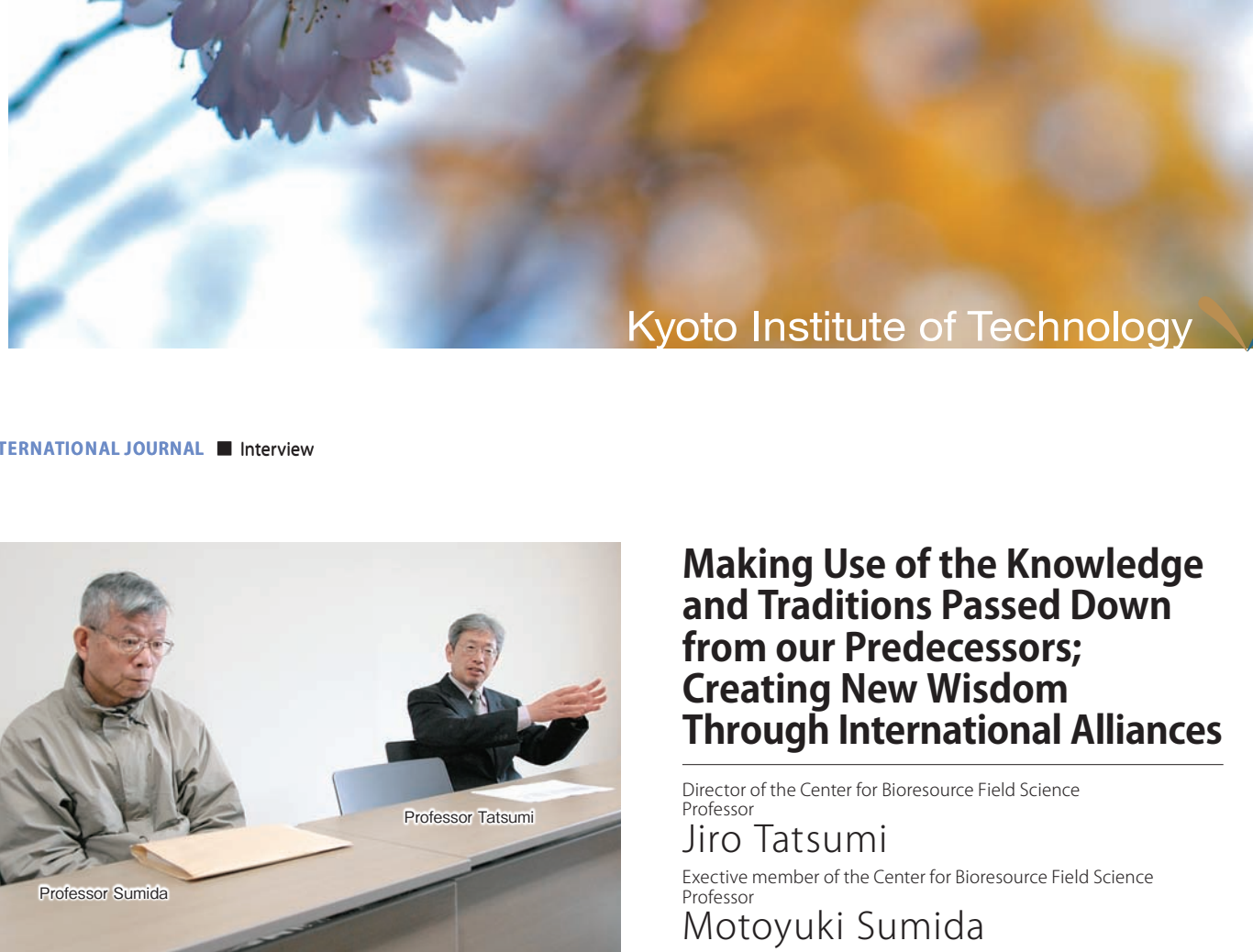




International Exchange Center Kyoto Institute of Technology

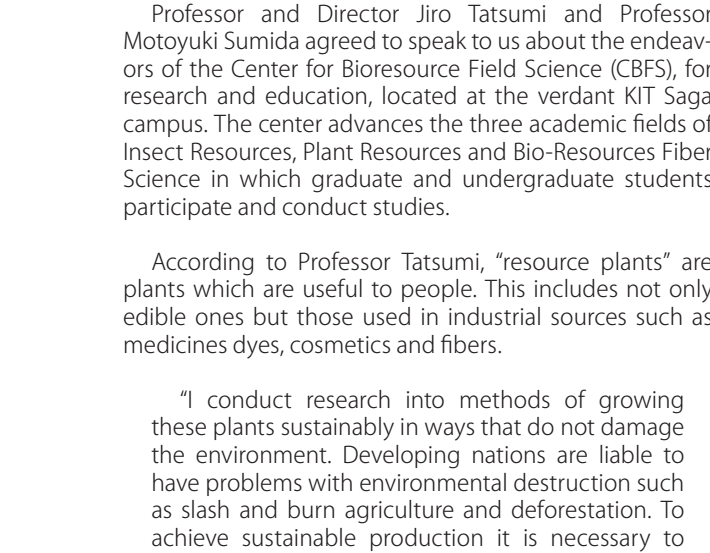
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Kyoto Institute of Technology

KIT INTERNATIONAL JOURNAL ■ Interview



Making Use of the Knowledge and Traditions Passed Down from our Predecessors; Creating New Wisdom Through International Alliances

Director of the Center for Bioresource Field Science
Professor
Jiro Tatsumi
Executive member of the Center for Bioresource Field Science
Professor
Motoyuki Sumida

Combining Science with Regional Folk-Knowledge Gained in Overseas Fieldwork

Professor and Director Jiro Tatsumi and Professor Motoyuki Sumida agreed to speak to us about the endeavors of the Center for Bioresource Field Science (CBFS), for research and education, located at the verdant KIT Saga campus. The center advances the three academic fields of Insect Resources, Plant Resources and Bio-Resources Fiber Science in which graduate and undergraduate students participate and conduct studies.

According to Professor Tatsumi, "resource plants" are plants which are useful to people. This includes not only edible ones but those used in industrial sources such as medicines, dyes, cosmetics and fibers.

"I conduct research into methods of growing these plants sustainably in ways that do not damage the environment. Developing nations are liable to have problems with environmental destruction such as slash and burn agriculture and deforestation. To achieve sustainable production it is necessary to properly improve the surrounding environment. For this reason, research into the reciprocal influences of plant resources and the environment are required."

