No. 27 January 2013

= Foreword =

International Research Activities at RISH in 2012

Professor Mamoru Yamamoto
Chair of the International Academic Exchange Committee of the RISH, Kyoto University

Humanospheric science is a new interdisciplinary science to conduct research concerning a "humanosphere." The Research Institute for Sustainable Humanosphere (RISH) of Kyoto University was established in 2004 in order to promote this new science with academic activities and education through domestic and international collaborative research programs. RISH contributes to both academic and public societies. International collaborations are especially important in the academic activities of RISH. In fact, most members of RISH have been involved in multi-lateral collaborations with other universities or research institutes at the international level. As a preface to the international newsletter, we would like to overview our international research activities in the fiscal year 2012.

RISH holds Memory of Understanding (MOU) with many foreign institutions. This year we added four more MOUs. The first one is the agreement with the University of Riau, Indonesia. This agreement is based on the collaborative research under the Global COE Program "In Search of Sustainable Humanosphere in Asia and Africa" (2007-2012), agreed in 2011 with three other Kyoto University institutions; the Graduate School of Asian and African Area studies, the Center for Southeast Asian Studies, and the Center for Integrated Area studies, and became formally effective on June 15, 2012. The second one is the agreement with College of Forest and Environmental Sciences, Kangwon National University in Republic of Korea. Prof. Junji Sugiyama reports the signing ceremony and the kick-off workshop "Wood Culture in East Asia" that were held on August 3rd, 2012. The third one is the Letter of Intent (LOI) agreed with the Research Institute for Human Settlements and Agency (RIHS) in Indonesia on August 28th, 2012. Assistant Prof. Takuro Mori reports this agreement that stands over the long-time collaborations starting from "JSPS-LIPI Core University Program in the Field of Wood Science" in 1996-2005. The last one is the agreement with Faculty of Civil Engineering and Planning, Islamic University of Indonesia signed on September 22nd, 2012. Prof. Kohei Komatsu reports this agreement and the signing ceremony that is fairly new expansion of collaboration with Indonesian institutions. Now number of MOUs reached 18 as listed in Table 1. Our counterparts widely spread over 12 countries in 7 Asian, 3 European, and 2 American regions.

Table 2 shows list of visiting scientists in this year. Among these professors and associated professors, Prof. Cihat Tascioglu from Duzce University, Turkey,

and Prof. Wen-Shao Chang from the University of Bath, UK kindly contributed this international news letter with reports of their visit to RISH. We also collected reports from two JSPS Post-Doctoral Fellows, Dr. Sanjay Kumar Mehta (India) visiting Prof. Toshitaka Tsuda, and Dr. Bertrand Marcon (Italy) visiting Prof. Shuichi Kawai.

RISH sponsors number of symposia and scientific meetings. In this year, among total 25 supported symposia, five were regarded as international meetings. Four of them were already conducted successfully; Humanosphere Science School 2012 (HSS2012) (August 27-30, Bandung, Indonesia), The 3rd Flagship Symposium of Tropical Artificial Forest (October 13, Uji Campus of Kyoto Univ.), Nanocellulose Summite 2012 (October 15, Uji Campus of Kyoto Univ.), and International Symposium on Sustainable development and Human Security in Southeast Asia through Biorefinary and Low Cost House (SABH 2012) (December 11-12, Uji Campus of Kyoto Univ.)

= News Topics =

RISH signs a MOU with UII-CE&P, Faculty of Civil Engineering and Planning, Islamic University of Indonesia

Professor Kohei Komatsu

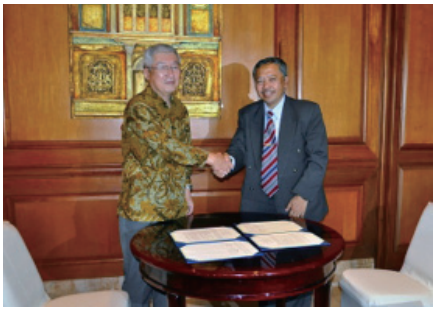
On the morning of 22nd September 2012, a signing ceremony was held between UII-CE&P and RISH, Kyoto University. For this ceremony, four members from UII-CE&P, including Professor Mochamad Teguh, Dean of UII-CE & P, and three members of RISH, including Professor Toshitaka Tsuda, Director of RISH, attended.

