Ministry of Education, Culture, Sports, Science and Technology (MEXT) Program for Leading Graduate Schools
Academy for Global Nuclear Safety and Security Agents at Tokyo Institute of Technology (U-ATOM)

Newsletter

Vol.6
2015.8
AY2014 Abridged Version

What is U-ATOM?

The Academy for Global Nuclear Safety and Security Agents is running a "residential school with a new and unique nuclear education (DOJO for Global Nuclear Safety and Security)." The name U-ATOM is a combination of the words 'Unique' and 'ATOM'.

Contents

Engineering Education Award received from JSEE

August 28, 2014
Hiroshima University,
Higashi-Hiroshima Campus

The Academy for Global Nuclear Safety and Security Agents received *the Engineering Education Award* at the 62nd Conference of the Japanese Society for Engineering Education.

The award was presented in recognition of how the academy's degree program featuring all-student dormitory boarding contributes to the innovation of graduate school education and the cultivation of global leaders, thus furthering the growth of engineering education.

Moving forward, we ask for your continued guidance and support as we strive to provide even more practical and meaningful education. You can expect great results from the Academy for Global Nuclear Safety and Security Agents!

Certificate of Engineering Education Award

Entrance Ceremony for DOJO for Global Nuclear Safety and Security

An entrance ceremony was held for the third graduating class of the DOJO for Global Nuclear Safety and Security at U-ATOM

The entrance ceremony was held on October 1, 2014 at the *Plaza Heisei of* the *Tokyo International Exchange Center* in Odaiba, Tokyo. The ceremony began in dignified fashion with a rendition of the school song sung by Ms. Michiko Fukuzawa, a member of the academy. Academy Director Masaki Saito presented an enrollment certificate to each of the six students, and the Director then discussed how students entering the entering the academy can prepare.

Distinguished guests including Yoshinao Mishima (President of Tokyo Tech), Kikuo Kishimoto (Dean of Engineering at Tokyo Tech), Kenzo Oshima (Former UN Ambassador), Takahiko Ito (Chairman of the Japan Branch of the Institute of Nuclear Materials Management), and Michiko Suzuki (Director of Foreign Studies Program at JASSO) expressed their expectation for academy students to grow into global leaders in industrial government, and academic fields related to nuclear power.





DOJO entrance ceremony for third graduating class (school year starting in April)

On April 1, 2015, an entrance ceremony was held for one student from overseas, who will join the academy as a member of the third graduating class.

Overseas Training

Students in the second graduating class participated in a two-week training held in the USA

THE UNITED STATES

SEPTEMBER 14-28, 2014

Boys, be ambitious!

Some DOJO students who had never visited the United States before seemed hesitant, but they gradually regained confidence while gaining experience through the activities including interaction with overseas students, and visiting *the World Bank* and the *Japanese Embassy*. The students also traveled to Washington DC where they received messages of encouragement from Tokyo Tech alumni who are active global professionals. Through encounters with warm and kind people in the United States, the training served to reaffirm the dreams and conviction of the students.

Think different!

During the visit to *UC Berkeley* and *Texas A&M University*, students gave theme-based presentations and engaged in group discussion. Students lodged on the campus of *UC Berkeley* and enjoyed interacting with local students. At the request of *Texas A&M University*, the students gave a presentation entitled "Recovery of Fukushima." After the presentation, the students and local students exchanged opinions while deepening their friendship. The Japanese students made a lot of acquaintances who they can greet with a warm Texan "Howdy!"

In the middle of difficulty lies opportunity

At the *Idaho National Laboratory*, the students experienced using equipment including the ATR which supplies an irradiation field with a high neutron flux from light-water reactors, the furnace EBR-1 which generated the world's first nuclear power, a detector utilized by the IAEA for inspections, and 3D laser scanning equipment used for validation of design information. Students also had a practical experience of Pu measurement using radiation detectors.

The students showed interest in the dry-storage facilities that hold reactor core materials including melted fuel while contemplating the aftermath of the Fukushima Nuclear Disaster.

Experience is the best teacher

Texas A&M University's Disaster City is a facility for comprehensive emergency response training and drills. *Disaster City* is located next to the world-famous *Brayton Fire Training Field*. The facility has life-sized collapsed buildings and damaged vehicles which are used to simulate various levels of disaster and damage. The nuclear disaster response exercises held during our visit. Students were given the mission of entering the rubble of a collapsed building and safely retrieving radioactive material. Exercises were conducted in extremely realistic conditions.