Professor Tatsumi has engaged in fieldwork abroad.

"In Nepal, crops are grown on steep slopes and in depleted soils. When you visit places like this, you find trees and shrubs grown along the border of field terraces. These are nitrogen fixing trees which enrich the soil while preventing erosion. This is an excellent, well conceived solution. By applying the scientific method and the findings of our research to the highly respected, expert folk-knowledge of regional agriculturalists, I hope to promote ideal environmental preservation techniques."

Applying the Findings from Our Sericulture Research: KIT's Lead in Sericulture

Professor Sumida of the academic field of Insect Resources conducts research into silkworms. Well known for the development of the System of Aseptic Sericulture on an Artificial Diet, KIT has taken the lead in sericulture research. Held in high esteem internationally, this center works to support the Silk Innovation Center of Mahasarakham University in Thailand and has begun interchange with Khon Kaen University also of Thailand.

Professor Sumida feels a sense of impending crisis as concerns the situation of sericulture research in Japan and

the West. "Although France was renowned for its sericulture program, the French National Sericulture Research Institute was closed last year. The reason given? "The field was outdated." They were preserving 200 species but that had become difficult. I see this as a great loss to human society. The situation in Japan is similar. Far from being outdated, some countries are beginning to use sterile sericulture techniques in the production of pharmaceuticals. It is vital to find a way to maintain our worldwide sericulture traditions." Professor Sumida pointed out.

