# 2<sup>nd</sup> Kyoto University-Southeast Asian Forum (KU-SEA Forum)

# "Technical Innovations for Sustainable Societies"

Saturday 26th January, 2008 13:00 - 16:20 pm,

Imperial Queen's Park Hotel,

Sukumvit 22, Bangkok, Thailand.

By
Kyoto University
Kyoto University Alumni Association in Bangkok
Kyoto Union Club

# The 2<sup>nd</sup> Kyoto University-Southeast Asian Forum

(KU-SEA Forum)

Kyoto University has nearly 100 years history in academic exchange with Southeast Asian countries. We received many under- and post-graduate students from Southeast Asian countries which number increased gradually and has reached 50 to 100 annually since the 1980s. We started dispatching faculty members to Southeast Asian countries for field works and joint researches in the 1960s. In order to support these activities, liaison offices were set up in Bangkok, Thailand (1964) and Jakarta, Indonesia (1970).

We have also received a lot of faculty members of Universities and research institutes in Southeast Asian countries for joint studies. We have launched several large-scale research and education programs under the government programs since the late 1980s, of which focuses strengthening the collaboration with Southeast Asian countries. These activities developed the academic tie with Southeast Asia much wider and deeper. Kyoto University has been one of the most active universities in doing research and education in Southeast Asia with Southeast Asian people. Frequent holdings in 2005, 2006 and 2007 of Kyoto University International Symposium (KUIS) in Southeast Asia clearly suggest the importance of academic collaboration with Southeast Asia.

KU-SEA Forum is co-organized by the Organization for the Promotion of International Relations, Kyoto University and the alumni association of the respective country. The forum aims at disseminating through the lectures provided by faculty members and/or graduates of Kyoto University. The forum also provides an opportunity to exchange ideas and information among faculty members, alumni and alumnae. We expect that the forum upgrades the intellectual reputation of Kyoto University in Southeast Asian societies and strengthen the collaboration between Kyoto University and Southeast Asian societies.

# The 2<sup>nd</sup> Kyoto University-Southeast Asian Forum "Technical Innovations for Sustainable Societies."

# **Program**

13:00-13:30	Registration
13:30-13:50	Opening Addresses
	Mr. NHMI Jun, the Japanese Minister
	Prof. Yokoyama Toshio, Vice-President, Kyoto University
	Prof. Wiwut Tanthapanichakoon, President, Kyoto Union Club
13:50-14:10	Keynote Address
	Prof. Ishii Yoneo, President, National Institutes for the Humanities
	"Thai Power of Assimilation and Tolerance, a Historical Reflection"
14:10-14:50	Lecture 1 "Energy for the future:
	Can we be totally free from energy-related problems?"
	Prof. Yoshikawa Kiyoshi, Kyoto University
14:50-15:20	Coffee Break
15:20-16:00	Lecture 2 "Nanotechnology:
	Does it truly benefit our society and how can we be sure it is safe?"
	Prof. Wiwut Tanthapanichakoon
16:00-16:30	Panel Discussion: "Technical Innovation for Sustainable Societies"
	(Discussion will be in English, but the summary in Thai.)
	Panelists:
	Dr. Bambang Subinyato, Indonesian Institute of Sciences
	Mr. Banno Tetsuji, President, Marubeni Thailand Co., Ltd.
	Prof. Krisada Visavateeranon, Thai-Nichi Institute of Technology
	Moderator:
	Assoc. Prof. Dr. Sucharit Koontanakulvong
16:10-16:20	Closing Remarks

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Kyoto University Alumni Association in Bangkok
Kyoto Union Club:

# "Keynote Address"

## Thai Power of Assimilation and Tolerance, a Historical Reflection

#### Yoneo ISHII

President, National Institutes for the Humanities, Inter-University Research Institute Corporation Emeritus Professor of Kyoto University

The Thai have shown their remarkable adaptability for survival throughout their hundred years of history of independence. The secret of their success should derive from their thoughtful action taken whenever external forces came to threaten their independence. Instead of blindly rejecting incoming invaders, they wisely identified what seemed valuable to them and successfully incorporating it into their own culture. This is the case when they first encountered the advent of the westerners in 15<sup>th</sup> -16<sup>th</sup> centuries. In the age of western imperialism of the 19<sup>th</sup> century, the Thai continued to retain their independence, while the rest of Southeast Asian became colonies of the West. In the 21<sup>th</sup> century, no country of the world, including Thailand, is free from the threat caused by environmental deterioration. Now is the time when the time-honored wisdom of the Thai be tested in finding an appropriate way to sustainable development. Their success shall be sincerely hoped.

#### Curriculum vitae

#### **Emeritus Prof. Yoneo Ishii**

Emeritus Professor of Kyoto University
LL.D (Kyoto), D.Litt honoris causa (Chula)
President, the National Institutes for the Humanities

**Publications** 

Sangha, States and Society; Buddhism in Thai History. 1986

The Junk Trade from Southeast Asia, 1998

## **Energy for the future:**

# Can we be totally free from energy-related problems?

Kiyoshi Yoshikawa, Professor Emeritus
Head, Supporting Office of Planning for Research Promotion
Kyoto University
Japan-Italy Cultural Center of Kyoto, Room 203
4, Yoshida-Ushinomiya, Sakyo-ku, Kyoto, 606-8302

#### Abstract

We human beings are now feeling the effects of global warming from the yearly and rapidly increasing carbon-dioxide emissions. Unless we can either control our energy consumption or invent innovative technology of high-efficiency carbon-dioxide removal, this increase in emissions will be very difficult to prevent, since the tendency of "seeking a better life" is basic human nature.

Then, the question is; in this 21st century, can we be free from energy-related problems, while enjoying sufficient energy to lead comfortable lives?

The future energy we envisage should be ideal in terms of impact to the environment, potentially lasting for thousands of years, equally distributed in every country, unlike oil, with the potential for high conversion efficiency into electricity, to be willingly acceptable to everyone.

Among various energy candidates, "nuclear fusion" is the most promising candidate. Kyoto University has a long history as a leader associated with this new energy, since Dr. Hideki Yukawa, the first Japanese Nobel prizewinner, and his colleagues initiated the research group called "Project Helicon" at Kyoto University in 1958.

These research activities were followed by many outstanding researchers, in particular, by Prof. Koji Uo, inventor of "Heliotron". This high performance device called Heliotron-E was successfully followed by the super-conducting Large Helical Device (LHD) at the newly established National Institute for Fusion Science, Toki city, and later by Heliotron-J at the Institute of Advanced Energy, Kyoto University, Uji campus.

On the other hand, the international project of a tokamak-type fusion experimental reactor called ITER (International Thermonuclear Experimental Reactor) started formally in Oct. 2007, and is to be constructed at Cadarache, France, aiming at a commercial fusion power plant in 50 years.

Also, together with the aforementioned magnetic confinement fusion, laser fusion research is being conducted at various places, and, in particular, strong programs are under way at Lawrence Livermore National Laboratory, and Osaka University, Institute of Laser Engineering.

Another advanced energy system, called SPS (Solar Power Station), using a huge solar panel in orbit to convert solar energy into microwave power and transmit it to the earth, is now being studied at Kyoto University.

From the viewpoint of energy utilization, the advantage of high-efficiency direct energy conversion from advanced fusion energy into electricity will be discussed here to offer our future society electricity and hydrogen energy.

#### Emeritus Prof. Kiyoshi Yoshikawa

Name:

Kiyoshi Yoshikawa,

Age:

64

Birth date:

April 4, 1943,

Birth place:

Nara city, Japan,

Citizenship:

**Japanese** 

Title & Affiliation: Head, Supporting Office of Planning for Research Promotion, Kyoto University,

Professor Emeritus, and Former Director, Institute of Advanced Energy, Kyoto

University. Japan-Italy Cultural Center of Kyoto, Room 203, 4, Yoshida-Ushinomiya,

Sakyo-ku, Kyoto, 606-8302

Tel:+81-(0)75-585-7111, Fax:+81-(0)75-751-9100, e-mail: kiyoshi@iae.kyoto-u.ac.jp,

#### Qualifications

Mar., 1966:

BS, Nuclear Engineering, Kyoto University, Japan.