Prior to the signing ceremony, Director Tsuda briefly explained the organization and research activities of RISH. Dean Mochamad Teguh gave an overview of the UII-CE & P. Then, both leaders signed the MOU documents. After the signing ceremony, a luncheon ceremony with Indonesian dishes was held. Staff from the two institutions discussed what research projects they will be collaborating on in the future.

The exchanges between RISH and UII-CE & P were sparked by exchanges that occurred during the 73rd Symposium Humanosphere, which was held in Bandung, Indonesia in July 2007. After that symposium, a lecturer at UII-CE &P enrolled in the Doctorate course at the Graduate School of Agriculture, Kyoto University, which enhanced the mutual relationship between the two institutes. In addition, RISH staff attended an international symposium held in Indonesia, and also investigated traditional wooden buildings in Indonesia. The RISH staff also gave special lectures on traditional timber structure for the graduate student.

Photo taken by all participants signing ceremony

The state of the exchange after the signing ceremony



Signing ceremony (Right; Dean Teguh, Left; Director Tsuda)

With the signing of this MOU, a new comprehensive and efficient partnership will be built between the two institutes. RISH hopes to actively promote academic exchange and enhance educational services through joint research, joint hosting of symposia, and an exchange of faculty members.

= News Topics =

RISH signed LOI with the RIHS, Ministry of Public Works in Indonesia

Assistant Professor Takuro Mori

To strengthen international academic cooperation between two Institutions, RISH Director Professor Toshitaka Tsuda of Kyoto University has signed LOI with Dr Anita Firmanti, Director of the Research Institute for Human Settlements and Agency (RIHS), Ministry of Public Works, Indonesia on August 28, 2012. The signing ceremony took place at RIHS in Indonesia.

Prior to the signing ceremony, a

short seminar showcasing the various research works done by RISH and RIHS was conducted by four researchers of both Institutions. In addition, a facility tour was given to the Japanese participants.

Mutual collaboration first began in 1996 under the JSPS Scientific Cooperative Program entitled 'JSPS-LIPI Core University Program in the Field of Wood Science' with RISH and LIPI (Indonesian Institute of Sciences) as the core participating institutions. Between 1996 and 2005, collaborative research on timber houses with RIHS was actively implemented. Several Indonesian researchers had done the member exchange under this ten-year program. And the current RIHS director Dr. Firmanti received her doctorate degree at RISH under the 'Ronpaku JSPS program' between the fiscal year 2000 and 2005. Mr. Maryoko Hadi, who is a RIHS researcher, is also currently taking his Doctorate program in RISH under the Ronpaku JSPS program since fiscal year 2008.

In collaboration with RISH and the Center for Southeast Asian Studies (CSEAS), the 'Southeast Asian for Sustainable Humanosphere - Green and Life in ASEAN' was initiated in 2011. Under this main project, the 'Development of low-cost house construction using tropical timber' was carried out by RISH and RIHS between 2011 and 2013. To-date, several mini workshops and research exchanges have been conducted.

With the signing of this LOI, a new comprehensive and efficient partnership will be built between the two Institutions. Through this partnership, RISH hopes to actively promote academic exchange and enhance educational services through joint research, joint hosting of symposia, and active exchange of members.

Signing ceremony (center; Director Firmanti, Right; Director Tsuda)

Introduction of both institutes
Second left side; Director Firmanti, Right side; Director Tsuda

= News Topics =

General memorandum for academic cooperation and exchange between the RISH and College of Forest and Environmental Sciences, Kangwon National University, Republic of Korea.

Professor Junji Sugiyama

At the signing celemony. From left, Prof. Emer. Okano, Prof. Lee, Prof. Kim, Prof. Tsuda, myself and Assoc. Prof Imai.

Kangwon University is the oldest Forestry College and one of the national universities in the field of wood science and technology offering high quality education and leading scientific research.

On the 3rd of August 2012, RISH signed MOU with Kangwon National University to establish collaborative relations between the two institutions and to promote friendship and co-operation. It is hoped that this MOU will encourage mutually beneficial relationships in the areas of teaching and research through exchanging information and materials that are of mutual interest, and through the organized exchange of academic staff and graduate students.