Solutions to Shared Problems Sought Through International Alliances

A research institute in Padova, Italy (Istituto per la Zootecnia Agraria, Padova) among others, is among the organizations where the flame of silkworm research is still burning. Professor Sumida is working to promote alliances among these overseas organizations. In September of last year, when The International Society for Wild Silkmooths and Japanese Society for Wild Silkmooths co-sponsored The 6th International Conference on Wild Silkmooths in Tokyo University of Agriculture, Professor Sumida had a hand in conference management and organization including visa paperwork and hotel arrangements. There were aspects of this which were a struggle but, he continued,

"After the conference, overseas participants came to shake my hand and thanked me for making it possible for them to participate. When it comes to international interchange, face to face communication makes all the difference. There are things you simply don't understand until you meet people. I was at Arizona University for a year. It is true there are challenges associated with being abroad, but I was able to form some lasting relationships. I hope to actively encourage young researchers to participate in international exchange."

Professor Tatsumi has the following to say about the future direction of the center.

"With its many promising prospects, the Center for Bioresource Field Science must lead the way. International interchange is of the utmost importance. The environmental problems of the world are common to us all and we must establish dynamic communication networks."

He further expressed his aspirations for the center by saying,

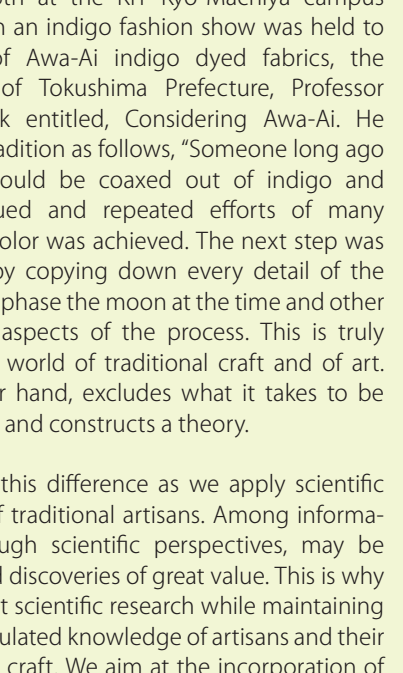
"I want to work toward solutions in cooperation with overseas organizations."

International Alumni ■ KIT INTERNATIONAL JOURNAL

Aiming to Become the Future Biobased Material Research Hub in Asia

Professor, Head of the Department of Biobased Materials Science

Urakawa Hiroshi



The Need for World-class Human Resources

Topics such as resource depletion and global warming are all too familiar to our ears these days. Considering that manufacturing has long been dependent on petroleum resources, it comes as no surprise that the Biobased Materials (BBM) major, which make use of natural biodegradable materials, is drawing attention. KIT began a master's program in the academic field of Biobased Materials Science last year. Unique, both in Japan and internationally, this program is firmly committed to BBM research. We interviewed Professor Hiroshi Urakawa from this program.

What is the current state of research in this field?

"Some research has made great progress toward achieving practical, marketable products. For example, poly-lactic acid, a bioplastic produced by fermenting starch has been a success. However, because production costs are high compared with petrochemical products and because this starch is edible, research is underway to utilize agricultural waste products."

What expertise do you demand from students in this program?

"The demands of the interdisciplinary research in this field require a range of backgrounds in, for example, biochemistry, chemistry and engineering. In addition, persons need to have highly developed intercultural communication skills. Abundant resources are needed for BBM development or manufacture but Japan, which can hardly be described as an agricultural country, does not have the raw material volume necessary to meet the demand. Materials must be imported. In view of this, students without international awareness or highly developed communication skills are likely to impede the progress of research in this field."

What programs do you have in place to insure that students achieve intercultural communication skills?

As this major vows to train students to cultivate an international outlook, our curriculum includes the BBM International Seminar. We enlist instructors from BBM-related research organizations to provide English lectures and we require students to write their papers in English. We insist they express their thoughts, opinions and interests to

the instructors present. The majority of students have been hesitant but when they finally overcome this, the experience becomes a significant step forward.

Are there other advantages to this program?

One of the foremost qualities of international awareness is the ability to explain about one's own culture. Living in Kyoto, the center of Japanese culture, students at KIT have a distinct advantage in this regard.

Integrating Art and Science

Last December 5th at the KIT Kyo-Machiya campus building, Ninigi, when an indigo fashion show was held to spotlight the lure of Awa-Ai indigo dyed fabrics, the traditional industry of Tokushima Prefecture, Professor Urakawa gave a talk entitled, Considering Awa-Ai. He expounded on this tradition as follows, "Someone long ago realized that color could be coaxed out of indigo and through the continued and repeated efforts of many persons, a beautiful color was achieved. The next step was to create a manual by copying down every detail of the process including the phase the moon at the time and other seemingly irrelevant aspects of the process. This is truly representative of the world of traditional craft and of art. Science, on the other hand, excludes what it takes to be irrelevant information and constructs a theory."