Mar., 1968:

MS, Nuclear Engineering, Graduate School of Engineering, Kyoto University, Japan.

May, 1974:

Dr. Eng., Nuclear Engineering, Graduate School of Engineering, Kyoto University,

Japan., "Effects of non-uniformities in the non-equilibrium Magneto-hydrodynamic

**Electrical Power Generation**"

#### Current and previous appointment and position

Jan., 1971:

Assistant Professor, Institute of Atomic Energy, Kyoto University

May, 1974:

Associate Professor, Institute of Atomic Energy, Kyoto University

Oct., 1978- Sept., 1979: Temporary employee at Lawrence Livermore Laboratory for Fusion Direct

Energy Recovery Research in the group of Dr. Ralph Moir (paid by DOE)

Oct.,1979- Mar.,1980: Visiting scholar at Lawrence Berkeley Laboratory for neutral beam injection

system in the group of Dr. Robert Pyle

Apr., 1992- Mar., 1996: Professor, Institute of Atomic Energy, Kyoto University

Apr., 1996- Mar., 2000: Professor, Institute of Advanced Energy, Kyoto University (renamed)

Apr.,2000-:

Director, Professor, Institute of Advanced Energy, Kyoto University

Mar.31, 2007:

mandatory retirement

April 1, 2007:

Head, Supporting Office of Planning for Research Promotion, Kyoto University,

Professor Emeritus,

#### Academic research fields

Non-equilibrium MHD electrical power generation, Fusion direct energy conversion, Inertial Electrostatic Confinement(IEC) Fusion, Detection of landmines by an extremely compact IEC device with 5 years program

"Research & Development of Humanitarian Landmine Detection System by a Compact Discharge-Type Fusion Neutron Source "(Oct. 2002-Oct.2007) supported by JSTA.

# Nanotechnology: Does it truly benefit our society and how can we be sure it is safe?

Wiwut Tanthapanichakoon, National Nanotechnology Center, National Science and Technology Development Agency, 130 Thailand Science Park, Klong Luang, Pathumthani 12120

#### **Abstract**

Nanotechnology is often touted as a revolutionary manufacturing technology of the 21<sup>st</sup> century. Dealing with the manipulation and control of material structure at the nanoscale, nanotechnology can elicit novel functionality and properties not seen in the ordinary bulk or microscale materials. In fact we have heard of and sometimes unknowingly used nanotechnology-enhanced products (nanoproducts) in our daily life, such as cosmetics, textile, electronic display, solar cell, etc. As in the case of all other advanced technologies, the tremendous potential benefits of nanotechnology could be offset by hidden negative or unintentional side effects, especially if abused or misused. The issue of safety of nanomaterials during production and use by consumers as well as their potential impact on human health and the environment, both short and long terms, must be handled carefully.

Approved by the Cabinet on August 13, 2003, the National Nanotechnology Center (NANOTEC) is tasked with the duty of the secretariat of the National Nanotechnology Policy Committee, the planning, implementation and promotion of R&D, the capacity building of HR and infrastructure, and the cultivation of public awareness. To respond to the short-term needs of the industry and long-term needs of the nation, NANOTEC gives research grants to universities and other institutions, carry out in-house research, set up a network of 8 centers of excellence (COE) in all major regions of Thailand, provide testing and characterization services and create 2 collaborative research consortia (CRC) in functional/technical textile and cosmeceuticals. NANOTEC's technology platforms consist of nanocoating, nanoencapsulation, and functional nanostructure. NANOTEC also initiated the Computational Nanoscience Consortium (CNC) to promote nanoscale simulations nation-wide, as a powerful tool to complement the conventional wet –lab approach. Last but not least, NANOTEC also set up a Nanosafety Program to promote R&D in safety, health and the environment, recommend standard test methods, and provide national nanosafety guidelines.

What follows is a general introduction to nanotechnology, the potential applications and benefits of nanotechnology, the risks associated with the abuse and misuse of nanotechnology, and the issues of nanosafety and its potential impact on health and the environment. The roles and contributions of NANOTEC will be used as concrete examples.

Emeritus Prof. Wiwut Tanthapanichakoon (Ph.D)

Executive Director of National Nanotechnology Center,

National Science and Technology Development Agency (NSTDA)



#### Office

National Nanotechnology Center, National Science and Technology Development Agency 130 Convention Center Building Thailand Science Park, Phahonyothin Road, Klong 1.

Klong Luang, Paihumihaní 12120Tel: +66 2 564-7100 ext. 6599

Fax: +66 2 5646985

E-mail: wiwut@nanotec.or.th, twiwut@chula.ac.th

Date of admission as an Associate of the Royal Institute: September 5, 2007

Subject: Technology

Discipline: Petrochemical Technology

#### Research Interest

Powder/ particle technology, aerosol engineering (dust collection technology), process analysis and simulation (modeling, simulation and optimization of chemical engineering processes), drying technology, energy technology, nanotechnology

#### Educations

B. Eng. (Chem Eng.) Kyoto University, Japan 1973

M. Eng. (Chem Eng.) University of Texas at Austin, USA 1975

Ph. D. (Chem Eng.) University of Texas at Austin, USA 1978

#### Professional Experiences

At present, Emeritus Prof. Wiwm Tanthapanichakoon is concurrently Executive Director of National Nanotechnology Center, National Science and Technology Development Agency (NSTDA); Associate Fellow The Royal Institute; Chair Prof Particle Technology Chulalongkorn University; Vice President for Special Affair, Technology Promotion Associate (Thailand-Japan); Secretary General, Association of Thai Particle Industries (TAPI); Executive Councilor. Thai-Nichi Institute of Technology; Senior Research Scholar, Thailand Research Fund (TRF); Chemical Engineering Follow, Engineering Institute of Thailand (EIT)

#### Honors and Awards

His research interest covers (nano) particle tech, aerosol eng., process simulation, drying technology, energy technology Dr Wiwut received numerous research awards and honors worldwide: Japan Society for Promotion of Science (JSPS) Fellow; Association for Overseas Technical Scholar; Senior Res. Scholar/Team Res. Award, Thailand Research Foundation S&T Award, Thailand Toray Science Found.; Outstanding Faculty Award in S&T (Univ. Level) Chulalongkorn University; listing in Marquis' Who's Who in the World, Millennium Edition; Marquis' Who's Who in Science & Engineering, 2003, etc. In recognition of his dedication, he was bestowed Knight Grand Cordon (Special Class) of the Most Exalted Order of the White Elephant in 2004.

Panel Discussion: "Technology Innovation for Sustainable Societies"

Dr. Bambang Subinyato, Indonesian Institute of Sciences,

Mr. Banno Tetsuji, President, Marubeni Thailand Co., Ltd.,

Prof. Krisada Visavateeranon, Thai-Nichi Institute of Technology,

Moderator: Associate Prof. Dr. Sucharit Koontanakulvong as.

#### Curriculum vitae

1. Name in full : Bambang Subiyanto

2. Date and Place of Birth : Nganjuk, December 20, 1958

3. Addresses

1. Office : R&D Unit for Biomaterial, Indonesian Institute of Sciences

JI. Raya Bogar Km 46, Cibinong, Bogor, Indonesia Tel: 021-87914509, 87914511, Fax.: 021-87914510

E-mail: komposit@cbn.net.id

2. Home : Komplek Perumahan LIPI No. 7, Cibinong

Jl. Raya Bogar Km 46, Cibinong Bogor, Indonesia

4. Present Employment Position/Status

Present Employment :

: Head of Research and Development Unit for Biomaterials

5. Educational Background:

School	Location	Degree	Field	Year of Graduation
Bogor Agric. University	Bogor, Indonesia	Bachelor of Science	Forest Products	1982
Kyoto University	Kyoto, Japan	Master of Agriculture	Wood Sci. and Technology	1988
Kyoto University	Kyoto, Japan	Doctor of Agriculture	Wood Sci. and Technology	1991

