



= Foreword =

## Recent International Research Activities of RISH

Prof. Toshiaki Umezawa  
Chair of the International Academic Exchange  
Committee of the RISH, Kyoto University



### List of MOU

Name of institution	Date of Conclusion	Research field
Nanjing Forestry University, CHINA	25 <sup>th</sup> October, 1996	Wood and wood-based materials
Center National de la Recherche Scientifique Center de Recherches sur les Macromolécules Vegetales, FRANCE	31 <sup>st</sup> January, 1998	Plant macromolecules
The National Institute of Aeronautics and Space of the Republic of Indonesia (LAPAN), INDONESIA	8 <sup>th</sup> September, 2000	Equatorial atmospheric dynamics
School of Biological Sciences, Universiti Sains Malaysia, MALAYSIA	24 <sup>th</sup> July, 2001	Biology and wood science
Research and Development Unit for Biomaterials, Indonesian Institute of Sciences (LIPI), INDONESIA	17 <sup>th</sup> September, 2004	Wood and biomaterial science
Universiti Putra Malaysia, MALAYSIA	6 <sup>th</sup> September, 2006	Wood science
VTT Technical Research Centre of Finland, FINLAND	20 <sup>th</sup> March, 2007	Biotechnology and material science
Zhejiang Forestry University, CHINA	17 <sup>th</sup> November, 2007	Wood science
The Centre for Research in Earth and Space Science (CRESS) of York University, CANADA	20 <sup>th</sup> December, 2007	Earth and space science
The College of Atmosphere and Geographic Sciences, Oklahoma University, USA	17 <sup>th</sup> March, 2008	Atmosphere and geographic science

The Research Institute for Sustainable Humanosphere (RISH), Kyoto University, was established in 2004 by unifying two organizations, the Wood Research Institute (WRI) and the Radio Science Center for Space and Atmosphere (RASC). The objective of the RISH is to promote academic activities and education in the field of a new humanospheric science through domestic and international collaborative research programs and thereby contribute to both academic and public societies. Humanospheric science is defined as an interdisciplinary science to conduct research concerning a humanosphere, which is composed of four vertical regions of planet Earth for human activities, that is, ground human-habitat, forest, atmosphere and space. By integrating the individual research results obtained in the laboratories in the Core Research Divisions, we pursue our four missions to solve

present and future problems concerning the humanosphere: Assessment and remediation for humanosphere, Science and technology towards solar energy society through biomass and solar power satellite research, Space environment and its utilization and Development of technology and materials for cyclical utilization of bio-based resources.

The RISH was established as an inter-university and international cooperative research institute. To promote international collaboration, we have signed Memorandum of Understanding with many foreign institutions. As shown in the table, we have eleven

MOUs at present.

We have held a number of international symposia to set and confirm our future directions towards establishment of a sustainable society. In FY 2007, six international RISH symposia were held: 73<sup>rd</sup> RISH Symposium (July 25, 2007, Bandung, Indonesia), 77<sup>th</sup> RISH Symposium (October 22-27, 2007, Kyoto, Japan), 78<sup>th</sup> RISH Symposium (October 29, 2007, Kyoto, Japan), 83<sup>rd</sup> RISH Symposium RISH-USM Workshop in Penang (December, 11-15, 2007, Penang, Malaysia), and 92<sup>nd</sup> RISH Symposium Towards Establishment of Sustainable Humanosphere (Cibinong, Indonesia).

In addition to the symposia, we have organized lectures "Humanosphere Science School in 2008" in RISH satellite office in Research and Development Unit for Biomaterials, Indonesian Institute of Sciences, Cibinong, Indonesia. This school originated as Wood Science School in 2006. In this year, it has been co-organized with G-COE program "In Search of a Sustainable Humanosphere in Asia and Africa" and expanded to cover many fields of humanospheric science.

We hope that these activities facilitate to establish systems for sustainable society through international research networks.