We are aware of this difference as we apply scientific theory to the work of traditional artisans. Among information eliminated through scientific perspectives, may be previously overlooked discoveries of great value. This is why we choose to conduct scientific research while maintaining respect for the accumulated knowledge of artisans and their mastery of traditional craft. We aim at the incorporation of art and science in this way.

Up until now, BBM has been primarily concerned with clothing, instruments and tools. The materials for these common everyday products originally came from plants and animals. I believe what is now necessary, is for us to use the powers of science to return to what was done originally. Our research has been noted abroad and interested specialists have visited our labs on inspection tours. We are actively encouraging international student enrollment and hope to become a major hub for BBM research in Asia.

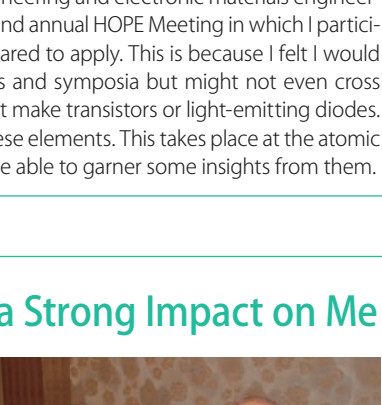
KIT INTERNATIONAL JOURNAL ■ Feature

Wonderful HOPE Meeting Experience [Yoriko Tominaga]

The HOPE Meeting in which I participated provides excellent opportunities for doctoral students selected from countries in the Asia-Pacific region to establish networks of researchers through the participant's interaction, which will usher in a bright future for science and technology in this region. The scope of the program in which I participated went beyond discussions with Nobel Prize laureates and other distinguished scientists to include a concert.

In 2009 when I participated, it had not been long since this program began. In fact, it was only the second year and the HOPE meeting was not yet widely known. Because I was a JSPS (Japan Society for the Promotion of Science) research fellow I received an invitation to apply from JSPS in fact the first I knew of the program was from the pamphlet they sent me. I was surprised to find that entry application materials had to be submitted in English. The section entitled, "Why do you wish to participate in this program?" required a full page in English. I wrote that I hoped participating in this program would give me an objective sense of the value of my research and a new perspective on my work. I hoped to take myself to another level as a researcher by speaking with excellent research students from the Asia-Pacific region.

In the field of Electronic Engineering, I have specialized in semiconductor engineering and electronic materials engineering. The academic field that this work is categorized under is physics. In the second annual HOPE Meeting in which I participated, the majority of the researchers were from the field of chemistry. Still, I dared to apply. This is because I felt I would have many opportunities to meet other researchers in physics at conferences and symposia but might not even cross paths with chemical researchers. Although I work with semiconductors, I do not make transistors or light-emitting diodes. I create crystals which produce semiconductor laser elements; the "seeds" of these elements. This takes place at the atomic level. As the arrangement of atoms is also of interest to chemists, I felt I might be able to garner some insights from them.



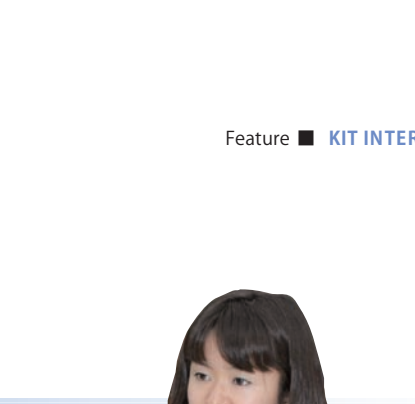
Words of a Nobel Prize Winner which had a Strong Impact on Me

Fortunately, I was chosen to be among the participants in the second HOPE meeting which was held in Hakone, Kanagawa Prefecture, from September 27 to October 1. The meeting assembled 100 doctoral students from 14 Asia-Pacific countries and regions.