Voice

KIKUHARA, 1st Year, Doctor's Course

Prior to the student sessions held at *Texas A&M University* and *UC Berkeley*, students had been in contact with each other and spent a considerable time in planning. After the session had ended, although I did feel I could have done some things differently, my overall feeling was one of substantial accomplishment. At the same time, the session made me realize that I need to study English more! In addition to broadening my knowledge, the sessions helped me to recognize the importance of communication and negotiation skills.

Domestic Training

NAGASAKI/HIROSHIMA

NOV. 21-24, 2014

Even while studying nuclear power in Japan, a country which has been the victim of nuclear bombing, we had not directly confronted the issue of nuclear weapons. DOJO students visited Hiroshima and Nagasaki to consider and study the issue of nuclear weapons. It was heart-wrenching to listen to the stories of victims, and we saw how many people continue to suffer even today; in no way are the bombings some far-off events in past history. "If you are going to study nuclear power, you must also study its negative aspects."—This was the message given to us by speakers before we left. The on-site training was a painful reminder of the heavy responsibility that goes with handling nuclear power.

HORONOBE

MAR. 25-27, 2015

In this training, the students visited the *Horonobe Underground Research Center* operated by the *Japan Atomic Energy Agency*, a facility which researches the deep geological disposal of highly radioactive waste, to study disposal and the research status at an underground research center. After attending a lecture at the public information house '*Yume Chisoukan*,' students descended into a tunnel located 350 meters below ground for an explanation on experiments. Students also toured life- size engineering barrier and conducted a characteristic test for bentonite.

Voice

FUJIOKA, 2nd Year, Master's Course

I was able to clearly understand current issues and needs related to deep geological disposal. It was an extremely valuable experience to see underground research facilities which are normally inaccessible.

The 4th International Symposium and Seminar

From February 17 to 26, 2015 in Odaiba, the academy held an international symposium and seminar related to the "3S" (Safety, Security and Safeguards). This year marked the fourth time the event has been held and featured the theme "Nuclear Power Safety: Post-Fukushima." This symposium and seminar consisted of two parts: the symposium was open to the general public, while the seminar was held for graduate school students who had been recommended to attend. A total of 40 students attended the seminar. In addition to 12 students from the Global Nuclear DOJO, there were also students from Korea, Vietnam, Malaysia, Indonesia, the United States, Lithuania, Greece, Russia, and Spain.

Symposium

The symposium featured highly renowned experts invited from Japan and overseas. Lectures were given on safety-related themes including lessons learned from the Fukushima Daiichi Nuclear Disaster and future risk management.

Seminar

In the Student Session, students conducted debates in English on themes they had chosen themselves. Although it was a difficult experience for students not proficient in English, the session was an outstanding opportunity for students to refine their skills.

Inspection of Fukushima Nuclear Power Plant

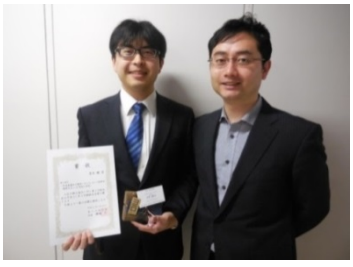
During the seminar, tours were held of *the Daiichi (Reactor No.1)* and *Daini (Reactor No.2) sites* at *Fukushima Nuclear Power Station.* During the tour of the plant, participants rode a bus for an up-close inspection of the power plant after the horrendous accident.

Voice

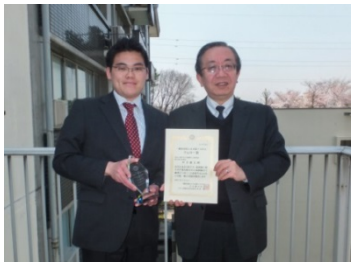
KAWAUCHI,
2nd Year,
Master's Course

Together with experts from Japan and overseas, we were able to hold a debate on the "3S" (Safety, Security, and Safeguards) — issues faced by nuclear power. During the seminar period, we visited *the Daiichi (Reactor No.1)* and *Daini (Reactor No.2) sites at Fukushima Nuclear Power Station.* I gained great knowledge regarding on-site conditions at the time of the accident in 2011, as well as the current reconstruction four years on. It was an opportunity to deeply consider the issues and the future role of nuclear power. Overall, the seminar was a valuable stimulus for continuing my study of nuclear power.