= RISH International Symposium =

## 83<sup>rd</sup> RISH Symposium – RISH-SBS Seminar

Ayako Honda  
International Affairs Adm. Office

The Research Institute for Sustainable Humanosphere (RISH), Kyoto University, and the School of Biological Sciences (SBS), Universiti Sains Malaysia (USM), jointly organized the seminar. That was held at the SBS of USM, Penang, Malaysia, from December 12 to 14, 2007.

SBS is one of the partner institutions of RISH. First Memorandum of Understanding (MOU) was concluded in July, 2001, to conduct exchange programs mainly in the field of urban entomology. The two institutes renewed their MOU in July 21, 2006, to encom-

pass a broader range of fields of wood science, and these successful past exchanges led to this series of activities.

The Seminar covered a wide range of topics from basic to advanced research on wood science and technology. Over 60 researchers came to the seminar and showed great interest in their discussions.

Another purpose of this seminar was to nurture and inspire young Japanese researchers to become more international and enhance the quality of research. Therefore RISH assured the young researchers of RISH who joined of beneficial opportunities.

During the seminar, on Dec. 13, Director Shuichi Kawai and other associated researchers at the RISH paid a courtesy visit to Vice Chancellor Lim Koon Ong of USM. First, they extended their thanks for the seminar and thereafter exchanged views on their mutual interest in academic exchanges.

The USM, which is a research oriented university mainly consisting of science departments, is a leading Malaysia university according to Malaysian government standards.

URL: <http://www.usm.my/en/>

The program of the seminar is as follows:



View of the seminar

### Program

#### December 12, 2008 (Wednesday)

- # Welcome Speech and Opening Ceremony: Prof Abu Hassan Ahmad, Dean of School of Biological Sciences, SBS
- # Developing Research Clusters for Life Science at USM: Prof Nazalan Najimudin, Research Platform Dean for Life Sciences, SBS
- # Exploration and Promotion of New Interdisciplinary Research Projects on a Sustainable Humanosphere: Prof Yuji Imamura, Head of the Center for Exploratory Research on Humanosphere, RISH
- # New Approaches for the Sustainable Production of Biobased and Biodegradable Materials: Dr. K. Sudesh Kumar, SBS
- # Cadmium Removal from Soil by Trans-



Vice chancellor is in the center, and Director Kawai is on his left

- genic Plants by Use of Metal Transporter Genes: Dr Tsugumi Nakanishi-Masuno, RISH
- # Foraging and Feeding Behaviour of Urban Pest Ants: Prof Lee Chow Yang, SBS (Visiting Professor of RISH)
- # Molecular Aspects of Unsaturated Fatty Acids in Fish Reproduction and Development: Assoc Prof. Alexander Chong Shu Chien, SBS
- # Development of Novel Functionalized Bacterial Cellulose-based Biomimetic Composites: Dr Thi Thi Nge, RISH
- # Optically Transparent Nanocomposites Reinforced with Bacterial Cellulose: Dr Masaya Nogi, RISH
- # Managing Mosquito Vectors in Malaysia: Assoc Prof Zairi Jaal, SBS
- # Termites for New Energy Options: Assoc Prof Tsuyoshi Yoshimura, RISH

#### December 13, 2008 (Thursday)

- # Perspective on the international academic collaboration of RISH: Prof Shuichi Kawai, Director of RISH, RISH
- # An overview of the collaborative research programs at RISH: Prof Toshitaka Tsuda Vice-Director of RISH, RISH
- # *Mimosa pigra* - the most noxious invasive plant species in ASEAN countries: Prof Mashhor Mansor, SBS
- # Evaluation of biodiversity of birds with special references to avian contribution to nutrient cycling in *Acacia* plantation

- forests: Dr Motoko Fujita, RISH
- # Incidence and remediation of bioaerosols in enclosed buildings in Malaysia: Prof Baharuddin Salleh, SBS
- # Generating wealth from local agro-wastes via solid substrate fermentation: Prof Darah Ibrahim, SBS
- # Microbial and thermochemical pretreatments of lignocellulosics for biofuel production: Prof. Takashi Watanabe, RISH
- # Insect juvenile hormone production from cell suspension culture of *Cyprus aromaticus* (Ridley): Prof. Chan Lai Keng,