Every HOPE meeting includes Nobel laureate participants. Seven Nobel laureates were invited to address our meeting. With so many young people gathered in one place, the noise and activity levels were high. All of that changed the moment the arrival of the Nobel laureates was announced and they entered the room. Instantly the room was cloaked in silent respect. It was astounding. It was the first time for me to witness what is meant by an aura.

Dr. Noyori, himself a Nobel laureate and chair of the committee, gave the keynote lecture in which he urged us to maintain a constant awareness of how our research might benefit the world. "Never forget that your work is to contribute to the progress and wellbeing of humanity." He reiterated in an impressive manner. Naturally I want to conduct research that will contribute to society. Listening to this champion of science, however, I understood more clearly than ever before the importance of precision, accuracy and clear intentions. In the afternoon at lunch, Dr. Noyori came to the table where I was sitting and spoke to each of us individually. When he came to me he said, "Do your work for your country. I leave Japan in your hands." I was deeply impressed.

Dr. Svante Lindqvist, director of the Nobel Museum, spoke about what it takes to be a Nobel Prize. He shared Dr. Noyori's view that we should not rest for even a day if we wished to receive the prize. "Work, and then, work more. When you have won the prize, what will be your next goal? What do you hope to contribute to the world? Keep that in mind. Read many books. Read books of high quality and avail yourselves of the bounty of knowledge and life."



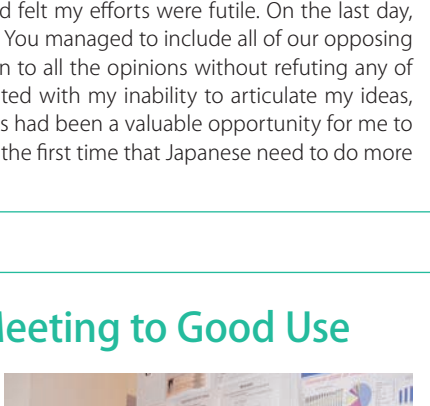
Feature ■ KIT INTERNATIONAL JOURNAL

The Japan I Discovered By Speaking With Students from Other Countries

I was astonished to find the high level of awareness of the students from what are known as developing countries. They boldly approached even the Nobel laureates and shook hands with them announcing that they wished to do something to alleviate the (air) pollution problems of Bangladesh. It made a strong impression on me that people my own age were so assertive in their determination to be of service to their country.

In the course of the meeting, we were divided into groups of 8 persons where we held discussions and were to present summaries of what was discussed. In the majority of groups, no one was from the same country. My group had members from China, Bangladesh, New Zealand and other places. As you might expect, their ways looking at the world differed. They argued their points in earnest. I found this fascinating.

Our views and conclusions had to be presented to everyone assembled and somehow I had been chosen as the group leader. Even though I suddenly found myself the leader, I was not completely able to express what I wanted to say during the discussions. When I returned to my room, rather than relaxing, I had the day's discussions to write. Because I needed to create a presentation about what was being said, I only had 1 to 2 hours of sleep each night. I was woozy from the work and lack of sleep. I was disappointed in myself and felt my efforts were futile. On the last day, however, three of the team members said, "You never complained, once. You managed to include all of our opposing opinions in your slides. From watching you, I learned that Japanese listen to all the opinions without refuting any of them and finally, harmoniously incorporate them all." While I felt frustrated with my inability to articulate my ideas, persons from overseas had seen this differently. I was pleased and felt this had been a valuable opportunity for me to experience a difference between Japan and other countries. I realized for the first time that Japanese need to do more than just Westernize.



Putting What I Learned at the HOPE Meeting to Good Use

The experiences I gained through the HOPE meeting are ones that I could not have obtained anywhere else. I reaffirmed the reasons for the existence of chemistry and physics; realizing that chemistry is an academic field which seeks value while physics examines the principals and origins of events. I hope to participate in research that fuses chemistry and physics.

My consciousness expanded from concern with atomic level particles and events, to one that encompasses my country. What can Japan do for the world? What can I do for the world as a Japanese? What does Japan have to offer that other nations do not? Applied arts and traditional culture come to mind. Happily, I am currently in Kyoto where I have recently realized how beautiful the temples are. I had been thinking how nice it would be to visit Italy or France. True, these are lovely places with a rich cultural heritage. First, however, we Japanese need to know Japan and learn to articulate its riches.