#### 6. Scientific Publications

#### A. International Journal

- Bambang Subiyanto. Shuichi KAWAI, Hikaru SASAKI, Nilyardi KAHAR, and Shigehisa ISHIHARA. Studies on curing condition of particleboard adhesive I. Effect of environmental temperature and adhesive temperature on gelation time. Mokuzai Gakkaishi, 34, 333 - 336 (1988).
- Bambang Subiyanto, Shuichi KAWAI, Mitsuhiko TANAHASHI, and Hikaru SASAKI. Curing conditions of particleboard adhesives II. Curing of adhesives under high steam pressures or temperatures. Mokuzai Gakkaishi, 35, 419-423 (1989).
- 3. Bambang Subivanto, Shuichi KAWAI, and Hikaru SASAKI. Curing conditions of particleboard adhesives III. Optimum conditions of curing adhesives in steam-injection pressing of particleboard. Mokuzai Gakkaishi,35, 424-430 (1989).
- 4. Bambang Subivanto, Shinjiro TAKINO, Shuichi KAWAI, and Hikaru SASAKI. Production of thick low density particleboard with a semi continuous steam-injection press. Mokuzai Gakkaishi, 37, 24-30 (1991)
- Vicente C. MALLARI Jr. Shuichi KAWAI, Hikaru SASAKI, Bambang SUBIYANTO, and Tomoyasu SAKUNO. The manufacturing of Particleboard I. Types of adhesives and optimum moisture content Mokuzai Gakkaishi, 32, 425 - 431 (1986).
- Bambang Subiyanto, Shuichi KAWAI, Hikaru SASAKI, and Shinjiro TAKINO. Properties of particleboard from lesser - used species I. Albizia falcata Backer. Wood Research, 73, 50 - 57 (1986).
- 7. Hikaru SASAKI, Shuichi KAWAI, Bambang Subiyanto, and Toshimitsu HATA. Curing of adhesives and particleboard production using steam-injection press. Wood Processing Technical Digest, 6(1),1-141988). (In Japanese)
- 8. Bambang Subivanto, Sulaeman YUSUF, Shuichi KAWAI, and Yuji IMAMURA. Particleboards from acetylated albizzia particles I. The effect of acetyl weight gain on mechanical properties and dimensional stability. Mokuzai Gakkaishi, 35, (1988).
- 9. Toshimitsu HATA, Bambang Subiyanto, Shuichi KAWAI, and Hikaru SASAKI. Production of

- particleboard with steam-injection part 1. Temperature behavior in particle mat during hot pressing and steam-injection pressing. Wood Science Technology, 23, 361-369 (1989).
- Yuji IMAMURA, Bambang Subiyanto, Roger M. ROWEII, and Thomas NilSSON. Dimensional stability and biological resistance of particleboard from acetylated albizzia wood particles. Wood Research, 76, 49-58 (1989)
- 11. Toshimitsu HATA, Bambang Subiyanto, Shuichi KAWAI, and Hikaru SASAKI. Production of particleboard with a steam-injecton press III. Effects of injection time and timing on board properties. Mokuzai Gakkaishi, 35, 1080-1086 (1989). (In Japanese)
- Toshimitsu HATA, Bambang Subiyanto, Shuichi KAWAI, and Hikaru SASAKI. Production of particleboard with a steam-injection press IV. Shortening the press cycle with steam injection. Mokuzai Gakkaishi, 35, 1087-1091 (1989). (In Japanese)
- Hikaru SASAKI, Shuichi KAWAI, Bambang Subiyanto , Yutaka SAWADA, and Seiki MATSUMOTO. Trial set- up of semi continuous (intermittent) press with steaminjection from hot platen surfaces and temperature distribution. Mokuzai Kogyo, 45, 409413 (19990). (In Japanese)
- Hikaru Sasaki, Shuichi Kawai, Toshimitu Hata, and Bambang Subiyanto. Steam Injection Pressing Technology. Recent Research on Wood and Wood -based Materials. Current Japanese Materials Research vol. 11. The Society of Materials Science, Japan. Elservier Applied Scince london and New York. 1993.
- Lingfei Ma, Yasuo Kuroki, Wakatsu Nagadomi, Bambang Subiyanto, Shuichi Kawai, and Hikaru Sasaki. Manufacture of Bamboo-Cement Composites II. Effects of additives on hydration characteristic of bamboo-cement mixtures. Mokuzai Gakkaishii, 43, 9, 754-761 (1997)
- Lingfei MA, Yasuo Kuroki, Wakatsu Nagadomi, Bambang Subiyanto, Shuichi Kawai and Hikaru Sasaki. Manufacture of Bamboo-Cement Composites II. Effects of Additives on Hydration Characteristics of Bamboo-cement Mixtures. Journal of the Japan Wood Research Society. Vol. 43. No.9, Tahun 1997
- Dede Hermawan, Shuichi Kawai and Bambang Subiyanto. Manufacture and Properties of Oil Palm Frond Cement-Bonded Board. Journal of Wood Science, The Japan Wood Research Society, Vol.47, 3, 2001, .208-213

#### **B.** International Proceedings

- 1. Yuji IMAMURA, Munezoh TAKAHASHI, Bambang Subiyanto and Sulaeman YUSUF. Proceedings of the 2nd Pacific Regional Wood Anatomy Conference, Laguna, Philippines, 1989, p. 1-14.
- SUBYAKTO; Bambang Subiyanto; and Shigehisa ISHIHARA. Sombustion Behavior of Laminated Board with Tropical Plantation Thinning. I. Fire endurance of the laminated board treated with phosphoric acid containing melamine formaldehyde condenses and untreated ones. Proceedings Second Indonesia - JICA Polymer Symposium, Bandung, 276-288 (1990)
- Bambang Subiyanto, Sulaeman Yusuf, Yuji Imamura, Seiko Fushiki, Takanobu Saito, and Yoshinaga Katuzawa. Properties-enhanced albizzia particleboards by incorporating fungicide and insecticide in the glue. Proceeding The International Research Group on Wood Preservation, Bali, Indonesia 30 May - 4 JUNE 1994.
- Bambang Subiyanto, A. Miyatake, T. Fujii, T. Hayashi. Production Technology of Superior Timber (SST) from Bamboo. Toward the New Generation of Bio-Based Composite Products. The Third Pacific Rim Bio-Based Composites Symposium, Kyoto, Japan 1996
- Bambang Subiyanto , Shuichi Kawai. Rapid Production of Thermosetting Cement Bonded Particleboard by Steam Injection Pressing. The First International Wood Science Seminar, Kyoto, Japan 1996
- Bambang Subiyanto and Shuichi Kawai. Rapid Production of Thermosetting Cement Bonded Particleboard by Steam Injection Pressing. The First International Wood Science Seminar, Kyoto, Japan 1996
- Anung Kusnowo and Bambang Subiyanto. Research and Development of Wood Science and Technology in Indonesia. Supplement of First International Wood Science Seminar, Kyoto December 6 – 7, 1996
- 8. Subyakto and Bambang Subiyanto. Cultivation and Utilization of Bamboo in Indonesia. Journal of Bamboo Research, China National Bamboo Research Center, Vol.16, No.2, 1997
- Bambang Subiyanto and Subyakto. Development of Semi-Fibre Bamboo Board Processing Technology: Shortening the Press Cycle. Proceeding of the 5th International Bamboo Workshop and the IV International Bamboo Congress, Ubud Bali, June 1995