- SBS
- # Genetically modified trees: from applied science to basic science: Dr. Tomomi Kaku, RISH
- # Isoprene emitted from tropical forests as a thermotolerance mechanism for plants: Prof. Kazufumi Yazaki, RISH
- # Scenario of mangrove-estuarine degradation due to human activities in Peneng Island: Dr. Khairun Yahya
- # Closing remarks: Prof Abu Hassan Ahmad, Dean, SBS, and Prof. Shuichi Kawai, Director, RISH



= RISH International Symposium =

## Humanosphere Science School and the 92<sup>th</sup> RISH Symposium in LIPI-Cibinong, Indonesia

Prof. Mamoru Yamamoto



RISH, Center for South-East Asian Studies (CSEAS) of Kyoto University, The Indonesian Institute of Sciences (LIPI), and the Global Center of Excellence (G-COE) Program "In search of sustainable humanosphere in Asia and Africa", with financial support from the Organizations for the Promotion of International Relations of Kyoto University, organized Humanosphere Science School (HSS) and the 92th RISH Symposium "Towards Establishment of Sustainable Humanosphere" in LIPI

Biomaterial Center in Cibinong, Indonesia in February 21-23, 2008.

The RISH director, Prof. S. Kawai, CSEAS director, Prof. K. Mizuno, and Deputy of LIPI, Dr. E. Sukara attended the meetings together with attendants that reached about 90 including 23 Japanese delegates. Because of rich travel support from the G-COE Program, many young scientists, i.e., post-doctoral fellows and students in the PhD courses, could join these interesting meetings from Kyoto.

In HSS, Prof. B. Subyanto, Dr. Subyakto, and Dr. A. Firmanti from LIPI, and Prof. M. Yamamoto, Prof. J. Sugiyama, Prof. T. Watanabe, Dr. T. Yoshimura, and Dr. M. Fujita from RISH gave lectures that cover topics from the wood science, the forest ecology to the atmospheric remote sensing. On the second day, we had a scientific trip to Bogor Botanical Garden of LIPI.

The 92th RISH Symposium was held on the last day, and we had presentations by Dr. H. Soedjito from



LIPI, Dr. E. Hermawan from National Institute of Aeronautics and Space (LAPAN) of Indonesia, Prof. S. Kawai, Prof. T. Umezawa, Dr. M. Shinohara,

Dr. R. Ridyorini, Ms. S. Mizuno, and Mr. K. Koishi from RISH, Prof. H. Mizuno and Prof. K. Matsubayashi from CSEAS, and Dr. K. Nakamura

from Kyoto University Graduate School of Asian and African Area Studies (ASAFAS). The topics spread over diverse fields, i.e., the regional studies of Asia and Africa, wood materials, plant-gene, biomaterials, tropical meteorology, and solar-power plant in space (SPS).

From these meeting we learned that vast study areas are concerned with the establishment of the sustainable humanosphere. Discussion in the meetings and conversations with scientists from different disciplines stimulated scientific interest of all participants including young scientists. We would like to continue organizing this kind of interesting and important meetings.

= Visiting Professor =

## Changing views on termites – not just foe but also friend

Prof. Michael Lenz  
Visiting Professor from Australia



When we think of “termites” these days, we no longer see termites as destroyers of homes and other wooden structures, we also see termites as a key group of animals contributing to the functioning of many ecosystems. Especially in the tropics they form a most important group by their sheer biomass. They are key components of the food chain, and most importantly they are decomposers of large volumes of plant litter and other cellulosic material. Their impact on the humanosphere can be manifold. With such holistic views prevailing at RISH, my time there provided me with a unique opportunity to look at two aspects of termite biology that take into account their abilities to decompose cellulosic materials and their recently recognized value as a nutritious food source to many animals.

