

Content

Science News from Chinese Media in October 2008
 Collected and Compiled by the Helmholtz Beijing Office

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Helmholtz in China

October is always the Golden Season or the best season in Beijing. This year is more special. Because of the Olympic game, the Beijing citizen could happily heritage the real blue sky for the most time, and also because the ban of parallel activities during the same time, we see an extreme busy time for international programmes in this particular October.

Dr. He and Mr. Liu Tong participated in the German National Holiday celebration in the Embassy. Because of the overlapping with the Chinese National Holiday vacation, the celebration was postpone on the 08.10 instead of 03.10. At least 600-700 guests enjoyed the party and had BBQ with music.

The 2nd Sino-German Symposium on Space Life Sciences was held 13-16.10 in Beijing. Prof. Rupert Gerzer from the Inst. of Space Medicine of DLR and at least 5 other DLR colleagues showed up. The event was co-organized by the Beihang University and sponsored by NSFC and DFG. German scientists were very encouraged by the progresses made by Chinese colleagues and delighted about the recent MoU signed by DLR and Chinese Manned Space Mission Office for the German experiments onboard of the planned Shenzhou 8 manned space ship. There is a big interest to attract Chinese student for the German PhD programs, in hope to strengthening the future communication and cooperation.

Dr. He flew to Dalian on 15.10 as an accompanier to Dr. Hack from the Embassy together with Mr. Han Xiaoding, chief representative of FhG. The goal is to meet Prof. , who has become the first permanent Chinese staff taking a tenure position as a talented junior professor. He is in charge of building up the Laboratory for Ionic Fluid. Dr. He took this opportunity also visited two other groups in biochemistry and high temperature fuel-cell in the institute. Dr. Chen's group has also won 200,000 euro from a FP7 project together with FZJ group. On the second day, Dr. He visited also two Dalian companies, who are contracted partners with GKSS. They are friendly and cooperative partner for manufacturing membrane modules to recycling the petro-vapor and to enrich the oxygen concentration for the use in the steel industry. They were seen as very successful technology transfer into China.

Prof. Proch from DESY came to Beijing around 17th for a visit. His Chinese partner in Beijing University is very keen to explore with him about the possibility of establishing a joint laboratory based on the cooperation on XFEL. Dr. He has offered a list of different possible available instruments at different levels, such as ministry level, or National Science Foundation level, or institutional level.

Two colleagues from HZI, Dr. M. Rohde und Dr. P. Schmitz went to Beijing during the time 27.10 -01.11. They came under an IB programm, to carry out the comparison research on the differences of streptococcus strings from China and from Europe and India. They were hosted by Prof. Yonghong Yang from the Children's Hospital. They have also under the companion of Dr. He to visit the State Key Laboratory of Pathogen in the Chinese Military Academy of Medicine and the Institute of Biotechnology in the Chinese Academy of Sciences. They instructed some laboratory works.

On 30.10, the Helmholtz Beijing Representative Office has received the fifth internship student, Mrs. Rebeka Freitag – r.freitag@helmholtz.cn. She is studying Chinese in the Bonn University and will stay in out office until the end of March 2009. We are happy about her coming and the assistance.

Helmholtz Beijing Representative Office

1 Science News

1.1 Energy

China's ITER office officially inaugurated in Beijing (CAS, 2008-10-20)

The nameplate-unveiling ceremony for China's ITER (International Thermonuclear Experimental Reactor) Office was held on 10 October in Beijing. CAS Vice President YIN Hejun extended warm congratulations to its establishment.

It is obligatory for CAS to support the development of nuclear fusion research, says Prof. Yin.

The world's first all-superconducting Tokamak experimental facility, Experimental Advanced Superconducting Tokamak (EAST), started operation in October 2006 at the CAS Institute of Plasma Physics (IPP). The smooth implementation of the ITER program will bring in an opportune chance to promote China's endeavor in this regard and to raise the country's related research level, according to the vice president.

China to launch nationwide survey of energy conservation measures (Xinhua Net, 2008-10-20)

China's government is to conduct a nationwide survey of efforts by local governments to reduce energy consumption and greenhouse gas emissions.

The government has set a target of reducing energy consumption per unit of GDP by 20 percent and major pollutant emissions by 10 percent from the 2005 levels by 2010, in a bid to protect environment and insure a sustainable development.

"However, the country still faces great difficulties in fulfilling the commitment, and the situation remains arduous," said National Development and Reform Commission (NDRC) deputy director Xie Zhenhua on Monday.

In the past two years, energy consumption per unit of GDP had only been reduced by 5 percent annually, according to NDRC figures.

Four central government departments on Monday launched a special campaign to oversee efforts by local departments to promote energy conservation and reduce discharges of pollutants.

The departments are the NDRC, and the ministries of supervision, environmental protection, and housing and urban-rural development.

The NDRC also announced on Monday the establishment of the National Energy Conservation Center to provide technical support for energy efficiency management.

The center would draw up energy conservation policies, regulations, research programs and mechanisms. The center would also be responsible for providing energy-saving assessments of fixed asset investment projects and promoting energy-saving technology.

The center would provide energy conservation training programs, and international exchanges and cooperation.

1.2 Earth and Environment

UN, China to Co-organize High-level Event on Climate Change (CRI, 208-10-04)

The United Nations and China will co-organize a high-level meeting on climate change early next month, with a special focus on technology development and transfer, the world body announced Friday. UN Undersecretary-General for Economic and Social Affairs Sha Zukang and China's Deputy Permanent Representative to the United Nations Liu Zhenmin briefed member states at the UN Headquarters on the Nov. 7-8 Beijing High-Level Conference on Climate Change: Technology Development and Technology.

"Technology transfer is of enormous importance in tackling climate change," Sha said. "Together with financing technology transfer, it is one of the means of achieving adaptation and mitigation action."

Effective international action on climate change will require progress on the question of technology transfer, which is addressed in the UN Framework Convention on Climate Change (UNFCCC) and also forms a core aspect of the Bali Action Plan, Sha noted.

"In this context, the conference will provide a forum for open, practical and pragmatic discussions on technology transfer and climate change," Sha said. "The conference will focus on practical options and solutions for overcoming barriers to technology development and transfer."

"We hope it will be an opportunity for member states and other stakeholders engage openly, away from the constraints of the negotiating setting," he said.

Sha said that the aim of the conference is to support the UNFCCC process, particularly the forthcoming UN Climate Change Conference in Poznan, Poland in December 2008.

Calling for "broad, high-level participation from member states," Sha said that the conference will be opened by Chinese Premier Wen Jiabao and that UNFCCC Executive Secretary Yvo de Boer and former British Prime Minister Tony Blair have confirmed their participation.

In his remarks, Liu said that over the years, the international efforts to develop and transfer clean technologies are lagged behind the needs, and the relevant mechanism and financial support are not yet put in place.

With many countries having divergent views on the issue, communication and dialogue will help countries deepen mutual understanding, find common ground and work together to promote technological development and transfer, Liu said.

"The purpose of the high-level conference is to provide a platform of dialogue for international cooperation in the relevant technological development and transfer," Liu said. "We hope this conference will help countries form some consensus on development and transfer of technologies for addressing climate change so as to further promote the efforts to address climate change," Liu noted.

Targeting climate change in Himalayas (Xinhua Net, 2008-10-10)

The Ministry of Science and Technology and the United Nations Environment Programme (UNEP) jointly launched a three-year program yesterday to address the increasingly worrying effects of climate change in the Himalayas.

"The rapid melting of snow and glaciers in the past 10 years has threatened economic development and

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ecological balance in the Himalayas faster than any period of time in the past half century," Zhang Shigang, the coordinator of the UNEP China Office, told China Daily yesterday in Beijing.

Global warming is causing a rapid meltdown of snow and glaciers in the Himalayan region, resulting in glacial overflows along the Himalayan range, data from the independent International Centre for Integrated Mountain Development showed.

Similarly, weather patterns are becoming more unpredictable and extreme, with droughts and floods worsening, he said.

The latest program aims to improve understanding of these problems and provide first-hand data for local governments to make more constructive policies to instruct residents on adapting to climate change, Zhang said.

The program will cover five regions: the Tibet and Xinjiang Uygur autonomous regions, Qinghai and Gansu provinces, and Sichuan province.

The UNEP plans to provide \$1.2 million for the program. It will also use the funds to research climate change in the country's coastlines. Science and Technology Minister Wan Gang has also called on the international community to work on a mechanism for the development of technology and its transfer to address the problems of climate change.

Expedition focuses on source of the Yangtze (CAS, 2008-10-10)



After tough work in the sloughy upper reaches of Dam Qu, an important upriver tributary believed to be the most possible real source of the Yangtze, the expedition goes on to explore another major tributary of this river, the Togton River on 7 October, 2008. This will be the last lap for the fieldwork of this large-scale expedition, which is expected to unveil the real sources of three major rivers in Asia, namely the Yellow, Yangtze and Lancang. The team has completed the investigation into the source areas of the Yellow and Lancang rivers.

The expedition, according to reports by Xinhua, will camp in the depth of the Gêladaindong Mountain in the Tanggula (Dangla) Mountain Range at an elevation of over 5,500 meters above sea level, and start their journey into the Mountain to search for the source of the Togton. They will perform observation and research on the spatial geographic changes of this area, to provide scientific evidence for the awaited official release of the important geographic information.

The 6,300km-long Yangtze River ranks the third longest in the world. According to the principal investigator of the expedition, Prof. LIU Shaochuang from the CAS Institute of Remote Sensing Applications, it has three major upriver tributaries, namely the Dam Qu, the Togton, and the Qumar. Among them, the Togton was officially identified as the source of Yangtze in the 1970s by the Yangtze River Water Resources Commission under the Ministry of Water Resources of China. This conclusion has stirred a big controversy at home and abroad, with many scholars arguing that it neglected the Dam Qu, the upriver tributary in the south whose length, discharge and drainage area are all bigger than those of the Togton. The new move of expedition is anticipated to clear the clouds with more sufficient and precise data.