- 10. Bambang Subiyanto dan Anita Firmanti Eko Susetyowati. Production Technology of Cement Bonded Particleboard from Tropical Fast Growing Species I, The Effect of Cement Content after Pre-treatment of Particles on Cement Bonded Particleboard Properties. Proceedings The Fourth Pacific Rim Bio-Based Composites Symposium, Bogor, 2-5 November 1998.
- Anita Firmanti Eko Susetyowati dan Bambang Subiyanto. Effect of High Temperature to The Compressive Strength of Cement-Wood Composite of Some Tropical Fast Growing Species. Proceedings The Fourth Pacific Rim Bio-Based Composites Symposium, Bogor, 2-5 November 1998.
- 12. Subyakto, Bambang Subivanto, T. Kajimoto, T. Hata, S. Kawai and S. Ishihara. Enhacement of Fire Retardancy of Wood Composites by Surface Coating or Densification. Proceedings The Fourth Pacific Rim Bio-Based Composites Symposium, Bogor, 2-5 November 1998.
- Bambang Subiyanto. Production Technology of Sawn Timber Substitution Made of Bamboo Composite Using Isocyanate Adhesive. The 5th ASEAN Science and Technology Week. Abstracts & Proceeding. Materials Science and Technology Conference, Hanoi - Vietnam, 12 -14 October 1998
- 14. Bambang Subiyanto. I.M. Sulastiningsih, Dede Hermawan, Kenji Umemura, Toshimitsu Hata and Shuichi Kawai. Production Technology of Oil Palm Cement Bonded Particleboard I, Hydration Behavior of Cement Mixed with Oil palm Fronds Powder. Proceedings of The Second International Wood Science Seminar, Serpong, 6 7 November 1998.
- 15. Bambang Subiyanto. I, Morooka, and M. Norimoto. Softening Behavior of Dry Bamboo by Heat Treatment Proceeding of the Third International Wood Science Symposium. Kyoto, Japan. November 1-2,2000
- 16. Mohamad Gopar, Bambang Subivanto. and Subyakto. Effect Cutting Time of bamboo on hydration and compression strength of bamboo-cement composite. Proceeding of the Third International Wood Science Symposium. Kyoto, Japan. November 1-2,2000.
- 17. Sudijono, Subyakto, and Bambang Subiyanto. Manufacture of bamboo-zephyr as plywood substitution for concrete-block pallet application. Proceeding of the Third International Wood Science Symposium. Kyoto, Japan. November 1-2,2000.
- Shuichi Kawai and Bambang Subiyanto. Zero emission processes of Oil Palm Utilization. Proceeding of the Third International Wood Science Symposium. Kyoto, Japan. November 1-2, 2000.
- 19. Eka Mulya Alamsyah, and Bambang Subiyanto. Effect of heat treatment of particle on physical and mechanical properties particleboard made from Indonesian bamboo. Proceeding of the Third International Wood Science Symposium. Kyoto, Japan. November 1-2, 2000.
- Bambang Subiyanto. and Anita Firmanti. State of the Art Wood and Wood-Based Industries in Indonesia. Proceeding of Japan Wood Based Panel Symposium 2000. Tokyo, 26-27 October 2000
- 21. Bambang Subiyanto and Subyakto. Development of Bamboo Composite Industry. dalam Buku Life Science Series, Bamboo, Commercial value and It's potential supply, Indonesian Institute of Sciences 2001,.21-28
- Bambang Subiyanto. Subyakto, and Shuichi Kawai. Zero-emmission Processes of Oil Palm Utilization: Case study of Oil Palm Mill in PI Kertajaya Lebak Banten Province. Proceeding of the Fourth International Wood Science Symposium. Serpong, Indonesia. September 2-5, 2002
- 23. Bambang Subiyanto. Anita Firmanti, Pipin Permadi. Acacia mangium the prospective Wood in Indonesia: Challenge for A New Resource. Proceedings of the The International Symposium on Sustainable Utilization of Acacia mangium, Kyoto, 22 23 November 2003
- 24. Anita Firmanti, Suryono Suryokusumo, Kohei Komatsu, Shuichi Kawai, Bambang Subiyanto. Utilizing Acacia mangium for Construction Materials. Proceedings of the The International Symposium on Sustainable Utilization of Acacia mangium, Kyoto, 22 23 November 2003.

#### 7. Patents

- 1. Production Technology of Bamboo Composite. Registered Patent P20001044.
- 2. Production Technology of Wood-Cement Concrete Hollow Block (in process)
- 3. Method of Increasing Hardness of bamboo by compressing Method (in process)
- 4. Production Technology of Coir Dust Panel as Water and Oil Absorber Materials (in process)

#### 8. Awards

- 1. Awards from Indonesian Institute of Sciences (LIPI) and Indonesian Television (TVRI) as Indonesian Young Scientist in the field of Technology and Engineering 1992.
- 2. Awards from Indonesian Institute of Sciences (LIPI) as The Best Young Scientist LIPI 1996/1997

Mr. Tetsuji Banno

President

Marubeni Thailand Co., Ltd.

NAME Tetsuji BANNO

DATE OF BIRTH December 21, 1950

MARRIED with Mrs. Aiko Banno

GRADUATION Bachelor Degree in Economics, Kyoto University in 1974

BUSINESS CAREER

April, 1974 Entered Marubeni Corporation

April, 1982 Marubeni America Corporation (New York)

April, 1988 Specialty Chemicals Sec., Specialty Chemicals Dept. (Osaka)

April, 1991 General Manager of Specialty Chemicals Sec., Specialty Chemicals Dept. (Osaka)

April, 1997 Deputy General Manager of Specialty Chemicals Dept. &

General Manager of Specialty Chemicals Sec., Specialty Chemicals Dept.

April, 1998 Deputy General Manager of Specialty Chemicals Dept.

April, 1999 General Manager of Specialty Chemicals Dept.

April, 2001 General Manager of Business Incubation Dept.

Apr. 2005-Present President, Marubeni Thailand Co., Ltd.

General Manager, Marubeni Corporation Bangkok Branch

Office address: 10th-11th Floor, Sindhorn Building Tower 2.

130-132 Wittayu Road, Lumpini, Pathumwan, Bangkok 10330 THAILAND

SOCIAL POSITIONS

Apr 2007-Present Vice President, Japanese Chamber of Commerce

Apr. 2006-Apr. 2007 President, Japanese Chamber of Commerce, Bangkok

Apr.2005-Mar.2006 Vice President, Japanese Chamber of Commerce

Apr. 2005-Mar. 2006 Executive Committee, Thai-Japanese Association

Apr. 2006-Present Vice President, Thai-Japanese Association

Apr. 2006-Apr. 2007 Member of the Board of Directors, Board of Trade of Thailand

Member of Board of Trustees, Sirindhorn International Institute of Technology, Apr. 2006-Apr 2007

Thammasat University (SIIT)

Board Member of the School of Engineering & Technology, Asian Institute

Aug. 2006-Present of Technology (AIT)

#### Assoc. Prof. Krisada Visavateeranon

Mr.Krisada Visavateeranon graduated from Kyoto University (B.Eng. and M.Eng. in Electrical Engineering) in 1975. He was Associate Professor at Department of Electrical Engineering, Chulalongkorn University from 1975, his specialization is in the fields of Industrial Instrumentation and Digital Logic and Microprocessor. He was Secretary General and Vice President of Technological Promotion Association (Thailand-Japan). He serves as an Executive Director of ASEAN University Network/Southeast Asia Engineering Network (AUN/SEED net, JICA). Currently, he is the President of Thai-Nichi Institute of Technology.

#### 日本語プロフィール

# クリサダー ヴィサワティーラノン

1950年バンコク生まれ。1975京都大学工学研究科修了(電気工学)。

1975年より、タイ国チュラーロンコーン大学工学部電気工学部准教授(-2006)

専門は工業計測、デジタル理論、マイクロプロセッサー。

泰日経済技術振興協会(TPA)副会長、専務理事を歴任。

2005-2007 JICA の"ASEAN 工学系高等教育ネットワークプロジェクト"(AUN/SEED net) 事務局長。

2007年より泰日工業大学(Thai-Nichi Institute of Technology) 学長

Name: SUCHARIT KOONTANAKULVONG

Date of Birth: December 6, 1955

Nationality: Thai

Position Appointment:

Associate Professor at Faculty of Engineering

Chulalongkom University

- Executive Director of Technology Promotion (Thai-Japan) Association

- TISI's Technical Committee No. 898 member (ISO9000)

- Associate Dean for Special Affairs

Education :

1978 - Bachelor Degree in Chemical Engineering, Faculty

of Engineering, Kyoto University, Kyoto, Japan.

1980 - Master Degree in Agricultural Engineering (in Civil Engineering),

Faculty of Agriculture, Kyoto University, Kyoto, Japan.

1983 - Doctoral Degree in Agricultural Engineering (in Civil Engineering).

Lab. of Water Use Engineering. Faculty of Agriculture.

