincere gratitude to the participating students and teachers from each country (who endured extremely hot weather) and to the respective institutions that sponsored their participation. Though this program is designed to be beneficial to Asia’s science and technology, we are convinced that it also contributes substantially to the internationalization of Japan and Japanese universities. With your assistance, we hope to build on this experience and improve the program. (August 25, 2014)

271 Asian High School Students Conduct Scientific Exchanges

Program of Special Course for High School Students in Sakura Science Plan (July 20-August 8, 2014)

Asian high school students enjoy the short-term, intensive study program

The 271 participated high school students from nine Asian countries were invited to attend the Special Course for High School Students. In record high temperatures, 294 participants (including the accompanying teachers) visited universities, research institutions, and companies in the metropolitan area and gained numerous ideas and impressions from special lectures by Nobel Prize recipients before leaving for their home countries.

On the evening of July 20, 80 high school students from China arrived in Japan as the First group. They stayed at the JICA Tokyo International Center in Shibuya, Tokyo. After being greeted via a welcome message from Mr. Haruo Kurasawa, representing the Japan-Asia Youth Exchange Program Promotion Office, Japan Science and Technology Agency (Sakura Science Plan), students attended an orientation. It was late evening when they finally settled in their rooms.

From the second day, they visited universities, research institutions, and companies and attended special lectures. In addition to their busy program schedule, they observed Japanese culture and took a quick tour of the Imperial Palace, the National Diet Building, Asakusa, Harajuku, and Akihabara before leaving for home after the short-term and intensive one-week study program.

All students of the Second Group were from China, and the Third Group was the mixture of the students from eight Asian countries. The programs for these groups were the same as that of the First group. Universities, research institutions, and companies involved were extremely supportive to host Asian high school students over the three-week period. Messages left by participated students were filled with gratitude.

Students of the First Group arrive in late evening

The First Group consisted of 80 Chinese high school students and 6 accompanying teachers. Without showing weariness from their journey, they checked in at their accommodations immediately after getting off the bus. Then, they proceeded enthusiastically to the orientation for the program.

The Second Group consisted of 71 Chinese high school students and 5 accompanying teachers. They arrived in Japan on the evening of July 27.



Left: Students pose for commemorative photo at the airport.

Right: Eisuke Futamura, JST Director, greets students with, "We warmly welcome you to Japan."

On August 3, the 120 high school students of the Third Group arrived one after the other from the Philippines, Mongolia, Cambodia, Malaysia, Indonesia, Vietnam, Republic of Korea, and Thailand.



Left: Students arrive from Mongolia. Right: Hats and parasols are offered to prevent heatstroke.

Part 1 High School Student Special Course Program

First Group (from China): 80 high school students, 6 accompanying staff

Schedule (7/20–7/26)	Course	A (44 invitees)	B (42 invitees)
7/20 (Sun)	PM	Arrive in Japan Attend orientation	
7/21 (Mon) Holiday	AM	■ Visit Tsukuba Space Center, Japan Aerospace Exploration Agency (JAXA)	■ Visit Edo-Tokyo Museum
	PM	■ Visit Edo-Tokyo Museum ■ Visit Imperial Palace	■ Attend experimental workshop by Dr. Hideki Shirakawa (Nobel Prize recipient) ■ Visit Imperial Palace
7/22 (Tue)	AM	■ Visit Japan Agency for Marine-Earth Science and Technology (JAMSTEC)	■ Visit HQ of RIKEN (Wako City) ⇒ Greeting from President, Ryoji Noyori (Nobel laureate) ⇒ Visit Nishina Center for Accelerator-Based Science (RIBF) ⇒ Observe supercomputer
	PM		■ RIKEN BioResource Center (Tsukuba)
7/23 (Wed)	AM	■ Visit National Museum of Emerging Science and Innovation (Miraikan) ⇒ Observe ASIMO performance ⇒ Meeting with Chief Executive Director Mamoru Mohri (former astronaut)	
	PM	■ Visit Kao Museum ■ Visit Asakusa ■ Board waterbus (Asakusa → Hinode Pier) ⇒ Tokyo Sky Tree (from boat)	
7/24 (Thu)	AM	■ Attend the lecture by Dr. Ei-ichi Negishi (Nobel laureate) ■ Participate in luncheon meeting with students of Tokyo Tech High School of Science and Technology	
	PM	■ Visit Tokyo University of Science (Kagurazaka Campus) ■ Visit Akihabara	
7/25 (Fri)	AM	■ Visit Institute of Industrial Science, the University of Tokyo (Komaba Campus)	■ Visit the University of Tokyo (Hongo Campus) ⇒ Lunch at school cafeteria
	PM	■ Visit Meiji Shrine and Harajuku ■ Attend opinion meeting ■ Attend farewell party	
7/26 (Sat)		Leave Japan	

Second Group (from China): 71 high school students, 5 accompanying staff

Schedule (7/27-8/2)	Course	A (33 invitees)	B (43 invitees)
7/27 (Sun)	PM	Arrive in Japan Attend orientation	
7/28 (Mon)	AM	<ul style="list-style-type: none"> ■ Visit Tokyo Institute of Technology (Ookayama Campus) ⇒ Lunch at school cafeteria 	<ul style="list-style-type: none"> ■ Visit Japan Agency for Marine-Earth Science and Technology (JAMSTEC)
	PM	<ul style="list-style-type: none"> ■ Attend lecture by Dr. Akira Suzuki (Nobel Prize recipient) ⇒ Students from Chiba Prefectural Funabashi Senior High School and Kashiwa Senior High School also participate ■ Representative students interact with the ambassador's wife, Mrs. Wang Wan (Counselor, Friendship Exchange Dept.) of the Chinese Embassy in Japan 	
7/29 (Tue)	AM	<ul style="list-style-type: none"> ■ Breakfast with Dr. Ei-ichi Negishi (Nobel Prize recipient) and his lecture 	
		<ul style="list-style-type: none"> ■ Visit the University of Tokyo (Hongo campus) ⇒ Lunch at school cafeteria 	<ul style="list-style-type: none"> ■ Visit Institute of Industrial Science, the University of Tokyo (Komaba Campus)
	PM	<ul style="list-style-type: none"> ■ Visit Kao Museum ■ Visit Akihabara 	
7/30 (Wed)	AM	<ul style="list-style-type: none"> ■ Visit the Disaster Prevention Experience-Learning Facility "Sona Area Tokyo" 	<ul style="list-style-type: none"> ■ Visit Waseda University (Nishi-Waseda Campus)
	PM	<ul style="list-style-type: none"> ■ Visit National Museum of Emerging Science and Innovation (Miraikan) ⇒ Observe ASIMO performance ⇒ Meeting with Chief Executive Director Mamoru Mohri (former astronaut) ■ Board waterbus (Odaiba Seaside Park → Asakusa) ⇒ Tokyo Sky Tree (from boat) ■ Visit Asakusa 	
7/31 (Thu)	AM	<ul style="list-style-type: none"> ■ Visit National Institute of Advanced Industrial Science and Technology (AIST) in Tsukuba ⇒ Visit Science Square Tsukuba ⇒ Visit Geological Museum 	
	PM	<ul style="list-style-type: none"> ■ Visit High Energy Accelerator Research Organization (KEK) in Tsukuba 	<ul style="list-style-type: none"> ■ Visit National Institute for Materials Science (NIMS) in Tsukuba
8/1 (Fri)	AM	<ul style="list-style-type: none"> ■ Visit Edo-Tokyo Museum ■ Visit the Imperial Palace 	
	PM	<ul style="list-style-type: none"> ■ Visit Meiji Shrine and Harajuku ■ Attend opinion meeting ■ Attend farewell party 	
8/2 (Sat)		Leave Japan	

Third Group (Indonesia, the Republic of Korea, Cambodia, Thailand, Philippines, Vietnam, Malaysia, Mongolia):**120 high school students, 12 accompanying staff**

Schedule (8/3–8/9)	Course	A (44 invitees)	B (44 invitees)	C (44 invitees)
8/3 (Sun)	PM	Arrive in Japan Attend orientation		
8/4 (Mon)	AM	■ Visit Japan Agency for Marine-Earth Science and Technology (JAMSTEC)	■ Visit the University of Tokyo (Hongo Campus) ⇒ Lunch at school cafeteria	■ Visit Institute of Industrial Science, the University of Tokyo (Komaba Campus)
	PM		■ Visit Tokyo Institute of Technology (Ookayama Campus) ■ Visit Edo-Tokyo Museum ■ Visit the Imperial Palace	
8/5 (Tue)	AM	■ Attend lecture by Dr. Toshihide Maskawa (Nobel laureate) ■ Participate in luncheon meeting with students of Tokyo Metropolitan Toyama Senior High School		
	PM	■ Visit Kao Museum Visit Asakusa ■ Board water bus (Asakusa → Hinode Pier)	■ Visit Kao Museum ■ Visit the Tokyo Sky Tree and Akihabara	
8/6 (Wed)	AM	■ Visit National Museum of Emerging Science and Innovation (Miraikan) ⇒ Interact with Chief Executive Director, Mamoru Mohri (former astronaut) ⇒ Observe ASIMO performance		
	PM	■ Visit Keio University (Yagami Campus) ■ Visit Akihabara	■ Visit Panasonic Center Tokyo ■ Board water bus (Odaiba Seaside Park → Asakusa) ■ Visit Asakusa	
8/7 (Thu)	AM	■ Visit University of Tsukuba	■ Visit National Institute for Materials Science (NIMS) (Tsukuba)	
	PM	■ Visit National Institute of Advanced Industrial Science and Technology (AIST) in Tsukuba ⇒ Visit Science Square Tsukuba ⇒ Visit Geological Museum ■ Visit Tsukuba Space Center, Japan Aerospace Exploration Agency (JAXA)		
8/8 (Fri)	AM	■ Attend lecture by Dr. Akito Arima and Lunch		
	PM	■ Visit Meiji Shrine and Harajuku ■ Attend opinion meeting ■ Attend farewell party		
8/9 (Sat)		Leave Japan		

Part 2 Activity Report

(1) Universities

<the University of Tokyo>

Favorable impressions of cutting-edge academic research

Visits to the University of Tokyo's Hongo Campus and Institute of Industrial Science (July 25 & 29 and August 4, 2014)

Students Impressed with the broad support system for foreign students

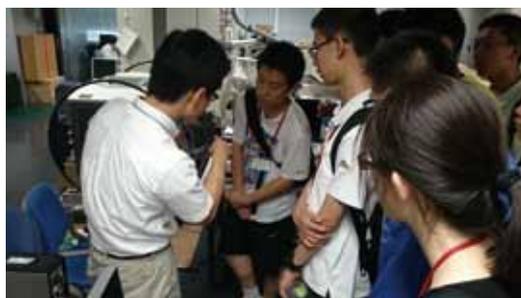
During the tour of the University of Tokyo's Hongo Campus and Institute of Industrial Science, students were impressed with many research explanations. A number of research buildings stand side by side in the vast Hongo Campus, and in the Faculty of Science building, participants received an overview regarding the Faculty of Engineering and the Faculty of Science. The presentation was conducted in English and Chinese using videos and PowerPoint to introduce the fact that the University of Tokyo's research has been evaluated as one of the best among universities worldwide based on publications of international institutions. The presentation also included detailed information about areas of expertise in undergraduate and graduate levels and the support system for foreign students.



Students listen to explanations of research outcomes, organizations, and the international student support system of the University of Tokyo.



The explanation of zeolite structure was easy to understand, receiving the students' attention.



Students appear engaged in this lecture on fine tuning of semiconductor circuits.

Since the University of Tokyo is one of the most prestigious institutions in Japan, its organizations, research themes, research performance, and international reputation are all attractive, so the visited students leaned forward with great interest to listen to the presentation. Detailed explanations about their receiving system for foreign students and support system for post-doctoral and career paths were provided and well received by them.

Then, the students visited laboratories of the Faculty of Science and the Faculty of Engineering. Associate Prof. Toru Wakihara, at the Faculty of Engineering used a model to describe research regarding zeolite materials. The students listened to the easy-to-understand explanations with great interest. They showed their interest especially in the research and development of zeolite for clean automobile emissions, and they asked questions actively. Also, a Chinese researcher working at the laboratory conducted a tour in Chinese to show the Super Clean Room. Participants seemed to be astonished to see the facility, which has been a hub for nanotechnology research and microstructural analysis and processing, etc. Research involving fine tuning of semiconductor circuits was also introduced, and the students asked several questions.

Students also visit Institute of Industrial Science, the University of Tokyo

The group also visited Institute of Industrial Science at the Komaba Research Campus. Mr. Inagaki of the International Exchange Team greeted participants in Chinese in the friendly atmosphere and the group watched a DVD introducing the institution of Industrial Science. Later, the 40 students were divided into four groups to visit different laboratories where

researchers provided details of their investigations. In particular, the high school students showed a keen interest in "Research of 3D information visualization and search technology toward large-scale longitudinal network data" described by Associate Prof. Masahiko Ito.

Although participated Chinese high school students previously had imagined that Institute of Industrial

Science was an uptight place, their perceptions seemed to change, and they described it as “a fun place to study the subject we desire” as they toured the facility. Through the visit in the institution, students were able to comprehend Japan’s top-level research status and deepen their interest in technology. Most were impressed with the prominence of Japan’s research technology and Japanese researchers who devote themselves to their field.

<Tokyo University of Science>

The Thrills of “Akiyama Mathematics Magic” at Mathematical Experience Plaza Visit to Tokyo University of Science, Kagurazaka Campus (July 24, 2014)

Students listen to welcome message and lecture in a theater

In the afternoon of July 24, Chinese high school students visited Tokyo University of Science, Kagurazaka Campus. First, they were guided to a lecture theater to hear a welcome message from the dean of the Faculty of Science, Mr. Hiroshi Yabe, and watched a DVD presentation introducing the university. Next, Prof. Jin Akiyama, a mathematician, explained the academic exchange activity with China in English and performed math magic to combine cubes. He entertained the high school students by forming and controlling the cubes when an image of a panda appeared out of nowhere.