Present at the signing ceremony were Prof. Kim, Dean of the College of Forest and Environmental Science, Kwangwon National University, Prof. Lee, Wood Science and Technology, Kyungpook National University, Prof. Tsuda, Director of RISH, Prof. Okano, Emeritus Professor of the University of Tokyo, Assoc. Prof. Imai, RISH, and myself. The atmosphere at the signing ceremony was very pleasant.

After the ceremony, a kick-off workshop on the topic "東東アジアにおける木の文化 동아시아의 목재문화 Wood Culture in East Asia－木材科学ができること－목재과학이 할수 있는 것 Potential of Wood Science" was organized, starting with a series of lectures from Prof. Kim about "黄腸木について 황장목에 관하여 Introduction to Yellow-heart Wood (*Pinus densiflora* for. *Erecta* Uyeki)" and from Prof Lee on the subject of "寺所蔵の活字版木の現状 해인사 소장 대장경 목판의 현황 Present Situation of the Tripitaka Koreana in Haeinsa Temple". Both professors and five of their graduate students were invited as a part of the RISH International Cooperative Research Program.

= Visiting Professor =

My visit and research activities at RISH

Dr. Cihat Tascioglu
Visiting Professor from Duzce University, Duzce, Turkey

I am an associate professor in the Department of Forest Industrial Engineering, Faculty of Forestry, Duzce University. I spent 12 weeks from April 1 to June 29 at RISH, Kyoto University as visiting professor. My host was Professor Yoshimura, the head of Laboratory of Innovative Humano-habitability. I know Prof. Yoshimura and his lab well since I studied there for 24 months between 2007 and 2009 as a JSPS (Japan Society for the Promotion of Science) post doctoral fellow under Assoc. Prof. Kunio Tsunoda who unfortunately passed away last year. From my previous experience, I was confident that Yoshimura Lab is well advance in the field of termite and wood decay studies therefore I wanted cooperate with his lab during my sabbatical.

One of my research interests is to develop novel techniques to protect wood-based and wood-plastic composites from termite and fungal attacks. During my post doctoral fellowship in RISH, five commercially available structural-use wood-based composites (WBCs) [softwood plywood (SWP), hardwood plywood (HWP), medium density fiberboard (MDF), oriented strand board (OSB) and particleboard [PB]) were post-treated with alkaline copper quat (ACQ) and copper azole (CA) via vacuum impregnation. Both water-based preservatives were successfully introduced into all types of wood-based composites according to the retention data obtained after the treatments. The target retentions were selected according to the Japanese Agricultural Standards (JAS) use class system. When mechanical properties of WBC after the post-treatment where compared with those of untreated controls, some reductions in static bending properties were recorded regardless of WBC type with an exception of SWP. Untreated and treated composites were tested for their resistance to decay fungi (brown rot fungus *Fomitopsis palustris* and white rot fungus *Trametes versicolor*) and the subterranean termite *Coptotermes formosanus* by laboratory and field test methods. In general, preservative treated WBC were not as resistant to biological attacks as treated *Cryptomeria japonica* sapwood blocks, possibly due to uneven distribution of preservatives in the composites. Untreated MDF was the most resistant to fungi and termites in both laboratory and field tests. PB was ranked second, and needed further protection only against *C. formosanus*. Both preservative chemicals did not adequately protect SWP and OSB from fungal and/or termite activity even at the highest retention levels tested with an exception of end-coated OSB post-treated with CA at 2.01 kg/m^3 retention level against *F. palustris*. The biological resistance of HWP was reasonably improved by both chemicals in laboratory and field tests. The chemical analysis revealed different biocide distribution profiles among WBC types. Both SWP and HWP exhibited a sharp biocide gradient between outer and inner sections, suggesting that core sections were more susceptible to biological activity. Interestingly, the opposite biocide distribution profiles were noticed in MDF, OSB and PB indicating more preservative chemicals were recovered from the core sections.

Furthermore, we incorporated zinc borate (ZnB) powder into wood-plastic composite materials during the manufacturing stage which is known in-process treatment. Similar tests regarding biological performance of the ZnB incorporated wood-plastic composites under laboratory and field test conditions were also carried out.

