

Content

Chinese Science and Technology News during April 2006

Collected and Compiled by the Helmholtz Beijing Office

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Helmholtz Activities in China

During the 02.-05.04, a Sino-German workshop on regenerative medicine was carried out in Beijing. This workshop was sponsored by BMBF and CNCBD (Chinese National Centre for Biotechnology Development) - an attached department of MOST. Over 60 people attended this workshop, including 15 scientists from German institutions such as Helmholtz centres, MPG, FhG, universities and companies. The workshop coordinators are on the German side Prof. A. Leidlein from GKSS Teltow and on the Chinese side Prof. Pei Xuetao from the Beijing Institute of Transfusion Medicine. Helmholtz Beijing office has offered various assistances concerning the preparation of this workshop.

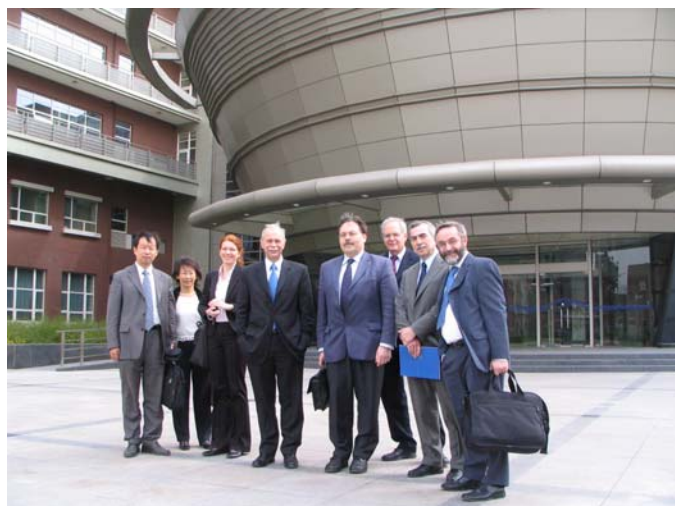
Several CNCBD officials including Mr. AN Daochang, vice director general of CNCBD have attended this workshop. 33 oral contributions were presented in 3 sessions: 1, Biomaterials for Regenerative medicine; 2: Stem Cell Biology and Tissue Engineering and 3, Regenerative Medicine and Clinical Research. These talks focused on present research projects but were also aimed at exploring the possibilities of cooperation for the future. Participants of both side praised this well prepared and effectively conducted workshop, which in itself was a big success.

On the 05.04, 6 colleagues from this workshop, accompanied by Dr. H. HE from the Helmholtz Beijing Office, have visited Tianjin University and Nankai University, in hope of cooperation.

During the 08.-15.05, a high profile Helmholtz delegation, led by the president Prof. Dr. Mlynek, has paid an intensive visit to Beijing and Shanghai. They have visited the Chinese Academy of Sciences and three of its best institutes, the Chinese Academy of Medical Sciences, Beijing University, Tsinghua University; Tongji University, Shanghai Jiaotong University, Fudan University. A meeting with Mrs. Wu Qidi, a vice minister of the Ministry of Education has also brought up the interesting topic of how to arrange more selected Chinese students into Helmholtz centres.

After the first week, after the most delegates returned back to Germany, Prof. Mlynek spent another week accompanied by Dr. H. HE further visiting Zhejiang University, Xian Jiaotong University, Hong Kong University of Science and Technology and National University of Singapore, etc. It is interesting to realize that most Chinese top universities have an annual budget of around 2.5 billion euros. As the personal and construction cost is much lower in China, many of them could afford to build a lot of new buildings, even completely new, massive and impressive campus. They are also trying to recruit outstanding scientists by offering them special research funding together with apartments in the packages. Certainly, universities in Hong Kong and Singapore have shown a higher standard and much higher percentage of internationalized faculties.

This visit has given all the colleagues a very positive impression. The improving infrastructure and research quality will surely stimulate more cooperation between Helmholtz and this region.



Dr. Hong HE

Head of Helmholtz Beijing Office

1 Science News

1.1 Energy

Xinjiang to build China's biggest wind farm

(People's Daily, 2006-04-10)

China's largest wind power farm will be built in Xinjiang's Turpan, according to sources with China Huadian Corporation, one of China's five power companies.

Perhaps Turpan will not only be famous for its grapes, but also a “windmill forest” .

According to China Huadian, a contract for developing wind power has been signed by this power company and the local administration in Turpan in late March.

China Huadian will invest a total of 15 billion yuan to set up a 2-million-kilowatt wind farm in Turpan. The project will proceed with the annual installation of 40,000 kilowatts.

Some 1.5 billion yuan will be injected in the first five years to install 300,000 kilowatts.

New fuel could save fortune

(Xinhua Net, 2006-04-20)



(The Chinese first dimethyl ether bus made by Jiao Tong University)

A local chemical company has started producing an alternative fuel that could save hundreds of millions of yuan a year if it was used to power all of Shanghai's diesel buses.

Bus engines must be refit before they can use the fuel, however.

Shanghai Coking & Chemical Corp, a unit of domestic chemical leader Shanghai Huayi Group, put its 5,000-ton-per-year dimethyl ether plant into operation earlier this week.

Dimethyl ether, or DME, is a clean-burning alternative to liquefied petroleum gas, liquefied natural gas, diesel and gasoline. It can be made from natural gas, coal or biological organisms.

Market experts say the new fuel can be profitably produced provided crude oil prices remain above US\$40 per barrel. Currently global oil prices are around US\$70 a barrel, almost triple 2002 prices.