Then, the group moved to the Museum of Science and looked at the exhibits related to machines from the Edo period. The students seemed very interested in the historic machines and the transition from manual calculators to computers. A permanent exhibit known as the Mathematical Experience Plaza is located in the museum’s basement where Prof. Akiyama lectured on “Akiyama Magic.”

He drew students’ interests by performing a magic trick in which he used scissors to cut and transform a cubic triangular pyramid into slips of paper that he assembled as a jigsaw puzzle. He also explained that parabolic antennas were designed using a quadratic function.



Left: Students attend the welcome ceremony held at a lecture theater. Right: “Akiyama Magic” attracts students.

Students visit laboratories in Chemistry Building and observe cutting-edge chemical research

Finally, the group moved to the Chemistry Building and visited several laboratories where they observed explanations by researchers about the status and themes of advanced chemical research. Following the explanation of recent research projects, students observed the actual operation of analytical equipment, which seemed to inspire them.

Many Chinese students at the university attended as guides and interpreters. They opened up quickly and developed a close relationship with the students.



Left: Students gathered for a commemorative photo in front of the Museum of Science.
Right: Program participants observe advanced research at a laboratory in the Chemistry Building.

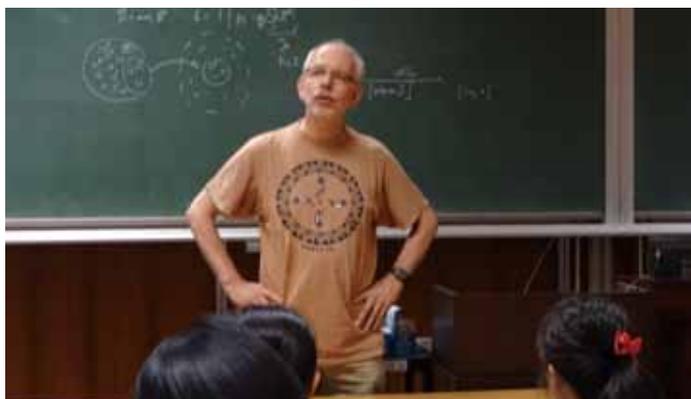
<Tokyo Institute of Technology>

Workshop at Earth-Life Science Institute Visit to Tokyo Institute of Technology (July 28 and August 4, 2014)

Students join the “Workshop at Earth-Life Science Institute” at Tokyo Institute of Technology

The Second Group of Chinese high school students visited the Earth-Life Science Institute (ELSI) of Tokyo Institute of Technology in the morning on July 28. ELSI is a new laboratory that opened in December 2012, which carries out studies on the birth of the earth and the origin of life. After attending an orientation about Tokyo Institute of Technology and ELSI, the students joined an international workshop.

When they joined in at the workshop, visiting researchers from various countries such as Italy, Spain, and U.S. were engaged in an enthusiastic discussion with Prof. Piet Hut, a councilor at Tokyo Institute of Technology and an astrophysics professor at the Institute for Advanced Study, Princeton University. In his lecture, he explained why researchers are studying the earth and the evolution of science study. Because the lecturer presented the material in a way that was easy to follow and interesting, we almost felt like we were participating in Harvard University’s “Justice course” with Prof. Michael Sandel.



Prof. Hut lectures to Chinese students

The students were inspired by the lecture and asked the professor many questions. Even afterwards, they surrounded the professor and fellows. It looked as if a workshop with Chinese high school students had also started. They were bursting with curiosity, with their eyes shining, about the unknown field of study.



Chinese students appear thoroughly engaged, as demonstrated by their numerous questions for Prof. Hut.



Students pose for a commemorative photo with Prof. Hut and other researchers.

In the Third Group, 80 high school students from Indonesia, Vietnam, the Republic of Korea, and Thailand also had the opportunity to visit Tokyo Institute of Technology. Following a brief introduction to the university, they were divided into two groups and learned about research by a DVD presentation at the Environmental Energy Innovation Building. Further, they observed Tokyo Tech’s TSUBAME supercomputer and visited the energy conservation experiment building. Following their tour, they gathered in the courtyard for commemorative photos.



Students learn about the attractions at Tokyo Institute of Technology



Students hear the secret story behind the development of the TSUBAME supercomputer.



High school students from the Republic of Korea and Thailand pose for a commemorative photo.



High school students from Indonesia and Vietnam gather for a commemorative photo.

<Waseda University>

Student Interested in a Variety of Science Lectures in English Visit to Waseda University, Nishi-Waseda Campus (July 30, 2014)

International program IPSE offers classes in English

When 40 high school students from China visited Waseda University, Nishi-Waseda Campus, they were greeted with an overview of the university by Mr. Shen Xiangcong of the International Office, International Affairs Division.

Next, Associate Prof. Mark Bowen, a faculty member at Science and Engineering and representative of the International Program in Science and Engineering (IPSE), described the program, which had its start in 2010. He advised, “Here, you can take a wide variety of science and engineering classes including mathematics, physics, and computer science—in English. We are one of the best universities in Japan to offer English-based science classes.” Since the Chinese students could understand English, they listened to the explanations from the Professor enthusiastically. The university also offered specific information about the entrance examination, scholarships, and dormitories for the international courses offered by the Faculty of Science and Engineering.



Left: Associate Prof. Mark Bowen explains the international program at the Faculty of Science and Engineering.
Right: International student, Mr. He, explained about campus life.

Animation leads to study in Japan

Mr. Ding, a fourth-year student in the School of Fundamental Science and Engineering, and Ms. Wei, a third-year student in the School of Creative Science and Engineering—both IPSE participants—talked about their classes and campus life. When Mr. Wei explained that he decided to study at a Japanese university because “I have been a fan of the animation ‘Doraemon’ very much since I was little,” Chinese students who also like animation

laughed understandingly.

Finally, Mr. He, a first-year student in the School of Advanced Science and Engineering, told the high school students why he decided to study chemistry at Waseda University. Citing the words of Tolstoy, “Without ideal, there is no secure direction; no direction, no life,” he ended his speech with the message that it is important to choose a university considering the future thoroughly.

Participated students asked fairly specific questions about curriculum and the impact of high school test results on the entrance examination. At the end of the visit, representative students expressed their thanks.



Left: High school students ask specific questions about the explanations.
Right: Waseda's foreign students pose for a commemorative photo.

<Keio University>

Excitement over state-of-the-art machine tools

Visit to Keio University, Yagami Campus

(August 6, 2014)

Students visit the Manufacturing Center

The 40 members of TeamA of the Third Group (from the Philippines, Mongolia, Cambodia, and Malaysia) visited Keio University, Yagami Campus. The Faculty of Science and Technology in this campus celebrates its 75th anniversary this year. After they listened to the history of the university, students became quite interested learning the image of the founder Yukichi Fukuzawa is printed on 10,000 yen notes and that Keio university has produced two astronauts. The group toured the Manufacturing Center, which was inaugurated in January 2014.



Left: Students listen to an explanation about the 75th anniversary of Keio University's Faculty of Science and Technology.
Right: Prof. Aoyama, the Faculty of Science and Technology draws student interest at the Manufacturing Center with his clear explanations.

Students ask numerous questions at the machine tool demonstration

Various machine tools for metallic materials processing have been installed at the Manufacturing Center, and the array of machines resembles a factory. Overwhelmed by the site, the high school students, with their eyes shining, enjoyed the clear explanations and demonstrations by Prof. Aoyama.

They asked one question after another; for example, a student inquired, “Why is water running while the machine is moving?” Because of their interest in science, it was not surprising that students exhibited considerable interest in manufacturing. They also paid attention to university students in work clothes, who were processing machine parts.

Later, the group returned to the classroom, and listened to the explanations from overseas (graduate) students

from Thailand and Myanmar about their research areas and their life in Japan. Specific questions such as “How did you get your scholarship?” were asked, and some students seemed interested in studying at Keio University in the future.



Left: Students show interest in university students as they operate machinery.
Right: Students from ASEAN countries talk about their research areas and university life.

<University of Tsukuba>

Welcome from overseas university students from their home country Visit to University of Tsukuba (August 7, 2014)

Forty high school students from the Philippines, Mongolia, Cambodia, and Malaysia visited University of Tsukuba. First students were guided to a room where they received an overview of University of Tsukuba and learned that a number of overseas students are enrolled there.

In the session, a presentation entitled “Why study in Japan?” was given by Dr. Louis J. Irving. He described the high-level educational system in Japan and identified specific advantages of studying at University of Tsukuba. Later, Tsukuba’s overseas students from the Philippines and Cambodia joined the welcome meeting and talked freely with students from their countries.



Left: High school students enthusiastically listen as they are told of the advantages of studying at University of Tsukuba.
Right: Students are welcomed by overseas university students from their home country.

Later, the group moved to the large-scale algal culture field, where research on the effective cultivation of large amounts of algae is conducted. Here, researchers described cultural techniques.



Students visit a large-scale algal culture field under the blazing sun.

Students view the intermediate product of dried algae.



Students view the large-scale algal culture field.



Overseas students from Cambodia tour the campus.

(2) Related Institutions: 10 institutions

<Japan Aerospace Exploration Agency (JAXA)>

Amazed to hear the roar of a rocket launch

Tsukuba Space Center, Japan Aerospace Exploration Agency (JAXA)

(July 21 and August 7, 2014)

At the Tsukuba Space Center, the group of high school students from China listened to a presentation on the history of space development in Japan, the framework of rocket development, and the history of rocket launching. The group then moved to the Space Dome where they observed various space rockets, as well as observational equipment and instruments.

The lunar orbiter “Kaguya” is the first Japanese lunar probe to closely explore the moon surface. The high school students appeared surprised by its size. The students also showed a tremendous interest in the array of exhibited satellites that Japan has developed, including the engineering test satellite “Orihime/Hikoboshi.”

In addition, visitors can view a full-scale model of the “Kibou” experimental module attached to the currently-operated International Space Station. The students expressed interest in this experimental module’s sophisticated techniques. Later, the group moved to the next facility to experience the explosive sound of a rocket launch. The students were especially interested in the difference among the various rocket engine sounds as heard from a distance.

The students’ impressions are as follows:



Jiang Ziyang (First grade student of Pengzhou No.1 High School, Sichuan)

I was excited to see right in front of me the actual H-II rocket which was exhibited outside. It was amazing how the rocket launch sound recorded three kilometers from the Tanegashima site differed based on the rocket’s type. I was also impressed by beautiful green in Japan that I observed from the highway on the way to Tsukuba Space Center from Tokyo.



Du Xuanlin (First grade student of Dalian Yuming Senior High School, Liaoning)

I found it interesting that the rocket launch sounds and the volume differed depending on the rocket’s type. I was interested in the heat insulator’s golden metallic foil that protects the actual satellite exhibited in the Space Dome (Note: This comment was made in response to an explanation of how various measures are taken so that a satellite can tolerate unusual vibrations or temperature changes; this occurred after listening to the launch sound and before observing this display.). I wish we had had an opportunity to learn more about this.



The Chinese high school students learned about Japan's space development.



The students observed models of successive rockets.



The students were excited to see the actual satellite.



The students observed the actual rocket engine.

<Japan Agency for Marine-Earth Science and Technology (JAMSTEC)>

Surprised to see the “SHINKAI 6500”

Visit to Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

(July 22, 28 and August 4, 2014)

The expanse, depth, and wonder of the sea is realized

The high school students visited the headquarters of JAMSTEC in Yokosuka. First, they visited the Marine Science Museum and Technology Center and studied the “SHINKAI 6500,” a manned research submersible of which Japan is proud. Overwhelmed by the enormity, some students appeared extremely excited.

Next, the group visited the maintenance center for the autonomous underwater vehicle “Urashima.” As these were exceptional high school students majoring in math and science, they asked many pointed questions such as “What type of power is used?” and “We can find the location using GPS. How does the underwater vehicle check its location in the sea?”



The students were introduced to JAMSTEC activities.



A commemorative photo was taken inside the control room.

At the experimental high-pressure water tank exhibit, the students intently studied a 1/3 scale model of a submersible’s cabin which was crushed by a high-pressure experiment. The students showed a significant interest in the high-pressure experiment and asked many questions.

Forty high school students from the Philippines, Mongolia, Cambodia, and Malaysia also observed the “SHINKAI 6500” and the experimental high-pressure water tank.



The students took photos of water-pressure experiment using a cup noodle.



A commemorative photo was taken in front of the "SHINKAI 6500."

The students also visited the Yokohama Institute for Earth Sciences (YES) and learned about the oceans, the Earth, and the environment using a large hemispherical screen and a 3-D screen at the Earth Science Museum. In addition, they observed the "Earth Simulator," a world-class high-performance supercomputer. The students could directly experience climate change predictions, as well as the effects of global warming as analyzed by the supercomputer. In particular, they showed tremendous interest as they watched a simulation of the Tohoku earthquake and tsunamis. Most of all, the students screamed with delight when they saw the Sea in Yokosuka, as many of them were from inland China, which made them all the more excited.



The students observed the effects of global warming.



The students enjoyed taking photos against the Sea in Yokosuka.

<RIKEN>

"Be the only one, not the number one!"

Visit to RIKEN for a lecture by President Ryoji Noyori
(July 22, 2014)

Observation of superconductivity cyclotron

The students who had been invited from China visited RIKEN in Wako City, Saitama Prefecture. At Riken, a Chinese researcher served as a docent and explained nuclear structure, superconductivity cyclotron, accelerators, and the discovery of new elements. The high school students asked rather advanced questions on topics such as the principles of nuclear fusion.