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The expedition marks the first effort of China to precisely locate the real sources of the three major rivers at the same time. After the fieldwork, the groups under the expedition, respectively in charge of subprojects in surveying, mapping and remote sensing, hydrology, geology and glaciology, and meteorology and geography will each compile reports of investigation for the subprojects, thereby to provide scientific evidence for determining the exact geographic locations of the real sources. The conclusion will be made by the end of November 2008, according to the work plan of the expedition.

Workshop deals with glacier change on Tibetan Plateau (CAS, 2008-10-13)

Under the auspices of the Xiangshan Science Conferences, a meeting was held from 25 to 27 September in Nyingchi, Tibet Autonomous Region, to explore the evaluation and countermeasures for regional eco-environmental impact of changes in glaciers and permafrost on the Tibetan Plateau.

The discussions were centered on the following issues: characteristics of the time-and-space distribution of the recent climate changes and their impacts on glaciers and frozen soil; the water table changes in the region's water bodies and lakes as a result of the cryosphere decline; potential areas for various mountainous hazards caused by the changes, such as glacial lake outburst floods, mud-and-soil flows; thawing permafrost and its impact on the ecological functions of nearby wetlands, meadows and the Plateau on the whole as well as the overall tendency of the changing during the upcoming 50 years. By exchanging of opinions, views and ideas in related disciplines, an overall estimation will be made on the Plateau's situation, regional economy's effect and the response to the changes. Based on this, adaptive and mitigating countermeasures for the region are to be worked out.

The symposium invited scholars in related fields to discuss the following topics: recent climate changes on the Plateau and their impacts on the Plateau's glaciers and permafrost; responses and adaptive strategies of the ecology and the environment to the changes; possible disasters caused the degeneration of glaciers and frozen soil; and the Plateau's traffic safety and reconstruction.

Expedition team embarks on the 25th Antarctic expedition (People's daily, 2008-10-21)

China's 25th Antarctic Expedition set off on a six-month scientific research mission from the port of Shanghai. During this period, team members will build China's first research station on Dome A, the highest point on the Antarctic Inland. This accomplishment will signify that the Antarctic expedition of China achieved the leapfrog development from the rim of the Antarctic continent to the key areas of the interior.

On the morning of October 20th, a short and warm farewell ceremony was held at the domestic base of Arctic and Antarctic expeditions in Pudong and 204 members of the expedition team boarded the vessel, Snow Dragon, to embark on the 25th Antarctic expedition.

According to sources, the expedition team is the largest one since China started its first Antarctic expeditions in 1984. The major task is to build Kunlun, the first inland scientific research station, on Dome A, the highest point on the Antarctic inland icecap. This is the third Chinese Antarctic research station after two previous installments named The Great Wall and Zhongshan.

Yang Huigen, chief scientist and captain of the 25th Antarctic expedition of China, said, "We will carry out scientific exploration of the deep ice core at the newly-built base, focusing on recovering meteorological evidence of the earth's history from 700,000 years ago. We believe we will find

high-resolution records of the planet dating back one million years."

CO₂ phytotron erected in Ailaoshan Mountains

(CAS, 2008-10-30)



Understanding the interactions between ecological systems with the environment is a research priority in areas such as global change, evolutionary biology, and functional genomics. Controlled environment facilities, like a CO₂ phytotron, which is made up of completely closed greenhouses for the study of environmental conditions on plant growth, are necessary for studying these interactions.

Recently, a CO₂ phytotron was set up in Ailaoshan Mountains by researchers with Ailaoshan Station for

Subtropical Forest Ecosystem Studies under the CAS Xishuangbanna Tropical Botanical Garden (XTBG) in southwest China's Yunnan Province.

Experts say that the controlled environmental facility will enable researchers to carry out studies on interrelationships between biological invasion and global change, and the evolution of exotic plants under environmental changes (such as the increased CO₂ density, temperature, and nitrogen deposition).

Due to its high elevation and latitude of the Ailaoshan Mountains, the local ecological system is more sensitive to the climatic change, and its response to the global change could be used as indicators for studies in the field. Lying at the southeast tip of the Qinghai-Tibet Plateau, the Ailaoshan Mountains sprawl in the transitional zone ranging from the inner core of the Yunnan Province's sub-tropical belt to its northern fringe, where tropical, sub-tropical and temperate floras are converged and crisscrossed.

Against such a background, the native biodiversity and floral phylogeny present an extremely complicated and diversified distribution layout. As the progressive course of global climate change speeds up, the local ecosystem is more capable of dramatically reflecting the impacts imposed by the global environmental changes in Ailaoshan Mountains. It is very likely to serve as a natural laboratory versed in exploring the mutual coupling and interaction between processes within an ecosystem and the current climate change.

The phytotron, which houses four plant growth greenhouse chambers and a laboratory, is aimed at carrying out a new control-and-test approach by integrating bio-invasion ecology with the on-going global warming, exploring the evolution of the aggressiveness developed in the intruding floral species against a complete set of changed ecological conditions as result of the global warming (such as the increased content of CO₂ in the air, the current temperature hike, subsidence of nitrogen and its compounds, etc.) in addition to the prediction of the possible distributive layout of the alien species, the early warning of the changes, identification of the weak links and restrictive factors in the dissipative process of the intruding species. Based on these, related countermeasures are to be formulated in a bid to stop their propagation and develop new methods of scientific management for their control and prevention. In order to rehabilitate the depleted ecosystems, scientific guidance might be provided for the control and experimentation of the bio-invasion in the Mountains. By using the phytotron, scientists can predict the possible distribution of invaded plant species, discover the vulnerable spots and limiting

factors, and make an early warning,

Established in 1981, the Ailaoshan Station focuses its studies on sub-tropical forest ecosystems. Its main task is to carry out research in the fields of forest ecology and conservation biology of sub-tropical forests, especially the pattern of species diversity and its maintenance, dynamic process of ecosystem, the driving forces of ecosystem degradation and the associated restoration and the biological base for some important ecological phenomena. At the same time, the station conducts research into landscape scale acting an important role in monitoring and recovering the sub-tropical mountainous environment of southwestern China.

1.3 Health

Chinese researchers record porcine handmade cloning

(Xinhua Net, 2008-10-11)

Chinese researchers have cloned eight piglets in a simplified method compared to traditional cloning. The piglets were born on Aug. 30 by handmade cloning (HMC), an alternative of the conventional operation that requires expensive equipment, said Yang Huanming, a scientist at Beijing Genomics Institute's Shenzhen branch (BGI Shenzhen) that developed the HMC technology, on Saturday at a press conference here.

HMC needs only a metal blade and skilled hands, which reduces costs and increases efficiency.

Yang, also an academician of the Chinese Academy of Sciences, said the piglets could reproduce in a natural way. "Cloned pork is relatively safe, and we're prepared for large-scale production," said Yang.

BGI experts conducted porcine HMC with Denmark scientists in 2006. The Chinese experts brought in the technology in 2007 and made a success after one year's efforts.

13th Int'l Biotech Symposium opens in Dalian

(People's Daily, 2008-10-14)

The 13th International Biotechnology Symposium & Exhibition (IBS) kicked off on October 13 2008 in Dalian, northeast China's Liaoning Province, with the theme of "biotechnology for the sustainable development of human society".

Two Noble laureates, professors and scholars from 80 countries and regions participated in this IBS.

The contents of the IBS range from research of basic biotechnology, the development of application technology, industry development, to the relative policies of the government. This symposium also established the young scientist award for the first time.

Training course for marine bio-technology opens in Qingdao

(CAS, 2008-10-14)

The 2008 international training workshop for marine bio-technology & its application recently opened in Qingdao in east China's Shandong Province.

Organized by the CAS Institute of Oceanography, the program is attended by nearly 30 trainees from 10 countries, including Mauritius, Russia, Indonesia, Thailand, India, the Philippines, Mongolia, Venezuela, Tunis and Tanzania.

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The workshop is concentrated on the latest developments and R&D results in marine bio-technology. By taking advantage of the academic buildup of the CAS institute, it strives to make the trainees acquainted with the current state and upcoming global trend in the field and basic theories and key know-how in the breeding of new aquatic cultivars, sound operation of marine farms, marine bio-preparations and oceanic pharmacy.

With the support of the Ministry of Science and Technology, the program was first started in 2002. Over the past 6 years, it has been attended by some 150 managerial workers and technicians from a score of countries or regions across the world.

Symposium on Euroasian floral genetic resources convenes in Kunming (CAS, 2008-10-15)



The Second Euro-asian Symposium on Plant Genetic Resources Conservation and Use was held from 2 to 5 September Kunming, capital of southwest China's Yunnan Province.

Jointly organized by the CAS Institute of Botany, the CAS Kunming Institute of Botany (KIB), UK University of Birmingham, International Association for Conflict Management, the meeting brought together scholars and delegates from various countries, including China, Germany, the UK, Austria, Israel, Thailand, Cambodia,

Laos, and Viet Nam.

The meeting reviewed the development of DIVERSEEDS, a scientific project supported by the European Commission's 6th framework programme for conservation and use of plant genetic resources in Europe and Asia. Scholars from the UK, Germany, China, Viet Nam and Cambodia presented applications for participating into the late-stage cooperation of the project. Prof. LONG Chunlin with an international advisor from KIB made a briefing on the databank of southwest China's germplasm resources and the research on traditional knowledge on floral genetic resources. The meeting conducted a deep-going exploration on the protection and exploitation of the trove, food safety and international cooperation in this aspect.

Experts say that the symposium will further promote the exchanges among Asian and European scholars, advances a network for preservation of the Euroasian floral resources and build a platform for cooperation in this regard.

Chinese premier supports developing transgenic engineering (People's Daily, 2008-10-18)

Chinese Premier Wen Jiabao expressed his support for developing transgenic engineering, in a two-hour interview with Bruce Alberts, editor-in-chief of Science of the United States on Sept. 30.