DME costs about 1,000 yuan (US\$123) less per ton than diesel fuel.

The new fuel could help Shanghai's diesel bus operators save more than 300 million yuan a year.

Around 15,000 of Shanghai's 19,000 buses are diesel powered.

The company's current production facility can produce enough DME to power hundreds of buses, and it can expand production if the market shows strong demand.

The city government has listed the industrialization of DME fuel as one of its major tasks in a bid

to reduce expensive oil consumption as well as to trim emission and noise.

"In order to use DME fuel, we only have to redesign the engine (of each bus) and that only costs some 10,000 yuan for every vehicle. The cost is not expensive at all," said Huang Zhen, an alternative fuel expert at Jiao Tong University.

Huang and his team cooperated with Huayi Group and Shanghai Automotive Industry Corp to design the country's first DME-powered bus, which went into trial use last year.

China's nuclear power plants in smooth operation

(China News, 2006-04-21)

Wang Jun, deputy director general of the Department of Nuclear Safety and Radioactive Management under the State Environmental Protection Administration, said that as to China's nuclear power development, at present 15 nuclear power generating sets are operational or under construction and 9 have begun commercial operation. With regard to the operational performance in 2005, based on the classification of the International Atomic Energy Agency, no Level Three nuclear accidents have happened, not to mention Level Two or more serious accidents.

According to inspection results, the safety status of all nuclear power plants which have started operation can meet technological requirements. Smooth operation of these nuclear power plants has laid a solid foundation for China's further nuclear power development.

As this year is the 20th anniversary of the Chernobyl nuclear power plant accident, the Chinese Nuclear Society held a symposium on nuclear development and safety on April 18, at which attendees discussed about China's nuclear power development and how to strengthen nuclear safety. Wang Jun said that China has taken extensive measures to boost safe development of nuclear power.

Qinshan nuclear power plant to use more homemade facilities

(China News, 2006-04-24)

The China Nuclear Engineering and Construction Corporation (CNECC) said on Sunday that the extended project for the Second Phase of the Qinshan Nuclear Power Plant, which will kick off construction by the end of this month, would be more "nationalized" as 75% of the project would use made-in-China equipment.

In previous construction, the eleven nuclear generating sets built during the Ninth and Tenth Five-Year plans took only three pieces of homemade equipment—a 300,000-kilowatt power sets and two 600,000-kilowatt power sets.

CNECC general manager Kang Rixin, who signed the design and technology service contract for the extended project of the Second Phase of the Qinshan Nuclear Power Plant on Sunday, said the project would be a successful model for China independently to develop nuclear industry with its own technologies, by using 55% of the China-made equipment in its construction. The project for the Second Phase has made further improvement based on the previous level. By adopting new standards, the extended project has witnessed 1,100 technological innovations and become safer and more reliable.

According to the contract, the No.2 Design and Research Institute under CNECC will be responsible for building the nuclear island for the extended project, the BOP project design, and other relevant work. The Nuclear Power Institute of China (NPIC) will be responsible for producing the nuclear reactor and the design of the reactor coolant, and Huadong Electric Power

Design Institute under the China Power Engineering Consulting Corporation (CPECC) will take on the designing work of the conventional island.

The extended project was approved by the State Development and Reform Commission in October 2005, which mainly includes the construction of two 650,000-kilowatt pressurized water reactor nuclear power sets. The two power sets will be put into commercial operation in March 2011 and in January 2012, respectively. Construction of the first set is scheduled to start on April 28.

**China's nuclear power stations among the safest in the world, expert
(China News, 2006-04-27)**

Well-known Chinese nuclear power expert Guo Wenjun said recently that nuclear power stations in China are among the safest in the world.

To prove his point, Guo said all Chinese nuclear power stations have containment. The containment built in the two nuclear power plants in Guangdong Province, namely the Dayawan Nuclear Power Plant and the Ling'ao Nuclear Power Plant, for example, are very sturdy, since their containment walls are built of steel and concrete 90.6 centimeters thick, which will let no radioactive contaminants escape. At present, most nuclear power stations in the world, including those built in China, are equipped with light water reactors, which use water to cool down the heat and are therefore not easy to explode. In contrast, the Chernobyl nuclear power station, as the first generation of nuclear power plants to be built in the world, had many deficiencies in design. Moreover, having no containment, the Chernobyl nuclear power station was prone to explode in combustion and the subsequent nuclear leak.

Guo said nuclear accidents are graded into seven levels, from zero to sixth. Nuclear accidents below the second level (second level included) are called incidents, while those above that level are called "accidents". The nuclear leak and explosion occurring in the Chernobyl nuclear power station was a sixth-grade accident. In China, the nuclear power plants built by the China Guangdong Nuclear Power Group have never encountered any accidents above the grade one level since they were put into operation—a fact which means that their operating systems have never experienced anything abnormal. The International Atomic Energy Agency (IAEA) usually carries out two to three weeks of inspection work at every nuclear power plant in the world, checking and making assessment of whether the nuclear plant is operating safely. These assessments have proved that the Dayawan Nuclear Power Plant in Guangdong have met all the standards required by the IAEA since the plant went into operation.

Guo Wenjun added that the nuclear power plants in China had set up emergency schemes to prevent terrorist acts. Regular drills are held to test the responding system and administrative capability of the nuclear power plants. Such drills are conducted to prevent any damages that terrorists might impose on the nuclear containment.

**1st self-designed nuclear power station starts expansion
(Xinhua Net, 2006-04-28)**



China's first self-designed and self-made nuclear power station began another round of expansion on Friday.

