

Collaboration agreement signed by AIST and Singapore's A*STAR

AIST signed a collaboration agreement with the Agency for Science, Technology and Research (A*STAR), one of Singapore's major research organizations, on Oct. 19, 2004. Both agreed to future programs to exchange personnel and information, hold workshops, and conduct collaborative research.

A*STAR is in charge of twelve research institutes in Singapore covering a large range of topics including bio-technology, information technology, and materials science. A*STAR also plays a major role in supporting Singapore's industrial science and technology, and is authorized to contribute to government policies related to science and technology, and to manage the relevant budget. A*STAR is strategically important for AIST in developing a network of cooperative research partners within Asia.

Mr. Boon Swan Foo, managing director of A*STAR, is a member of the AIST Advisory Board, and AIST's

President Hiroyuki Yoshikawa serves as a board member of A*STAR. The signing ceremony for the agreement took place at AIST Tsukuba Center during Mr. Boon's visit to Japan to attend an Advisory Board meeting at AIST.



The 4th AIST Workshop on LCA for APEC Member Economies

An AIST workshop on Life Cycle Assessment (LCA) for APEC member economies entitled "Capacity Building in the Region" was held at the Tsukuba International Congress Center from October 26 to 27, 2004. It was sponsored by the Research Center for Life Cycle Assessment, AIST. The Sixth International Conference on EcoBalance was held at the same time. This is the fourth time the workshop on the status of LCA projects in APEC economies and surrounding regions has been held since 1998.

The participants came from a total of nineteen countries, including a number of European entries. The fifty delegates were able to participate in a number of stimulating discussions during the two-day event.

During the conference, AIST representatives reported on the LCA status of various countries, as determined by surveys that were collected by AIST, then discussed the progress that was being made. Delegates then listened to LCA status reports by members of the United Nations Environment Programme, and representatives of Holland, Germany, and other countries. The Chilean representative

proposed that APEC countries clarify the definition of "life cycle inventory" and that life cycle concept should be made mandatory. Moreover, it was deemed necessary to involve private organizations in order to attract attention to this important issue.

The members of APEC economies participated in lively discussions to determine effective ways to cooperate on LCA issues in the future.

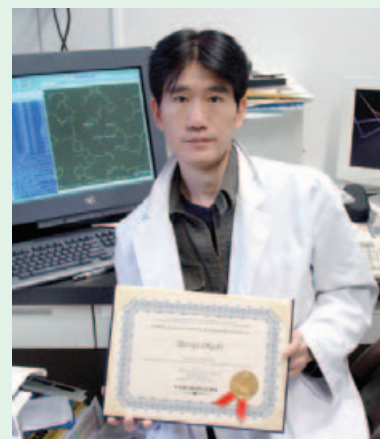


Tetsuji Okada, Senior Research Scientist at the Biological Information Research Center receives Research Front commendation

On Nov. 2, 2004, a celebratory event was held to commend Japanese researchers who have made a significant contribution to emerging Research Fronts (defined as a set of seminal papers in a specialized or highly focused area of research). Thomson Scientific Corporation developed the idea of the Research Front. A total of 13 Research Fronts and 16 outstanding Japanese researchers were identified by determining the most highly-cited papers and how they related to one another, using Thomson database. Tetsuji Okada of the Molecular Functional Analysis Team at AIST's Biological Information Research Center was identified for his work in structural biology.

Dr. Okada was commended for his work on the structure determination of the prototypical member in the largest membrane protein family of the human genome. He wrote four papers which were cited 1,100 times. His most

frequently referenced paper was "Crystal structure of rhodopsin: AG protein-coupled receptor: *Science* 289 (5480), 739–745."



Research cooperation initiated between AIST and the Vietnamese Academy of Science and Technology

AIST and the Vietnamese Academy of Science and Technology (VAST) signed a research cooperation agreement at joint workshop held in Hanoi from Dec. 15 to 18, 2004.