My research activities in recent visit included obtaining field test data from post-treated wood-based and in-process treated wood-plastic composites installed in the RISH's Living Sphere Simulation Field (LSF) located near Hioki City in Kagoshima Prefecture on the south west of Kyushu Island, Japan. I was able to visually observe and rate termite and decay damage on the composites exposed to termite and decay activity under protected above ground conditions for 36 months. In general, termite attack is always severer than decay regardless of composite type and retention level based on the field test findings. While SWP, HWP and OSB material treated at higher retention lev-

Sakura time in Uji River

Inspection in the Living Sphere Simulation Field (LSF) near Hioki City, Kagoshima, Japan.

els showed significantly slower progress in termite attack when compared to their untreated controls, none of composites among the highest retentions rated as sound after 36 months exposure.

In addition, I was able to conduct some laboratory termite tests with *Coptotermes formosanus* on wood-plastic composites fabricated from recycled treated wood and polyethylene (PE) in Duzce University. The termite tests are part of a wide study dealing with physical, mechanical and biological (termite, decay and mold) performance of the recycled treated wood-plastic composites.

While a visiting professor, I was able to share my research interest on wood preservation and biodeterioration to graduate students from Japan and Indonesia. I gave a seminar before faculty of RISH on June 13, 2012 entitled "Biological performance of wood-based composites post-treated with preservatives". After my presentation, I received many interesting questions and input which encourages me to take my study to further stage.

I would like to extend my sincerest thanks to my host Yoshimura-Sensei for his time, interest and very warm hospitality during my stay. I am also thankful to Yanagawa-Sensei for interesting discussions and coffee breaks. Special thanks go to Ms. Nobuko Yagi for detailed explanations and endless help on every matter. Finally, I would like to thank all laboratory personnel including staff members Mr. Akio Adachi, Ms. Kaori Sunagawa, Ms. Kyoko Inoue and Mr. Hajime Sorimachi and graduate students Ms. Titik Kartika , Ms. Ono Kazuko, Mr.Yuichi Yamamoto, Mr. Rikiya Takesako, Mr. Khoirul Himmi and Ms. Munadian Musalam who were always there when I needed help in or out of the lab.

= Visiting Professor =

My re-visit to RISH after I have left for two years and my activities

Dr. Wen-Shao Chang
Visiting Professor from University of Bath, UK

I am currently lecturing in Department of Architecture and Civil Engineering at University of Bath, UK. Experience in working in a vibrant and research focused environment like RISH was not terribly new to me. Before I joined UoB, I have worked in RISH at Kyoto University as a JSPS Post-Doc Research Fellow for a year (2009-10), and earlier I spent another year (2005-2006) in RISH as a visiting Research Associate. So before I was invited by Prof Kohei Komatsu to visit RISH during June to August 2012 for three months, I have stayed in RISH for two years collectively. My research interests involve timber and bamboo engineering, in particular the dynamic behaviour of timber components (joints, beams and floor, etc.) and conservation of historic buildings. During my stay at Kyoto University this time, I worked with Prof. Komatsu on a project titled "Development of Strong Shear Wall Composed of Panelised Cross Laminated Timber (CLT) and Lagscrewbolt". More information of my research and profile can be found in: http://www.bath.ac.uk/ace/people/chang/index.html

The CLT is a popular timber product in the UK and European countries as it ensures the robustness of timber structures. In the UK, there are two eight-storey timber apartments in London built in the past few years of which the CLT is the main construction material. Compared with in the Europe, CLT is a relatively new product in Japan and more research efforts are needed to investigate the CLT panels using domestic materials, such as sugi. Lagscrewbolt is a patented connection system that can connect timber members; this system was developed by Prof. Kohei Komatsu. This project is to combine these two systems together to provide timber building systems with higher stiffness and strength. During the discussion between myself, Prof. Komatsu and others, we have set the target for the CLT shear walls around the level of 90kN, this will ensure the failure would not occur in lagscrewbolt and to prevent splitting failure in the CLT panels. After the tests, the results showed that the maximum strength of the CLT shear walls with proposed connection system was in the range of 55-60 kN. The photo, taken by Prof Komatsu, shows the experimental setup and the specimen undergone large horizontal movement. In spite the fact that the expected strength is lower than we would expect, the results were satisfactory and could be a good pilot study to be used in the joint project to proper research funding agency, such as G8 Research Council, between two institutions in the future.