A ceremony was held Friday in Haiyan County of east China's Zhejiang Province to mark Qinshan Nuclear Power Station second phase's passing of state technical assessment and the commencement of the expansion project.

Top Chinese leaders, including Wu Bangguo, Chairman of the National People's Congress Standing Committee, Premier Wen Jiabao and Vice-President Zeng Qinghong, sent respective letters of congratulation on the occasion.

The key to China's nuclear power development lies in raising its innovation capabilities and the training of high-tech management personnel, Wu said in a letter of congratulation.

Wen Jiabao called on the station staffs to sum up experience and redouble their efforts to make new contribution to China's nuclear power development.

Zeng Qinghong congratulated the staffs on sticking to innovation in construction.

Addressing Friday's ceremony, Vice-Premier Zeng Peiyan said China will continue to develop its second-generation of nuclear power stations and promote construction of new-generation ones.

The country will gradually increase the proportion of nuclear power in its electricity supply.

China plans to increase its nuclear power generating capacity to 40 million kw by 2020, aiming to account for 4 percent of the country's total installed capacity at that time. Currently less than 2 percent of its electric power comes from nuclear generation.

"Safety and quality should be placed above all in nuclear power station construction and operation," Zeng said, urging on the sector to build the most strict nuclear power safety system in the world.

1.2 Earth and Environment

International team conducts studies on freshwater dolphins

(CAS, 2006-04-03)



With the approval and support of the Wildlife Protection Office under the Ministry of Agriculture, CAS Institute of Hydrobiology in Wuhan (IHB) joined hands with Baiji.org Foundation in carry out a pilot expedition on *Baiji*, a Yangtze freshwater dolphin, from March 17 to 24.

The *baiji* is the world's most endangered cetacean, it is listed as 'Critically Endangered' by the IUCN Species Survival Commission (IUCN 1996), and its prospects for survival are considered to be extremely doubtful. The number of the baiji has shown a continuous decline since the 1970s and now is thought to number no more than a few tens of individuals. If the species is to be saved conservation needs to be immediately targeted where it will have maximum positive impact on the species. Effective measures of conservation of the baiji are therefore dependent upon up to date information on distribution and abundance.

The expedition, under the Baiji.org-IHB Initiative, is planned to conduct a status assessment survey to collect scientifically robust data on the distribution, abundance and density of the baiji and Yangtze finless porpoise. The research team consists of cetacean specialists from China, US, UK and Swiss.

By deploying state-of-the-art acoustical monitoring equipment and applying cutting-edge dolphin surveying techniques, the dolphins were located about 120 times during the 250 km journey up the Yangtze River and some important activity regions for the animal were pinpointed by the team.

The pilot is a fundamental component of the Range-Wide (IHB-Baiji.org) Yangtze Freshwater Dolphin Expedition planned for this fall, with an objective of providing Chinese decision-makers with a reliable data and information platform for designing and implementing conservation management factors for the entire Yangtze River and its critically endangered flagship inhabitants.

Antarctic plate is floating towards South America

(China News, 2006-04-10)

Chinese mapping scientists obtain for the first time information about the movement of the Antarctic plate through precise observations from 1997 to 2004. Analysis of scientists discovered that the Antarctic plate is generally moving towards South America.

An officer of the Chinese Antarctic Center Surveying & Mapping revealed this news at a relevant conference held in central China's Wuhan City on April 7. According to him, the region of the Great Wall Station on the Antarctic Peninsula shows the tendency of steadily moving towards the American Continent horizontally at an average speed of about 18.5mm per year. The area of Zhongshan Station situated on East Antarctica is moving southwest horizontally at an average speed of about 8.70mm annually. Judging from the extent of crustal movement, West Antarctica moves faster than East Antarctica and the Antarctic Peninsula moves faster than other regions.

The Great Wall and Zhongshan stations were established by China on Antarctica.

China scientists named 300 sites in Antarctica**(China News, 2006-04-10)**

Li Weisen, deputy director general of China's State Bureau of Surveying and Mapping, revealed on Apr. 7 that during the past 22 years since China has participated in scientific expeditions in Antarctica, Chinese scientists have given names to over 300 sites in Antarctica, protecting China's rights in the region.

Wuhan University Professor and Chinese Antarctic Center of Surveying and Mapping director E Dongchen is in charge of the naming project for Antarctica with assistance from over 40 scientists. Based on the overall development planning and layout for China's expeditions to Antarctica in the tenth five-year plan period, China consummated construction of various mapping infrastructure and technical systems for polar expeditions in four years, completed positioning of geodetic network in key Antarctic regions included in expedition plans, and fundamentally finished all types of mappings urgently needed for its expeditions.

Prof. E said that in 1984, he gave China's first geographical name in Antarctica - the Great Wall Bay. In the following year, on the first topographic map of China's Great Wall Station in Antarctica, two beautiful glaciers were named Tortoise Mountain and Snake Mountain respectively. In recent years, he named the virgin lands in Antarctica after Hubei's scenic spots such as "the Red Cliff," "Small Wudang Mountain" and "Shennongjia."

In the past four years, China's Antarctica mapping coverage has been extending quickly to nearly 170,000 square kilometers, including various line maps, image maps and thematic maps needed for expeditions. During these four years, China organized five scientific expeditions to Antarctica and two to Arctic, and also fulfilled several key polar scientific expeditions such as construction of the Yellow River Station in Arctic and determination of the peak of the Dome-A region in Antarctica. These efforts not only laid a solid foundation to ensure mapping of future polar expeditions, but were of great significance to maintain China's rights in Antarctica as well.