AIST is working towards becoming a hub for a network of major Asian research organizations while setting up an environment to support overseas development for Japanese industries. To that end, AIST signed a general agreement on research cooperation with VAST, the largest national research organization in Vietnam, and held a joint workshop to advance the progress of cooperation.

The workshop was sponsored by Japan's Ministry of Economy, Trade and Industry (METI), NEDO, JETRO and JICA. There were about one hundred participants and they discussed three major topics. The first topic involved environmentally conscious technologies, such as effluent liquid waste processing by the textile industry and metal plating, including heavy metals, and protection from pollution in aquacultural development areas for shrimp and prawns. The second topic was information technology including geological information processing using natural language and grid technology. The final topic was marine

geology, including efforts to produce geological maps of the South China Sea, and the possibility of using satellite data to predict flooding.

At the signing ceremony, Senior Vice-President Kisaburo Kodama signed for AIST and President Dang Vu Minh signed for VAST. The ceremony was followed by speeches by Dr. Dang and other guest speakers, including Mr. Hachiro Okonogi, Japan's Vice-Minister of Economy, Trade and Industry, Dr. Le Dinh Tien, Vietnam's Vice-Minister of Science and Technology, Mr. Norio Hattori, the Japanese Ambassador Plenipotentiary to Vietnam, and Mr. Hiroyuki Fujimura, the Chairman of the Industrial Division of the Tokyo Chamber of Commerce and Industry.



AIST and Thailand's core research organizations sign general agreements on research cooperation following a joint workshop

Recognizing its role as a Japanese research institute within the larger Asian community, AIST is working towards becoming an Asian hub organization that will promote the development of excellent human resources for research in the region. The institute is also developing a strategy to disseminate AIST research throughout Asia to foster sustainable development on a global scale. To that end, AIST signed general agreements on research cooperation on Nov. 25, 2004, in Bangkok with two core Thai national research organizations: the National Science and Technology Development Agency (NSTDA) and the Thailand Institute of Scientific and Technological Research (TISTR). The signing ceremony was part of the Thailand-Japan Collaboration Workshop held on Nov. 24 and 25.

The workshop addressed issues in recycled and distributed energy, such as biomass and photovoltaic energy, and other environmental technologies. It also covered nano-technology and new materials development. Since the Asian region has the most abundant biomass resources in the world, there were discussions on the possibility of using energy in multiple ways to utilize biomass resources effectively. Participants also addressed the idea of centralizing diversified biomaterials marketplaces and reducing CO₂ emissions by increasing biomass production through forest regeneration and tree planting in desert regions.

Attendees included forty researchers, specialists and associated partners from AIST, industry, and academia including on-site staff of the Japan International Cooperation Agency (JICA), the Japan External Trade Organization (JETRO), and the New Energy and Industrial Technology Development Organization (NEDO). In additions, there were sixty Thai researchers and specialists from NSTDA and TISTR, bringing the total attendance to 100.

Each research organization introduced itself briefly and presented international and Asian strategies. Participants discussed potential topics for cooperation in research and development, and ways to manage such projects. The workshop was then divided into two sections, one on energy and environment and the other on materials and nano-technology, at which the Japanese and Thai researchers reported on their studies and considered possible future collaboration. Finally, the chairperson of each session proposed topics for possible collaboration: 11 research items in energy and environment fields, and 14 in materials and nano-technology fields.

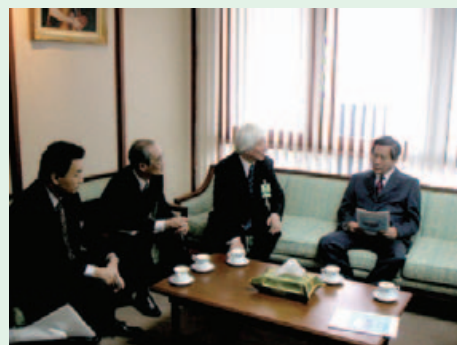
The ceremony for signing the agreements was held at the end of the workshop. President Sakarindr Bhumiratana signed for NSTDA, Governor Nongluck Pankurdee signed for TISTR, and President Hiroyuki Yoshikawa signed for AIST. NHK, Japan's national broadcaster, reported on the ceremony, interviewed President Yoshikawa, and televised it on a nation-wide news program on the morning of Nov. 26.