I am an Honorary Research Fellow at CSIRO Entomology in Canberra, Australia within the group “Termites in Ecosystems”. It was with great joy that I accepted the invitation by Dr Kunio

Tsunoda to come to RISH, especially since I had experienced the great hospitality and diverse research opportunities at the Laboratory of Innovative Humano-habitability during earlier short stays. From July 2007 until January 2008 I worked closely with Drs Kunio Tsunoda and Tsuyoshi Yoshimura and their team looking at the question of whether waste paper products could be used to maintain and breed termites, as had been suggested in the past by researchers from Canada and Australia. A recent, detailed study by Itakura and colleagues (2006) demonstrated the high nutritious value of workers of the two Japanese key pest species of termite, *Reticulitermes speratus* and *Coptotermes formosanus* (unsaturated fatty acids, amino acids). We wanted to know if it was possible to mass rear termites on such products so they could be used as food supplements in the breeding of fish and other animals as suggested by Itakura and colleagues. At the same time the pro-

ject might demonstrate that termites could help reduce the amount of waste paper in Japan and elsewhere.

Our laboratory studies and very preliminary results from the field (Kagoshima RISH field research site) have confirmed that termites are choosy feeders. Although they may readily feed on a variety of different paper sources when they are the only food available, in the field termites seem to prefer materials that are free of chemical paper additives. Dr Yoshimura will continue to monitor the field trials (Kagoshima, Uji campus) over the coming spring to early summer. But unfortunately it seems that mass rearing termites on cellulosic waste materials such as paper and cardboard may have only limited potential. For this purpose other food sources will have to be investigated.

Also while at RISH I collaborated



*Coptotermes formosanus*  
upper and lower left: attack on newspaper upper  
right: fecal droppings black from print ink lower  
right: black print ink accumulating in termite abdomen

with Drs Tsunoda, and Yoshimura and Visiting Professor Chow-Yang Lee of the University Sains Malaysia (Penang, Malaysia) on a number of other smaller successful termite projects. Some of those will ensure ongoing collaboration.

I have greatly appreciated the opportunity to get a glimpse of the way of life in Japan beyond a short-stay tourist experience. The warm hospitality

at RISH, for which we are very grateful, and the consideration and help given by the people of Kyoto, has given memories that will stay with me and my wife. Apart from Kyoto and Uji where we lived, among the places visited in Japan most memorable were Hiroshima and right at the end of my time in Japan, Hokkaido in winter, especially time at the reserve for the Manchurian Crane.

I would like to express my gratitude especially to Drs Tsunoda and Yoshimura for hosting my visit and for the opportunity to meet with other colleagues from research institutions and industry and the excellent support given to me at RISH.

= RISH-mission Scientists =

## Global variation of water vapor using different observational platforms (COSMIC, AQUA, NCEP and ECMWF)

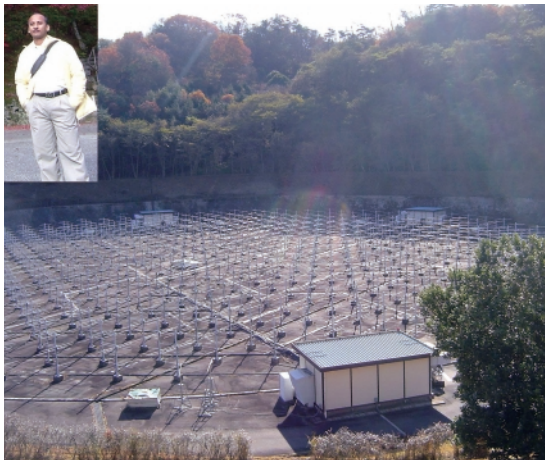
Dr. I. V. Subba Reddy  
RISH-mission Scientists from India