Further to this project, my work while I was at Kyoto University has

The experimental setup at RISH

diverted into to use of shape memory alloys (SMAs) in timber structures. I was impressed by Prof. Yoshikazu Araki in Department of Architecture at Kyoto University about his work, so I arranged a meeting with him and invited him to give a presentation at Prof. Komatsu's lab. We have agreed to work together on this topic in the future and will find ways to secure research funding together to carry out research works jointly. I have conducted some preliminary experiments while I was in Kyoto so that I can use to submit a manuscript to peer reviewed journal as a short communication to build our track record on collaboration, and these works will also be used as pilot study in my proposal to EPSRC in the UK. This will reinforce my collaboration with Kyoto University in the long run.

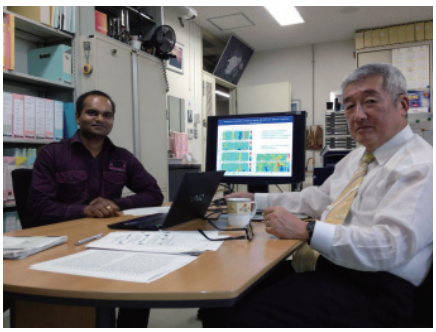
I have to say thank you to committee members and Prof. Kohei Komatsu for inviting me back to Kyoto University after I have left for two years. Special thanks also to Yagi sann who helps myself and my wife whenever and whatever needed, I could not image how difficult our life would be without her assistance. I also want to thank my colleagues in LSF for helping the experiments and useful discussions. Looking back my time in RISH at Kyoto University, it has always been a very fruitful time for me, and this really reinforces our relationship not only in person but also between two institutions. Most importantly, the sponsorship of my visit to RISH is acknowledged.

= Post-doctral Fellow =

Climate monitoring of the Tropical Tropopause Layer by GPS Radio Occultation

Dr. Sanjay Kumar Mehta
JSPS Post-doctral Fellow

I am presently working as JSPS researcher with my host professor Toshitaka Tsuda at Research Institute for Sustainable Hunmanosphere (RISH), Kyoto University. First time, I met Prof. Tsuda on his visit at National Atmospheric Research Laboratory (NARL), India for GPS radio occultation (RO) workshop during April 2005. I was pursuing my doctoral research at NARL then. I came to Japan first time to visit RISH as an East Asian Young Researcher for about one and half month during 2010. After completion of my doctorate degree I joined as a Mission Research Fellow at RISH on June, 2011 and worked till August, 2012.



Snap of my regular discussion with Professor T. Tsuda

I am carrying my post-doctoral research entitled 'A study on the variations of the tropical tropopause by using high-precision satellite data'. The objective of present research is to study the long term changes of the temperatures in the tropical tropopause layer (TTL) by employing GPS RO, radiosonde and ERA-Interim data sets. The TTL forms as a gradual transition from troposphere to stratosphere and thus have the mixed characteristics of both. The TTL is an important source region for the air entering to the lower stratosphere. The temperatures of the TTL control stratospheric water. Stratospheric water vapour affects ozone layer through its radiative and photochemical nature. Thus the TTL has global impact on the climate change.

Changes in the altitude of minimum temperature in the TTL i.e. cold point tropopause (CPT) recognized as a climate change indicator due to anthropogenic (Human) and natural activities. Changes in the CPT temperature are linked to tropospheric warming and stratospheric cooling. These results were obtained by employing routine radiosonde, operational satellites and reanalysis products. However, these instruments were not designed for the long-term climate monitoring purpose and hence structural uncertainty remains.

GPS RO measurements are independent and calibration free which provides high quality data to monitor the TTL with global coverage, essentially all-weather capability, long-term stability and consistency. There is recent research which shows the capability of the GPS RO for the climate monitoring and hence as future climate benchmark. Even short records of GPS RO enable to capture the tropospheric warming and stratospheric cooling signal and found to be consistence with radiosonde and ERA-Interim.