The group also visited the P4 Laboratory in Tsukuba, which is one of the most high-risk laboratories for genetic modification experiments. They listened to a lecture on the collection, preservation, and provision of laboratory rats.



Both photos were taken in front of superconductivity cyclotron at RIBF Building.

To welcome the students, Dr. Ryoji Noyori, President of Riken made the following message, which impressed the high school students.

“The level of China’s science research has increased enormously, and RIKEN has collaborated with the Chinese Academy of Sciences. In the future, we would like to work not only for the development of both China and Japan but also for the development of humankind. I feel that development of sciences has gotten more competitive these days. We need to think about nature a little more cautiously.

There is a difference between receiving a gold medal at the Olympics and receiving a Nobel Prize. At the Olympics, we compete under the same conditions in the same stadium to gain a ranking. But the Nobel Prize is awarded to someone who has achieved a one-of-a-kind research result and not to someone who is number one in something. I hope you aim to be the only one.”



Students were greeted by Dr. Noyori.



A commemorative photo was taken with the president in the center.

<National Museum of Emerging Science and Innovation (Miraikan)>

Excited about “Itookashi City” and robots

Visit to National Museum of Emerging Science and Innovation (Miraikan)

(July 23, 30 and August 6, 2014)

Admire the ASIMO’s smooth movement

The high school students visited the National Museum of Emerging Science and Innovation (Miraikan) where visitors can experience the most-advanced science, technology, and the wonders of scientific phenomena. The faces of the students revealed their excitement as they observed the exhibits. It was during the summer vacation, so many Japanese children and junior and high school students were already in the museum. There also were some foreigners, so the group toured in an international atmosphere.

A young female robot named Otonaroid dressed in Kimono and sat on a chair, attracted the students. She was charming and expressive when the students spoke to her in Chinese. The students took turns sitting on the bench facing her, and enjoyed taking pictures and talking with her.

Many of the visitors gathered for the Humaroid Robot ASIMO’s performance. The students had a delightful time watching ASIMO’s smooth movements that were not robot-like and applauded his impressive actions.



Many visitors gathered for ASIMO's performance. The photo to the right is the video of "Geo-Cosmos".

Visitors are welcomed to view "Geo-Cosmos," which projects a realistic Earth shining in space; it is displayed on the large open-ceiling space that reaches from the 1st floor to the 6th floor. The students were impressed by the beautiful projection and each took pictures.

They also curiously observed the "Itookashi City", which presents an imaginary city in 2050. Some students stated, "Miraikan is very interesting, but we didn't have much time to observe things. I wish we could have had more time to look around."

Impressed by Dr. Mamoru Mohri, Chief Executive Director's speech

Dr. Mamoru Mohri, Chief Executive Director raised global issues such as the current abnormal weather, including global warming, as well as environmental problems. He appealed, "From now on, researchers need to work together, regardless of their nationalities, to address various issues. I hope that you will become researchers and contribute to humankind." He also posed many questions of the students, including "Have you ever seen a solar eclipse? Can you explain the mechanism?"; and "What do you want to be in the future? Why?"

The students asked various questions such as "Do you feel alone in space?"; "Do you believe aliens exists?" and "What is the relationship between the brain and space?" Dr. Mohri respectfully answered each of the questions. The students also nodded to his answer, "The brain is larger than space."

<Disaster Prevention Experience Learning Facility "Sona Area Tokyo">

Realizing the importance of preparing for disaster

Visit to The Disaster Prevention Experience-Learning Facility "Sona Area Tokyo"

(July 30, 2014)

Absorbing the knowledge to survive in a disaster

The visit to "Sona Area Tokyo," which was developed as a collaborative effort between the Ministry of Land, Infrastructure, Transport, and Tourism and the Tokyo Metropolitan Government, became an unusual learning experience for the "High School Student Special Course." This facility is located in the Tokyo Rinkai Disaster Prevention Park (Ariake, Koto-ku, Tokyo), which is a disaster prevention hub facility that gathers disaster information and serves as a "local disaster response headquarters" in the event of a massive disaster such as an earthquake directly hitting Tokyo area.

This is a place in which residents can raise their awareness of disasters through various experiences, education, and training; they can acquire knowledge, wisdom, techniques, and self-help and cooperative philosophies to respond to actual disasters.

The high school students from China visited "Sona Area Tokyo" on July 30. Since some areas of China are prone to earthquakes, their interest level was very high. The students joined the "Tokyo earthquake simulation 72-hour tour" in which they



could experience the flow of events using Nintendo DS, starting with the occurrence of an earthquake disaster in the Tokyo Metropolitan Area and ending with an evacuation. The students also watched an animated film that follows a young sister and brother on the day of a big earthquake. This renewed the students’ knowledge about disaster prevention, and helped them deeply realize the importance of preparing for earthquakes.



The students experienced the city after the disaster.



The students learned about disaster prevention using Nintendo DS.

There have been many earthquakes in China including the 2008 Sichuan earthquake. Since Chinese experience big earthquakes every few years, it is necessary for them to prepare for a disaster as it is for us. This became a good opportunity for the students to acquire knowledge that will be useful during a disaster.



The students watched an animated film describing a day in the life of sister and brother affected by disaster.



The students learned through various exhibits on disaster prevention.

<Kao Museum>

Experiences in the culture of cleanliness from ancient times to the present

Visits to Kao Museum

(July 23, 29 and August 5, 2014)

Public bath in the Edo era drew students’ interests

All of the students in the “Special Course for High School Students visited the Kao Museum and the Kao Corporation’s cosmetic factory in Sumida-ku, Tokyo.

Kao Museum is a unique facility that contains exhibits from Kao’s diverse creative corporate activities in the “culture of cleanliness.” It is divided into three exhibit zones: “The Culture of Cleanliness,” “Kao History,” and “Communication Plaza”. In the Culture of Cleanliness zone, hygiene practices related to bathing, laundry, household cleaning, and cosmetics were clearly presented. In particular, a model of a public bath from the Edo era was popular among students. They examined the model with keen interest by using the touch panels. Many students appeared interested in Japanese bathing culture as some countries including China, do not have a custom of soaking in a bathtub.



An Indonesian student showed interest in a public bath of the Edo era.



The students also learned about the history of Kao in a large exhibition room.

Measured their hair and skin

In the Communication Plaza, the students were interested in a measuring instrument exhibited in the Science Corner. While listening to the narrative, they enjoyed checking their skin texture and moisture levels, and measuring the thickness of their hair.

At the cosmetics factory, the group observed a cosmetics packing process. As photography was not allowed, some students keenly sketched the products packed on a conveyor in an orderly manner. When the Second Group visited, the students were disappointed as the production line was closed for maintenance.

The Kao's docents were fluent in Chinese and English and used humor in their narratives. There was laughter throughout this fun visit. Representatives from Kao commented after the visit that "it was very impressive that the students came together at the end of the tour and politely greeted the Kao staff saying, 'Thank you very much' in Japanese."



The students used one of the popular instruments to check the thickness of hair.



A student had his skin moisture-level measured.

<High Energy Accelerator Research Organization (KEK)>

Observation of the site of atomic and molecular level research using radiation light

Visit to High Energy Accelerator Research Organization (KEK)

(July 31, 2014)

In the afternoon of July 31, the Chinese high school students of the Second Group visited the High Energy Accelerator Research Organization (KEK).

To begin, the group watched an introduction video on the organization to learn about the kinds of research conducted by this institution. Next, the students observed a Belle II detector which was under maintenance and toured an exhibition room; a Chinese researcher delivered an introduction and explanation. The students easily understood the explanation as it was delivered in Chinese and many of them nodded in acknowledgement.

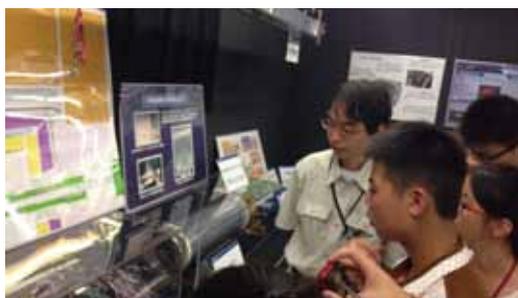


The students watched an introduction video on the High Energy Accelerator Research Organization.



The students listened to an outline explanation of the Photon Factory.

In an exhibition room, the Chinese researcher used a synchrotron model to carefully and clearly explain the principle, structure, and applicable fields of synchrotron. The students then asked rather technical questions about particle research and atomic nucleus.



The students listened to an explanation on the principle, structure, and applicable fields of synchrotron from a Chinese researcher.



Lastly, the group moved to a synchrotron radiation research facility and observed the Photon Factory. The students listened to an outline of the Photon Factory and an explanation on recent research in various fields at the atomic and molecular levels using synchrotron radiation. Synchrotron radiation is a light which is generated when an electron track moving close to the speed of light is bent by a magnetic field, and its brightness is incomparably higher than that of a light from the original light source. Furthermore, its wavelength exists in a wide range, from infrared and visible, vacuum ultraviolet rays to X-rays.

The high school students learning about these characteristics posed questions to the docent. When the time came to leave the facility, the students insisted on staying and said “we want to learn a little more.”

<Panasonic Center Tokyo>

Impressed by experiencing electric appliances of the latest design!

Visit to Panasonic Center Tokyo

(August 6, 2014)

Eighty high school students from Indonesia, Vietnam, the Republic of Korea, and Thailand visited the Panasonic Center Tokyo in Ariake, Koto-ku, Tokyo. This facility opened in 2002 as Panasonic’s comprehensive global hub for transmitting and receiving information. With a vision to realize “A Better Life, A Better World” for



each individual customer, in addition to presenting actual products and solutions, the center serves as a nucleus for communications, feedback, and direct requests from customers. Based on the philosophy “It is all about the customer,” originated by the company founder, Mr. Konosuke Matsushita, the center serves as a place to create new values. Since Panasonic is known as a world-class brand, many of the high school students showed a tremendous interest in this company and looked forward to experiencing the latest product models.

After entering the facility, a guide from Panasonic spoke about the facility and provided instructions. The students listened carefully to the details as they didn't want to miss any products exhibited in the center.



The students arrive at the Panasonic Center.



The students listened to details about the center.

In the center, there is a museum entitled RiSuPia in which visitors can interact with mathematics. A math lover, Mr. AZIZ FARHAN FATTURACHMAN (Indonesia) challenged himself on Komachizan, Japan's old math puzzle. As everybody watched, he solved the puzzle without any difficulty, receiving the admiration of his friends. Also at the Nintendo booth, Mr. LE XUAN HUNG from Vietnam murmured, "It is very hard to get Nintendo products in Vietnam. I want to get a Wii."



In addition to these exhibits, there were opportunities to watch videos of the opening ceremonies from previous Olympic Games from Los Angeles to London, and to experience actual sports equipment such as "Bubble Soccer" in which players are enclosed in bubble ball to play soccer. The students enjoyed all of the exhibits.

<National Institute for Materials Science (NIMS)>

Showing interest in highly professional research
 Visit to National Institute for Materials Science (NIMS)
 (July 31 and August 7, 2014)

Pointed questions from students surprised researchers

The high school students and accompanying teachers who visited Japan for the "High School Student Special Course" visited the National Institute for Materials Science (NIMS) on July 31 and August 7.

Eng. Dr. Seiichi Muneki of the Public Relations Office, Planning Division at NIMS provided an overview of the institution, including the history, areas of study, and NIMS' state-of-the-art laboratories. Afterwards, the students visited the laboratories and intently listened to the narratives.



The students listened to an introduction of NIMS.



The students listened to the research details.

The research topics NIMS proudly presented in the presentation ranged from a metal fatigue testing machine room (creep test) to the study of a molecular electric power cord, the study to align the crystal direction in ceramics using a strong magnetic field, the observation of cancer cells using an electron microscope and a laser microscope, and the study of organic polymer materials in a metallic shell structure.



The students visited each laboratory to observe the outcomes of advanced research.



Further, the students listened with great interest to an introduction on the recent studies including the measurement of remaining cesium and the removal of cesium created by the 3.11 nuclear power plant accident. The students continually asked questions, even though each presentation was quite technical and contained advanced research topics. At times the researchers wondered how they should answer questions and how they should explain things in a way that the students could understand. The institution’s researchers were astonished and noted, “The students were far more serious and asked more pointed questions than the Japanese high school students who occasionally visit us.”

Mr. Nguyen Huy Hoang, a second-grade high school student from Ho Chi Minh, Vietnam, stated, “It was interesting to learn about the methods and instruments for measuring a nano-sized surface. I would like to pursue the field of mathematics in the future. This was my first visit to Japan, and I was under the impression that the western culture and Asian culture were well mixed here.”

<National Institute of Advanced Industrial Science and Technology (AIST)>

Therapeutic robot “Paro” gains popularity

Visit to National Institute of Advanced Industrial Science and Technology (AIST)

(July 31 and August 7, 2014)

The National Institute of Advanced Industrial Science and Technology (AIST), one of the largest public research institutes in the country, conducts research in diverse fields of studies that support Japanese industries including “Environment and Energy,” “Life Science,” “Information Technology and Electronics,” “Nano-technology, Materials and Manufacturing,” “Metrology and Measurement Science,” and “Geology.” The student group visited “Science Square TSUKUBA” where visitors can receive an overview of the research institution and observe some of its research outcomes. Two groups comprised of high school students from nine Asian countries visited.

First, Dr. Shinichiro Morimoto (Assistant Director of International Affairs Division, Research and Innovation Promotion Headquarters) presented an overview in plain English of the institution/organization and its activities. Ms. Salamat, a researcher from the Philippines working in an energy-related division at AIST spoke about her

experience, to which the students listened intently. When asked by a student, “How did you become a researcher at AIST?”, Ms. Salamat shared the story of how she applied to the institution after graduating from a university in the Philippines.