In RISH I am carrying out studies on “Global variation of water vapor using different observational platforms viz., COSMIC, AQUA, NCEP and ECMWF”. In the past water vapor observations are limited and mostly they are point observations. In the recent years observational techniques have been evolved to monitor the atmosphere globally on a continuous basis with high spatial and temporal resolutions. The spatial and temporal variations in water vapor, precipitation and temperature are very important in the study of global climate change. The water vapor is one of the key parameters for the weather, climate change and weather forecast. The water vapor distribution varies sharply in the vertical direction as evident in the many forms of stratiform cloud systems. The convective and stratiform clouds are highly prevalent in the tropical region. Tropical precipitation provides three fourths of the energy that drives the atmospher-

ic wind circulation through latent heat release. Thus, it has been always in the focus of space-borne research. In the recent years COSMIC, Aqua, missions have emerged as very powerful techniques to study water vapor globally. COSMIC mission provides about 2000 real-time soundings per day over the globe with high degree of vertical resolution and providing global coverage in all weather conditions. Thus GPS radio occultation data is ideally suited for a detailed study of water vapor. Aqua is another satellite mission of the NASA’s Earth Observing System (EOS) which was launched on May 04, 2002, consists of six distinct earth-observing instruments. The three components of the aqua sounding set are AIRS (atmospheric infrared sounder), AMSU (advanced microwave sounding unit), HSB (humidity sounder for Brazil). AMSU is a 15 channel sounder consisting of two physical units, AMSU-A1 and AMSU-A2. Twelve of AMSU’s

channels measure radiation with frequencies between 50 and 60 GHz and are used primarily for temperature sounding, the other channels measure radiation at frequencies of 23.8, 31.4 and 89 GHz and are used mainly for water vapor and precipitation measurements. The horizontal resolution of the AMSU data at nadir is 40.5 km, this is three times as coarse as that of the AIRS data. The NCEP reanalysis and ECMWF data are also used for the comparison and the difference between these observations are studied. The observational technique is different for both COSMIC and Aqua satellite. The COSMIC mission provides high vertical resolution data with limb technique but Aqua satellite provides high horizontal resolution data with nadir technique. By combining these two, both vertical and horizontal variation of water vapor are studied globally. Aqua is showing lower values than COSMIC and radio sonde. But the comparison is



over the western pacific region and also the variation between over the land and ocean in India-Indonesia region.

I have delivered one Institute seminar and two seminars for the Prof. T. Tsuda's Research group. During my stay in Japan I visited to Shigaraki where the MU radar, Rayleigh Lidar, Boundary Layer Radar, RASS and other remote sensing facilities are

fairly good between COSMIC and radio sonde. Global variation of water vapor is compared with the NCEP, ECMWF, COSMIC and AIRS for the month of September 2006. We are also focusing the water vapor distribution

available. During October 23-27, 2007 I attended the International CAUSES Symposium, held at Kyoto University, Japan. Kyoto is the historical place and I am quite fortunate to stay in Kyoto. In Kyoto I visited some of the historical

temples eg., Kinku Kuji, Byodo-In, Momorotoji temples. These are quite excellent.

I would like to express my great pleasure to record my deep sense of gratitude and profound thanks to Prof. T. Tsuda who gave me this opportunity to work in the world reputed University. I express my sincere thanks to my colleagues for their cooperation towards research as well as common amenities. I extend my heartfelt wishes to Mrs. Michiko Okazaki and Mrs. Sachiko Shikata who have taken care in all the aspects to provide comfortable life in Japan. I express my sincere thanks to the authorities of RISH for providing necessary facilities and excellent support to carry out my research work.

= Students from Abroad =

## Research Activities at the Research Institute for Sustainable Humanosphere (RISH)

Zhengpeng Hua  
Master Course Student from China



It is an honor to present my research in this International Newsletter. I would like to express my appreciation to my research supervisor, Professor Kozo Hashimoto, for giving me an opportunity to conduct this interesting study and for fruitful and continuous discussions, helpful suggestions, and useful advice throughout the present research.

People have paid more and more attention to space power satellites (SPS). One of the most important issues of the microwave power transmission (MPT) system in the SPS is highly effective power transmission. Since there are phase differences in the microwaves between different antennas, the microwaves can offset each other. Thus phase synchronization between antennas is important. My research is based on a fast phase control method called the parallelization method.

First, we conducted certification experiments of the parallelization method with one signal generator and two signal generators, in which we compared the phase differences between two signals measured by the parallelization method and the true values. The error with one signal generator was about 1.4 degrees. After using an approximation straight-line method to

eliminate the error caused by the phase difference between two signal generators, the error with two signal generators was 3.7 degrees.