In the exclusive interview at the Zhongnanhai leadership compound, Wen said his support of the transgenic engineering was further strengthened by the recent global food shortage.

When China didn't have the transgenic technology in cotton plants 10 years ago, the cotton bollworms would not die even when immersed in pesticides. Wen said, "Since we began transgenic engineering of cotton, the plants not only increased their ability to resist bollworms but also increased yield."

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"Therefore, I strongly advocate making great efforts to pursue transgenic engineering. The recent food shortages around the world have further strengthened my belief (in it)," said Wen.

Responding to Alberts' words on some European states' objection to developing transgenic crops, Wen said if transgenic science was mixed with trade barriers, "that would block the development of science".

High energy beams a boost for tumor treatments

(Xinhua Net, 2008-10-23)

Chinese nuclear physicists have developed a medical treatment for destroying malignant tumors more than 2.1 cm below the skin surface through the use of heavy ion beams.

Zhan Wenlong, the country's leading nuclear physicist, said the research carried further an earlier accomplishment made by the same scientists in January. It also used heavy ion beams to treat tumors 2.1 cm or less below the body surface.

Compared with light ion beams, such as gamma rays and X-rays used in traditional radiotherapies, heavy ion beams are considered the most effective, so far, in accurately moderating the amount of radiation and minimizing the damage done to healthy cells, said the Beijing-based scientist.

He explained the new treatment used stronger heavy ion beams that reached 400 mega electron volts (MeV) at their highest level that could travel farther into the human body to kill deeper tumors.

The Heavy Ion Research Facility in Lanzhou -- Cooler Storage Ring (HIRFL-CSR), a 300 million yuan (about 44 million U.S. dollars) national science project built in the northwest Gansu Province capital, is playing a key role in generating the beams.

Its heavy ion beams used in the January tests were 100 MeV, which limited the treatment to shallow tumors only, said a researcher.

At the CAS Institute of Modern Physics, Zhan and his research team have produced a broad spectrum of heavy ion beams. They range from 80 to 400 MeV, which can be used to treat both shallow and deep-seated tumors. Scientists were now optimizing the system software to pave the way for clinical testing in the near future, he added.

With this medical goal achieved, China followed Germany, Japan and the United States in becoming the fourth country to use heavy ions in cancer therapy.

The HIRFL-CSR, which was officially completed in July, included a main ring, an experimental ring, a radioactive beam separator, an experimental detector and a radiation protection system.

Symposium addresses nano-drugs for cancer treatment

(CAS, 2008-10-24)

Recent years have witnessed the rapid development of China's nano-science and technology with widespread influence. On January 2008, a proposal to convene a Sino-US symposium on nano-medicine and nano-biology was jointly made by Director of the US National Institutes of Health Dr. Elias Zerhouni, Director of the US National Cancer Institute Dr. John E. Niederhuber and Director of the National Institute of Environmental Health Sciences Dr. Samuel Wilson. To integrate outstanding research forces in China and carry out exchanges with scholars of the world, in particular US, the Xiangshan Science Conferences (XSSC) was hold a symposium on nanotechnology and nano-drugs for cancer treatment from 21 to 23 October in Beijing.

Studies of nanotechnology and nano-drugs for cancer treatment are an emerging field that takes full

advantage of expertise and research approaches from such academic disciplines as nanotechnology, biology, chemistry, physics, medicine, pharmaceuticals and public health. No single discipline can deal with the new field characterized with strong interdisciplinary and comprehensive studies. It is both a topic at the cutting-edge of science development and an important social issue closely related to people's health and environment, offering unlimited opportunities for innovation.

The meeting was focused on nano-drugs and nano-technology for cancer treatment, environmental health of nanotechnology and its safety, and the strategy and policy for nanotechnology development.

New efficacy against liver cancer discovered in Artemisinin

(CAS, 2008-10-27)

A recent study by HOU Junmei, a doctoral student with the research group of Prof. WANG Hui with the CAS Institute of Nutritional Sciences, shows that Artemisinin and its derivate Dihydroartemisinin are promising therapeutic agents against liver cancer, either used alone or in combination with the conventional chemotherapy. Earlier, Wang Tao, another member of Wang's group, had discovered their functions against ovarian cancer.

As reported in a recent issue of Clinical Cancer Research, the researchers also revealed the underlying mechanisms of Artemisinin and its derivate Dihydroartemisinin's action in human hepatoma cells.

The researchers suggested that Artemisinin and its derivate Dihydroartemisinin have significant anticancer effects against human hepatoma cells, with minimal effects on normal cells, indicating that they are promising therapeutics for human hepatoma used alone or in combination with other therapies.

Scientists reveal general picture about the origin of new genes in fruit flies

(CAS, 2008-10-28)

Gene, the very basic unit of life, has long held the limelight in modern biological studies. One fundamental truth revealed by scientists of the twentieth century is that gene is a segment of DNA and provides information an organism needs to build or do something – like making a nose or an arm, or repairing a wound. Now, with the help of molecular biology, scholars are able to think about another important issue: where do the new genes come from?

Like doctors infer an individual's growth from the embryo, geneticists find sufficiently young genes to observe their origination and evolution, through which they might finally peep into the rise of all genes, including ancient ones that have undergone millions of years of variation.

Since 2004, Dr. WANG Wen and coworkers with the CAS-Max-Planck Junior Research Group on Evolutionary Genomics have reported a series of young genes of *Drosophila* (or fruit fly, a two-winged insect model often used in genetic experiments), such as the monkey-king which bares out gene-splitting mechanism and the testes-specific expression *Hun*, etc.

Based on extensive genome sequence comparisons among 300-odd young genes in *Drosophila melanogaster* species subgroups, PhD candidates ZHOU Qi, ZHANG Guojie et al from Wang's group recently surveyed the mutational process by which new genes originate. Although previous case studies had explained some general principles governing the origination of new genes, this is the first whole-genome level investigation by far which provides a panoramic picture for the origin of new genes in fruit flies.

Several interesting observations were made. First of all, as gene duplication is widely believed to play a pivotal role in evolution, Wang and collaborators discovered that within a single species –

melanogaster for instance 7C newly-born genes are largely tandem duplicates, while survived old genes shared by multiple species are usually dispersed duplicates.

Then, researchers identified the previously underestimated roles of de novo origination and retroposition. The process by which a new gene is de novo generated from non-coding sequence, a less discussed topic before, proves responsible for over one tenth of the birth of new genes. And retroposition, a means of gene copying which features the integration of a sequence derived from RNA into a DNA genome, is considered a major mechanism that generates about another one tenth of new genes.

Their study also supported a widespread contribution of changes in gene structure to fixing new genes. About 30% of the identified new fruit fly genes recruit various genome sequences and form chimeric gene structures.

According to Dr. Wang, the origination of new genes is a key mechanism underlying the emergence of genetic novelties during an organism's evolution. Known processes of new gene's creation include exon shuffling, gene duplication, retroposition, gene fusion, fission, de novo origination and so on. The origination rate is around five to 11 new genes per million years.

However, Wang says that scientists still need to work out more genome sequences in other species to testify similar patterns, and the studies on how new genes impact the development, heredity and evolution of organisms are equally significant.

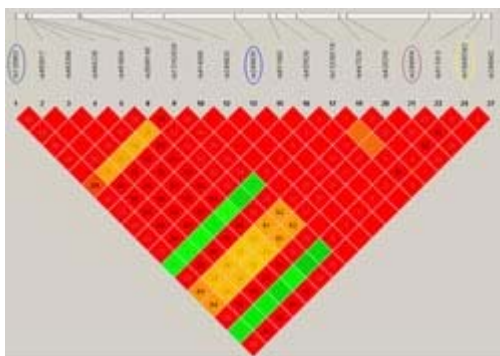
The work, published by Genome Research, is co-funded by a CAS-MPS Fellowship, the National Natural Science Foundation of China and the National Basic Research Program of China.

Dr. Wang was recruited in 2002 to the CAS Kunming Institute of Zoology as head of the Group. He also serves the Institute's deputy director.

Some of Wang's work is joined by overseas researchers, including Prof. Manyuan Long from the University of Chicago, who discovered Jingwei, the first gene of sufficiently recent origin in *Drosophila* to offer insights into the origin of a gene.

New research advance in breast cancer vulnerability of Chinese women

(CAS, 2008-10-29)



CAS researchers recently made a new advance in research into breast cancer risk among Chinese women.

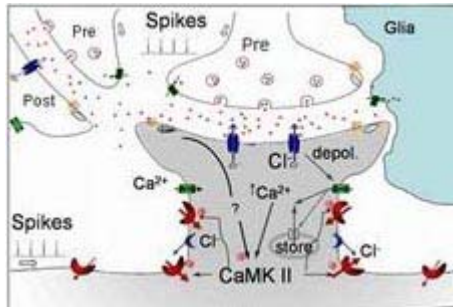
In collaboration with scientists from Nanjing Medical University, a research team led by Prof. WANG Hui with the CAS Institute of Nutritional Sciences, the Shanghai Institutes for Biological Sciences, carried out a case-control study on the relationship between breast cancer risk and PALB2, a gene encoding a protein that may function in tumor suppression.

As reported in a recent issue of *Clinical Cancer Research*, four single nucleotide polymorphisms (SNPs) which tagged all 19 of the reported SNPs covering PALB2 were selected and genotyped in 1,049 patients with breast cancer and 1,073 cancer-free controls in a female Chinese population.

Based on the multiple hypothesis testing with the Benjamini-Hochberg method, they found that tagging three SNPs (rs249954, rs120963, and rs16940342) were associated with an increase of breast cancer risk.

Scientists believe the discovery could lay significant theoretical bases for screening highly risked people among the Chinese populations.