China sets to build third science station in Antarctic**(China News, 2006-04-11)**

The Wuhan University in central China's Hubei province has recently finished the mapping work for another scientific exploration station in the Antarctic, and preparation work for setting up the science station in the Antarctic will kick off soon. When finished, this will be China's third scientific exploration station in the Antarctic after the Great Wall and Zhongshan stations.

Wuhan University revealed on Monday that staff members responsible for the mapping work in the Antarctic had recently finished drawing the map for the new station. The mapping includes the geological status of the Grove Mountain, a map of the core area of the highest ice cap zones in the Antarctic that covers an area of 70 square kilometers drawn with a scale of 1:25,000; and a detailed route from the Zhongshan station to the highest ice cap zone.

The new station will be built at the highest ice cap zone, which is called "an inaccessible area" due to the bad weather there. So far, only a few countries have set up their scientific exploration stations there. The new station signifies that China's scientific exploration in the Antarctic has entered a new stage. Material supplying center will be built near the Grove Mountain.

Head of the Antarctic Scientific Exploration Office under the State Oceanic Administration Qu Tanzhou said China's decision to build the station was originally set to help scientists to spend

summer there, and gradually change it into a station that can work all year round in the long run. The new station shows that China's exploration in the Antarctic has moved a step forward from rim zones into the hinterland.

China develops an array of technologies to control water pollution

(China News, 2006-04-12)

Over the past three years, China has invested over one billion yuan in its research to develop technologies to control water pollution. Now the efforts have begun to be paid off: China has developed an array of technologies that can help solve heavy water pollution problems in the country.

The water pollution control project is divided into five main aspects: technologies that are used to solve water pollution in lakes and restore their ecological environment, technologies used to improve water quality in cities, technologies to guarantee the safety of drinking water, and new technologies on biological treatment of water, and on forming waste water handling equipment into a complete set. The major achievement includes technologies can be used to improve overall aquatic environment at lake sources, and restore the ecological environment for lakes after they are heavily polluted. These technologies are regarded as key technologies in solving the lake pollution problem. The technologies are have been put to use in 11 cities including Wuhan and Suzhou, and different schemes made that can improve the water quality in these cities based on their specific situation.

The research team on the water pollution control project said some technologies have begun to produce good results, and some have been used in handling the Songhuajiang River pollution incident that occurred last year. In future, these technologies will be applied in solving the water pollution problems in areas such as the Three Gorges dam, the South-to-North Water Diversion Project, Taihu Lake, and Huaihe River reaches.

The big technology program was initiated in 2002. Chinese central government invested 350 million yuan for the project and another 700 million yuan was gathered from local governments and related social institutions. So far, applications for patents for over 400 technologies in the program have been filed, 14 sets of criteria have been made to control various kinds of water pollution, four R&D centers established, and more than 100 big modeling projects established from the program.

China's first drilling rig for 9000-meter wells to go operation this June

(People's Daily, 2006-04-18)

China's first oil rig capable of drilling to a depth of 9,000 meters will get its first test in the northwestern Karamay oil field this June, said sources with China National Petroleum Corporation (CNPC), China's biggest oil producer, on Monday.

The China-made drilling rig, which contains numerous patented parts, breaks the country's dependency on foreign rigs that can drill 9,000 meters and will upgrade both China's capacity to explore for oil and gas both offshore and on land, said Luo Chao, deputy chief engineer of China Petroleum Material and Equipment Corporation (CPMEC), a specialized service company fully owned by CNPC.

The drilling rig is made by Baoji Petroleum Machinery Company Limited, China's biggest research and manufacturing base for drilling rigs owned by CPMEC.

According to the company, research has been completed on China-made drill rigs that can bore to a depth of 12,000 meters.

The soaring price of oil has encouraged more money to flow into oil and natural gas exploration. To make breakthroughs in oil exploration and production, the research and development of drilling rigs are a necessary precondition, said Jia Bingyan, chief designer of the drilling rig.

"Eliminating sandstorms impossible in China"

(China News, 2006-04-18)

Dusty weather and serious sandstorms have raged in many parts of northern China since February, especially in recent days. Though China has reinforced its control in recent years, it is still impossible to eliminate sandstorms under the current situation, said Liu Tuo, Director of the National Bureau to Combat Desertification under the State Forestry Administration in an interview on Monday.

Liu said that at present, there are four areas in the world where sandstorms frequently occur, located respectively in Central Asia, North America, Middle Africa and Australia. China is part of the area in Central Asia. Sources of sandstorms that hit China originate not only from desertified lands in northern China, but also from some foreign countries. Particularly this year, the influence of sand sources from outside of China has become greater. The 1.74 million square kilometers of desertified lands and deserts in northern China cannot be reclaimed and eliminated under current technical conditions. Therefore, China cannot eliminate sandstorms due to both internal and external sand sources.

When talking about the causes for the frequent sandy weather, he explained that dusty days this year are more than those in previous years, which, however, are still within the normal range compared to the situations in past years but more serious in intensity.

Thawing momentum speeds up at Glacier No.1 in Xinjiang

(CAS, 2006-04-19)



Based on their continuous on-site mass balance observation, researchers from the Cold & Arid Regions Environmental & Engineering Research Institute, a CAS research arm in Lanzhou, capital of northwest China's Gansu Province, found that the drastic process of thawing is occurring at the Glacier No.1 in the source region of the Urumqi River in the Xinjiang Uygur Autonomous Region. Their research reveals that since the mid-1990s, the vicinity's temperature hike has brought in the most stunning change to the glacier ever recorded in the area. During the 45 years from 1958 to 2003, its thickness has reduced by some 11 meters, totaling 18.38 million cubic meters in aggregate volume of ice losses. During the 42 years from 1962 to 2004, its total area shrunk by

0.242 square kilometers, accounting for 12.4% of the glacier's area, presenting an accelerated momentum of the shrinkage.