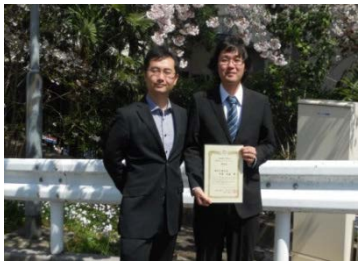
Award Winners!



AY2015 Spring Semester,
Kakuyu-kai Master's Thesis Award
Takeshi AOKI
2nd Graduating Class
Sagara Laboratory



AY2014
AESJ Fellow Award
Kota KAWAI
2nd Graduating Class
Takeshita Laboratory

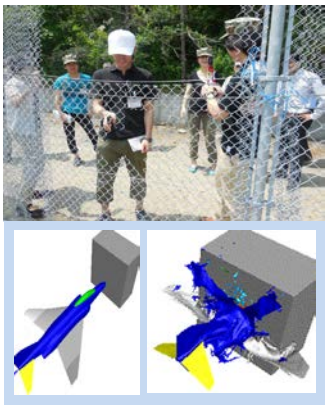


AY2014 AESJ
Student Poster Session Award
Kazuki NAKAHARA
2nd Graduating Class
Sagara Laboratory

Activity Report

Practical Training Training in Nuclear Security

Through classroom work, exercises at training facilities, and practice in numerical analysis, this course provides a practical explanation of themes including the base concept of nuclear security, the properties and barrier materials for nuclear and radioactive matter, the design and assessment of physical protection systems, the principles of object and shock wave analysis for structures, trends in systematic measures in Japan and overseas, and nuclear security culture. Students taking the course used ANSYS AUTODYN code to conduct a numerical simulation of anti-shock analysis exercises for structures exposed to flying objects and bomb blasts. Students also visited the *Japan Atomic Energy Agency (JAEA)* in Tokai Village, Ibaraki Prefecture. There, students received practical nuclear security education, including exercises using physical protection training facilities and surveys of nuclear security at reprocessing plants.



Science Café

September: Shall we talk “NUCLEAR”?

On September 6, 2014, a Science Café under the theme of “Shall we talk ‘Nuclear’?” was held for foreign students living in the *Tokyo International Exchange Center*, which is also an activity base for DOJO students. About 20 students from various countries enjoyed participating in the event. In a relaxed atmosphere, students exchanged opinions on a variety of topics including energy conditions in their native country and nuclear power generation and related risks.

December: What’s “Nuclear”? –Diversity and Future of Nuclear Power

On December 20, 2014, the third Science Café was held by third-year students at the academy and targeted at high school students. Following an introductory lecture focusing on basic knowledge of nuclear power, nuclear power generation, reconstruction activities at Fukushima, and radiation, then a Q&A session was held separately for each theme in order to foster a deeper understanding of the topics. It was a stimulating experience for everyone involved, including academy students.

Student Introduction #3

Kaname SAGA
3rd graduating class

I studied water treatment and water environments in undergraduate school. Currently, I major in nuclear engineering and conduct research related to analytical chemistry. I enrolled in U-ATOM in order to engage in further study of separation engineering and energy issues — areas in which I have always been interested. Peaceful use of nuqclear power is established based on social literacy and international cooperation in a variety of specialized fields. I hope to become a professional who understands these relationships and is capable of making decisions. I believe it is necessary to deepen my comprehensive understanding from a wide range of perspectives. The diverse coursework and training at U-ATOM help me develop a broad knowledge.

Jiaju ZHOU
3rd graduating class

I was in the Dept. of Nuclear Engineering at university when the disaster at Fukushima Daiichi Nuclear Power Station occurred. I was asked countless questions regarding nuclear power plants and radiation by concerned people around me. I had been confident in the safety systems of modern nuclear power plants and was therefore shocked by the Fukushima disaster. Although I had originally been interested in reactor physics, the disaster led me to shift my focus to safety. I decided to come to Japan and enroll at U-ATOM in order to study the cause of the Fukushima Daiichi Nuclear Disaster and work to improve nuclear power safety in the future. I am currently studying technical and social issues to ensure the safe and peaceful use of nuclear power throughout the world.

Information

Event Schedule

▼Europe Training ▼Asia Training ▼U.S.A. Training ▼Practical Exercises ▼Other

Edited and issued by the Academy for Global Nuclear Safety and Security Agents, Tokyo Institute of Technology
2-12-1-N1-1, Ookayama, Meguro-ku, Tokyo, 152-8550, Japan TEL/FAX:03-5734-3279
E-mail:u-atom@nr.titech.ac.jp URL:http://www.nr.titech.ac.jp/u-atom/ Issued on August, 2015