The students listened to the overview of AIST.



“Paro” was popular with students.

At “Science Square TSUKUBA,” students were attracted to many exhibits and narratives. However, they were most fascinated by a therapeutic robot named “Paro.” The students took turns hugging the seal-shaped Paro and exclaimed “Cute!”

At an exhibit demonstrating robot technology used for entertainment, the students were excited to see a dinosaur-shaped robotic Tyrannosaurus that roared as if it is alive and walked heavily on two legs.

In addition, the high school students raced to an exhibit in which visitors could experience cutting-edge technology such as the next generation of surveillance cameras and hyper mirrors. It is a device that automatically detects abnormal action from camera footage. The system also immediately senses and automatically notifies via computer of any abnormal or hazardous situations. The students were enthused by this exhibit.



The dinosaur robots were popular among students.



The students also enjoyed the experience-based exhibits.

Next, the group visited the Geological Museum, where the director explained the mechanisms of earthquakes. There were many interesting exhibits including one that featured fossil specimens from ancient times, which the students observed enthusiastically. A commemorative stamp area was also very popular.

(3) Special Lectures by Intellectuals

<Dr. Hideki Shirakawa>

An experimental lecture in white coats

Chemistry experiment lecture by Dr. Hideki Shirakawa

(Awarded a Nobel Prize in Chemistry in 2000)

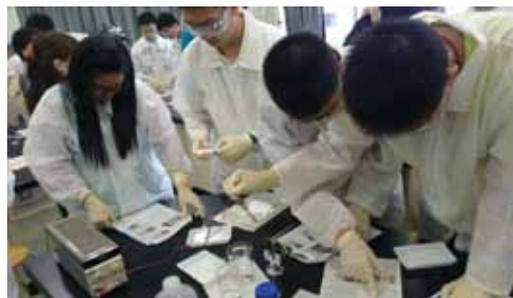
(July 21, 2014)

Learning firsthand from a Nobel Prize winner created excitement

An experimental lecture by Dr. Hideki Shirakawa, who received the Nobel Prize in Chemistry in 2000 for his discovery of conductive plastics, was held on Nishogakusha University’s Kudan Campus.

The lecture was titled “Let’s fabricate a conducting polymer EL device.” Everyone in the room wore a white coat, goggles, and rubber gloves. On the laboratory tables there were seven kinds of test reagents including ethanol and toluene as a solvent and sodium chloride as a supporting electrolyte solution, as well as experimental tools including zinc plates, stainless, plates and beakers. Dr. Shirakawa lectured using a blackboard. Later, the doctor

visited each table and directly delivered instructions to the students, much to their excitement.



Following a blackboard lecture, Dr. Shirakawa visited each experiment table and delivered instructions.

In the experiment, the students first created a conductive plastic thin film to observe its changes. Next, they entered into an experiment to create an organic EL element and produced an electron-injection layer by creating an emission layer. Finally, when they assembled an organic EL element and increased the voltage, the EL element glowed in a beautiful red, signaling that the experiment was successful. Cheers and applause broke out amongst the excited students at each table.

As the experiment's instructor Dr. Shirakawa diligently visited the tables and offered advice on the students' experimental methods, as well as delivering mini lectures. The doctor was impressed by the students, noting “Chinese high school students are active. They are at a first year university student level.”

The students' impressions are as follows:



Cao Yining (Second year student at Hangzhou Xuejun High School)

During the experiment, Dr. Shirakawa carefully taught us so that we would not become confused by difficult technical terms. Thanks to his kind instruction, I could better understand the experiment. Throughout the experiment, Dr. Shirakawa directed our procedures and fervently answered to our questions. I have seen a picture of the doctor in his younger years. Compared to that, with his white hair, Dr. Shirakawa appeared different. I couldn't help developing a heartfelt respect for him, as he has devoted his life to one research field and has led numerous technical innovations.



Yu Zhongliang (Second year student at Hangzhou Xuejun High School)

Today's biggest gain was the lecture by Dr. Shirakawa. He used various ingenious ways to convey the experimental process in a clear way. I believe that Dr. Shirakawa is truly a model scientist who continuously pursues truth without the preconceived notion that “plastic has no conductivity”.

<Dr. Ei-ichi Negishi>

The most important thing for a scientist, as well as humans, is ABC
 Dr. Ei-ichi Negishi (Distinguished Professor of Purdue University, USA)
 (Awarded a Nobel Prize in Chemistry in 2010)
 (July 24 and 29, 2014)

There were two special lectures delivered by Dr. Ei-ichi Negishi. In the First Group, ten second-grade high school students from the Tokyo Tech High School of Science and Technology joined the group of 40 high school students invited from China.

At the beginning of the lecture, the doctor told the students, “As a scientist and a human being, the most important thing is ABC.” He further explained, “A stands for Ambition to address issues ambitiously; B stands for Basic research that focuses on basics; and C stands for both Creativity and Catalyst.”

The doctor also slowly explained the background behind the discovery and details of his Nobel Prize awarded for “palladium-catalyzed cross couplings in organic synthesis,” while occasionally asking questions of the students.



Dr. Ei-ichi Negishi delivered a lecture.



Both Chinese and Japanese high school students eagerly listened to the lecture.

“It took me 34 years to receive a Nobel Prize”

In the question-and-answer session following the lecture, many Chinese and Japanese students raised their hands and asked questions in English. The questions included fairly technical ones, along with some were filled with curiosity, such as “What was your impression when you received the Nobel Prize?” and “What do you think about Chinese scientists?” The doctor politely answered each question.

At the end of the lecture, the doctor advised the students, “It took me 34 years from when I first came up with the theme until I received the Nobel Prize. If you keep dreaming, your dream will come true.” He also encouraged the students, “Your high school years are when you establish a base for your life. I hope you have a fulfilling school life.”

Mr. Masahiro Nakayama, a participating Japanese student from Tokyo Tech High School of Science and Technology was very impressed with the Chinese students’ English proficiency, noting, “I had to use my dictionary, but I could understand the lecture because I had studied English chemical terms. It was amazing how good the Chinese high school students are in English.”

The second lecture session was held after a breakfast with Dr. Negishi. During the breakfast, the Chinese students surrounded the doctor and unflinchingly asked questions in English. The doctor respectfully answered the questions and posed for commemorative photos with a beaming smile.



The students actively asked questions.



The students take a commemorative photo with Dr. Negishi.

<Dr. Akira Suzuki>

“Find something you like”

Dr. Akira Suzuki (Emeritus Professor of Hokkaido University)

(Awarded a Nobel Prize in Chemistry in 2010)

(July 28, 2014)

Dr. Akira Suzuki’s special lecture was titled “Useful examples of science for the progress of humankind: Organic synthesis using an organic boron compound.” The high school students from China as well as 30 Japanese students from Chiba Prefectural Kashiwa High School and Funabashi High School, both of which are designated as a Super Science High Schools (SSH), participated in the lecture. In front of the nearly 100 high school students, Dr. Suzuki shared that it was two academic chemistry



books written by Dr. Brown et al. that motivated him to enter the field of chemistry.

Suzuki Coupling is widely applied

Next, Dr. Suzuki used basics that students could understand to explain the technology behind the revolutionary “Suzuki Coupling,” the research theme that won him the Nobel Prize. He explained that this technology was not toxic and was easy to handle, so it can be used in a wide range of fields and products, including pharmaceutical products and TV displays, mobile phones, and personal computers.



Japanese and Chinese high school students eagerly listened to the lecture.



Dr. Suzuki also explained the origin of the Nobel Prize medal.

In addition, he used slides to carefully describe the Nobel Prize awards ceremony and the origin of the Nobel Prize medal. The students felt as if they had witnessed the actual awards ceremony.

“Please feel free to ask any questions,” Dr. Suzuki kindly said, as five or six students raised their hands at once. He offered fairly technical advice to a student who wished to learn more about the Suzuki Coupling. In response to the question “How can I keep myself motivated?” the doctor advised, “Find something you like. As long as you do something you like, you will continue to be encouraged, even if you make a mistake.”

At the conclusion of his lecture, the doctor told the students, “The level of Asian scientists is very high. I think that in the near future we will have more Nobel Prize winners not only from Japan, but also from China and other Asian countries.”



A Chinese student asked a question with a reference handout in hand.



During the question and answer period, the high school students strived to be the first to ask questions.

<Dr. Toshihide Maskawa>

“I was a bad student who didn’t do my homework in elementary and junior high school.”

Dr. Toshihide Maskawa (President of the Kobayashi-Maskawa Institute for
the Origin of Particles and the Universe of Nagoya University

(Awarded the 2008 Nobel Prize in Physics)

(August 5, 2014)

The participating 120 high school students from 8 countries in the Third Group of the High School Student Special Course and 51 students of the Tokyo Metropolitan Toyama High School attended a special lecture by the Nobel Laureate in Physics Dr. Toshihide Maskawa. His lecture was entitled “Today’s Science and Society.” In his prepared speech, Dr. Maskawa first pointed out the significant difference between the science and research in the 20th century and that in the 21st century. Research in particle physics used to be carried out on a desk 2 x 1

meters in size, but at present, it is being “carried out in experiments in a circular tunnel 100 meters underground with a circumference of 27 kilometers, where particles are made to collide together”

He told the students that we are at the threshold of such an era. However, he went on to say, “The peoples of Asia were originally farmers, and have the virtue of working well together in groups. It is now the time for us to exercise this virtue.” He encouraged the high school students by proclaiming his belief that it is the Age of Asia.

“Getting paid for doing what I like to do.”

Dr. Maskawa talked about his life, from his childhood leading up to his career as a researcher in theoretical elementary particle physics. He emphasized the importance of having freedom when young to study as one pleases, without deciding on a specialty. He himself “had no special field, and studied as he pleased as a graduate student of Nagoya University.”

When he said, “I was a bad student in elementary and junior high school because I didn’t study,” the room was filled with laughter. He also related episodes such as the circumstances of his encounter with Dr. Shoichi Sakata, a leader in elementary particle research, and how he got the idea that there are at least six kinds of elementary particle quarks while he was taking a bath.

A student from Mongolia asked whether the doctor was happy and what he thought happiness is. Dr. Maskawa replied, “Getting paid for doing what I like to do. There is no greater happiness than this,” which made the students laugh.



Dr. Maskawa replied to questions while standing.



Students friendly conversed with Dr. Maskawa.

The special lecture was followed by a lunch break and then the round-table talk, where students conversed with Dr. Maskawa in an animated manner. Meanwhile, the students of Toyama High School interacted with their counterparts from Asian countries, talking and taking photos.



High school students of various nationalities conversed pleasantly with Dr. Maskawa.



Students' pleasant chats sprung up in the room.

<Dr. Akito Arima>

Asians are capable of developing ideas and thoughts on asymmetry

Dr. Akito Arima (Former Minister of Education, Former Director-General of the Science and Technology Agency, President of Musashi Academy)

(August 8, 2014)

The Asian received the Nobel Prize in physics for the theory of symmetry.

The main theme of his lecture, entitled “Symmetries in Arts, Culture, and Nature,” was “the effect of asymmetry and symmetry on physics”.

Dr. Arima talked about symmetry and asymmetry and explained differences in how they are conceived in the

Occident and the Orient. He cited examples of each in buildings, art, and gardens to make the differences easy to understand. His main point was that while importance is placed on symmetry in the Occident, importance is placed on asymmetry in Asia, especially in Japan.

Dr. Arima explained that this difference in focus influences research in physics considerably. He presented research conducted by Chen-Ning Yang and Tsung-Dao Lee, who received the 1957 Nobel Prize in physics for their work on parity non-conservation of weak interactions in nuclei and predicted that parity symmetry could be broken.

Furthermore, he introduced “spontaneous symmetry breaking” discovered by Yoichiro Nambu and the “origin of the broken symmetry which predicts the existence of at least three families of quarks in nature” discovered by Toshihide Maskawa and Makoto Kobayashi. For their research, these three were jointly awarded the 2008 Nobel Prize in physics. Dr. Arima suggested that these physicists were open to the idea of asymmetry when developing new theories because they were Asians.

His argument that the cultural and historical aspects of a region have an influence on a branch of science such as physics made a profound impression on attending students from Asia. A number of questions were addressed to Dr. Arima, including whether it was possible to combine both symmetry and asymmetry in one’s thinking. He replied to each question, demonstrating thoughtful consideration and patience.

Dr. Arima had lunch with the young people from Asia after his lecture, and he appeared to enjoy talking with them.



Dr. Arima delivered his lecture so that high school students could understand these concepts.



Dr. Arima listened to questions from high school students.



Dr. Arima enjoyed talking with students during lunch.



The students talked animatedly about the lecture while eating.

(4) Cultural Experiences in Japan

Exploring Japanese culture on a very tight schedule

271 high school students from nine Asian countries from the First, Second, and Third Groups of the “High School Student Special Course” followed a very tight one-week schedule and left Japan with many heartfelt memories. Some students remarked, “I wanted more free time.” Though it was very short time, they did have an opportunity to explore and enjoy Japanese culture. Here are a few of the photos from their memory album.



The students enjoyed lunch in the school cafeteria.



The students experienced an escalator in Tokyo.

At Edo-Tokyo Museum, the students were amused by the historic exhibits from the Edo era. They had pictures taken of themselves on an old palanquin and one-yen taxi.



The lunch in Asakusa was a Washoku Gozen meal. It came with sashimi (sliced raw fish), so it was interesting to see if the Chinese students, for whom it was not customary to eat raw fish, would be able to eat it. When the camera was aimed at them, they posed for a photo like this. They displayed considerable youthfulness and wisdom. "Sashimi was great," they said, and most of them finished it. (Photo in left below)



Representative students from the Second Group made a courtesy visit to the Embassy of China in Japan and received a welcome from the ambassador's wife.