**New insights into synaptic plasticity
(CAS, 2008-10-30)**



Signaling mechanism underlying GABAergic receptor-independent LTP at developing GABAergic synapses

The brain is "plastic" as it is constantly changing. The ability to learn and form memories is due to the ability of neurons to change the way in which they communicate with each other - that is, through synaptic plasticity. As a major inhibitory neurotransmitter in the brain, GABA plays an important role in neuron transmission network. However, GABAergic synapses have only come into the limelight recently, and plasticity of GABAergic synapses remains largely unexplored, especially in developing animals. A recent study by CAS researchers may shed light on the issue.

As being reported 26 Oct. online by *Nature Neuroscience*, graduate students XU Chun and ZHAO Man-xia, under the supervision of Drs. Mu-ming Poo and ZHANG Xiao-hui from the Institute of Neuroscience, the CAS Shanghai Institutes for Biological Sciences, have made advancements on their studies of GABA_B receptor activation mediates frequency-dependent plasticity of developing GABAergic synapses.

In this study, the researchers have demonstrated a critical role of GABA_B receptors (GABA_BRs) in frequency-dependent synaptic plasticity of developing hippocampal GABAergic synapses, during early postnatal development when they are still excitatory. They further reveal the cellular mechanism underlying the frequency-dependent long-term potentiation (LTP) induced by coincident pre- and postsynaptic neuronal spiking. Three coincident events, postsynaptic spiking, GABA_AR activation and GABA_BR activation are required, which, in turn, result in up-regulation of postsynaptic CaMKII activity and local activity of a Cl⁻ co-transporter NKCC1, leading to the strengthened GABAergic transmission (Figure).

These findings reveal a novel function of GABA_BRs in the postsynaptic regulation of long-term plasticity of developing GABAergic synapses, and such frequency-dependent plasticity also provides a mechanism for self-refinement of local GABAergic circuits during neural development.

1.4 Key Technologies

**XSSC addresses development of high-performance computing
(CAS, 2008-10-13)**



Under the theme of "policy measures for the development of high-performance computing in China," the 329th Session of the Xiangshan Science Conferences (XSSC) was held from 7 to 9 October in Beijing.

The meeting was co-chaired by HE Xiantu from the

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Institute of Applied Physics and Computational Mathematics, ZHONG Wanxie from Dalian University of Technology, ZHANG Hanxin from the State Laboratory for Computational Fluid Dynamics and CUI Erjie from the China Academy of Aerospace and Aerodynamics.

More than 30 experts in various fields from 27 institutions across the country attended the conference and held in-depth discussions on the issue in this regard.

With the soaring development of science and technology, high-performance computing has become a tool with strategic significance for scientific research and engineering designing. Complementary with the traditional theoretical studies and lab experiments, this technology has greatly improved the capacity for scientific research, making remarkable contributions to the development of modern science, technology and engineering.

Thanks to the continuous efforts over the past several decades, China's high-performance computing has made sound progress with important achievements on its application in some major S&T fields. Compared with developed countries, however, China still has a long way to go in this aspect. Especially, there is an acute lack of research and development of high-end application software for numerical simulation, which hampers its capacity upgrading for indigenous innovation and the development of key technologies for mega-engineering projects.

At the meeting, Prof. He Xiantu delivered a key-note report on China high-performance computing: current situation, challenges and future development. And the participants held discussions focusing on such topics as high-performance computing: demands from, and application in, the national major projects and basic research; key scientific issues and bottle-necks for the development of high-performance computing; and suggestions for the development of high-performance computing.

Asian scientists discuss latest simulation technologies

(Xinhua Net, 2008-10-14)

Nearly 400 scientists from 15 countries came to Beijing to discuss cutting edge simulation technologies this weekend.

They were taking part in the 2008 Asia Simulation Conference and the 7th International Conference on System Simulation and Scientific Computing.

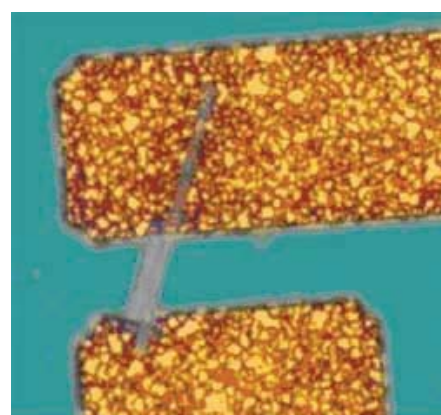
Simulation is an attempt to model a real-life or hypothetical situation on a computer so that it can be studied. The technology helps engineers design complicated products, such as cars, planes or medical tools. It is also widely used to simulate motion which improves athlete performance.

Tang Xiaoqing, vice president of Beijing University of Aeronautics and Astronautics said, the goal of the conference was to increase international academic exchanges in modeling and simulation. It brought outstanding researchers together to share their expertise and experience, he added.

Simulation technology and high performance computing have become increasingly popular in engineering fields. Tang believes it's why international exchange and an expert forum, like the one held this weekend, are so important.

The conference was initiated by Chinese, Japanese and the Republic of Korea simulation academic associations.

China's first ZnO nanorod field-effect transistor fabricated in IMECAS



(CAS, 2008-10-23)

China's first back-gate ZnO nanorod field-effect transistor

Recently, zinc oxide (ZnO) nanorod field-effect transistor (FET), the first of its kind as a nano device in China, was successfully fabricated by scientists with the CAS Institute of Microelectronics, Chinese Academy of Sciences (IME).

ZnO is a wide bandgap semiconductor and an important multifunctional material. The ZnO nano materials, such as nanowires, nanorods, nanobands and nanorings, attract intense worldwide attention for their unique optical, semiconducting and piezoelectric properties. At present, Chinese scientists in this filed mainly focus their research on material growth and diode development.

A research group headed by Prof. ZHANG Haiying from IME came up with a unique "bottom-up" method for designing and developing nano devices. Through the regular contact photolithography technology, they employed ZnO nanorods as the channel material and fabricated a metal-oxide-semiconductor FET by combining gate oxide and back gate metal, which displayed satisfying results.

Next, Prof. Zhang and her colleagues will further advance the technology in order to develop nanowires with an even smaller diameter and improve the performance of the devices, raising solutions to key problems in practical use.

Conductance plateaus of graphene p-n junctions discovered

(CAS, 2008-10-30)

Recently, SUN Qingfeng with the Lab for Condensed Matter Theory and Materials Computation, CAS Institute of Physics made an intensive study on the electron transport through graphene p-n junctions in cooperation with LONG Wen with the Capital Normal University and WANG Jian from the University of Hong Kong. Their research paper entitled with "Disorder-Induced Enhancement of Transport through Graphene p-n Junctions" was published on the 16th issue of Physical Review Letters on October 17th.

Graphene is the name given to a flat single layer of carbon atoms densely packed into a two-dimensional honeycomb lattice and also a basic building block for graphitic materials of all other dimensionalities. Back to the last century, it was already revealed that the unique band structure of graphene could lead to many peculiar properties. Recently, the successful fabrication of graphene in laboratory brings new interests among scientists.

In their research under the joint support from the National Natural Science Foundation of China and CAS, Prof. Sun and his colleagues investigated the conductance of clean and disordered graphene p-n junctions by using the Landauer-büttiker formalism combined with the nonequilibrium Green function method.

They find that the conductance is quite small for the clean samples under a perpendicular magnetic field, while in the presence of disorders it can be dramatically enhanced. And at a suitable range of disorders, some conductance plateaus emerge, the values of which exhibits at $1e^2/h$, $3/2 e^2/h$, $5/3 e^2/h$, $3 e^2/h$, etc. The lowest conductance plateaus can sustain for a very broad range of disorder strength (about 2 orders of magnitude), but the existence of high plateaus depends on system parameters and sometimes cannot be formed at all. These research results are in agreement with a recent experiment.

1.5 Structure of Matter

Construction of an experimental platform for plasma dynamics

(CAS, 2008-10-14)

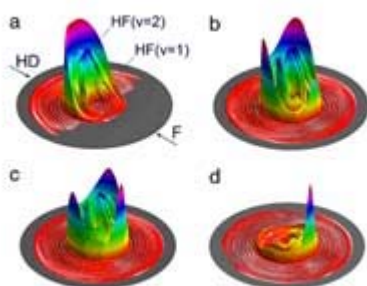


A research project for developing an experimental platform for plasma dynamics in astronautic and aeronautic studies has passed the acceptance check under the auspices of CAS.

Experts say that the new platform, a brainchild of researchers from the CAS Institute of Mechanics, will facilitate the simulation studies of electric propulsion and re-entry of spacecrafts in China. It will be conducive to bringing together engineers and technicians from various fields to work on a same facility.

Probing the resonance dynamics in the F+HD reaction

(CAS, 2008-10-21)



On the 3D contour plots obtained in their experiment, CAS researchers identify "dramatic" changes in the outgoing direction of product of the F+HD reaction against very small changes at collision energies around 0.5 kcal/mol. Illustrated are snapshots of the product translational energy at certain scattering angles with a range of collision energies: 0.43 kcal/mol (a); 0.48 kcal/mol (b); 0.52 kcal/mol (c); and 0.71 kcal/mol (d).

reaction two years ago.

Resonance is a metastable state formed in a "well" on the curve of potential energy. When beams of

Direct observation of the transition state in a chemical reaction is regarded as a "Holy Grail" in the chemistry community. This Holy Grail has recently been obtained by a group of physical chemists at the Dalian Institute of Chemical Physics under CAS. The group, led by Profs. YANG Xueming and ZHANG Donghui, reports in the 2 Sept. issue of *PNAS* its success in observing the prominent forward scattering for the HF product in an important reaction, the reaction between fluorine atom (F) and hydrogen deuteride (HD), with unprecedented accuracy. This scattering, according to the team, is caused by the ground resonance state of the product.