Kyoso University

Other Training:

Oct. 1977 - Training on Ocsign and Operation of Ube Fertilizer Plant, Japan.

March-April 1981 - Training on Operation and Maintenance Scheme in Toyogawa

Irrigation Project at Water Resources Development Bureau, Japan.

July 1986 - Training on Small Scale Rural Development in

Japan at Kyoto University.

May 1992 - Technical Visit on Coastal Engineering Research, Osaka University

Member of Professional Societies:

The Engineering Institute of Thailand

- Japan Society of Irrigation, Drainage, and Reclamation Engineers.

Thai Environmental Engineering Association

Technology Promotion Association (Thai-Japan)

Thai Hydrologist Club

#### Major Publications:

- Tidal Flow Analysis of the Upper Gulf of Thailand by Finite Element Model, Proc. of VIII Int. Conf. On Computational Methods in WR, Italy, June 11-15, 1990.
- Development and Application in Water Quality Model in Urban Drainage Planning, Proc. of IX Int.
   Conf. On Computational Methods in WR, USA, June 9-12, 1992..
- Sedimentation of Bangkok Bar and its prediction, Jour. Coastal Engineering, JSCE, Vol. 40, 1993, pp. 506-510 (in Japanese).
- Mechanism and Estimation of Sedimentation in Bangkok Bar Channel, Proc. of the 24th Coastal Engineering Conference, ASCE/Kobe, Japan, Oct 23-28, 1994, pp. 3002-3015
- Drought Analysis in NE Thailand, Journal of Hydrologist Club. Annual Meeting Proc. Feb.1996, pp. 164-172 (in Thai).
- Groundwater Rehabitation in Kamphaengphet, Proc. Civil Eng. Conf., Nov 12-14, 97 pp. 252-260 (in Thai).
- The Study of Wave and Current Influences on Shoreline Changes at Bangkhuntien District Bangkok, Proc. Civil Eng. Conf., May 1999 (in Thai).
- Groundwater Pumpage Estimate in the North Part of Lower Central Plain, Thailand, Jour of Hydrologist Club, Vol. 5, 2001, pp. 231-237 (in Thai).
- Review of Groundwater Recharge Study in Thailand and Proposed Study Procedures, presented to Workshop on Artificial Recharge, Faculty of Science, Chiangmai University, Sep 17-18, 2001. 4 pp
- GIS Utilization for Water Management in the North Part of Lower Central Plain, Thailand. Proc.



- Nat. Water Res., No. 1, EIT, Dec 20-21, 2001, pp. 6/14-19.
- Determination of Recharge Rate from Soil Classification Map in GW Modeling, Proc. Of 17 th World Congress of Soil Science, Bangkok, Thailand, Aug 14-21, 2002, pp. 1845/1-6.
- Groundwater Modeling in the North Part of Lower Central Plain, Thailand.
   Proc. Of Int. Conf. on Water & Environment, Dec 15-18, 2003, Bhopal, India.
- Water Allocation Analysis during Dry season in the North Part of Lower Central Plain, Thailand,
   Jour. Of Hydrologist Club, Vol. 7, 2003, pp. 309-319 (in Thai).
- Application of ANN for Runoff Prediction in Pasak Reservoir Operation, 9th Proc. Nat. Civil Eng., 2003 (in Thai).
- Groundwater Use and Management in the North of Lower Central Plain, Jour of IWRA, (under submitting).

#### Major Experiences in Engineering:

1979-1980 - Water Management Study in Toban (field survey and water system modeling)

1980-1982 - Nakaumi Lake Refreshing and Land Reclamation Project in Japan (Research assistant in field survey and water quality modelling)

1982-1983 - Showa Tank Spillway Improvement Project in Japan (as Hydraulic Engineer)

1985-Present - Consultant in Water Resources Engineering and Hydraulic Modeling. Project undertaken are :

- Mathematical and Physical Modelling of Oil Spill and Oil Discharge in Chao Phraya River as part of the Environmental Impact Study of Bangkok Petroleum Refinery. (Apr. 86-July 86).
- Mathematical Modelling of Salt Intrusion in Mae Klong River as part of the Post Environmental Evaluation Study of Srinagarind Dam.
- Water Transport Study as a part of Master Plan Study for Thonburi and Sumut Prakarn West (Oct.86 - Jan.87).
- ❖ Technical Evaluation of Water Management Support Programme in Pump Irrigation Scheme Stage 1, in Irrigation Engineering aspect (Nov.86-Jan.87)
- Environmental Impact Study on NPC Loading/Unloading facilities in Oceanographical Change aspect (Aug.-Oct.87)
- Evaluation Study of Mun Chi Pump Irrigation Project, Stage 2 in Irrigation Engineering aspect (Mar.-Apr.88)
- Raw Water Sources Study for Surananee Industrial Area (Apr.-May 88).
- Master plan of Flood Protection and Drainage
   Scheme in Chulalongkorn Campus (May-Oct.88)
- The Study of Present Stormwater handing Capacity of the Karon Watershed in the Karon Water Management Plan as part of the Coastal Resources Management Project, National Environment Board. (Nov.88-Mar.89)
- Master Plan of Flood Protection and Drainage Scheme in Chulalongkorn Campus (May-Oct.88)
- The Study of Present Stormwater handing Capacity of the Karon Watershed in the Karon Water Management Project, National Environmental Board. (Nov.88-Mar.89)
- Master Plan for Agriculture Land Reform Project, Water Resources Development aspect, 1990
- ♦ Master Plan for Water System Design in Bangna Country Club Project, 1990-1991
- ❖ Feasibility Study of Wastewater Treatment and Collection System in Chiangmai Municipal in Water Quality Aspect, 1991
- Master Plan and Feasibility Study of Wastewater Collection and Drainage System in Trang Province (Drainage and Water Quality Engineer), 1993
- Impact Study for Land Reclamation in Phuket Bay (Coastal Morphology and Water Quality Aspect), 1994
- ❖ The 5th BMA Development Plan (1996)

- Rehabitation Study of GW in Kamphaengphet (1997)
  - \* Nakornsrithamarat Flood Feasibility Study (2002)
  - \* Mitigation Plan for Hydraulic Impacts from Bangpakong Diversion Dam (2002)
  - \* Water Resources Management Masterplan of Bangpakong Basin (2003)
  - \* Surge Analysis in Klong Saensap Drainage Tunnel (2003)

#### Major experiences in Research

- 1990-1993 Joint Research on Siltation Mechanism of Chao Phraya River Mouth with Osaka University funded by Japanese Nikkeiren and Chulalongkorn University
- 1994 Research on Numerical Modeling of Current-wave Field at River Mouth funded by Asahi Glass Foundation
- 1995 Research on Wave Hindcasting Methods for Lower Siam Gulf funded by Faculty Research Fund
- 1996-1997 Kamphaengphet Groundwater Rehabitation Study funded by Department of Public Works
- Research on The possibility of Kra Channel Dredging Physical Aspectfunded by Royal Thai government
- 2000-2002 Groundwater Potential and Demand Study for GW Management in the Northern Part of Lower Central Plain funded by the Thailand Research Fund
- 2003-2004 Groundwater Monitoring in the north of Lower Central Plain and the development of Groundwater Data Linkage System
- 2004-2005 The Assessment of Pasak Jolasid Dam Project (Effectiveness of Surface Water Management and Impacts on Groundwater)
- 2007- Present- Project Manager and Researcher, Area-based Water Resources Management System
  Development Along With Decision Support System and Social Process in
  Rayong Province Area, funded by Thai Research Fund.
- Consultant, National Trans-boundary Flood Issues Expert for Thailand, Mekong River Commission.
- Project Manager and Researcher, Evaluation of Flood Management and Alleviation Project in the Central Region of Thailand during 2006, funded by Royal Irrigation Department
- Project Manager and Researcher, The Risk Assessment of the Contamination
  in Groundwater Resource in Klangdong District, Pakchong, Nakornrachasima Province,
  funded by Department of Groundwater Resource.
- 2007-2009 Impact Of Global Climate Change on Monthly Precipitation and Stream Flow in Thailand, Water Management, Rayong, Chonburi