They also visited a major retail store. The girls and boys browsed different departments; the girls shopped in the cosmetics department, while the boys visited the machinery department.



The students from the Third Group toured Tokyo by boat.



High school students from Indonesia stopped in front of the Imperial Palace for a commemorative photo Left.
Here they posed in front of the bus prior to leaving Japan Right.

The students left Japan and arrived home safely, their hearts were filled with memories. The students parted reluctantly as the last group from the Third Group prepared to leave and took commemorative photos before boarding the bus.

(5) Closing Ceremony and Reporting Meeting (First-Third Groups)

<The First Group>

Making candid speeches on the impressive experiences in Japan

First Group Closing Ceremony and Reporting Meeting

The Reporting meeting with 80 Chinese students from the First Group was held on July 25. To open, Ms. Yuka Miyahara, Deputy Director from International Science and Technology Affairs Division, Science and Technology Policy Bureau, Ministry of Education, Culture, Sports, Science and Technology welcomed the guests, stating, “The Sakura Science Plan began just this year, and you are the first invitees. This program is to invite exceptional Asian youth to Japan, have them experience Japan’s cutting-edge science technology, and allow them to interact with Japanese youth. I expect that your visit to Japan will be an opportunity to further boost exchanges in the field of science between China and Japan, and I wish you continued success.”

Next, Mr. Ruan Xiangpin, Minister and Counselor of the Embassy of China greeted them by stating, “I am thankful for the Sakura Science Plan program, and at the same time, on behalf of the Embassy of China, I extend a heartfelt welcome to the Chinese high school students. For many years, JST has engaged in a scientific exchange between China and Japan. This program, Sakura Science Plan, is designed for young Chinese students. It is incredible to have a program like this under the current strained relations between China and Japan. The Embassy of China would like to continue to provide support for civil exchanges.”

The first student to deliver a speech was Mr. Zhang Hanzhong from Liaoning, who said, “More than anything, I was overwhelmed by ASIMO, who I viewed at the National Museum of Emerging Science and Innovation (Miraikan). When I observed his smooth movement, running, and jumping, I realized this was the fruit of cutting-edge technology.” Subsequently, Miss. Zhang Xiatong from Xian expressed her impressions, “The rows of trees along the streets are well maintained, and I heard many birds singing even in the city. China can learn a lot about environmental preservation, such as trash separation.”

Mr. Lu Jin from Dalian also commented, “I visited many advanced science technology facilities, and now I like science more and more.” Mr. Li Junzheng from Beijing remarked, “Japan and China have much in common, such as Chinese characters and the tea culture. I believe both countries should develop a better understanding; it is

disappointing that the reality is different.”

Miss Wang Xinya from Hainan expressed, “I was impressed with the details. In the morning, a woman cleaning up said good morning with a big smile, which left me happy all day.” Mr. Wang Zifan commented, “Dr. Hideki Shirakawa’s words ‘Basic research is important’ impressed me. I was struck by his spirit in thoroughly pursuing his studies.” Mr. Liu Fengxin commented, “I obtained knowledge about many topics, from space to underwater.” The high school students presented their outcomes from different perspectives.

Following the meeting, Mr. Fumiaki Takahashi, a senior fellow at JST China Research and Communication Center, awarded certificates of completion to the students, and the First Group of the week-long “High School Student Special Course” program came to an end.



Certificates were awarded to the representative students.



A commemorative photo was taken with all of the participants.

Speeches of the representative student invitees and accompanying teachers at the Reporting meeting



Mr. Li Junzheng, a first grade student at Beijing National Day School

China and Japan use similar characters, and Chinese and Japanese have similar faces. We should have a better understanding of each other, but the reality is different. Although we are similar ethnically, we think only of ourselves, and the dispute between the two is intensifying. This even scares people. I was once disappointed, but now, since this visit, I believe I see a new signs of hope. In thirty years, we will become decent members of society working in various fields as politicians or scientists, etc. By that time, we may be responsible for the country, and this pure feeling may change. However, I believe that yesterday’s friendships will never be changed. It is not your future. It is both of our futures.



Miss. Zhu Yuying, a second grade student at The High School Attached to Nankai University

Researchers maintain a solemn attitude towards learning, and I believe I caught a glimpse of the true depiction of many researchers who place value on innovation. We were able to see science experiments, were introduced to the fields in which the researchers are working, and were able to learn so many things including their approaches to the study of science.

I would like to thank the Sakura Science Plan organizers. I am grateful for the precious opportunity you have given us. Through this experience, I could better understand how China and Japan are separated by only a narrow strip of water.



Mr. Wang Jia (Children & Youth Science Center, China Association for Science and Technology)

The students did not have solid understanding of Japan; however, through this one-week of experience, they were able to attain basic knowledge of Japan's science and technology as well as Japanese culture, history, and customs. By conducting an experiment and sharing a meal with the Nobel Prize winners, we learned not only about their research, but also their lifestyle, and we could also experience their charm. Many high school students are hoping to study and work in Japan in the future. I understand that this reflects the success of the Sakura Science Plan.



Ms. Cheng Shu (Sichuan Technical Exchange Center)

Thank you very much, from my heart, for planning such a wonderful science exchange plan. We were able to fully enjoy the time and the space as if we were swimming in a vast universe or walking at the bottom of a deep sea.

Both the students and I are grateful that we could visit universities leading in education and research, and that we had opportunities to directly meet and interact with first-class researchers and educators. We gained valuable experiences and memories.

<The Second Group>

“My perspective has changed through the program”

Certification Ceremony and Opinion Exchange Meeting from the Second Group

The opinion exchange meeting for the 71 Chinese high school students from the Second Group was held. Mr. Shoichiro Sakaguchi, Director from International Science and Technology Affairs Division, Science and Technology Policy Bureau, Ministry of Education, Culture, Sports, Science and Technology began the meeting by noting that, “An exchange in science technology among young people is important for the future of Asia. Please reflect on this meaningful one week experience, including the observation of the cutting-edge technology and the lectures by the Nobel Prize winners. I expect that you will study at a university or work at a research institution in Japan in the future and hope that the participating students have a bright future.”

Mr. Naoto Ito, Principal Official of Second China and Mongolia Division, Asian and Oceanian Affairs Bureau, Ministry of Foreign Affairs of Japan commented how important it is to experience and learn new things during youth, as based on his experience visiting China as a high school student.

Mr. Ruan Xiangpin, Minister and Counselor of Science Technology Center, Embassy of China expressed his gratitude to JST for their contribution towards the cooperation between Japan and China, and also expressed his expectations of contributing to world peace through youth exchanges, promoting mutual understanding between China and Japan, and further developing international exchange capabilities with the cooperation of the Ministry of Education, Culture, Sports, Science and Technology and the Ministry of Foreign Affairs of Japan.



Mr. Shoichiro Sakaguchi, Director of International Science and Technology Affairs Division, Science and Technology Policy Bureau, Ministry of Education, Culture, Sports, Science, and Technology



Mr. Naoto Ito, Principal Deputy Director of Second China and Mongolia Division, Asian and Oceanian Affairs Bureau, Ministry of Foreign Affairs of Japan



Mr. Ruan Xiangpin, Minister and Counselor, for Science and Technology, Chinese Embassy in Japan



A commemorative photo was taken after certificates were presented by Mr. Okimura, a JST Special Advisor.



A commemorative photo with all participants was taken at the end of the ceremony.

Representative speeches from the students are as follows:



Miss. Guo Jia, 2-A Group (Henan Experimental High School)

I am from the middle of Henan. I am very happy that I could participate in the Sakura Science Plan this time. I found each day’s program to be very inspiring.

The Nobel Prize winner, Dr. Akira Suzuki offered us tips on how high school students can study science. The doctor said that he read a book titled “Organic Chemistry,” which strongly motivated him toward the Coupling research. We don’t know when and where we’ll find a book that changes

us. For this reason, I believe that I will have to read many books.

I learned about an electric circuit at Tokyo University and experienced an earthquake at the disaster prevention center, all of which were astonishing.

With regard to how I can study science as a high school student, it was very useful for me to visit the various facilities and listen to the discussions by researchers. We learned that we should continuously test our ideas, not counting only on an inspiration, and a small stream of work will become larger and larger.

Survival of humankind depends on science technology. I learned once again that scientists must always hope for people's happiness.



Mr. Liang Kunchangtai, 2-B Group (Hefei No.1 High School)

I experienced many things during a short one-week stay in Japan. It was a valuable experience that could not be achieved during a personal trip. At the exchanges with distinguished scientists, they discussed their experiences. They taught me the importance of being committed to science and to making people's lives better. From this experience, I could grasp the key factor to being successful in the world of science.

You have to have a strong interest. This strong interest will be helpful when I develop a solid base and when I encounter any difficulties. Another important factor is to have an interest in improving our society. I was able to experience advanced science technology in Japan. In that respect, there is a distance between China and Japan. It is us who can abridge the distance.

Greetings from the accompanying teachers:



Ms. Zhao Dan (Jinan Foreign Language School)

All the participants of this program came to Japan with an interest in Japan's high-level science technology. From our arrival, we were warmly welcomed at each place. I would like to express my heartfelt gratitude.

Japan has advanced technologies. All of us were inspired by this visit. We were given a chance to meet world-class scientists and also offered the option to study at a prestigious Japanese university in the future.

The beautiful scenery of the city of Tokyo is something of which I was not aware. Thank you for offering us such a valuable experience. I hope that Japanese people can also visit China and that this cultural exchange will continue in the future.



Mr. Bao Kangsheng, Group Leader (Hefei No.6 High School)

We came here in peace and are about to leave peacefully. The shining stars and clouds in the Tokyo sky will be preserved in my heart and taken home.

During our stay, we had the great privilege of meeting teachers who had won Nobel Prizes. I felt their strong passion towards science and as well as their affection for educating young people.

I would like to thank the JST staff for implementing this plan. It was such a diverse and rewarding program. I would like to express my gratitude on behalf of the 76 student and teacher participants.

Thank you to all of the staff for your hospitality. All of the participants will explore their options and move forward together.

Let's have faith in the future and make an effort. I hope that a flower will bloom in a warm wind towards the ocean.

<The Third Group>

“Witnessed the advanced technology with my own eyes”

Certification Ceremony and Opinion Exchange Meeting of the Third Group

On August 8, the opinion exchange meeting for the 120 high school students from the Third Group was held at the JICA Tokyo International Training Center. Each of the students and accompanying teachers from the eight countries reflected on the productive visits and lectures and expressed their impressions in their speeches.



At the beginning of the meeting, Mr. Mao Iwai, Unit Chief, International Science and Technology Affairs Division at the Science and Technology Policy Bureau, Ministry of Education, Culture, Sports, Science and Technology thanked the students who participated in the first Sakura Science Plan exchange program and expressed the desire for further development of this program. After her speech, a high school student from each of the eight participating countries presented his or her impressions and expressed gratitude for the opportunity to visit Japan through the Sakura Science Plan. The students shared their excitement about the opportunity to visit to universities, research institutions, the National Museum of Emerging Science and Innovation (Miraikan), all of which placed them in direct contact with Japan’s leading-edge science and technology and its outcomes. Furthermore, some expressed their desire to stay longer in Japan.

The teachers who led students from their countries also showed admiration for Japan’s high level of commitment to science and technology. They expressed gratitude to the program organizers for providing a stimulus for their students. Later, Mr. Fumiaki Takahashi, a JST senior fellow, presented certificates of completion to the students. Before the closing ceremony, commemorative photos were taken with groups from each country.

A farewell party was held following the ceremony, during which time participants performed traditional entertainment native to their countries and wild laughter filled the hall.



At the farewell party, students enjoyed traditional dance and song performances.

A collection of student and teacher speeches is as follows:



Cambodia Mr. Choeung Sovanrithy (Preah Sisowath High School)

We observed many science-related facilities including JAMSTEC, the National Museum of Emerging Science and Innovation (Miraikan), and Science Square TSUKUBA. It was impressive that each science technology has a different characteristic.

We also visited universities including Keio University and the University of Tsukuba. This was a significant opportunity to observe the laboratories and campuses. Further, it was a very memorable experience to listen to the lectures by famous scientists including Dr. Toshihide Maskawa, a Nobel Prize winner, Mr. Mamoru Mohri, an astronaut and Chief Executive Director of the National Museum of Emerging Science and Innovation (Miraikan), and Dr. Akito Arima, a former Minister of Education, and to converse casually with them. Their achievements inspired me.



Malaysia Mr. Lee Ren Ghee (First grade student at Chong HWA Independent High School)

In this program, we learned much about Japan's science technology. JAMSTEC was very impressive. The guides provided us with such detailed explanations that we didn't need to read each panel.

"Shinkai 6500," the manned research submersible, was also impressive. We had plenty of time at JAMSTEC, which was great as we could leisurely tour the facilities and exhibits. The accommodations, places to visits, and coordinators were all wonderful. This program is a memorable experience.



Mongolia Mr. Tumendalai Munkhdalai (Shine Mongol High School)

My first impression was that Japanese people are very kind. I was also impressed by the advanced science technology. Moreover, it was not simply technically advanced. I was most interested in observing the robots that assist physically-challenged people and provide care to the elderly. I was happy to personally witness such an advanced technology through this program.

It was also a pleasant experience to get to know the high school students from different countries and to be able to talk with them. I would like to thank JST for organizing this program and all those who are involved in this program.



Philippines Ms. Carillo Joanna Marie (Fourth grade student at Philippine Science High School)

I was able to visit many research institutions and facilities, as well as universities, and to experience Japan's science technology, which is surprisingly advanced. Through this program, we learned that people from different countries need to collaborate on science technology development.