In order to evaluate climate change signals, one need to properly remove the signals due to quasi-periodic oscillation, El Nino Southern Oscillation, solar cycle and volcanic eruptions by decomposing the time series into these components. These components are known as inter-

annual variation in the temperature. Regression method is generally adopted to remove inter-annual signals from climate change signal. Inter-annual variability of the TTL is more complex due to different bearing of these signals. The use of high resolution GPS RO data in the present research is to (1) validate other source of data sets such as reanalysis products, (2) evaluate a fine vertical and spatial structure of the various inter-annual components and (3) study trends in the TTL. The understanding of the fine structure of the TTL will be useful in improving the general circulation model.

I have had several opportunities to present my research work at various seminar which regularly held at RISH and various conferences such as JpGU (held at Tokyo, Japan), COSPAR (Held in Mysore, India), MSJ meeting (Held in Sapporo, Japan) and Sixth COSMIC Workshop (held in NCAR, USA) during my research. I have submitted my present research to JGR Atmosphere.

I would like to express my sincere thanks to my host Professor for providing me opportunity to work with Professor Masatomo Fujiwara of Earth Environmental Science, Hokkaido University. I am thankful for the valuable discussion and suggestions from Prof M. Shiotani and Dr. N. Nishi of Kyoto University. I also had pleasure working with other staffs and students of RISH. I would like to sincerely thank Mrs. Sachiko Sikata of RISH for her support in arranging various issue related to my research and daily activities. I would like to thank Dr. T. V. C Sarma of NARL, India, for his help during my visit to Japan. I would like to express my sincere thanks to Kyoto University and JSPS for providing fund to my research work and I hope that I will deliver my best in near future.

= Post-doctoral Fellow =

Wood aging investigation for cultural heritage applications

Dr. Bertrand MARCON
JSPS Post-doctral Fellow

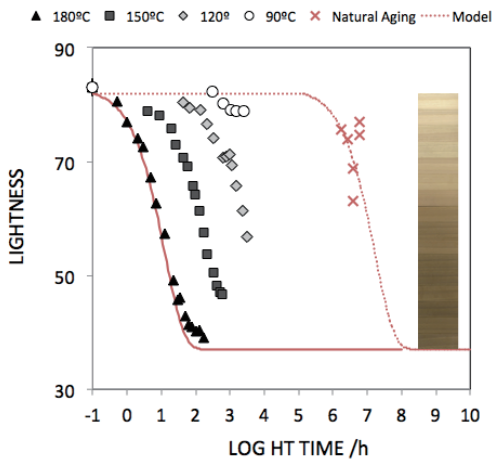
Since I started my PhD between University of Florence (Italy) and University of Montpellier II (France) in mechanics and wood science entitled "Hygromechanical study of wooden panels, supports of historical paintings, in view of their conservation" in 2009, I focused my research on the wood used in historical artifacts.

The Japanese Society (JSPS) awarded me a one-year fellowship for the Promotion of Science. That gave me the opportunity to work in the Research Institute of Sustainable Humanosphere (formerly Wood Research Institute) of Kyoto University. This laboratory has acquired a unique expertise on the properties of ancient wood thanks to the access of material originating from traditional Japanese temples.

Nowadays, wooden artwork is not only an issue for conservators and curators; scientists are more and more involved in such problems. Because of the lack of materials available to perform mechanical tests on wood from cultural masterpiece, it is not always possible to access the whole material properties. Moreover, it is well known that aged wood and freshly cut wood have *inter alia* significant hygromechanical differences. Alternative way to have information on aged wood is to make it artificially (at low temperatures) by heat treatments. To highlight the aging effect, I present in Figure 1 the color evolution against time exposition (in logarithm scale) at 180 ºC in an air-circulating oven (HT stands for heat treatment). The wood color turns darker and more orange with heat treatment and exactly the same kind of evolution is observed for natural aging (~HT at 15℃).

The poplar (*Populus alba* L.) was the most used wood species (up to 90%) as support for painting on wood during the "Renaissance" period (13th to 16th century) because of its low density (for big paintings like triptych), its ease of work, its homogeneous light grain and for its ease supply in Europa (implies low price). This is the reason why we considered that peculiar species is this study. However, some other wood for instance hinoki (*Chamaecyparis obtuse* Endl., Japanese cypress), Keyaki (*Zelkova serrata*) and calligraphic paper (chinese Xuan paper) as well, are under major interests in my hosting institute.