The team further identifies the defects in previous theoretical models and constructs an improved potential energy surface (PES) for reactions $F+H_2 \rightarrow HF+H$ and $F+HD \rightarrow HF+D$. The new version of PES, as demonstrated in the experiment, can accurately predict the resonance peak positions for both reactions. This is the latest accomplishment made by the same team on top of its series achievements in the field of reaction dynamics research, including its successful capture of Feshbach resonances in the $F+H_2 \rightarrow HF+H$

reactants collide at exactly the right energy, the resonance can be triggered to substantially change the behavior of the reaction system. For example, some reaction would not be able to proceed at very low collision energy unless with help from a resonance state. On the other hand, its high sensitivity to the PES also offers very good opportunity to understand the dynamics of the reaction. It gives us a glance to the most spectacular and non-intuitive episode of a reaction, where the reactivity of the system is greatly enhanced. This makes it a fascinating object of research for chemists to predict the resonance potential, namely the potential energy at which the resonance occurs. It has so far attracted keen interest from top labs all over the world, knowing that understanding of this magical phenomenon might lead to successful laser control of reactions and even the development of bond selective chemistry, a long-sought vision.

Beautiful as this vision is, it proves to be a big challenge to predict the accurate resonance potential of an actual reaction. An important approach to capture a resonance is to search for clues about the development of the reaction from its PES. Therefore different models have been proposed to obtain the PES of certain chemical reactions, approximating the exact electronic energy of every possible atomic arrangement of the reactant and the product molecules. The visualized contour of the total energy of a certain atomic arrangement resulting from a PES model looks like a landscape, where the "mountains and valleys" correspond to the ups and downs of electronic energy values against certain atomic orientations of the molecules. Scientists have been struggling to accurately depict every point of this "relief map," in hope of getting details of the transition states occurring in the process of the reaction.

Up till now, the only method available to obtain the PES is through high-level ab initio quantum chemistry calculations, in which no empirical data is allowed to use except for an exclusive group of basic constants. Only when the obtained PES is accurate enough can it be possible to predict a resonance potential at a quantitative level. Unfortunately, this kind of accuracy for PES is still a forbidden task for theoretical studies, though previous research has contributed some valuable approximation models. Thankfully, recent developments in experimental research have provided some means to test the accuracy of the theoretical model, making it possible to correct these models and achieve better accuracy. A measure of this kind is the high-accuracy crossed-beam reactive scattering studies, where physical chemists let two beams of reactants collide at certain angle and energies, and meanwhile observe the time-of-flight (TOF) spectra of the products, in order to reconstruct the detailed dynamics of the reaction.

Using the high-resolution and highly sensitive D-atom Rydberg tagging TOF method, the group conducts a full quantum state resolved reactive scattering study on the $\text{HF}+\text{D}$, and successfully obtains the differential cross sections of reaction $\text{F}+\text{HD}$ (DCSs), or the snapshots of the product translational energy at certain scattering angles with a range of collision energies. On the obtained 3D contour plots, they identify "dramatic" changes in the outgoing direction of product against very small changes at collision energies around 0.5 kcal/mol. Particularly, the changes in energy triggered by the alteration of collision energy as little as 0.04 kcal/mol between 0.48 to 0.52 kcal/mol are most striking. This strong vibration suggests that the isotope substitution in the reaction $\text{F}+\text{HD} \rightarrow \text{HF}+\text{D}$ has a prominent effect on the reaction coordinate. Moreover, they find that there is a wide discrepancy between the theoretical prediction of the resonance potential of this reaction and the observed snapshots in the experiment. Their ensuing theoretical analysis further reveals the reason: the full-dimensional FH_2 ground potential surface, a model established to predict the resonance potential of $\text{F}+\text{H}_2$ reaction, is not as precise as believed in describing the resonance landscape of the $\text{F}+\text{HD}$ reaction. As demonstrated in the

experiment, there exist intrinsic differences between these two reactions that the old model, called XXZ-PES, cannot accommodate.

What forms a sharp contrast with the dynamics of the F+H₂ reaction is, the rotational distribution of the HF ($v=2$) product appears trimodal with two clear peaks at the lowest collision energies studied, while that of the F+H₂ reaction shows a basically unimodal distribution. Origin of this difference entails further exploration; however, this reaction has become a touchstone reaction for studies in this field.

Before Yang, Zhang and their colleagues' work, no PES model was available for accurate quantitative prediction of the resonance potential for both the F+H₂ and F+HD reactions, simultaneously. To construct a more accurate PES, the group fixes an improved model based on higher level of accurate quantum scattering calculation, in a hope to reduce the errors in the earlier model.

Based on the new model, they got new DCSs, for both the F+H₂ and the F+HD reactions. The results are surprisingly good. For the F+H₂ reaction, the overall agreement between experiment and theory prediction resulting from the new PES turns out to be as good as, or even better than that from the earlier model. More importantly, this prediction gives "nearly perfect" an agreement with the experimental result in terms of the F+HD reaction. The new model successfully predicts almost all of the finest structures in the DCSs observed in the experiment, particularly the trimodal structures of the rotational distribution.

In the end, the group has successfully constructed an improved PES, named CCSD(T)-PES, to HF+D. Comparison \diamond accurately predict the dynamical resonance in the reaction F+HD with the observation from the crossed-beam studies demonstrates that this model achieves an unprecedented resolution, approaching spectroscopic accuracy.

The group's experimental and theoretical study on the dynamics of the resonance phenomenon in the F+HD reaction has provided later theoretical research with valuable fundamental data, and meanwhile it has offered a powerful and sensitive probe to the reaction resonance potential in the F+HD reaction. It is believed to have marked a breakthrough in the area of chemical reaction dynamics research and might inspire future studies on controlled resonance-mediated reactions.

This work appeared as part of the Special Feature of *PNAS* for chemical reaction dynamics published on 2 Sept. In his introduction article to this special edition, Prof. F. Fleming Crim, a Member of the National Academy of Sciences of the USA and an expert on the PNAS editorial board remarks: "observation and calculation of resonances are great challenges, and this study shows the power of combining theory and experiment to understand them and to obtain a new potential energy surface for the reaction." The chemical community is looking forward to discoveries at the next corner, maybe somewhat unexpectedly, to gradually unveil the mysteries in chemical reactions.

Symposium on verification of gravitation theory and general relativity via space experiments (CAS, 2008-10-30)

Under the theme of "verification of gravitation theory and general relativity via space experiments," the 332nd session of the Xiangshan Science Conferences was held from 26 to 28 October in Beijing.

The accuracy of a land-based experiment is ravaged due to the weak gravitational effect and surrounding disturbance. To address the problem, various attempts are made to conduct experimental studies in a micro-environmental setting, increasing the accuracy by a big-margin. The space verification of gravitational theory and general relativity will promote, theoretically and experimentally,

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the development of gravitational physics, and find answers to some deep-seated problems on the gravitation and the cosmos.

The burgeoning progress of Chinese space technology in recent years has laid a solid foundation for the space science and exploration in this country. The experimental studies of gravitation theory and general relativity will be of significance for involving Chinese scientists in the international competition in the field of basic research of space science. In addition to pushing forward aeronautical progress, the move will effectively coordinate the development in both space science and aerospace science and technology in China.

The symposium held discussions on the spatial exploration of the gravitational wave, space tests of laser-Astrodynamics, the verification of the principle of equivalence and inverse-square law via space experiments while coping with similar questions about the gravitational theory. Deep-going and wide-range explorations were carried out so as to make proposals and inspire thoughts in the design of related spatial tests and further promote China's experimental research in this aspect.

The meeting was co chaired by Prof. HU Wenrui from the CAS Institute of Mechanics, Prof. Shing-Tung Yau from the Harvard University, Prof. ZHANG Yuanzhong from the CAS Institute of Theoretical Physics and Prof. LUO Jun from Huazhong University of Science & Technology.

Prof. Hu Wenrui delivered a keynote round-up report on the space-borne gravitational experiments & detection of gravitational waves

Key topics of the meeting included spatial detection and measurement of gravitational waves; space experimental verification of the Principle of Equivalence; the verification of non-Newtonian gravitation via spatial experiments, and laser-Astrodynamics.

1.6 Transport and Space

Scientists start studying samples from Shenzhou-7 (CAS, 2008-10-10)



CAS scientists on 6 September unsealed a box of solid lubricant samples that were aboard the Shenzhou-7 spacecraft. They will study the material for the next six months.

"Two types of solid lubricant samples, after being exposed to outer space during the Shenzhou-7 mission, had shown obvious changes," said LIU Weimin, head of the CAS Lanzhou Institute of Chemical Physics in northwest Gansu Province. "The appearance of the two types of samples has either turned dark or become rougher," he said.

Solid lubricants are widely used in spacecraft to reduce friction because they withstand high temperatures. Scientists hoped to improve the stability and lifetime of the materials by studying the test samples taken to outer space.

Liu said scientists would compare the samples with those exposed to a simulated space environment in the laboratory. "We need to know how the lubricants react to being in a vacuum, atomic oxygen and low temperatures in outer space," he said. If scientists discover the difference between the two exposed

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lubricants, they might be able to tell how other materials change in outer space, Liu said.

The solid lubricant samples, loaded outside the Shenzhou-7 capsule and retrieved by astronaut Zhai Zhigang during his spacewalk, weighed about 2.2 kg. They were exposed to outer space for 44 hours.

The Shenzhou-7 space module, carrying three taikonauts, landed safely by parachute on Sept. 28 in China's northern grasslands after a 68-hour flight. The mission included the first ever spacewalk by a Chinese astronaut.

China to launch FY-4 weather satellite around 2013

(Xinhua Net, 2008-10-11)

China plans to launch the first satellite of the Fengyun-4 (FY-4) series by 2013, said the China Meteorological Administration (CMA) during a meeting here Friday.

The FY-4 project involves the country's second-generation of geo-stationary meteorological satellites.

Leading scientists and engineers believe FY-4 could help China more accurately forecast weather, climate, environment and natural disasters, when it is launched. Currently, the project is in the proposal stage.

CMA Vice Director, Yu Rucong, said FY-4, a successor of the FY-2 series, would further boost China's ability to monitor cloud systems and atmosphere temperature and humidity.