The National Museum of Emerging Science and Innovation (Miraikan) most impressed me. There we were able experience life in 2050. We were also able to observe various robots. I was amazed that these robots are used not only for research and development, but also for people in general.



Indonesia Mr. Viharsyah Aulia Akbar (Twelfth grade student at SMAN 28 Jakarta)

We were able to learn about cutting-edge science technology and the visions for the future. As we visited the many research institutions, science facilities, and universities, I began to consider learning more about science technology and the Japanese culture. I also wanted to bring the knowledge I gained back to my home country to improve Indonesia.

I hope that the Japanese government will continue this program and create more opportunities for future Indonesian high school students to visit Japan and learn many things.



Vietnam Mr. Nguyen Minh Quang (Eleventh grade student at HUS High School for Gifted Students)

We were able to acquire a great deal of knowledge about science technology. I decided that I would like to come back to Japan to study, if possible, so that I can develop myself. During our visit to the University of Tokyo, I was attracted to the explanation of how the science course will promote further internationalization. The university's academic atmosphere was also impressive.

The visit to Sensoji Temple also became an unforgettable memory. Although it is located in Tokyo, a modern city, I was able appreciate the spiritual atmosphere.



Republic of Korea Mr. Lee Jun Su (Eleventh grade student at Incheon Science High School)

Before I came to Japan, I saw radical Japanese demonstrations regarding a territorial issue between Republic of Korea and Japan on TV in our country, so I was apprehensive about the country. However, after this opportunity to visit Japan, my impression has been changed as I began to learn about the nature of Japanese people.

I didn't have a particular dream before visiting Japan, but as I listened to Mr. Mohri, Chief Executive Director of Miraikan, I learned about the importance of having a dream and realizing it. I am grateful to everyone.



Thailand Mr. Tanoo Jumrustanasan (Eleventh grade student at Mahidol Wittayanusorn School)

My visit included a valuable experience of observing robots, especially ASIMO. I was also able to make many new friends.

Further, when we listened to the teachers who had won Nobel Prizes, they discussed more about their younger years and less about their research themes. Their stories were very insightful. Now it is my dream to join a science research in Japan in the future. I hope that I will be able to conduct research with all of you who have participated in this program.

<Accompanying teachers>



Cambodia Mr. Sor Luy (Preah Sisowath High School)

We are very grateful that we could visit Japan at this time. We visited various facilities including the National Museum of Emerging Science and Innovation (Miraikan), and we were able to feel the warmth of the town’s people during our free time. I would like to share my various experiences with many people after I return to my country.



Malaysia Mr. Tin Chee Yan (Chong HWA Independent High School)

It was great that we were able to visit the most advanced research institutions and universities during our visit. Tokyo Tech’s super computer was especially impressive. The experience of listening to the stories from the teachers had who won Nobel Prizes was quite valuable.



Mongolia Ms. Al Tangerel Enkhtsetseg (Shine Mongol High School)

I learned that the Japanese education system is excellent. There are many things we can learn from Japan. We are extremely grateful that we were able visit Japan.



Philippines Ms. Morante Karizz Anne (Philippine Science High School)

After touring the various facilities during my visit, I became quite envious of Japan as we don’t have similar facilities in our country. I was able to witness Japan’s bright future.

I learned a new Japanese word, “sugoi,” which means “amazing.” I believe there are many “sugoi” things in Japan.



Indonesia Ms. Holida Lafriyah Muksin (Ministry of Education and Culture)

We were able to visit many research institutions and experience new technologies during our stay in Japan. I would like to express my heartfelt gratitude to you all for offering us such an experience.

**Vietnam Ms. Tran Bish Thu (Vietnam National University)**

I would like to thank those in Japan who helped this visit come to fruition. The participating students gained valuable experiences. I believe that what they experienced in Japan will greatly impact their future.

**The Republic of Korea Mr. Daekil Cha
(Korea Foundation for the Advancement of Science and Creativity)**

We participated in various experiences during our stay, and the lecture by Dr. Maskawa, a Nobel Prize winner, was especially impressive. I would like to express my gratitude to JST and those in Japan who are involved with this program.

**Thailand Mr. Luecha Ladachart (Ministry of Education)**

Thank you for those who brought this visit to Japan to fruition. We shared many experiences during our visit. It is obvious that the students learned a great deal. We have fond memories of taking photos with GUNDAM.

(6) Results of Questionnaire to Participated Senior High School Students

The Sakura Science Program administered a survey questionnaire to the First, Second, and Third Groups of participated senior high school students just before they left Japan. Following are the results.

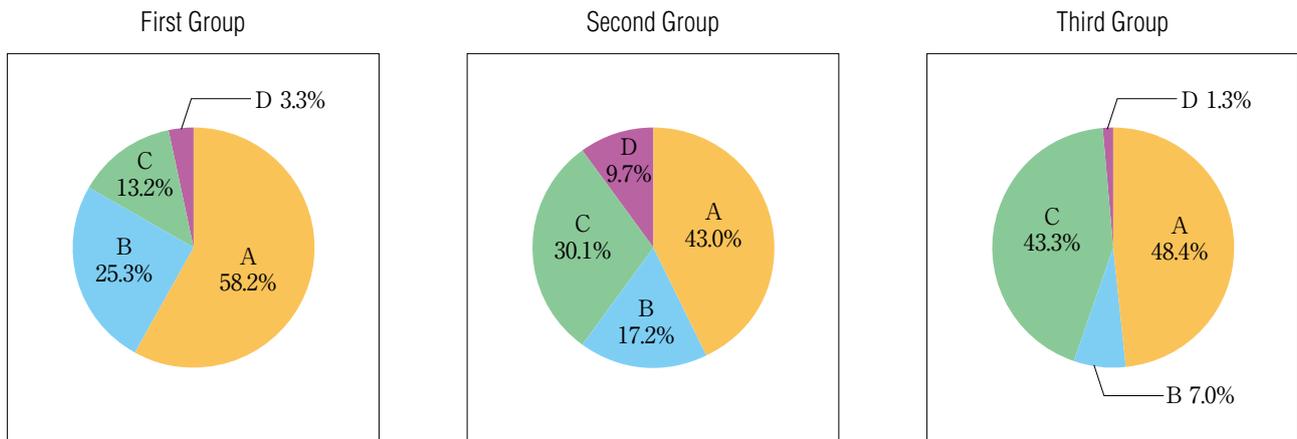
Valid Respondents

First Group: China (78 students)

Second Group: China (76 students)

Third Group: Mixed Asia (132 students and supervisors from Cambodia [11], Indonesia [22], the Republic of Korea [22], Malaysia [11], Mongolia [11], Philippines [11], Thailand [22], and Vietnam [22])

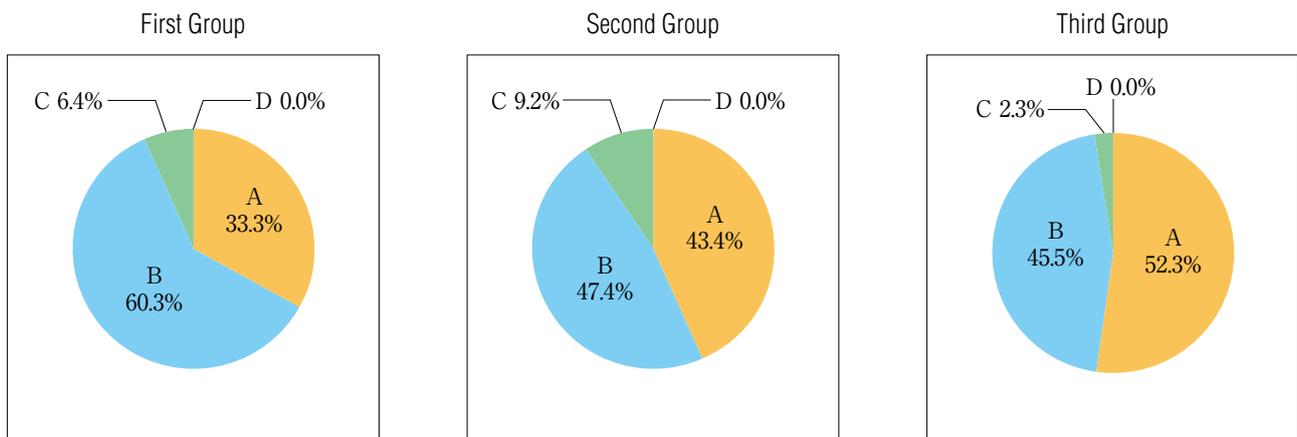
1) What are the reasons for participating in this activity at this time? (Multiple answers are allowed.)



A. Was interested in Japan B. Wanted to communicate with Japanese friends
C. Was nominated by school or other institutes D. Other

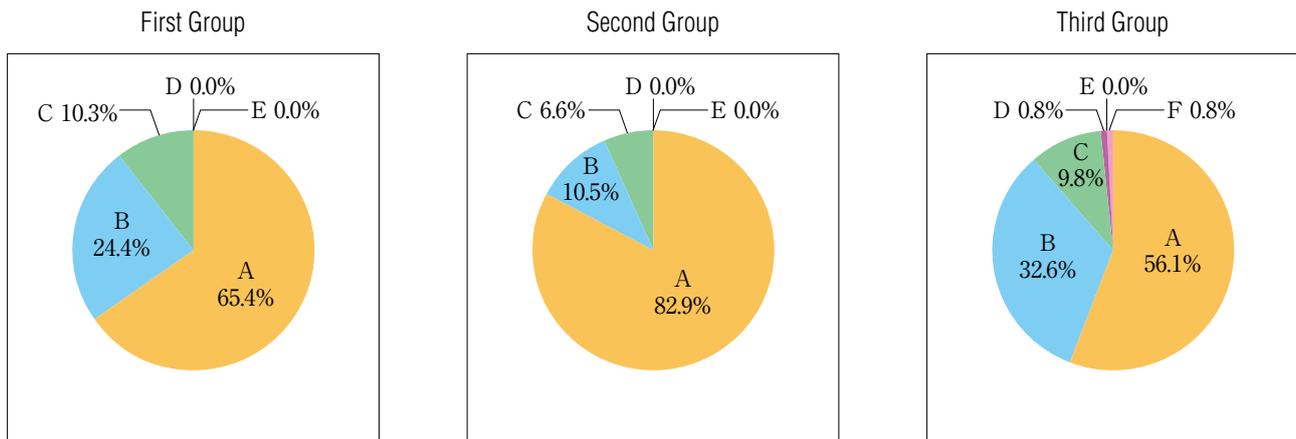
Summary: The total of A and B responses represented more than 50% of all responses to this question.

2) What was your impression of Japan before participating in this activity?



A. Very good B. Good C. Not so good D. Poor

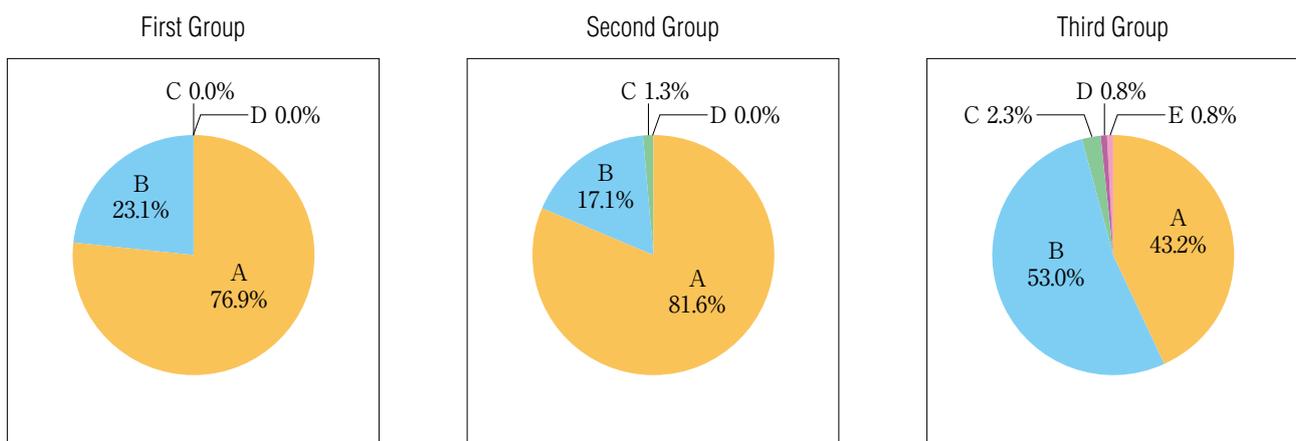
3) By participating in this activity, how did your impression toward Japan change?



A. Improved B. Improved slightly C. Remained the same D. Worsened slightly E. Worsened F. No response

Summary for questions 2) and 3): The greatest improvement in students' impressions of Japan (after participating in this program) was shown by the groups from China (First and Second Groups). Improvements or slight improvements in impressions (A and B responses) in the mixed Asian group (Third Group) were reported by 89% of respondents.

4) Were you satisfied with your participation in this course and your visit to Japan? Please tell us why or why not.