The aim of this study is to investigate similarities between naturally aged wood and heat-treated wood. Hence,



Color evolution due to heat treatments performed at 18℃ (time axis in logarithm)

heat treatments at different temperatures are applied for different periods of time, to check the time-temperature equivalency (Arrhenius law). The challenge of this post-doctoral project is to provide trends useful for the modeling of mechanical and hydric ageing effect and thus estimate the full properties of old wood paintings, sculptures or structures (over hundreds of years) instead of the common use of recent wood properties from literature.

I sincerely wish to thank Prof. Shuichi Kawai for providing me the opportunity to work with him and for supporting my research here and I also would like to thank JSPS foundation for financial support.

Table 1. List of international MOU in FY2012

No.	Institution	Country
1	Nanjing Forestry University	China
2	Center National de la Recherche Scientifique, Center de Recheerches sur les Macromolecules Vegetales	France
3	The National Institute of Aeronautics and Space of the Republic of Indonesia (LAPAN)	Indonesia
4	School of Biological Sciences, Universiti Sains Malaysia	Malaysia
5	VTT Technical Research Centre of Finland	Finland
6	Zhejiang Forestry University	China
7	The Centre for Research in Earth and Space Science(CRESS) of York University	Canada
8	National Atmospheric Research Laboratory (NARL)	India
9	The College of Atmospheric and Geographic Sciences, the University of Oklahoma	USA
10	Institute of Mathematics and Informatics of the Bulgarian Academy of Sciences	Bulgaria
11	Southwest Forestry University	China
12	National Cheng Kung University (College of Planning and Design)	Taiwan
13	Tanjungpura University (Faculty of Forestry)	Indonesia
14	Indonesian Institute of Sciences (LIPI) (Research and Development Unit for Biomaterials)	Indonesia
15	Chulalongkorn University (Faculty of Science)	Thailand
16	College of Forest and Environmental Sciences, Kangwon National University	Korea
17	The Research Institute for Human Settlements Agency for Research and Development Ministry of Public Works-Indonesia	Indonesia
18	Faculty of Civil Engineering and Planning, Islamic University of Indonesia	Indonesia
19	University of Riau	Indonesia

Table 2. Visiting Professors of RISH from February 2012 to December 2012

Name and Affiliation	Research title	Period
Cihat TASCIOGLU, Duzce University, Turkey	Biological Performance of Novel Wood Composite Materials	1 April 2012-30 June 2012
Wen-Shao CHANG, University of Bath, UK	Development of Strong Shear Wall Composed of Panelized Cross Laminated Timber (CLT) and Lagscrewbolt	1 June 2012-31 August 2012
Mohammad Iftekhar SHAMS, Khulna University, Bangladesh	Simplified fabrication of optically transparent composites reinforced with biomaterials	1 August 2012-30 November 2012
David NUNN, University of Southampton, UK	Oblique nonlinear wave-particle interaction in VLF waves and simulation of chorus emissions	1 September 2012-29 December 2012
Mechtild MERTZ, East Asia Civilisations Research Centre, Paris (CRCAO), France	Wood selection in ancient temple structures of Tibetan cultural sphere : case studies in Lhasa (Tibet), Sikkim (India), Sichuan Province (China)	1 September 2012-28 February 2013

Table 3. International Symposium from February 2012 to December 2012

Theme	Place	Period
Humanosphere Science School 2012 (HSS2012)・The 2nd International Symposium for Sustainable Humansphere (The 2nd ISSH) (208th RISH symposium)	Bandung city, Indonesia	27-30 August 2012
Tree Biotechnology towards Sustainable Production of Forest Biomass (213rd RISH symposium)	Kyoto University Uji Campus, Japan	13 October 2012
Nanocellulose Summit 2012 (209th RISH symposium)	Kyoto Terrsa, Japan	15 October 2012
International symposium on sustainable development and human security in Southeast Asia through biorefinery and low cost house (214th RISH symposium)	Kyoto University Uji Campus, Japan	11-12 December 2012

The Committee of International Academic Exchange
Mamoru Yamamoto (Chair), Toshitaka Tsuda, Shuichi Kawai, Takashi Watanabe, Hiroshi Yamakawa, Kazufumi Yazaki, Yoshiharu Ohmura, Toshiaki Umezawa, Hiroyuki Yano, Hirotsugu Kojima and Kenshi Takahashi (Chief Editor of the International Newsletter)
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