China plans to launch another 22 meteorological satellites by 2020. Four are from the FY-2 series, 12 from the FY-3 series and six from the FY-4 series.

Sun Laiyan, vice director of the State Administration of Science, Technology and Industry for National Defense, said the FY series had become a model of remote sensing satellite operations and civilian satellite services.

No details of just what FY-4 will be able to do have been decided on. However, scientists say it will be more advanced than FY-3 which launched at the Taiyuan satellite center in northern Shanxi Province May 27.

FY-3 worked with the FY-2D to ensure timely weather forecasts during the Beijing Olympic Games. It is equipped with a dozen detectors such as the infrared scan actinograph and a microwave formatter.

FY-3 can provide data to forecast between 10 to 15 days of weather in a row.

New generation of Chinese passenger aircraft makes successful flight

(People's daily, 2008-10-11)

A new-generation short haul passenger aircraft solely developed in China has completed a successful trial flight, paving the way for commercial production next year, the manufacturer announced on Friday.

The Xinzhou-600, developed by Xi'an Aircraft Industry Company (XAC) of the China Aviation Industry Corporation I (AVIC I), flew on Thursday in Xi'an, capital of northwest China's Shaanxi Province, said the AVIC I.

The turboprop aircraft was a new version of the Xinzhou-60 that can carry 50 to 60 passengers. The Xinzhou-600 had been updated with a more comfortable cabin and better designed body structure and maintenance system, said Geng Ruguang from the AVIC.

It was also designed for inter-island flights, which would help in the Southeast Asia and island nation markets, Geng said.

XAC took about three years to develop the Xinzhou-600, which would be delivered to clients from the

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second half of 2009, he said.

The company has orders for 136 Xinzhou-60s and has exported them to Zambia, the Republic of Congo, Laos, Zimbabwe and Bolivia since 2006.

This would give China the edge to compete in the global market for turboprop aircraft, where demand is expected to reach 1,900 in 20 years.

Geng said the company had started to plan the development of the next generation aircraft, the Xinzhou-700.

China to deliver telecom satellite to Pakistan

(Xinhua Net, 2008-10-16)

China will launch a telecommunication satellite, dubbed PakSat-1R, for Pakistan in 2011.

The satellite's chief contractor -- China Great Wall Industry Corporation (CGWIC) -- said on Thursday that a Long March 3B rocket will be used to put the satellite into orbit.

It will launch from the Xichang Satellite Launch Center in the southwestern Sichuan Province.

The company said ground control facilities for the satellite will be delivered to the Pakistan Space and Upper Atmosphere Research Commission after it enters orbit.

CGWIC and its sub-contractors are responsible for the design, manufacturing, final assembly, testing and launch of the satellite.

It will have a life span of 15 years.

Pakistan will use it for domestic telecommunication and broadcast services.

Contracts for the satellite deal were sealed Wednesday in the presence of presidents from both countries. Pakistan President Asif Ali Zardari was in Beijing for his first state visit since taking office in September.

This is the third time China has delivered a satellite to another country. In 2007, two satellites were sent to Nigeria.

2nd Chinese-Brazilian satellite fulfils 5-year mission in orbit

(Xinhua Net, 2008-10-22)

The second earth resource satellite, CBERS-2, developed jointly by Brazil and China, fulfilled its five years' mission in orbit on Tuesday, the National Institute of Space Investigations of Brazil (INEP) said.

The CBERS-2 was launched on Oct. 21, 2003 by the Chinese Long March 4B rocket from Taiyuan launch facilities in China. Sample images from CBERS-2 were made available on Jan. 10, 2007.

It was the second satellite of the Chinese-Brazilian Earth Resource Satellite (CBERS) program, agreed by both countries 20 years ago to develop, launch and operate satellites together.

The first satellite, CBERS-1, was launched on Oct. 14, 1999 and operated for four years till August 2003.

The agreement between the two countries foresees the launch of two other satellites, the CBERS-3 and CBERS-4, till 2013.

The CBERS is currently part of the main Earth-observing mission programs in the world, together with the U.S. Landsat, French Spot and Indian ResorceSat. According to the INEP, the program is a successful example of South-South cooperation on high technology.

China's largest optical telescope helps peer into the universe**(CAS, 2008-10-23)**

How has the universe been formed and evolved? What about the Milky Way consisting of tens of billions of stars? These questions have kept people wondering in the whole history of human civilization.

The wide field and large sample astronomy, which focuses on extragalactic and stellar spectroscopic surveys, is expected to shed new light on these and other issues. As the optical spectrum contains abundant physical information of distant celestial objects, the spectral acquisition for a huge amount of the objects is

the key to studies in the field. However, among the billions of various celestial bodies recorded by imaging survey technologies, only 1/10,000 has gone through the spectral observation.

Now a new telescope with wide field of view recently developed by CAS astronomers will solve the bottleneck of spectral observation in astronomy. With its powerful spectroscopic survey ability, the telescope, named LAMOST (the large-area multi-target optical-fiber spectral telescope), could push the large sample spectroscopic sky survey deeper and wider, making significant contributions to the study of extra-galactic astrophysics and cosmology, such as galaxies, quasars and the large-scale structure of the universe.

Formally inaugurated on 16 October at the Xinglong Station under the National Astronomical Observatories at CAS (NAOC), the largest optical sky-watch facility in China will also enable the country to carve a niche in the international astronomical community in terms of types of telescopes: the largest aperture among those with a wide field of view.

During its first test observation on 27 September, LAMOST obtained more than 1,000 spectra of objects. Then it can continuously obtain as many as 2,000 spectra of objects during a single operation. This has made it a telescope that possesses the highest spectrum acquiring rate in the world. The scientific goal of LAMOST focuses on the extragalactic observation, structure and evolution of the Galaxy, and multi-wave identification. Its spectroscopic survey of tens of millions of galaxies and others will make substantial contribution to the study of extra-galactic astrophysics and cosmology.

This 235-million-yuan (about \$33 million) project was proposed in the early 1990s by a research group headed by Prof. WANG Shouguan and Prof. SU Dingqiang from NAOC, both being CAS Members. It has won worldwide support from the astronomical community. In 1996, a formal proposal for the project made by CAS was listed, after repeated reviews, into "the National Mega-Science Facilities Program." The proposal was approved by the State authorities in April 1997. Its construction was started in September 2001. In August 2008, all its hardware components were in place, and initial test was launched.

The advanced facility has eight subsystems: optical; active optics and support; mounting and tracking; telescope control; instruments (fibers, fiber positioning, spectroscopes, and CCDs); enclosure; observatory control and data processing; and input catalogs and survey strategy. The key innovation of the project is the concurrent adoption of the active optics techniques both for thin and segmented mirrors on its reflecting Schmidt telescope corrector, making the LAMOST a unique astronomical instrument in combining a large clear aperture and a wide field of view. The parallel controllable fiber

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positioning system enables it to shoot the problem of precisely locate 4,000 celestial objects simultaneously.

Its design and construction were mainly in the charge of the Nanjing Institute for Astronomical Optics and Technology under NAOC, the NAOC headquarters and University of Science and Technology of China. As a key national facility, the telescope will open to the whole Chinese astronomical community, and will be active in carrying out international cooperation.

China to launch a telecom satellite for Venezuela

(Xinhua Net, 2008-10-28)

China will send a Venezuelan telecommunication satellite into orbit on the early morning of October 30, according to a spokesman with the Xichang Satellite Launch Center. It will be the first time that China has made a commercial space launch for a Latin American country, said the official.

The rocket carrier for the Venezuela 1 Telecom Satellite will be a Long March 3II.

The official did not reveal any details about the commercial launch, such as the prices of the contract and technical data and information about the satellite.

According to the website of the Great Wall Industry Corporation, China's sole contractor for such space business, China began its commercial space launch business on August 5, 1987, when a Long March 2C rocket carrier launched a micro-gravity test instrument for the French company Martra Maconi.

In 1990, a Long March 3 sent the AsiaSat-1 Communications Satellite for the AsiaSat HK company into space.

The Venezuelan satellite will be the 111th space flight of the Long March family, the 29th international commercial launch by China, and the 35th overseas satellite to be launched by the country.

2 News from Universities

Over 1.2 million Chinese studying abroad during 30 years

(People's Daily, 2008-10-10)

From 1978 to the end of 2007, a total of 1.212 million Chinese had studied abroad. The number increased 168 times from 860 in 1978 to 144,500 in 2007 in 30 year, according to the Ministry of Education.

From 1978 to the end of 2007, 319,700 people have returned home after graduating from foreign schools.

In the field of education and scientific research, 77 percent of the colleges and universities principals, 84 percent of the academicians of Chinese Academy of Science, 75 percent of the academicians of China Academy of Engineering, 62 percent of doctoral tutors and 71 percent of the directors of the State-level teaching and research bases (center) have had experience of studying abroad.

3 Innovation Management

China needs to spend more on basic science research, says premier

(People's Daily, 2008-10-18)

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Chinese Premier Wen Jiabao has said that the country needs to spend more on the research of basic sciences, which is the source of any technical innovations.

"No applied or developmental research can do without basic research," Wen said in an interview with Bruce Alberts, editor-in-chief of the Science Magazine of the United States on Sept. 30.

Mentioning China's investment in basic research fixed at five percent of total research investment, Alberts inquired whether the ratio was enough. The Premier said China had continuously increased the level of support to basic research," but I think the ratio is still insufficient."

Wen said basic research served as the wellspring and driving force in development, and he "attached great importance to research in fundamental sciences".

CAS institute approaches of technology transfer appreciated

(CAS, 2008-10-29)

Although producing a large number of research papers, China's research institutions are worried about the application of their research achievements.

The ways of commercializing its R&D results by the CAS Institute of Computing Technology are highly recommended by the Administration of the Beijing Technical Market.

One feature of the efforts is the establishment of non-profit centers for technology transfer, recruiting professionals to be engaged in the work. The other one is that the positions of research professions are kept for those engaged in the work of technology transfer. They can return to their research work.