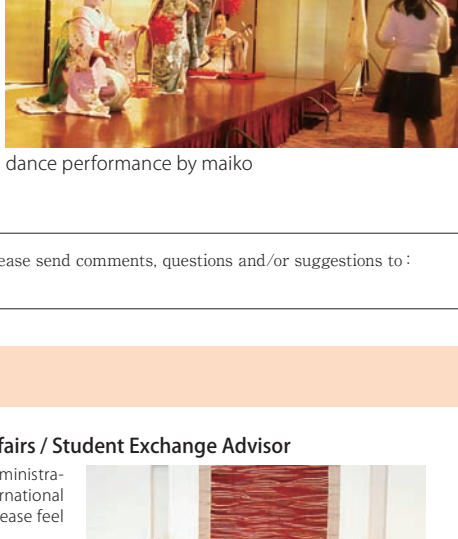
I hope to create a research organization composed of the friends I made during this program. And through this network, I hope to assist with the development of a program to enable young people from these countries to visit each other's nations. If today's KIT students take part in this meeting, they will have an opportunity to be inspired. This is a life changing experience. I have conviction that when you change, you can change your environment, and change the world. I dare you to accept my challenge.



KIT INTERNATIONAL JOURNAL ■ Topics

Emergency Preparedness Training 2010

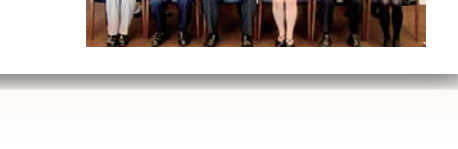
We conducted an Emergency Preparedness Training session on December 4th for residents of KIT International House (*Marikoji Kaikan*) with the cooperation and instruction of Sakyo Ward Fire Department officials. The fire drill assumed a fire in a Marikoji apartment and progressed from there. Students enacted the steps they needed to follow, to safely escape from the building. Participants then experienced an earthquake in the mobile earthquake simulation room and smoke in a closed room. Everyone expressed surprise at how shocking these emergency situations were in spite of knowing they were about to happen. We provided hands on training with actual fire extinguishers after everyone had listened to instructions on the use of fire extinguishers and indoor fire hydrants. This was a good opportunity for the international students and researchers to increase their awareness of disaster readiness. It is hoped that these drills will prove valuable in the event of a real emergency.



explanation by firefighter

KIT Exhibits at 2010 Japan Education Fairs Abroad

In November of 2010, KIT exhibited at the JASSO Japan Education Fairs with 40 other Japanese institutions in Thailand and with 60 others in Vietnam. Many institutions featured distinctive displays. Students were attracted to the KIT booth by our English language university prospectus which was prominently displayed among with our other PR materials. KIT staff effectively communicated the unique research and educational opportunities provided on our campus to the excellent prospective students eager to study in Japan. KIT alumnae and alumni, officials from Japanese institutions in Thailand, local high school students and university students visited our booth where friendships were furthered and meaningful information was exchanged.



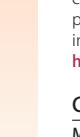
Japan Education Fair

KIT President Hosts Social Gathering 2010

KIT President EJIMA Yoshimichi, hosted a social gathering on December 16, 2010 at a Kyoto city hotel. The guests were from foreign consulates in Japan, municipal offices in Kyoto and supporting organizations for international students. This annual event, promotes mutual friendship among international students and international researchers who pursue their research and academic work far from home.

The party commenced with President Ejima's opening speech. Following the cordial speech by the Osaka Consul General of the People's Republic of China, Prof. Tatenaga, the Vice Director of the International Exchange Center, gave a toast and briefly addressed the room. To provide everyone with a precious Japanese cultural experience, a dance performance by *maiko* was included, lending a luxurious atmosphere to the party. The 2010 party enjoyed a large turnout of nearly 200 guests and included government and community representatives, international students, international visiting scholars and university officials. The evening concluded with a speech by Prof. Furuyama, Director of the International Exchange Center.

dance performance by maiko



Feedback Welcome

Thank you for reading the KIT International Journal. Please send comments, questions and/or suggestions to :
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http://www.kit.ac.jp/english/05_05_060000.html

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