A. Extremely satisfied B. Reasonably satisfied C. Fairly satisfied D. Dissatisfied E. No response

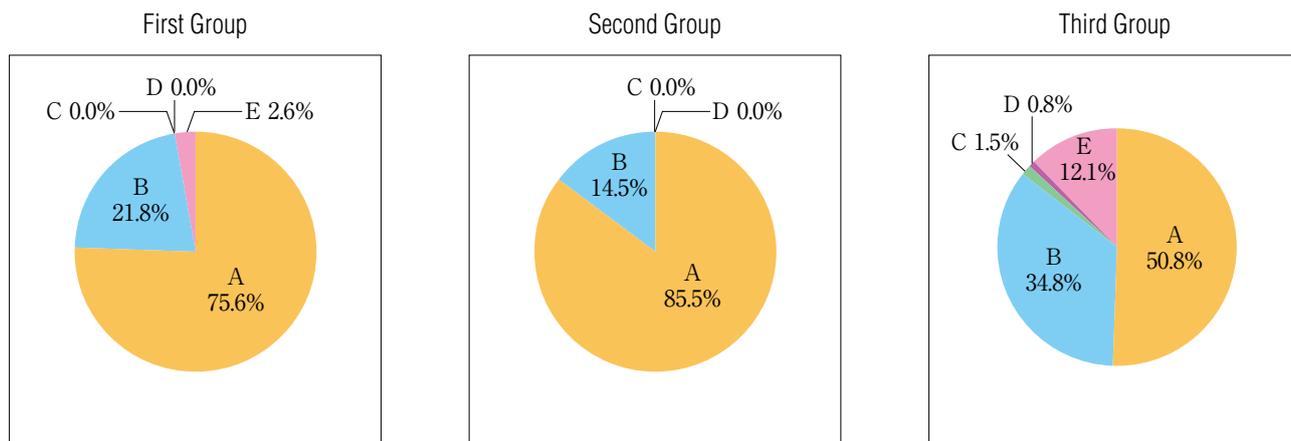
Comments from Participants:

* By participating in this program, I was able to obtain a correct understanding of Japan and deepen my feelings toward Japanese culture. The program was proved to be very meaningful, and it enabled me to turn my attention to the world. Japan's environment and the concept of punctuality left a deep impression on me. (Participant from China)

* I was able to learn many interesting things about science and technology and deepen my interest. Even after I returned, my motivation to continue my studies has remained strong. (Participant from Thailand)

Summary: Regarding satisfaction levels for the courses this time, 70 to 80% of the Chinese students (1st and Second Groups) replied that they were "very satisfied," while only 43% of the mixed Asian group (Third Group) indicated that they were "very satisfied." The reason for the difference appears to relate to the fact that the Chinese groups sometimes had an interpreter during their activities but the mixed Asian group did not have an interpreter (i.e., all activities were conducted in English).

5) Were you satisfied with the universities, research centers, and facilities that you visited? Please identify them by name and give reasons for your response.



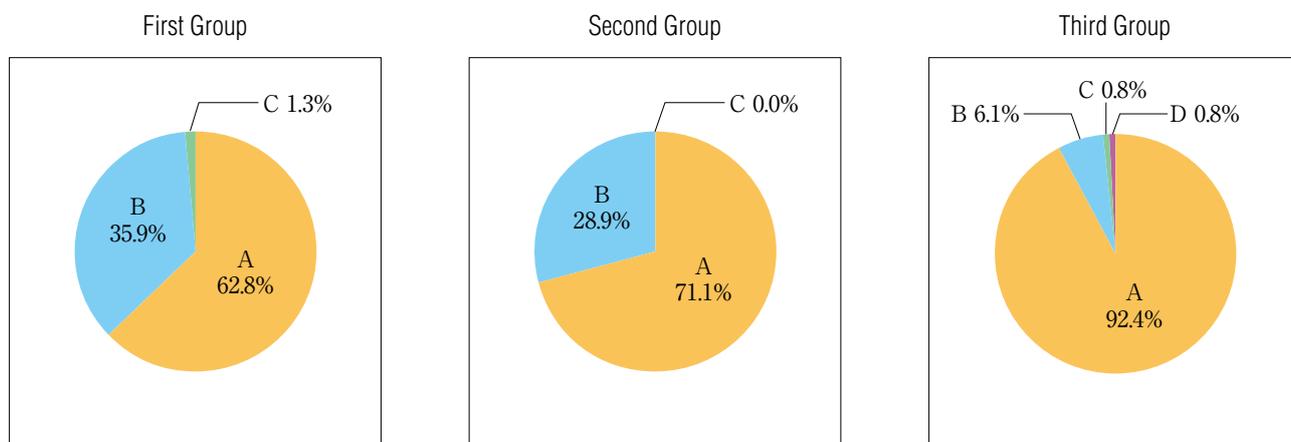
A. Extremely satisfied B. Reasonably satisfied C. Fairly satisfied D. Dissatisfied E. No response

Comments from Participants:

- * There were many foreign students studying at University of Tsukuba. They were studying in English, and they were surrounded by superb facilities that made me want to study there too. (Participant from Mongolia)
- * National Institute for Materials Science (NIMS) had research laboratories in the fields of cancer treatment and polymers, which were very interesting. Furthermore, the method of introducing their research by animation made it very understandable. (Participant from Thailand)
- * At the University of Tokyo, Komaba Campus, we saw a semi-conductor research laboratory, and it was my first time to see a clean suit. In the visit to the nano-electronics research laboratory, I was able to learn about revolutionary technology. (Participant from Thailand)
- * At Keio University, I was able to see the latest high quality research devices, which also excel in design. (Participant from Cambodia)

Summary: Within the Chinese groups (First and Second Groups), 70–80% of the participants replied that they were “very satisfied” with their visits to universities, research centers, and facilities, whereas only 51% of the mixed Asian group (Third Group) indicated that they were “very satisfied.” The difference in satisfaction levels seems to stem from the same reason mentioned in 4).

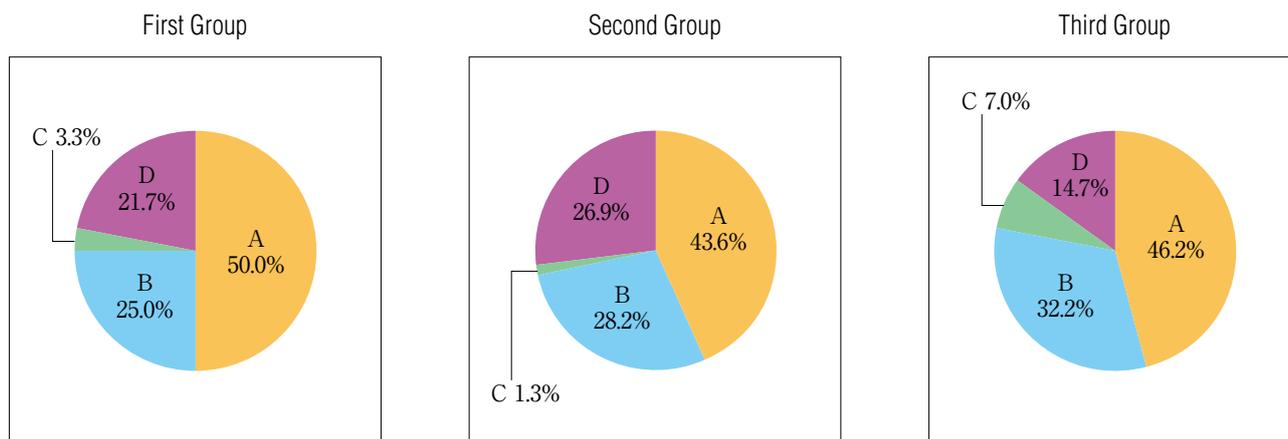
6) Do you wish to visit Japan again?



A. Yes, very much B. Yes C. Not particularly D. No response

Summary: 60–70% of the Chinese groups (First and Second Groups) and 92% of the mixed Asian group (Third Group) selected the first response (A), indicating that high school students who participated in the program have strong aspirations to visit Japan again.

7) If you responded with either A or B, how would you want to visit Japan again?



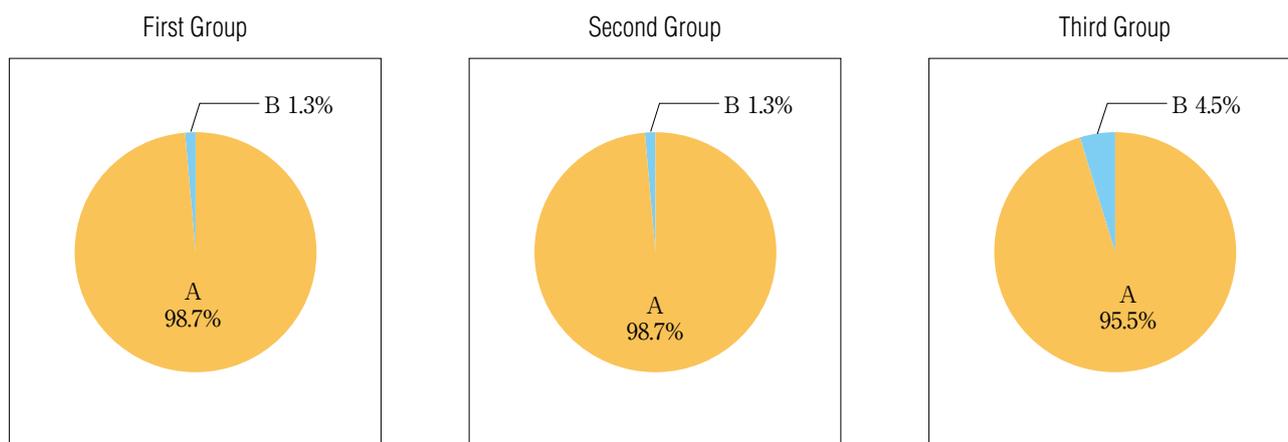
A. As a foreign student B. As a researcher C. As a company employee D. Other

Comments from Participants:

- * In the research field of leading-edge science and technology, Japan is ahead of Asia and the world. If I am going to engage in research in the science and technology field, I will think of selecting Japan first and foremost. (Participant from China)
- * My dream is to become a researcher. Japan has a very good environment for conducting scientific and technological research. (Participant from Indonesia)
- * I want to become a mathematical researcher. I would like to acquire the high level of knowledge in science and technology in Japan and work collaboratively with Japanese researchers. (Participant from Vietnam)
- * I like the personalities of the Japanese. I think that Japan is blessed with nature and an environment that is conducive to study. (Participant from Thailand)

Summary: Regarding the desired conditions for revisiting Japan, about half of the students from all groups stated their wish to return to Japan as foreign students. This finding supports the purpose of the Sakura Science Plan.

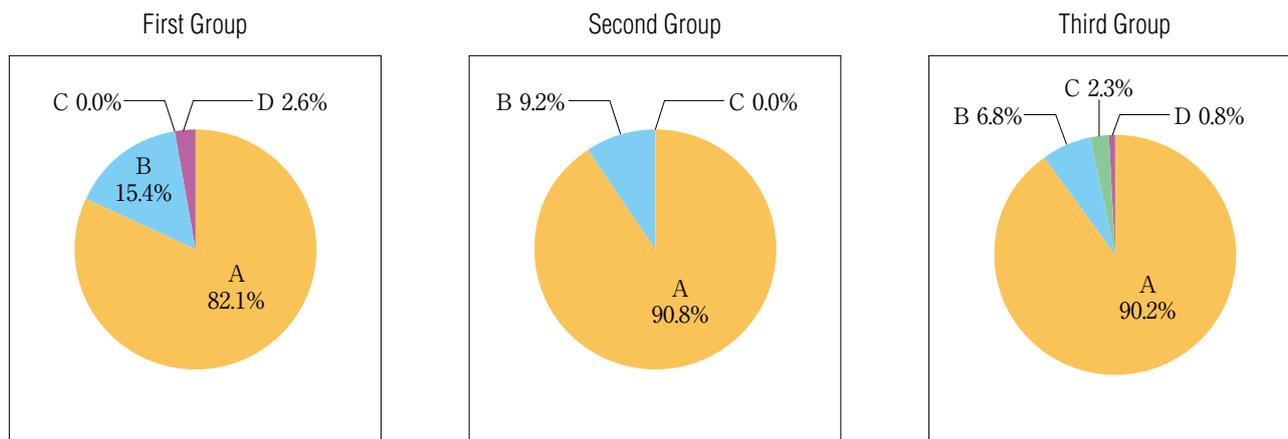
8) Do you wish to receive information on Japan’s science and technology programs, including studying in Japan, after you return to your home country?



A. Yes B. No

Summary: Almost all students in all groups requested information about additional educational opportunities. This result shows the importance of providing a system for following up with program participants.

9) Would you recommend this program to friends in your country?



A. Yes, definitely B. Yes, somewhat C. No D. No response

Comments from Participants:

- * This visit has given significant meaning to our future lives. It has awakened me, given me inspiration, shown me the direction for a new life, and broadened my perspective. It has changed my past views toward Japan and deepened my understanding of the country. (Participant from China)
- * I hope many people will understand Japan, learn about its advanced culture, and promote the exchange between China and Japan. (Participant from China)
- * Not only was I able to learn about Japan but I was able to exchange opinions with students from various countries, making it extremely meaningful. (Participant from Cambodia)
- * I am grateful to have been selected for participation in this program. I do not think there are other programs like this that give us the opportunity to meet students from other countries and visit various sites as wonderful as these. (Participant from Thailand)
- * It is a very well-balanced program covering science, technology, and culture, which I think will benefit all of Asia. (Participant from Thailand)

Summary: Almost all students in all groups replied that they would strongly recommend this program to their friends. Thus, maintenance and development of present and future programs can be expected.

(7) Publicity Activities and News Coverage

Favorable report by National and International Media about the Sakura Science Plan

We developed the strategy to positively advertise the status of the programs executed, with the hope that the framework and implementation of the special course for senior high school students would be widely understood by the public and all cooperating organizations. Publicity was executed according to the following points:

1. Utilize social networking services (SNSs, designed to form social networks through Internet communication)
2. Report via the official home page of the Sakura Science Plan
3. Secure news coverage by providing information to the media



The picture on the left shows the “We Support the Sakura Science Plan” site on Facebook (a SNS), and the picture on the right shows the official home page of the Sakura Science Plan.