In terms of the technology transfer, the institute adopts such modes as technical radiation, patented rights and incubation of spin-off firms.

4 China's International Science Cooperation

CAS researchers join EU project on soil information

(CAS, 2008-10-06)



As one of the two non-European partners, the CAS Institute of Soil Science (ISS) will participate in the e-SOTER, a project on global soil observing system funded by EU Framework Program 7 (FP7).

The kick-off meeting for the euro 3.3 million project was held at the World Soil Information (ISRIC), Wageningen, The Netherlands, from 11 to 12 September. As part of the FP7 project Global Earth Observing System of System, according to experts, the 14 partner-consortium will strive to overcome the current

shortcomings of SOTER (Soil and Terrain Database) and form a platform that can be extended world-wide by using RS data for validation and correction of existing survey data; generating new data surfaces; improving the quality of applications; and providing a freely accessible web service

ISS has kept a close cooperation tie with ISRIC, the coordinator of the project, over the past 25 years.

**Sino-German project on multipurpose forests to kick off in China
(CAS, 2008-10-24)**

Although China has produced encouraging achievements in afforestation, especially the national Grain for Green Project (converting steep cultivated lands to forests), over the past two decades, new problems gradually came to light in forest plantations, including weak pest control ability, feeble soil and water conservation capacity and unsatisfying ecological and economic returns. Under the circumstances, to construct a sound composition pattern of tree species and foster a scientific system of management becomes a weighty problem.

Under the auspices of the National Natural Science Foundation of China and the Sino-German Center for Research Promotion, Chinese and German scientists are joining hands to improve China's forest development through finding out answers to the pending problems in the sector.

According to Prof. YANG Yongping, vice director-general of the CAS Kunming Institute of Botany, the project will focus on the dynamics and functions of multipurpose forests, mainly covering the following six areas: comprehensive cataloging and planning system; sustainable management of non-timber forest products; multi-functional management of secondary forests; plantations with optimization; evaluation in the forest management and the limitation and development of the land use; and forest policy.

Its ultimate goal of this cooperation is to enhance forest functions through developing effective forest management in order to confront the climate change and meet the growing social demands.

Multipurpose afforestation

According to Prof. Yang, the mono-purpose afforestation is already history. For instance, after a series of forest disasters, such as the 1990 winter snowstorms Wiebke and Vivian, German government framed a contingency plan to deal with snowstorm and windstorm. To make it effective, the management is based on the concept of "near to nature forest management," which emphasizes forest multi-functionality. In China, a number of research programs have been carried out in order to increase the output of non-timber forest products, develop forest environmental services and enhance multifunctional management of the secondary forest. In fact, a trial project of multipurpose forest plantations is carried out in Hainan Province.

Mono-purpose afforestation brings mono-species plantations, while mixed-species forest has more ecologically vital functions. For example, in a mixed-species forest with biodiversity richness, since rainwater is intercepted by tree leaves at different heights layer by layer before it runs into the soil, the water conservation effect comes out much better. Besides, people are now in more awareness of the economic and ecological values of the forest and expect more from it.

"At present, forestation should be based on the concept of multi-functionality so that various objects can be achieved in one plantation", says Prof. Yang. For instance, the economic interests may be considered in the first place, so we will correspondingly make selection of tree species and select the native tree species as a priority. Next, apart from economic aspects, timber and byproducts such as mushrooms and medicinal herbs should be taken into the plan. And also the ecological aspects should be considered. Therefore, we may preconceive the soil and water conservation capacity and evaluate the impact that may bring to the local area and also we will probably consider whether or not to mix conifers with broadleaves.

5 Miscellaneous

Chinese-led research team creates bionic gecko feet

(Xinhua Net, 2008-10-10)

A U.S. research team led by Chinese scientists has created a nanotube-based dry adhesive that surpasses the stickiness of gecko feet -- no easy feat, since the animals can cling to nearly any type of surface.

Geckos rely on aligned microscopic hairs for their gravity-defying climbs. Their design mimics this arrangement, with a vertically aligned array of straight carbon nanotubes topped by a layer of curly, entangled nanotubes, Wang Zhonglin, the lead researcher from Georgia Institute of Technology, told Xinhua on Thursday.

Just as in the gecko foot, the combination produces an adhesive with superior strength in the shear direction -- clinging against the pull of gravity -- and regular strength in the normal, perpendicular direction, which allows the adhesive to be easily pulled away from a surface. The shear adhesive force of the nanotube array is almost 10 times that of the gecko foot.

Though the material might seem most appropriate for use by Spider-man, the real applications may be less glamorous. Because carbon nanotubes conduct heat and electrical current, the bionic gecko feet could be used to connect electronic devices.

Another application might be for adhesives that work long-term in space. "In space, there is a vacuum and traditional kinds of adhesives dry out, but nanotube dry adhesives would not be bothered by the space environment," said Dai Liming, another lead researcher from University of Dayton.

Their paper will appear in the Oct. 10 issue of journal Science. For the future, the researchers hope to learn more about the surface interactions so they can further increase the adhesive force. They also want to study the long-term durability of the adhesive, which in a small number of tests became stronger with each attachment.

High-rises Put Stress on Sinking Shanghai

(CRI, 2008-10-12)

Shanghai, China's most populous city and an aspiring global financial center, is also among the world's most vulnerable urban areas to a rise in sea levels as global warming melts polar ice caps.

Its location on a low-lying alluvial plain near the mouth of Asia's longest river, the Yangtze, has already made it susceptible, but researchers warn that forests of skyscrapers sprouting across the ambitious metropolis could compound the threat by causing its marshy ground to sink.

"Shanghai came from the ocean, and has been facing the threat of rising sea levels," said Wang Pingxian, a member of the prestigious China Academy of Sciences and professor of ocean geology at Tongji University in Shanghai. "The rising sea level is a worldwide problem, caused by global warming, but Shanghai and Tianjin, among China's coastal cities, face the biggest challenge, mainly because of land subsidence," Wang said as part of the Reuters Global Environment Summit.

Sinking ground levels have long been a headache for Shanghai, although the culprit has traditionally been the pumping of ground water to support its rapid growth and industrialization.

The dyke along Shanghai's riverfront Bund, which protects a 1.6 kilometers of historic granite buildings from the waters of the Huangpu River, has been raised three times - by nearly 2 meters - over the past four decades.

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Shanghai drilled its first deep well on the Bund in 1860, and as industrial development and ground water use accelerated, the city sank 1.76 meters between 1921 and 1965, or an average of about 4 centimeters a year. As early as the 1960s, the Shanghai government began addressing the problem by pumping some of its treated water supply, which is now taken largely from the Huangpu River rather than from ground water, back below the surface.

Building boom

Land subsidence eased substantially and ground levels even began rising in the 1970s when the government was particularly active in pumping water back, but sinking set in once more in the 1990s as the city set out on a frantic building boom.

The city has further tightened restrictions on ground water use since 2006 and plans to ban use of ground water entirely for non-drinking purposes by 2010, when it expects to be pumping 50 million cubic meters of water per year underground.

That compares with the 17.3 million cubic meters of water it pumped underground in 2007, when it pulled out 43.8 million cubic meters of ground water. At its peak, the city pumped out 200 million cubic meters of ground water a year.

As a result of strict regulation of ground water usage, Shanghai sank only 6.8 millimeters in 2007, or 0.5 millimeters less than a year earlier, a government report said.

But while the city moves to stop the ground from being pulled in as ground water is sucked out, researchers now worry that the ground is being pushed down as masses of skyscrapers are built across the urban landscape.

"(Land subsidence) is more serious in areas where groundwater is heavily used, or high-rise density is high," said Xu Shiyuan, a professor of geology at East China Normal University.

There are about 10,000 buildings with more than 10 floors in Shanghai, of which 80 percent have been built in the past 10 years, according to Emporis, a provider of building information.

"Land subsidence caused by construction of high-rises and underground projects will be a key issue in the future," said a professor at a research institute affiliated to the government in Shanghai, who declined to be named. He said that although a single high-rise building could only cause ground in adjacent areas to subside marginally, dense blocks of high-rises could press the soil in sand layers underneath, and contribute to ground sinking over a large area.

"It's a very difficult problem, and we haven't found any effective solutions," he said.

Damage bridges

Some researchers said, however, that high-rise construction would cause only minor land subsidence and could be limited by technical innovations; although worries would remain that uneven subsidence could damage bridges and tunnels.

"One can't generalize the situation and say high-rises are going to have a more significant impact on land subsidence. It's rather a case-by-case scenario," said Xu of East China Normal University.

The developer of the 492-meter Shanghai World Financial Center, which surpassed the neighboring Jin Mao Tower as mainland China's tallest building and the third tallest building in the world, said it was not contributing to a land subsidence problem. "Our building is not causing land to sink," said Michiho Kishi, a spokesman for Mori Building.

Chinese Company Produces 1st Solar-Powered Car (CRI, 2008-10-13)

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One of China's first group of solar-powered cars went on display last Friday at the 29th Zhejiang International Bicycles and Electric-powered Cars Exhibition in Hangzhou, eastern China's Zhejiang Province, Hangzhou.com.cn reported.

The mini car produced by Zhejiang's 001 Group was designed to target the increasingly serious energy crisis. The group has so far produced over 10 such cars and each of them will sell for 38,000 yuan (US\$5,560).

Sheng Gangxiang, an engineer at the Zhejiang 001 Group, told reporters that the vehicles have solar panels on their roofs that turn the sun's rays into energy to get them going. The car can absorb 95 percent of the solar energy it takes in, however, it can only transform 14 to 17 percent of that into electricity, roughly the same as solar cars manufactured

elsewhere.

The solar-driven car can travel 150 kilometers after 30 hours of solar charging. But an only one-hour charge will get the car going for only five kilometers.

At present, solar energy is mostly used in water heaters in China.