During the same period, the eastern end of the glacier saw a retreat up to 175.2m and the same figure for the western end was 197.6m, showing a retarded tempo in the glacier's surface movement. Since 1986, the depth of its annual run-off in average has doubled, leading to the appearance of a 5m-high icy crag exposed to a massive melting process at the top of the glacier's eastern branch. As a result, a pool of about 30 square meters has been formed from the melting water. Scientists conclude that the glacier's mass balance is less than the amount thawing away, leading to the incessant retreat of the glacier.

Because of the growing trend of the current warming-up worldwide, the glacier thaws in a more and more intensified way, remarkably affecting the ice-forming layers and cross-section of the ice sheet. In such a circumstance, the borderlines of different layers in the glacier become blurred. Also, the research discovers that the thawing trend is expanding since 1996 and the elevation of the limits of ice-forming layers is lifting up higher and higher. The obtained data show the end of the glacier's icy lobe reaches 4074m in elevation, an uplift of 74m over the responding figure recorded in 1962. With the ice-forming layers becoming more and more dwindling in their area, the glacier now is speeding up its thawing tempo, the scientists say.

Laureate of Einstein Visiting Professorship gives lecture on ecological evolution

(CAS, 2006-04-21)



With the support of the prestigious Albert Einstein Visiting Professorship of CAS, Prof. Nils C. Stenseth, chair of the Centre for Ecological and Evolutionary Synthesis (CEES), University of Oslo, visited the CAS Institute of Zoology recently and presented a lecture at the Graduate School of CAS in Beijing.

Prof. Stenseth, who is also a Chief Scientist at the Institute of Marine Research in Norway, has been focused on such issues as population biology, large-scale ecological and evolutionary patterns, effects of climate variation, terrestrial, marine and freshwater systems. His academic accomplishments has won him many awards and memberships in closed scholarly societies, such as French Academy of Sciences, Academia Europaea, Royal Norwegian Society of Science and Letters.

Launched in 2004, the CAS Albert Einstein Visiting Professorship Program is designed to invites up to 30 world-class scientists each year to visit CAS for up to two weeks. Prof. Stenseth is among 15 of winners of the program in 2006.

Yangtze Delta sank slowly, but on a larger area

(China News, 2006-04-21)

Director of the Planning Department under the Ministry of Land and Resources Hu Cunzhi said today that a recent monitoring carried out on the Yangtze River showed that the Yangtze River Delta had sunk at a slower speed than before.

The Yangtze River Delta is one of the three regions in China where the surface has sunk at a most severe degree. In recent years, the surface at some core sinking areas in the Yangtze River Delta region has sunk more slowly than before, but the sinking areas have expanded greatly.

The Ministry of Land and Resources issued a public report on the conditions of China's land resources in 2005. At a news briefing held later, Hu Cunzhi said great achievement had been made in the monitoring work of the sinking areas in the Yangtze River Delta region. According to a recent notice issued by the Ministry of Land and Resources on the Yangtze River surface sinking and underground water environment, surface sinking in the Yangtze River Delta region is less severe than before on the whole, especially in the North China Plain area.

Talking about the prevention of geological disasters, Hu said China had recently set up more than 40,000 monitoring stations nationwide to prevent geological disasters. The prevention work has proved to be effective, in that 500 geological disasters have been prevented, 11,000 people have been relocated, and 341 million yuan worth of property loss have been avoided.

In 2005, there were 854 geological disasters occurring in China whose direct economic losses were more than 500,000 yuan worth each. Among the 1,021 casualties in the disasters, 578 people died and 104 were missing. The disasters caused 3.65 billion yuan worth of direct economic loss.

Hu Cunzhi added that the geological disaster prevention project for the second-phase work of the Three Gorges dam project had recently passed state checking, and demonstration work for the third phase had also been finished and would be started soon.

China steps up efforts to protect new plant varieties

(People's Daily, 200604-24)

An intellectual property exhibition in Beijing this week displayed not only counterfeit goods but some new plant varieties, fresh content for China's intellectual property rights (IPR) protection.

In China, the protection of new plant varieties has been an important part of the country's IPR protection strategy, just like the protection of brands and patents.

The Chinese Ministry of Agriculture (MOA) announced in Beijing on Sunday that China has ascended to fourth position in the world in applications for protecting new agricultural plant varieties.

By the end of March this year, China has received a total of 3,207 applications for protecting new plant varieties, including 114 applications from foreign entities.

About 747 applications have been approved in China, the ministry said.

China launched the regulations on protecting new plant varieties as early as 1997.

On April 23, 1999, China acceded to the "International Convention for the Protection of New Varieties of Plants" and became the 39th member of the International Union for the Protection of New Varieties of Plants (UPOV).

According to government regulations, a new plant variety refers to a cultivated plant variety, or a developed one based on a wild plant, which is new, distinct, uniform and stable, and its name is designated. Without permission from the owner, no one is allowed to grow or sell these new varieties.

Liu Ping, vice dean of the science and technology center under the MOA, told Xinhua that in the

past seven years, China has included 62 kinds of plants and 78 kinds of forestry plants in the national list of protected plant varieties, setting a fair platform to protect plant breeders' rights.

In 1999, the government received only 115 applications on protecting new plant varieties for the whole year, while the annual total jumped to 950 in 2005, Liu said.