Next, we developed a phase control feedback system that could make the phases of two signal generators synchronous. The error was less than 4 degrees. We conducted wireless experiments to test the feedback system. In the wireless environment, the feedback system could control the phase difference between two signals effectively.

Space satellites will become major energy sources and be a great benefit to humankind in the future. We hope that more and more people will participate in satellite research and accelerate this process.



= Students from Abroad =

## I study tropical wood decay for my PhD research at RISH, Kyoto University

Erwin

Ph.D. student from Indonesia



In the beginning of April 2004, I came to Japan when the Sakura flowers were in bloom. It was the first time I experienced people gathering under of the full bloom of the Sakura blossoms, enjoying the beautiful red, pink and white flowers while picnicking with food and refreshments in a common tradition called “Hanami”. On the second day of my stay in Kyoto, I was really surprised and lucky enough to experience my first Hanami party with the students, researchers and staff



*Processing SEM images using EDAX software*

members of the laboratory where I would work. The day was a wonderful opportunity for me as a new member to get to know everyone from the laboratory and to begin to create a deeper relationship with them. That day has become an unforgettable moment that symbolizes the commencement of my life in Japan.

With a Mombukagakusho (MEXT) Scholarship by Embassy Recommendation (G to G program), I had the opportunity to start my study at Kyoto University with a five-month Japanese language course at the Yoshida campus. On October 2004, I was admitted as a research student in the Laboratory of Innovative Humano-habitability at the Research Institute for Sustainable

Humanosphere (RISH), Kyoto University. In April 2005, I was enrolled in the institute’s doctoral program under the supervision of Prof. Yuji Imamura.

In East Kalimantan, Indonesia where I came from, planters have been trying to establish plantation forests of the commercial trees of the Dipterocarpaceae family, such as the red meranti and yellow meranti. Unfortunately, these trees often suffer from canker disease and their wood decays. Similarly, in replanting of rubber plantations, the rubber trees are also susceptible to this disease. Because forests are managed for timber production and the wood of rubber trees from replanting areas is used for furniture and various wood-based products, decay reduces the grade quality or timber yield, and is therefore a serious economic problem. Because of that I have focused my research on the study of microscopic characteristics of wood

degradation involved in the decay of these trees. I have identified the decay fungi by using molecular methods and inoculated it into sound wood for decay test experiments in the laboratory. For fungi identification, I used molecular methods because this was a rapid and accurate way to characterize and identify organisms, and it did not require the substantial subjectivity often involved in the use of classical methods, but rather was based on objective (molecular) information derived from the target organism. Under the guidance of Dr. Shuhei Takemoto, I accomplished

the DNA analysis for fungi identification in the Laboratory of Environmental Mycology and Nematology, Graduate School of Agriculture, Kyoto University.

I found basidiomycetes fungi and non-decaying mitosporic fungi in the decayed wood tissues of the trees. The basidiomycetes fungi in laboratory conditions have a similar decay pattern to that in the decayed wood of plantation trees. Identifying the causal fungi and examining the decay pattern on wood in the laboratory should enable confirmation of the cause of the wood degradation. I also performed a microscopical observation of progressive decay under laboratory conditions to determine the process of wood degradation by the basidiomycetes fungi. I believe that studying the microscopic characteristics of wood degradation in commercial trees will help in the development of control measures for decay. During this study, I have written two papers that have been accepted for publication in the *Journal of Wood Science*, and I have other papers in preparation for submission.

While I was studying, I joined the Japan Wood Research Society (JWRS)



*A longitudinal canker and transverse view of the canker disk of a rubber tree found in East Kalimantan, Indonesia*

and the International Association of Wood Anatomist (IAWA). I presented my research papers at the 55<sup>th</sup> annual meeting of JWRS in Kyoto (March 2005), at the IAWA meeting in Botany 2006 Conference in California, USA (August 2006), and at the 57<sup>th</sup> annual meeting of JWRS in Hiroshima (August 2007). At the 6<sup>th</sup> PRWAC of the IAWA meeting in Kyoto (December 2005), I presented the results of my

research work in poster sessions, and was awarded the first-place prize for best poster. I also participated in the 3<sup>rd</sup> International Symposium on Surfacing and Finishing of Wood in Kyoto (November 2004), the 6<sup>th</sup> International Wood Science Symposium (IWSS) in Bali, Indonesia (August 2005) and the 16<sup>th</sup> Indonesian Scientific Conference in Kyoto (August 2007).