#### **Employment:**

- 1979-1980 Special Lecturer of Shiga Agricultural College, Shiga Prefecture, Japan.
- Apr.-Dec 1983 Research Fellow at Water Use Eng. Lab., Department of Agricultural Engineering, Faculty of Agriculture, Kyoto University.
- 1984- 1986 Lecturer at Department of Civil Engineering, Faculty of Engineering, Chulalongkorn University
- 1986-1996 Assistant Professor at Department of Civil Engineering, CU
- 1996- Present Associate Professor at Department of Water Resources Engineering, Chulalongkorn University
- 1989-1995 Deputy Director of Chula Unisearch (Administration/ Business Development)
- 1996-1998 EIT's ISO9000 Committee Chairman

#### Specialized Fields:

 Water Resources System Design/Management and Hydraulic Modeling(Flood and Drainage, River Mouth Hydraulics, Groundwater)

# **Kyoto University**

Founded May 1, 1869, Chartered Jun. 18, 1897

Type: Public (National)

**Endowment:** ¥ 250.2 billion (2.2 billion USD)

President: Kazuo Oike

Faculty: 2,921 Staff: 2,269 Undergraduates: 13,254 Postgraduates: 9,198

Location Kyoto, Kyoto, Japan

Campus: Urban, 333 acres (1.3 km²)

Athletics: 48 varsity teams

Colors: Dark blue Nickname: None Mascot: None

Affiliations: Kansai Big Six, ASAIHL

Website: www.kyoto-u.ac.jp

Kyoto University (京都大学 Kyōto daigaku), or Kyodai (京大 Kyōdai) is a major national university in Kyoto, Japan. It is the second oldest university in Japan<sup>[1]</sup>, and formerly one of the Imperial Universities of Japan. The university has a total of about 22,000 students enrolled in its undergraduate and graduate programs.

Kyoto University has historically advocated a "spirit of freedom" in its academic activities<sup>[2]</sup> The university established itself as a premier research university with six Nobel Laureates and two Fields Medalists among its faculties and alumni. The university is also known as the home of the Kyoto School group of philosophers.

Kyoto University has been ranked as the 22<sup>nd</sup> best university in 2006 in terms of volume scientific publications according to the *Academic Ranking of World Universities*.<sup>[1]</sup>

#### 1. History

The forerunner of the university was the Chemistry School (舍密局 Seimikyoku) founded in Osaka in 1869, which, despite its name, taught physics as well. (舍密 is a transcription of a Dutch word chemie.) Later, the Third Higher School (第三髙等學校 Daisan kōtō gakkō) was established in the place of Seimi-kyoku in 1886, it then transferred to the university's present main campus in the same year.

Kyoto Imperial University (京都帝國大學 Kyōto teikoku daigaku) as a part of the Imperial University system was established in June 18, 1897, [1] using the Third Higher School's buildings. The higher school moved to a patch of land just across the street, where the Yoshida South Campus stands today. In the same year of the university's establishment, the College of Science and Technology was founded. The College of Law and the College of Medicine were founded in 1899, the College of Letters in 1906, expanding the university's activities to areas outside natural science.

After World War II, the current Kyoto University was established by merging the imperial university and the Third Higher School, which assumed the duty of teaching liberal arts as the Faculty of Liberal Arts (教 後部 *Kyōyōbu*). The faculty was dissolved with the foundation of the Faculty of Integrated Human Studies (総合人間学部 *Sōgō ningen gakubu*) in 1992.

Kyoto University has since 2004 been incorporated as a national university corporation under a new law which applies to all national universities.

Despite the incorporation which has led to increased financial independence and autonomy, Kyoto University is still partly controlled by the Japanese Ministry of Education (文部科学省 Monbu kagaku shō).

The current president is Kazuo Oike.

#### 2. Campuses

The university has three campuses in Yoshida, Kyoto; in Gokashō, Uji; and in Katsura, Kyoto.

Yoshida Campus is the main campus, with some laboratories located in Uji. The Graduate School of Engineering is currently under process of moving to the newly-built Katsura Campus.

#### 3. Faculties and graduate schools

- o Integrated Human Studies
- o Letters
- o Education
- o Law

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- o Economics
- Science
- o Medicine
  - University Hospital
  - Pharmaceutical Sciences
- o Engineering
- o Agriculture
  - Experimental Farm
  - University Forests
  - Human and Environmental Studies
- o Energy Science
- o Asian and African Area Studies
- o Informatics
- o Biostudies
- Global Environmental Studies

#### 4. Research institutes, centers, and facilities

- Institute for Chemical Research
- Institute for Research in Humanities
- Institute for Frontier Medical Sciences
- Institute of Advanced Energy
- Wood Research Institute
  - o Disaster Prevention Research Institute
- Yukawa Institute for Theoretical Physics
- Institute for Virus Research
- Institute of Economic Research
- Research Institute for Mathematical Sciences
- Research Reactor Institute
- Primate Research Institute
- Center for Southeast Asian Studies
- Academic Center for Computing and Media Studies
- Radiation Biology Center
- Radio Science Center for Space & Atmosphere
- Center for Ecological Research
- Radioisotope Research Center
- Environment Preservation Center
- Center for Molecular Biology and Genetics
- Center for Student Exchange
- Research Center for Higher Education

- University Museum
  - o International Innovation Center
- Research Center for Low Temperature and Materials Sciences
- Center for student Health
- Research Center for Sports Science
- Counseling Center
- University Archives
- Center for Archaeological Operations
- Center for African Area Studies
- KU-VBL (Venture Business Laboratory)
- Health and Medical Services
- Kosobe Conservatory

## 5. Notable alumni

Many famous people have graduated from Kyoto University, including six Nobel laureates and five Japanese prime ministers.

#### 6. References

- 1. Historical Sketch. About Kyoto University. Kyoto University (2004).
- 2. Basic Ideas & Policies: Kyoto University Mission Statement. Kyoto University.

**Table 1 JAPANESE NOBEL PRIZE LAUREATES** 

Year conferred	Field	Name	Alma Mater	Position when the Prize was conferred
2002	Chemistry	Kouichi Tanaka	Tohoku University	Shimadzu Corporation
	Physics	Masatoshi Koshiba	The University of Tokyo	Emeritus Professor, the University of Tokyo
2001	Chemistry	Ryoji Noyori	Kyoto University	Professor, Nagoya University
2000	Chemistry	Hideki Shirakawa	Tokyo Institute of Technology	Emeritus Professor, University of Tsukuba
1994	Literature	Kenzaburo Oe	The University of Tokyo	Novelist
1987	Physiology-M edicine	Susumu Tonegawa	Kyoto University	Professor, Massachusetts Institute of Technology
1981	Chemistry	Kenichi Fukui	Kyoto University	Professor, Kyoto University
1974	Peace	Eisaku Sato	The University of Tokyo	Former Prime Minister
1973	Physics	Leona Ezaki	The 3rd Higher School/ The University of Tokyo	Senior Researcher, IBM Watson Research Center
1968	Literature	Yasunari Kawabata	The University of Tokyo	Novelist
1965	Physics	Shin-itiro Tomonaga	Kyoto University	Professor, Tokyo University of Education
1949	Physics	Hideki Yukawa	Kyoto University	Professor, Kyoto University

Note: Dr. Yukawa of Kyoto University was the first recipient of the Nobel Prize in Japan.

Note: As of June 2006, out of the 12 Nobel Prize laureates, 5 are graduates from Kyoto University.

# 7. List of people associated with Kyoto University in Japan. Several notable individuals have either studied or worked on the faculty of Kyoto University.