The MOA has organized more than 30 training programs in the past seven years to increase the public's knowledge on plant breeders' rights.

A latest investigation on 500 new plant varieties shows that the government invested 40 percent for the research and development of new plant varieties, with the rest coming from non-government sectors.

According to Liu, the protection of new plant varieties has benefited farmers greatly.

The 500 new plant varieties under investigation have been promoted to about 640 million mu (42.67 million hectares) in China, increasing an additional grain output of 56.32 billion kilograms, with an additional value of 22.37 billion yuan, said Liu.

In 2005, China planted 150 million mu (10 million hectares) of new plant varieties of rice, wheat and corn, producing an additional grain output of 8 billion kilograms, Liu said.

To better protect plant breeders' rights, China's agricultural authority has issued laws and regulations to fight against illegal cases violating plant breeders' rights.

Currently, more than 800 violation cases have been investigated by the judicial departments, with 460 cases having been taken to courts.

Progress in studies of plants in the family Schisandraceae (CAS, 2006-04-24)



CAS researchers have achieved fresh progress in their studies of medical plants in the family Schisandraceae, making contributions to the new drug development and the sustainable exploitation of the local resources of herbal medicine.

Schisandra is a woody vine with numerous clusters of tiny, bright red berries. The fully ripe, sun-dried fruit is a traditional Chinese medicine. It is purported to have sour, sweet, salty, hot, and bitter tastes. This unusual combination of the flavors is reflected in schisandra's Chinese name wu-wei-zi, meaning "a fruit of five tastes." Two dozen additional species within its family, Schisandraceae, are also believed to have pharmacological effects.

China is noted for its rich resources of the plants in the family of Schisandraceae. Of the 50 species in the world, about 30 are native to this country. Furthermore, the majority of them are found to have medical values. In southwest China's Yunnan Province, 18 kinds of such plants have been used for medical purposes. However, little is known about many of their chemical constituents and pharmacological functions.

With the support of the National Natural Science Foundation of China and special funds for new drug development from the Provincial Government of Yunnan in recent years, a research team headed by Prof. SUN Handong from the CAS Kunming Institute of Botany has made significant progress in their systematic research into the chemical components and bioactivity of several medical plants in the family Schisandraceae. So far, Prof. Sun has published 14 research papers on the topic, and filed for four patents. His studies have received attention in the S&T community.

Prof. Sun, who is a CAS member, started his studies of the chemical constituents of the plants as early as in the 1990s. Over the past five years, his team identified more than 300 compounds in such plants, including 80 new ones, which fall into such chemical types as triterpenoid, lignan and sesquiterpene. His discovery of novel nortriterpenes deepens people's understanding the chemical components of such plants.

The research team also made new progress in its studies of bioactivities of the plants by identifying 13 compounds that clearly show anti-HIV activity. In 1996, he isolated nigranoic acid, a triterpenoid from *Schisandra sphaerandra* that showed activity in several anti-HIV reverse transcriptase and polymerase assays. Their studies suggest that one of compounds, schizandrin, noted for its strong anti-HIV activity, could be used as a candidate for the development of anti-HIV drugs. At present, pre-clinical research has been underway on schizandrin as a new drug.

Yellow River overworked

(China News, 2005-04-25)

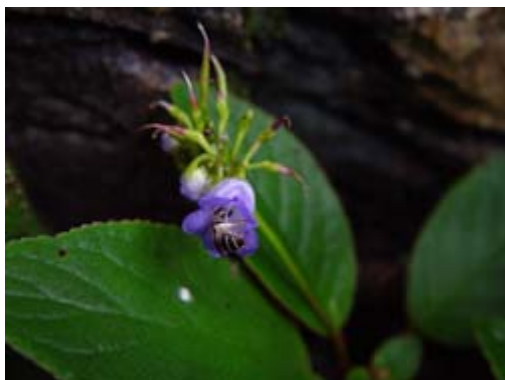
As industrialization and urbanization process speed up in the Yellow River region, the use of water in the Yellow River region has taken a structural change. While agricultural water usage decreases from 95% in 1980 to the present 79%, water use for industrial purpose has risen by 13.4%, and the Yellow River's total water consumption reach six billion cubic meters.

Some experts point out industrialization process has sped up in the upper and middle reaches of the Yellow River, where natural resources are rich. Over the next 20 years, it is expected that industrial water consumption will keep growing at current rate. In fact, demand for water use of the Yellow River has already far exceeded what the river can supply.

Head of the Water Control Department under the Yellow River Water Conservation Committee An Xindai said a lot of water could be saved in agricultural use. Starting from 2003, relative departments began to transform some agricultural water usage for industrial purpose in Inner Mongolia and Ningxia Hui Autonomous region. It is expected that by 2010, some 600 million cubic meters of water resources in Inner Mongolia and Ningxia Hui Autonomous region will be diverted for industrial use from agricultural sector after water conservation measures have been taken.

A mechanism of self-fertile plants to prevent inbreeding

(CAS, 2006-04-26)



Gesneriaceae is a pantropical plant family with over 3000 species. Although a large variety of pollination mechanisms have been reported for the neotropical members of the family, the details of buzz-pollination and enantiostyly for the family have not been described.

A recent study by Gao Jiangyun and colleagues from the CAS Xishuangbanna Botanical Garden has led to some interesting discoveries about the floral biology and pollination ecology of *Paraboea rufescens*, a tropical Chinese member of the Gesneriaceae.