During the tight schedule of the workshop, AIST President Yoshikawa, Vice-President Naohiro Soga, and Director-General for International Affairs Takayuki Matsuo met with Thailand Vice-Premier Phinij Jarusombath and Mr. Korn Thapparansi, Minister of Science and Technology. Both Thai representatives warmly welcomed the plan for collaboration between Thai research organizations and AIST, giving their full support to sustainable development as a momentous and collective issue that demanded collaboration throughout the world.

It was determined that a follow-up meeting would be held in March 2005 in Japan to discuss further details. In addition, the Biomass-Asia Workshop 2005 was planned for Japan in January 2005.



Heads of three organizations at the signing ceremony: From left, Governor Nongluck of TISTR, President Yoshikawa of AIST, and President Sakarindr of NSTDA.



Meeting with Vice-Premier Phinij (right).

Poster Prizes awarded on two consecutive days during 2004 Fall Meeting of MRS

The Materials Research Society (MRS) is one of the largest societies for research in materials engineering and nano-technology. During the 2004 Fall meeting of MRS, two researchers from AIST's Research Institute for Ubiquitous Energy Devices were awarded Poster Prizes on consecutive days. On Nov. 29, 2004, Dr. Satoshi Ichikawa (center left) received a prize for his paper "Electron Holographic Characterization of Nano-Hetero Interface Effect in Gold Catalysts". On the following day, Dr. Tomoki Akita (right) was recognized for his paper "Analytical TEM Study of the Degradation Phenomena in Proton Exchange Membrane Fuel Cell".

Dr. Ichikawa characterized the atomic and electronic structures at nano-hetero interfaces between gold particles and titanium oxide supports using electron holography in order to elucidate the catalytic mechanism in cooperation with first-principle calculations. Dr. Akita investigated the degradation phenomena of the proton exchange

membrane fuel cell (PEMFC) by an analytical transmission electron microscope. This investigation revealed the nano-scale structural changes in the electrocatalyst and the membrane. Only four presentations are awarded the Poster Prize from among several hundreds of poster presentations on each day. The fact that researchers from the same research organization received two separate Poster Prizes proves that the AIST is fostering a high level of achievement. This is a proud accomplishment for any world organization. <http://unit.aist.go.jp/ubiqen/index.html>



Biomass Asia Workshop 2005 held in cooperation with the Ministry of Agriculture, Forestry and Fisheries of Japan

AIST held an international workshop called "Biomass Asia Workshop 2005" from Jan. 19 to 21, 2005 in Tokyo and Tsukuba in cooperation with Biomass Nippon at the Ministry of Agriculture, Forestry and Fisheries.

Biomass is drawing public attention these days as a recyclable organic resource. It is necessary to build strong partnerships with Asian countries in the future in order to utilize these resources effectively. This workshop was held to determine the future direction of policies for industry and agriculture and for research and development. Decisions will be based on the exchange of policies, techniques, and opinions among staff members of Japanese industries and government organizations and the government administrative offices and research organizations in other Asian countries.

Biomass Asia Workshop 2005 was the first multi-level meeting that AIST has organized in cooperation with associated Asian government organizations and research organizations on the topic of cooperation in the field of biomass. Through this workshop, AIST will be able to take a leading role in the establishment of networks and partnerships in Asia. These efforts should raise AIST's

profile in Asian countries.

This workshop helped to build a network among government and research organizations in Asian countries. It served to outline the current situation and address issues facing each country. Additionally, it helped to create opportunities for the newly developed human resource network and pave the path for future research collaboration.