#### **Nobel Laureates**

- 1. Hideki Yukawa winner of the Nobel Prize in Physics in 1949; he became the first Japanese to win the Nobel Prize
- 2. Shinichiro Tomonaga winner of the Nobel Prize in Physics in 1965
- 3. Kenichi Fukui winner of the Nobel Prize in Chemistry in 1981
- 4. Susumu Tonegawa winner of the Nobel Prize in Physiology or Medicine in 1987
- 5. Ryoji Noyori winner of the Nobel Prize in Chemistry in 2001

#### Fields Medalists

- Heisuke Hironaka mathematician, Fields Medalists in 1970
- Shigefumi Mori mathematician, Fields Medalists in 1990

#### Literature

- Kan Kikuchi Japanese author
- Motojirô Kajii
- Tatsuji Miyoshi
- Shohei Ooka
- Yasushi Inoue
- · Akimitsu Takagi crime fiction writer
- Sakvo Komatsu
- Keiichiro Hirano

#### **Politics**

- Frank Hsieh Former mayor of Kaohsiung City and Premier of Taiwan/ 2008 Democratic Progressive Party presidential candidate for the Republic of China (Taiwan)
- Osachi Hamaguchi Prime Minister of Japan
- Kijuro Shidehara Prime Minister of Japan
- Tetsu Katayama Prime Minister of Japan
- Fumimaro Konce Prime Minister of Japan
- Hayato Ikeda Prime Minister of Japan
- Lee Teng-hui Former President of the Republic of China (Taiwan)

#### Science

- Kiyoshi Oka mathematician
- Teiji Takagi mathematician
- Kinji Imanishi ecologist, anthropologist
- Motoo Kimura biologist
- Tetsuro Matsuzawa primatologist

#### Others

- Akira Asada philosopher
- Junya Kondo founder of Hatena Co., Ltd.
- Kiyoshi Miki philosopher
- Michio Morishima economist
- Nagisa Oshima film director
- Tetsuji Takechi kabuki and film director and author
- Takeshi Umehara philosopher
- Takahisa Zeze film director

#### 1. Hideki Yukawa

Hideki Yukawa FRSE (湯川 秀樹 January 23, 1907 – September 8, 1981) was a Japanese theoretical physicist and the first Japanese person to win the Nobel prize.

Yukawa was born in Tokyo, on January 23, 1907. In 1929, after receiving his degree from Kyoto Imperial University he stayed on as a lecturer for four years. After graduation, he was interested in theoretical physics, particularly in the theory of elementary particles. In 1932, he married Sumi ( $^{7}$   $^{8}$ ) and had two sons, Harumi and Takaaki. In 1933 he became an assistant professor at Osaka University, at age 26.

In 1935 he published his theory of mesons, which explained the interaction between protons and neutrons, and was a major influence on research into elementary particles. In 1940 he became a professor in Kyoto University. In 1940 he won the Imperial Prize of the Japan Academy, in 1943 the Decoration of Cultural Merit from the Japanese government. In 1949 he became a professor at Columbia University, the same year he won the Nobel prize in physics, after the discovery by Cecil Powell of Yukawa's predicted pion in 1947. Yukawa also predicted K-capture, in which a low energy hydrogen electron could be absorbed by the nucleus.

Yukawa became the first chairman at Yukawa Institute for Theoretical Physics 1953. He received a Doctor, *honoris causa* from the University of Paris, and honorary memberships of the Royal Society of Edinburgh, the Indian Academy of Sciences, the International Academy of Philosophy and Sciences, and the Pontificia Academia Scientiarum were granted to him for acknowledgement in science.

He had been an editor at Progress of Theoretical Physics since 1946. He had published many scientific papers and lecture notes, including Introduction to Quantum Mechanics (1946) and Introduction to the Theory of Elementary Particles (1948), both in Japanese.

In 1955, he joined 10 other leading scientists and intellectuals in signing the Russell-Einstein Manifesto, calling for nuclear disarmament.

#### 2. Sin-Itiro Tomonaga

(Redirected from Shinichiro Tomonaga)

Sin-Itiro Tomonaga or Shinichirō Tomonaga (朝永 振一郎 Tomonaga Shin'ichirō, March 31, 1906 – July 8, 1979) was a Japanese physicist, influential in the development of quantum electrodynamics, work for which he was jointly awarded the Nobel Prize in Physics in 1965 along with Richard Feynman and Julian Schwinger.

Tomonoga was born in Tokyo in 1906. He was the second child and eldest boy of a Japanese philosopher, Sanjūrō Tomonaga. He entered the Kyoto Imperial University in 1926. Hideki Yukawa, also a Nobel Prize winner, was one of his classmates during undergraduate school. During graduate school at the same university, he worked as an assistant in the university for three years. After graduate school, he joined Nishina's group in Riken. In 1937, while working in Leipzig, he collaborated with the research group of Werner Heisenberg. Two years later, he returned to Japan due to the outbreak of the Second World War, but finished his doctoral degree on the study of nuclear materials with his thesis on work he had done while in Leipzig.

In Japan, he was appointed to a professorship in the Tokyo University of Education (a forerunner of Tsukuba University). During the war he studied the magnetron, meson theory, and his "super-many-time" theory. In 1948, he and his students re-examined a 1939 paper by Sidney Dancoff that attempted, but failed, to show that the infinite quantities that arise in QED can be canceled with each other. Tomonaga applied his super-many-time theory and a relativistic method based on the non-relativistic method of Pauli and Fierz to greatly speed up and clarify the calculations. Then he and his students found that Dancoff had overlooked one term in the perturbation series. With this term, the theory gave finite results; thus Tomonaga discovered the renormalization method independently of Julian Schwinger and calculated physical quantities such as the Lamb shift at the same time.

In the next year, he was invited by Robert Oppenheimer to work at the Institute for Advanced Study in Princeton Township. He studied a many-body problem on the collective oscillations of a quantum-mechanical system. In the following year, he returned to Japan and proposed the Tomonaga-Luttinger liquid. In 1965, he was awarded the Nobel Prize in Physics (alongside Julian Schwinger and Richard P. Feynman) for the study of QED, specifically for the discovery of the renormalization method. He died in Tokyo in 1979.

#### Anecdote

He performed a rakugo in German during a campus festival at the University of Tokyo, demonstrating his broad cultural interests. He honored Yoshio Nishina as his teacher in physics throughout his life. Now his tomb is next to that of Yoshio Nishina and the epitaph on his tombstone reads "He rests within the hearing of his teacher".

#### 3. Kenichi Fukui

Kenichi Fukui (福井謙一 Fukui Ken'ichi, October 4, 1918 – January 9, 1998) was a Japanese chemist.

Kenichi Fukui was co-recipient of the Nobel Prize in Chemistry in 1981 with Roald Hoffman, for their independent investigations into the mechanisms of chemical reactions. His prize-winning work focused on the role of frontier orbitals in chemical reactions: specifically that molecules share loosely bonded electrons which occupy the frontier orbitals, that is the Highest Occupied Molecular Orbital (HOMO) and the Lowest Unoccupied Molecular Orbital (LUMO).

He was professor of physical chemistry at Kyoto University from 1951 to 1982, president of the Kyoto Institute of Technology between 1982 and 1988, and a member of the International Academy of Quantum Molecular Science.

#### List of books available in English

- Theory of orientation and stereoselection (1975)
- An Einstein dictionary Sachi Sri Kantha; foreword by Kenichi Fukui (1996)
- Frontier orbitals and reaction paths: selected papers of Kenichi Fukui(1997)
- The science and technology of carbon nanotubes edited by Kazuyoshi Tanaka, Tokio Yamabe, Kenichi Fukui(1999)

#### 4. Susumu Tonegawa

Susumu Tonegawa (利根川 進 Tonegawa Susumu, born September 6, 1939) is a Japanese scientist who won the Nobel Prize for Physiology or Medicine in 1987 for "his discovery of the genetic principle for generation of antibody diversity." Although he won the Nobel Prize for his work in immunology, Tonegawa is a molecular biologist by training. In his later years, he has turned his attention to the molecular and cellular basis of memory formation.

Tonegawa is best known for elucidating the genetic mechanism in the adaptive immune system. To achieve the diversity of antibodies needed to protect against any type of antigen, the immune system would require millions of genes coding for different antibodies, if each antibody was encoded by one gene. Instead, as Tonegawa showed in a landmark series of experiments beginning in 1976, genetic material can rearrange itself to form the vast array of available antibodies. Comparing the DNA of B cells (a type of white blood cell) in embryonic and adult mice, he observed that genes in the mature B cells of the adult mice are moved around, recombined, and deleted to form the diversity of the variable region of antibodies.