As reported in their paper "the Pollination Ecology of *Paraboea rufescens* (Gesneriaceae): a Buzz-pollinated Tropical Herb with Mirror-image Flowers," which is highlighted in *Annals of Botany* 2006, the researchers found that the plant shows two fascinating floral characters. First, it is one of those species that possess mirror-image flowers; in this species the two forms (left-styled, anthers deflected to the right; right-styled, anthers deflected to the left) are borne within the same inflorescence. Secondly, it is buzz-pollinated: the visiting bumblebees rapidly vibrate their indirect flight muscles to induce pollen release from the tip of the anther. Their detailed studies of flower morphology and pollination in this species indicate that first that pollination by hand was much more efficient than open-pollination, possibly suggesting sub-optimal numbers of pollinators. Secondly, they confirmed that *P. rufescens* is self-fertile but that autonomous self-fertilization in the absence of pollinators does not occur.

The botanists also discovered that there was clear evidence of inbreeding depression in respect of the number of seeds set when flowers were self-pollinated by hand. Outbreeding is therefore advantageous to this species. The relative positions of anthers and style within an individual flower actually make self-pollination within one flower very unlikely. Indeed, if the pollinator visits another flower of the same enantiomorph, pollen transfer remains very unlikely because pollen is present only on one side of the bee, the side away from the style. Their studies suggest that the plant exhibits monomorphic enantiostylous flowers and a buzz-pollination syndrome. Floral morphology in *P. rufescens* and pollinator foraging behavior seems likely to reduce self-pollination and pollinations between flowers of the same stylar deflection.

China's manned DSV can go 7,000 meters under the sea (Xinhua Net, 2006-04-26)

China is making smooth progress in the development of the manned deep submergence vehicle (DSV), which is able to go 7,000 meters deep in the sea. The general assembly of the vehicle has begun, the reporter learned from the exhibition of the achievements on the research and study of oceanic resources.

The US, Japan, France and Russia are the only countries that own manned deep submergence

vehicle, but their vehicles never go deeper than 6,500 meters in the sea. China's 7000-meter manned DSV will become the one that goes deepest under sea in the world.

Tentative plan for the Dayang II scientific research ship is now available. The plan for the construction of a blue water base for the survey of oceanic resources, the experiment and development of blue water facility and oceanic industry has been made too.

Water technologies hailed a success at conference

(Xinhua Net, 2006-04-28)

China plans to introduce further world advanced water technologies to improve flood controls and water supplies.

Gao Bo, director of the international co-operation, science and technology department at the Ministry of Water Resources (MWR), pledged the move would also rehabilitate water-related ecosystems.

He told the opening ceremony of the Promotion Conference on International Advanced Water Technology in Beijing that the sustainable use of water resources was of vital importance in China.

The country is plagued by scarce water supplies, frequent floods and droughts, serious water pollution and soil erosion, he said.

"Such promotion (of technologies) has helped China keep in line with the world's water sector," he told the conference.

He said hundreds of imported technologies had already been used to good effect in China.

During the two-day event, more than 50 enterprises from 15 countries and regions will showcase their latest technologies and try to apply them in China.

They include computer-based systems that monitor water treatment, pollution and irrigation.

The central government has budgeted 50 million yuan (US\$6.2 million) this year for the country's water sector, said Gao.

It will be used to buy high-tech equipment, particularly water-saving and pollution control systems.

During the 10th Five-Year Plan period (2001-05), the MWR injected about US\$40 million of special funds to introduce about 600 technologies from more than 20 foreign countries into China's water sector.

More than half of them had been adopted by key water projects in the country by the end of last year.

They have played a key role in improving geological prospecting for the South-to-North Water Diversion Project, designed for improving China's uneven distribution of water resources, monitoring water quality in key sections of the Yellow River, one of the country's worst polluted major water systems, and monitoring the soil erosion in the Loess Plateau, one of the world's worst eroded areas.

1.3 Health

Twin donates stem cells to brother

(Xinhua Net, 2006-04-02)

Xu Zibo, a 17-month-old boy, received stem cells transplanted from his twin brother at Shanghai Children's Medical Center last week to treat an inherited metabolic disease.

The stem cell transplant was the first between twins in Chinese history.

Doctors said it will take at least a month to determine if the surgery was a success.

"There is a 80 percent possibility of success. The stem cell is from a sibling, so the patient faces a lower chance of rejection and other complications," said Dr Chen Jing from Shanghai Children's Medical Center. "The best time for a transplant is within one year after delivery."

Xu, a Zhejiang Province native, suffers from mucopolysaccharidosis, or MPS, a rare disease caused by the lack of a specific enzyme. It stunts a child's growth and development, limits the movement of joints and impacts organs.

The condition usually becomes evident in early childhood, as the patient is shorter and has deformed joints and strange appearance. Infected children often die before they reach the age of 10.

Xu's father and mother are both MPS gene carriers, but neither has ever shown signs of the disease. When two gene carriers have a child, there is a 25 percent possibility he will have the disease.

"Our first son was detected with MPS at the age of four. Up till that point we had never heard about the disease and we were told we are both carriers," said Xu Xiao, the father.

Xu's wife became pregnant again in 2004 with twins, and doctors said one fetus was an MPS carrier and the other had the full-blown disease.

"Since doctors said a stem cell transplant can treat the disease, we decided to give birth to the twins," Xu said.

The twins were delivered in September, 2004.

According to Dr Chen, MPS is so rare that ordinary examinations won't diagnose it, but it can be found during a prenatal test.

"Most cases aren't detected until the child starts to show symptoms," Chen said.