I live in Japan with my wife and

children. Looking back, I have had many memorable occasions while living here. Every year, my family and I participate with pleasure in the Japanese traditional events in our neighborhood, like *kodomo matsuri*, *mochi tsuki*, *ocha matsuri*, *undokai*, *winter supotsu* and *onggakukai*. We have also participated in cultural exchange events where we shared traditional Indonesian customs, such as the *Indonesianotabe*

= News Topics =

## Establishment of DASH System

Prof. Kazufumi Yazaki

A new system designated “Development and Assessment of Sustainable Humansphere (DASH)” is introduced to Research Institute for Sustainable Humansphere (RISH) at the end of March 2008 as a budget request from Kyoto University to Ministry of Education, Culture, Sports, Science and Technology in Japan for the fiscal year 2007.

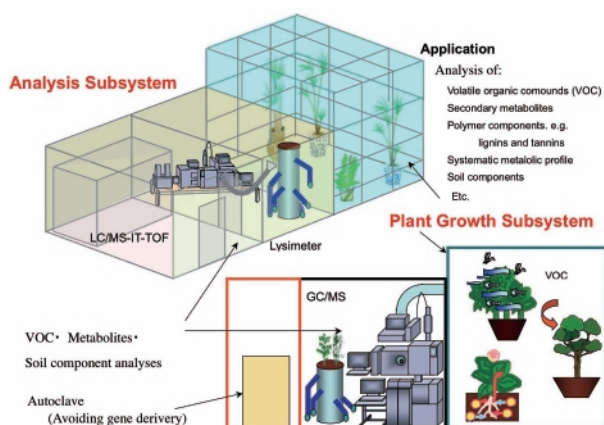
The concept of DASH system is illustrated below. This system provides the facility to grow transgenic plants and to analyze wide range of metabolites from volatile compounds to polymers. As this system was requested from both RISH and Center for Ecological Research, this system is designed also for ecological studies analyzing interaction between plant and insect, plant and fungi, plant and atmosphere.

DASH system consists of two components, i.e. analysis subsystem and plant growth subsystems. The former

contains three analytical facilities: 1) LC-MS-IT-TOF that enables systematic analysis of chemical components of plants, fungi, and bacteria; 2) two GC-MS apparatuses for the analysis of lignin components as well as volatile organic compounds emitted from many organisms in nature; 3) lysimeter (model MP-917) to monitor the soil environments. The latter is a greenhouse, which has 2 closed greenhouses and 5 special screened greenhouses, specialized for growing transgenic plants including large woody plant species. The height of the largest room is ca. 7 m and overall building area is ca. 220 m<sup>2</sup> including the rim. Inside of this DASH greenhouse, a culture room is also equipped where axenic cell and tissue cultures or plant transformation can be managed.

This system will be applied for the domestic and international collabora-

tive research programs and be opened for all relevant researchers on application basis from the fiscal year 2008. The construction of DASH is on-going and the current status is shown in the picture. We appreciate the active application for utilizing the DASH system as new collaboration with our Institutes.



### The Committee of International Academic Exchange

Toshiaki Umezawa (Chair),  
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Kazufumi Yazaki,  
Mamoru Yamamoto,  
Tsuyoshi Yoshimura,  
Naoki Shinohara and  
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Illustrated by Chikako Noshi



(Indonesia Night) Festival 2007, and my wife together an Indonesian friend demonstrated Angklung (traditional Indonesian music) performances at the Kyoto Foreign Students Music Festival in 2005 and 2007. I will never forget the help, advice and support from everyone at the Laboratory of Innovative Humano-habitability for my research activities.