Tonegawa was born in Nagoya, Japan and attended the Hibiya High School in Tokyo <sup>[1]</sup>. He received his bachelor's degree from Kyoto University in 1963. He received his doctorate from the University of California, San Diego. He did post-doctoral work at the Salk Institute in San Diego in the laboratory of Renato Dulbecco, then worked at the Basel Institute for Immunology in Basel, Switzerland, where he performed his landmark immunology experiments. In 1981, he became a professor at the Massachusetts Institute of Technology, and founded and directed the Picower Institute for Learning and Memory at MIT.In 1982, he was awarded the Louisa Gross Horwitz Prize from Columbia University together with Barbara McClintock another nobel prize winner in 1983.

In 2006, Tonegawa was accused of discouraging the recruitment of a female junior faculty candidate in the McGovern Institute for Brain Research, another MIT neuroscience unit, by informing her that they would likely become competitors at MIT. In a letter to MIT President Susan Hockfield, 11 tenured female MIT professors requested an investigation of potentially unethical conduct. An investigation by an internal MIT committee submitted a report to the Provost, who and the President wrote letters to the MIT community. The committee found no evidence of gender bias. On November 17, 2006, Tonegawa announced his resignation as director of the Picower Institute for Learning and Memory, effective December 31, 2006. [41[5]

#### References

- 1. Autobiography on Nobel official website
- 2. MIT star accused by 11 colleagues, Boston Globe 2006
- 3. Statement on the Report of the Ad Hoc Committee to Review the Structure of the MIT Neuroscience Program, by MIT President
- 4. MIT neuroscience center head quits, Boston Globe 2006
- 5. Statements by Susumu Tonegawa (official)

#### 5. Ryoji Noyori

Ryoji Noyori (野依良治 Noyori Ryōji) (born September 3, 1938) is a Japanese chemist. He won the Nobel Prize in Chemistry in 2001. Noyori shared half of the prize with William S. Knowles for the study of chirally catalyzed hydrogenations; the second half of the Prize went to K. Barry Sharpless for his study in chirally catalyzed oxidation reactions (Sharpless epoxidation).

Ryoji Noyori was born in Kobe, Japan. He became fascinated with chemistry at the age of 12, after hearing a presentation on nylon. He saw the power of chemistry as being the ability to "make high values from almost nothing". He became a student at Kyoto University, working as an instructor in the research group of Hotosi Nozaki before being appointed associate professor at Nagoya University. After postdoctoral work with Elias J. Corey at Harvard he returned to Nagoya, becoming a full professor in 1972. He is still based at Nagoya, though he is also now president of RIKEN, a multi-site national research initiative with an annual budget of \$800 million. In 2005, Noyori became Honorary Doctor at Technical University of Munich and RWTH Aachen University, Germany.

Noyori believes strongly in the power of catalysis and of green chemistry; in a recent article he argues for the pursuit of "practical elegance in synthesis". In this article he states that "our ability to devise straightforward and practical chemical syntheses is indispensable to the survival of our species." Elsewhere he has said that "Research is for nations and mankind, not for researchers themselves." He encourages scientists to be politically active- "Researchers must spur public opinions and government policies toward constructing the sustainable society in the 21st century." [2]

Noyori is currently a chairman of the Education Rebuilding Council, which was set up by Japan's PM Shinzo Abe after he came to power in 2006 [1].

#### Chemistry

Noyori is most famous for asymmetric hydrogenation using as catalysts complexes of rhodium and ruthenium, particularly those based on the BINAP ligand. (See Noyori asymmetric hydrogenation) Asymmetric hydrogenation of an alkene in the presence of ((S)-BINAP)Ru(OAc)<sub>2</sub> is used for the commercial production of enantiomerically pure (97% ee) naproxen, used as an anti-inflammatory drug. The anti-bacterial agent levofloxacin is manufactured by asymmetric hydrogenation of ketones in the presence of a Ru(II) BINAP halide complex.

He has also worked on other asymmetric processes. Each year 400 000 tonnes of menthol are produced (in 94% ee) by Takasago International Co., using Noyori's method for isomerisation of allylic amines.

More recently he and Jessop have developed an industrial process for the manufacture of N,N-dimethylformamide from hydrogen, dimethylamine and supercritical carbon dioxide in the presence of RuCl<sub>2</sub>(PMe<sub>3</sub>)<sub>4</sub> as catalyst.<sup>[3]</sup>

#### References

- 1. R. Noyori, Pursuing practical elegance in chemical synthesis, Chemical Communications, 2005 (14), 1807 1811. Abstract
- 2. Keynote address, June 23, 2005, at the Second International Conference on Green and Sustainable Chemistry, Washington DC.
- 3. P. G. Jessop; W. Leitner (Eds.), Chemical Synthesis using Supercritical Fluids, VCH/Wiley, Weinheim, 1999.

#### **Kyoto University, Center of Southeast Asian Studies** (CSEAS Liaison Office, Bangkok)

CSEAS in Bangkok is in Bangkok for 20 years. Current office is located in BB Raj Mansion, 31-33 Sukhumvit Soi 20, Bangkok 10110, Tel.+66-2-259-8485, Fax +66-2-259-8419.

#### **Kyoto University Alumni Association in Bangkok**

: Mr. BANNO Tetsuji President : Mr. KATSUYAMA Secretary

## **Kvoto Union Club**

Kyoto Union Club is established 10 years ago. The first president is Dr. Wiwut Tanthapanichakoon. He was succeeded by Mr. Rangsun Lertnaisat. In 2007, several members from Kyoto University visited and provided seminars at Thai-Nichi Institute of Technology. Bangkok. At that time about 40 Thai Kyoto University Alumni participated and elected Emeritus Prof. Wiwut Tanthapanichakoon (Ph.D) as the President of the Kyoto Union Club (2007-2010). The following are the name lists of board committee.

#### **Board Committee of Kyoto Union Club (2007-2010)**

President : Emeritus Prof. Wiwut Tanthapanichakoon (Ph.D), wiwut@nanotec.or.th

: Ass. Prof. Dr. Krisada Visavateeranon, krisada.v@tni.ac.th Advisor

: Mr. Rungsun Lertnaisat, orbusiness@hotmail.com, nutcharee s@hotmail.com Secretary General

: Mr. Suwanchai Lohawatanakul Treasurer

Committee (PR) : Ms. Nuengnam Navaboonniyom, namchai21@hotmail.com : Ass. Prof. Dr. Sucharit Koontanakulvong, sucharit.k@chula.ac.th Committee

Committee : Ass. Prof. Dr. Anchaleeporn Waritswat Lothongkum, kwanchal@kmitl.ac.th

: Ass. Prof. Dr. Vilai Rungsardtong, vilai8106@yahoo.com Committee

Committee : Dr. Nattaporn Tonanon, Nattaporn.T@Chula.ac.th

Committee : Mr. Yuthana Kulintharaprasert, Yuthana.Kulintharaprasert@tha.dupont.com

#### Activities

The Kyoto University, Kyoto University Alumni Association in Bangkok and the Kyoto Union Club have hosted the Kyoto University Southeast Asian Forum, "Technical Innovation for Sustainable Societies" on Saturday 26<sup>th</sup> January, 2008 13-16.20 pm at Imperial Queen's Park Hotel, Bangkok.

In the same day, at 18-20 pm, the Dinner Party of Kyoto Union Club will be arranged at The Kyoto University Southeast Asian Center (CSEAS Liaison Office) 1st Floor, BB Raj Mansion, 31-33 Sukhumvit Soi 20, Bangkok 10110, Tel.+66-2-259-8485, Fax +66-2-259-8419 (500 Baht/person).

# Dinner Party Program (Saturday 26th January, 2008)

18.00 Register

18.30 Welcome Address: MIZUNO Kosuke, Director of CESEAS, Kyoto University YOKOYAMA Toshio, Vice President of Kyoto University Toast Leader:

Warm Address: BANNO Tetsuji, President of Kyoto University Alumni Association

> in Bangkok, (President of Marubeni Thailand Co., Ltd.). Wiwut Tanthapanichakoon, President of Kyoto Union Club

Tentative agreement that a representative of each generation (20s, 30s, 40s, 50s, 60s) from both countries shall give a small talk about memories of the University life in respective era.