We launched a “We Support the Sakura Science Plan” site on Facebook (FB), one of the largest SNSs. Since we regard FB as a “news flash site,” we immediately uploaded information on events associated with the special course for senior high school students as they were implemented. Thus, we have promoted a greater understanding among people who use FB daily. By uploading the events as quickly as possible, some of the participating high school students read news flashes and responded.

On the other hand, we have used the official homepage for reporting the contents implemented after the news was organized. Both sites are used collaboratively to publicize information regarding on-going events for the special course for senior high school students and for selected proposals. The Sakura Science Plan website allows for proposals from the public and submissions to the special course to be uploaded separately.

Favorable Coverage by Various Media

We were able to secure coverage from various media including newspapers, television, and internet. Coverage by media through August 20, 2014, regarding the special course for senior high school students is tabulated in the following list. Though not included in the list, a number of media—including the Yomiuri Shimbun—are expected to cover the story later.

Among the sources providing coverage, People’s Daily (Renmin Ribao) in China expressed appreciation for the course objectives, explaining that the program has enhanced the exchange of youth with the aptitude for science and technology.

Media Coverage (as of August 20, 2014)

Date	Media	Title
May 16	The Science News	“Exchange with Asian Youths” called for receiving organizations in Japan
May 23	The Chemical Daily	“JST Concludes Memorandum with Ministry of Science and Technology (MOST) of the People’s Republic of China on the Science Exchange of Youth”
June 22	Yomiuri Shimbun	“Inviting Youth from Asia to Japanese Technology”
July 4	The Science News	Asian Youths Exchange Science and Technology Experiences at Japanese Universities, etc. JST’s new project selects 155 plans
July 9	Oita Godo Shimbun	“Science Exchange with Asian Youths at Oita University, Faculty of Medicine”
July 25	People’s Daily (Renmin Ribao) (Chinese version)	“The Future Lies in the Younger Generation”—Chinese High School Students Attend a Special Lecture given by a Japanese Nobel Prize Laureate”
July 26	Jiji Press Ltd	“Japanese and Chinese High School Students Facilitate Exchange in the Science Field = Nobel Prize Laureates Cooperate”
July 26	Yahoo News	“Japanese and Chinese High School Students Facilitate Exchange in the Science Field = Nobel Prize Laureates Cooperate”
July 30	NHK BS1 “International Report”	(Special Feature) “Win the Hearts of Chinese Students-The Race to Acquire Elites Intensifies”
July 30	People’s Daily Online (Japanese version)	(China-Japan Focus) “What One Likes, One Will Do Well” describes the special lecture given by Professor Akira Suzuki, Nobel Prize Laureate.
July 31	Shizuoka Shimbun	“Guiding Inside Shizuoka University before Studying Abroad: Inviting Indonesian Senior High School Students”
August 1	Chunichi Shimbun (Fukui Prefecture version)	“Study on Fiber Material: Students from Asia Exchange Opinions with Graduate Students of University of Fukui”
August 2	Tokachi Mainichi Newspaper	(Special article contributed by Kazuki Okimura, Special Advisor, Japan Science and Technology Agency [JST], an independent administrative institution) “Science and Technology Opens Up Asia—Sakura Science Plan—Inviting Youth for the Development of Human Resources”
August 3	Asahi Shogakusei Shimbun	This news source extended the following invitation: “Come all ye excellent youngsters from Asia! This summer we will invite 280 senior high school students.”

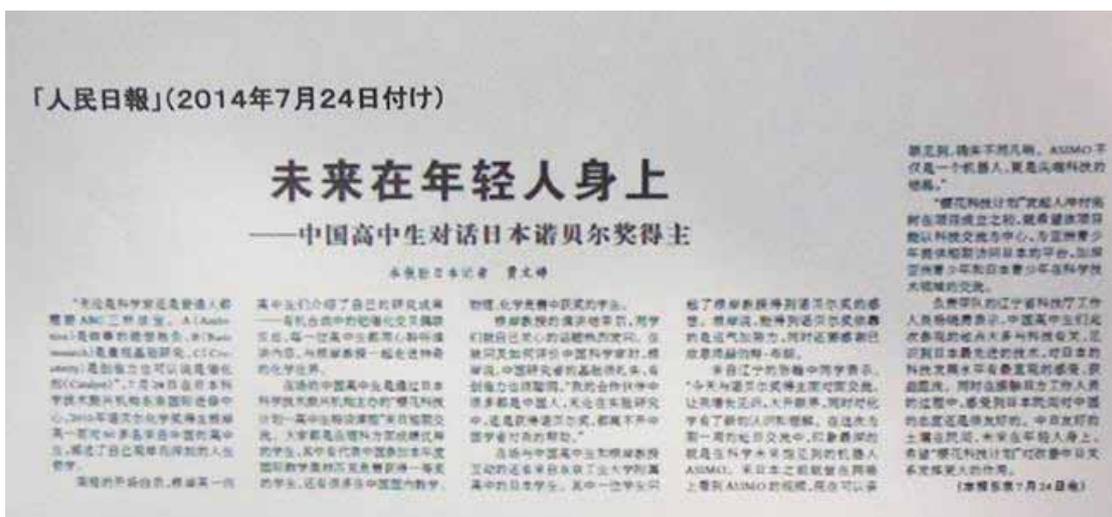
August 3	Chunichi Shimbun	Summer Festival, Vigor, Energy
August 4	Bunkyo News	“Special Course for Senior High School Students of the Sakura Science Plan, by Japan Science and Technology Agency, Has Started”
August 4	Mid-Japan Economist	“Student from China Visits Kasugai”
August 5	Sankei Shimbun	“Senior High School Students from Nine Asian Countries Participate in Scientific Exchange across Japan”
August 6	The Asahi Shimbun (digital version)	The newspaper reported that Professor Toshihide Maskawa confessed to high school students from Asia that he disliked English after being laughed at for his pronunciation of “money.”
August 7	Tokyo Shimbun (Evening Edition)	“Asian High School Students Experience Japanese Science and Lecture by Professor Toshihide Maskawa”
August 11	NHK General TV (Ohayo Nippon)	The broadcast featured the arrival of foreign students from China.
August 17	The Star (Malaysia, Online)	“Promoting Exchange of Knowledge”
August 20	Gomutimes (Rubber News)	“Chinese Students Visit Tokai Rubber Industries and See the Vibration Isolator Installed Facility”



Pictures showing articles from Asahi Shogakusei Shimbun [left], Tokyo Shimbun (Evening Edition) [middle], and NHK General TV (Ohayo Nippon) [right]

People’s Daily (Renmin Ribao, Chinese version) Reports on the Sakura Science Plan

The most authoritative media in China, People’s Daily, reported about the Sakura Science Plan in the article entitled “The Future Lies in the Younger Generation’—Chinese High School Students Attend a Special Lecture Given by a Japanese Nobel Prize Laureate.” We introduce the complete article with an English translation here:



Picture of the article reported by the People’s Daily (Renmin Ribao, Chinese version, “The Future Lies in the Younger Generation’—Chinese High School Students Attend a Special Lecture Given by a Japanese Nobel Prize Laureate.”

“What is important as a human being and a scientist is ABC. A stands for the Ambition to tackle whatever issues lie ahead; B stands for Basic Research, which should always be regarded with significance; and C stands for Creativity and Catalyst.” This is how Professor Ei-ichi Negishi—recipient of the Nobel Prize for Chemistry in

2010—simply and clearly explained his life philosophy before the 80 or so high school students from China in his special lecture.

After a simple introduction, he explained how he came to discover the “palladium-catalyzed cross couplings in organic synthesis,” a result of his research which led to receiving the Nobel award. High school students, listening attentively, were pulled into Professor Negishi’s mystic world of chemistry.

The high school students who participated from China came to Japan by means of the special course for high school students offered by the Sakura Science Plan. All participants were students with excellent grades in science, including some who participated and took first place in the International Mathematical Olympiad and others who won awards in mathematics, physics, and chemistry contests in China.

After Professor Negishi finished his lecture, the students overwhelmed him with questions reflecting their interest. When asked what he thought about Chinese scientists, he replied, “Chinese scientists have basic knowledge and creativity, and they are very intelligent. I have a lot of Chinese colleagues. My research experiments owe a great deal to the Chinese scientists who supported me.”

Additionally, students from Tokyo Tech High School of Science and Technology attended the lecture, and one of them asked about Professor Negishi’s reaction to receiving the Nobel Prize. He replied, “I thought the Nobel Prize was a blessing of luck and effort, and I am extremely grateful to Herbert C. Brown, my late teacher.”

Han Zhong Zhang, a participating high school student from Liaoning Province, offered the following comments: “I was able to learn a lot from being able to directly listen to the lecture today by Professor Negishi, Nobel laureate. I was able to not only understand the nature of things but also to acquire new knowledge and information about chemistry. I made new discoveries. What impressed me most during my one week stay in Japan was when I went to see the robot ASIMO at the National Museum of Emerging Science and Innovation (Miraikan). I had seen a moving image of ASIMO before on the Internet, but actually seeing it in front of my eyes deeply moved me. I felt that ASIMO was not just a robot and more like a successful result of efforts combined with the latest science and technology.”

Mr. Kazuki Okimura, incorporator of the Sakura Science Plan, said that he initiated the program because he wanted Asian youths to deepen their exchanges with Japanese youths in the field of science and technology by extending the opportunity for Asian youth to visit Japan.

Xiao Yong Yang of the Ministry of Science and Technology, Liaoning Province, who was responsible for the Chinese mission, offered the following remarks: “The places that the Chinese high school students visited this time were mainly organizations and facilities deeply related to science and technology. By coming into contact with the latest technology, we were able to experience the maturity of Japanese science and technology and learn a lot. Additionally, by becoming familiar with the Japanese staff, I felt that the Japanese people were very friendly toward China. The friendship between China and Japan is constructed on a civilian base and its future lies in the hands of the younger generation. I hope that the Sakura Science Plan further contributes to improving the China-Japan relationship.”

(Wen Ting Gu, reporter for *People’s Daily* [*Renmin Ribao*, Chinese version] residing in Japan; July 24, 2014)

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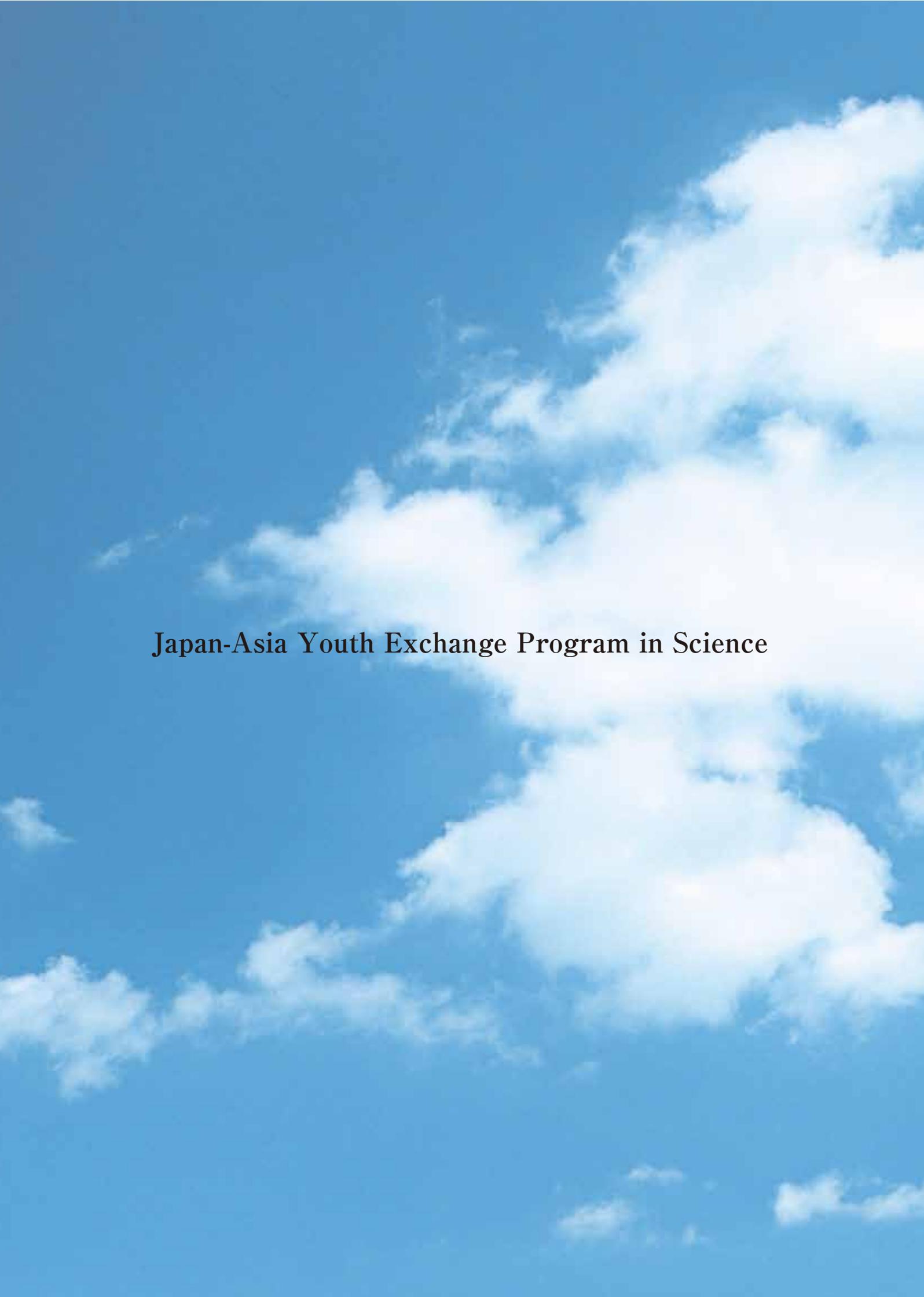
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