China Emerges as a Power in Science, Technology (CRI, 2008-10-19)

"China is quickly emerging as one of the major countries in science and technology," Vaughan Turekian, chief international officer of American Association for the Advancement of Science (AAAS), told Xinhua in a recent interview.

"For more than 30 years, China has been building a world class scientific enterprise, developing both the physical infrastructure and human resource base to move forward in the fields of science and technology," he commented. Turekian, along with Alan Leshner, CEO of AAAS, published an editorial entitled "Chinese science on the move" on the Dec. 7, 2007 issue of the journal Science.

In that editorial, they said China, as one of the world's fastest-growing economies, was also the world's fastest-growing supporter of scientific research and development (R&D), with its national R&D funding moving to the third place in the world, just behind the United States and Japan.

And "with some evidence, China is now only second to the United States in R&D funding," Turekian told Xinhua. "Given the long history of Chinese innovation dating back centuries, it is not surprising that China has embarked on this latest investment in science and technology as a crucial underpinning of its economic and social development."

As for the impetus behind China's remarkable progress in science and technology, Turekian said that the initiation of the Four Modernization drive played an important role in pushing this new era of science success.

Furthermore, the focus by the current Chinese leadership on investing in science and technology has been crucial to the recent surge in Chinese science, he said.

"I also believe that promoting exchanges between Chinese and Western scientists and students is crucial to the rapid rise of Chinese science," said the AAAS official.

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Turekian also stressed the importance of international cooperation in the field.

"This is particularly true in global issues such as environment, public health and innovation," he said.

Turekian said for China, which has a highly competitive science community, one of its great challenges is how to deal with the ethics and scientific misconduct.

"This is true not only in China, but also in fact in all countries. As competition increases to perform at the highest level, there is always a chance that there will be increasing cases of misconduct," he said.

Turekian said, therefore, it is important to put in place both formal regulation and enforcement mechanisms as well as the informal training and mentoring that can decrease the amount of misconduct.

The key to science is risk-taking and willingness to fail, he said.

"So, the key for China, and many developing scientific communities, is ensuring that misconduct is minimized, while encouraging risk-taking and creativity," he said.

Goethe Institute in Beijing to celebrate 20 years anniversary

(People's Daily, 2008-10-22)

The Goethe Institute in Beijing will celebrate its 20 years anniversary on November 1, 2008, according to a news conference on October 21.

Goethe Institute has held lots of cultural communication activities in China for many years, such as movie, music, and dramas, and also invited Chinese to do further study in Germany.

Michael Schaefer, German ambassador to China said at the news conference that Germany and China will deepen their mutual communication on culture and education, politics and economy. Goethe Institute is the largest international cultural and educational communication institute of Germany, whose headquarter is in Munich, Germany. The Beijing Goethe Institute was established in 1988.

Laboratory named after late German professor

(CAS, 2008-10-24)



Uli Schwarz Laboratory renaming ceremony was held on 16 October at the CAS-MPG Partner Institute of Computational Biology (PICB) in Shanghai. CAS Vice President Prof. LI Jiayang and Vice President of the Max Planck Society (MPG) Prof. Herbert Jaeckle were present at the ceremony to unveil its nameplate.

Prof. Uli Schwarz (1934-2006), a renowned biologist and former directors of the CAS Shanghai Institute for Advanced Studies (SIAS) and the Max Planck Society (MPG) Institute for Developmental Biology, had devoted himself to S&T cooperation and exchanges between China and Germany since the 1980s.

Prof. Schwarz also did a lot of work for the establishment of PICB in 2005, which is the first overseas institute co-sponsored by MPG. By recruiting competent scientists from across the world, the institute has forged fruitful cooperation with world-class institutions and is taking on important research projects.

With an objective of integrating experimental science with computational and theoretical biology, PICB have decided to consolidate its biological lab with the MPG guest lab. The new lab is named after Prof. Schwarz to mark his outstanding contributions to the rewarding partnership between CAS and MPG

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Also present at the ceremony were Prof. PEI Gang, president of Tong Ji University, CHEN Xiaoya, president of Shanghai Institutes for Biological Sciences, Heinrich Pfeiffer, former president of Germany's Alexander von Humboldt Foundation and Ms. Ula Schwarz, wife of the late Prof. Uli Schwarz.

Chinese scientific know-how increases

(Xinhua Net, 2008-10-28)

For Bruce Alberts, editor-in-chief of the prestigious journal *Science*, his recent visit to China in late September has been pretty impressive.

"Chinese scientific know-how certainly is on the rise," Alberts told Xinhua in a recent interview. The number of patents and scholarly journal articles by scientists and engineers in China is rising sharply.

The *Science* journal published in 2007 alone approximately 30 articles by Chinese authors or co-authors. *Science* editors receive some 12,000 submissions worldwide, and they ultimately accept and publish only about 7 percent of the submissions, after a rigorous peer review process.

"We have been very pleased to showcase a number of important research articles by China-based scientists and engineers," said Alberts, who served as editor-in-chief of *Science* since March 1, 2008.

Founded in 1880, *Science* has been the official journal of the non-profit AAAS (the American Association for the Advancement of Science) since 1900. Now, each week an estimated 1 million people worldwide read the journal.

Most recently, *Science* offered the first-ever press briefing in Beijing related to a journal article by Chinese scientists about a pest-resistant form of cotton. Another example of the magazine's efforts to showcase Chinese science and technology was an article by Chinese author You Hailu which described his discovery of a fossil of *Gansus yumenensis*, one of the oldest members of the lineage leading to modern birds. An encounter with the author during his tour of Washington D.C. led to the publication of his article.

"Other exemplary *Science* papers by Chinese authors have provided new insights to SARS and the rice genome," Alberts recalled. "*Science* magazine is very proud of these efforts, and pleased to see China-based scientists and engineers succeeding."

AAAS sent its first delegation to China in 1978. During the past 30 years, "China undoubtedly has become much more open to international research cooperation and other types of collaboration with the rest of the world," he said.

During his September visit to China, he was very impressed by all his meetings with Chinese leaders, educators, and students, he added. "Just the fact that the editor-in-chief of a science journal was given the opportunity to meet and speak freely for two hours with the Chinese premier says a great deal about the level of openness in the country today," said Alberts.

It also reflects the eagerness of Chinese leaders to learn science from other countries, in order to use science to build bridges between nations and improve human welfare. "All of these changes are commendable, being important both for China's and the world's future, and they are strongly welcomed," Alberts said.

He said that China is very fortunate to have key leaders who have scientific and engineering training and who deeply appreciate what scientific excellence can do for their nation. "Wen Jiabao, for example, is a professional geologist. The people of China also clearly recognize that science and technology are keys to economic prosperity and a better life overall."

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In the United States, "we seem to under-appreciate the value of science at times," said Alberts. "This does not seem to be the case in China, where citizens and leaders alike seem to understand that strategies for fighting disease, better earthquake predictions, solutions to climate-change challenges, and access to safer, more nutritious and abundant foods will all depend upon advances in science and technology."

During Alberts' trip, he met with students at Tsinghua and Peking universities. "The caliber of university students in China is extraordinary."

When it comes to China's scientific advancement in the future, Alberts said: "As I discussed with the Chinese premier, I believe that a greater investment in basic research is essential because so often, new inventions and discoveries to improve human quality of life will spring serendipitously from fundamental investments made 30 years earlier."

This basic research is a long-term investment that sets the stage for major advances in the future, and it must not be neglected, Alberts stressed.

"Premier Wen and I also agree that innovation starts with the education of children, and the nurturing and support of the young investigators who represent the future of science in the world."

They also discussed the importance of providing competitive, merit-based research funding for the very best young scientists to encourage them to take risks and to innovate.

Alberts said the new Young Innovator Award from the U.S. National Institutes of Health is a very good program in U.S. "I believe that allowing the most outstanding young people to carry out independent research based on their own ideas is critical for the future of science in any nation."

It is also important to increase openness so that researchers are always free to move back and forth as they collaborate with their peers.

CAS researcher receives top prize from World Meteorological Organization in 2008 (CAS, 2008-10-29)

Dr. Alexander Bedritsky, president of the World Meteorological Organization (WMO), conferred the 53rd International Meteorological Organization (IMO) Prize on Prof. QIN Dahe, a glaciologist and climatologist from the CAS Cold and Arid Regions Environmental and Engineering Research Institute, at the award presentation ceremony held on 28 October at the Great Hall of the People in Beijing. Chinese Vice Premier HUI Liangyu was present at the awarding ceremony and delivered a speech.

The IMO Prize, the highest WMO award, originates from WMO's predecessor, IMO, founded in 1873. The prize in 2008 is to organize Prof. QIN Dahe, who is also a CAS Member, for his achievements in cryosphere and climate research, his involvement in the preparation of IPCC Scientific Assessments Reports, and his contribution to meteorological services at the national and at the international levels.

Chaired by the President of the Chinese Meteorological Administration ZHENG Guoguang, the awarding ceremony was attended by high-level officials and eminent scholars, including CAS Vice President LI Jinghai and some CAS Members.

HLHL Foundation awards Chinese scientists (Xinhua Net, 2008-10-29)

The Hong Kong-based Ho Leung Ho Lee (HLHL) Foundation on Wednesday granted science and technology awards to 57 Chinese scientists.

Of the winners, Fang Jiancheng, a professor from the Beihang University, was awarded 1 million HK

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dollars (129,000 U.S. dollars) for his achievements in space flight technology, while the other 56 scientists received 200,000 HK dollars each.

Chinese State Councilor Liu Yandong, in her congratulatory letter sent on behalf of the State Council, the Cabinet, to the winners, encouraged the science workers to make greater progress in the future and meanwhile expressed gratitude to the foundation's donors.

The Ho Leung Ho Lee Foundation, set up in Hong Kong in 1994, give annual awards to Chinese scientists. It is the most influential non-governmental prize in science and technology in China.

Over 800 people have received the honors so far.

Abbreviations

- CAS** - Chinese Academy of Sciences
- MOST** - Ministry of Science and Technology
- CRI** - China Radio International