CAS scientist discovers a new skin-penetrating intensifier

(CAS, 2006-04-03)

So long as pastes the "medicinal plaster" on the skin, while do not need to give an injection or take the medicine, the symptom of the diabetes patients will be eased. Perhaps the above issue is no longer a dream. Recently, the research team led by Prof. WEN Longping, which is from Life Sciences School of the University of Science and Technology of China (USTC) under CAS, takes advantage of biological technology to discover a skin-penetrating peptide which can carry insulin to enter the human's body through skin. It provides the doctors a simple medicine-applying method for the patients. *Nature Biological Technology* publishes this magnificent research result on 23, March.

Diabetes is the major disease which harms the human health nowadays. According to the estimates of World Health Organization, there are 135 million diabetes patients in the world, 40 million in China. In the majority of diabetes patients' bodies, the insulin lacks relatively, even absolutely, so

the treatment to them is to inject the insulin several times a day, bringing the huge pains to patients.

To apply the medicines through the skin is the way to force the skin to absorb the medicine; it has many special advantages, comparing with those traditional methods, such as injection and taking the medicine. This new method particularly fits to diabetes patients who need to have medicines repeatedly every day. However, majority of medicine elements can not enter the skin, the human's natural barrier, especially the medicine with large water affinity elements, such as insulin. For many years, scientists have developed a large number of researches by chemosmosis promoter and physics-aided with the purpose of overcoming the skin barrier to realizing the medicine-applying through the skin. But both methods have various shortcomings, like causing the skin allergy easily, high costs, needing the special instruments. Considering of the above factors, to find a new skin-penetrating intensifier to overcome these defeats is the dream of many researchers.

Prof. Wen Longping leads the team to creatively apply the molecular biology technology to do research, and successfully finds the short peptide which can effectively help the protein-class medicines to pass the skin. The editors of Natural Biological Technology regard this research result as an attractive achievement which reveals a new strategy to transfer the large elements to enter the skin.

Prof. Wen Longping introduces that the research was developed in mice, so whether the skin-penetrating peptide can be used in humans are still unknown. Currently the research team led by him cooperates with a Shanghai-based medicine technology company to carry out the clinical studies, striving for entering the human body experiments step as soon as possible.

Over 10 new contagious diseases found in China

(China News, 2006-04-05)

An official from the Ministry of Health said on Tuesday that more than ten new contagious diseases have been discovered in China and it is possible that some other contagious diseases can also be found in China.

At the APEC Newly Discovered Contagious Diseases Seminar held on Tuesday, Deputy Director at the Emergency Case Handling Office of the Ministry of Health Liang Dongming said that in China, some infectious diseases, such as hepatitis, epidemic hemorrhagic fever, and bacillary dysentery, keep a high infection rate among people; other diseases, such as tuberculosis, venereal disease, and schistosomiasis, have occurred more frequently than pervious years, although these diseases had once been brought under control. In recent years, some new diseases including AIDS, SARS, and avian influenza, have emerged in China.

In addition to this, Liang pointed out that it is also possible for other new diseases to find their way into Chinese territory. These diseases include Ebola, West Nile Fever, and Nipah virus disease, and China should strengthen measures to prevent these diseases from entering into China. Liang said the new diseases have complex virus strains and can be transmitted through various channels. Due to their complexity, these diseases could be spread across countries or even on a global scale.

He said human beings are mostly vulnerable to new diseases and these diseases are also difficult to be diagnosed at the beginning stage. For newly erupted diseases, scientists lack effective preventive and treating methods. Also, most of the new diseases occur with great uncertainty.

Satellite tracking for bird flu control**(China News, 2006-04-05)**

China has invested 3 million RMB (US\$375,000) in renting a satellite from France to track the whole process of bird migration. Commencing in Qinghai Lake area in March, this project will find out the sources and spread of bird flu through real-time monitoring of bird migration status and routes. This is China's first try on satellite tracking.

Qinghai Lake area witnessed a bird flu outbreak last May, killing 6,345 migratory birds. Experts believe that bird flu outbreak in some Chinese provinces happened to overlap with the migration routes of migratory birds, while in other countries, those birds have spread bird flu to animals that are close to human beings. These infected animals are the greatest threats to human beings in the eyes of specialists. Migratory birds thus become a crucial part in the bird flu prevalence chain.

Experts deem that during the three steps of infection of highly pathogenic bird flu including "animal to animal, animal to human and human to human," people are now facing a problem: how to break the chain before it develops to the last step, namely how to reduce bird flu spread from animal to human. In this step, birds draw much attention as the source of infection and spread.

The avifauna center affiliated to the State Forestry Administration launched a project to track migratory birds with the help of satellite technology in Qinghai Lake area this March, in order to monitor the migration routes of migratory birds and offer assistance to bird flu prevention and control. China will rent Argos satellite from France, receiving signals from "satellite signal emitter" fixed on birds to watch the whole process of birds' moving from their breeding place to where they live in winter, as well as providing effective information for bird flu prevention and control in areas involved in the birds' journey.

China released statistics on gays and HIV infection**(China News, 2006-04-06)**

According to the latest research conducted by China's health authorities, there are five to ten million male homosexuals in China for the moment, and HIV infection rate among gays in their most sexually active stages reaches 1.35%.

This is the first time the Chinese government publishes statistics on the number of male homosexuals and their HIV infection rate to the world.

An expert points out HIV infection rate of male homosexuals ranks second among China's high-risk groups, only behind drug addicts. As for the phenomena of multiple sexual partners and low condom utilization rate, weak prevention and control will very likely lead to rapid rise of HIV infection rate and spread towards the masses.

China has been quietly making health care efforts targeting this special group in recent years. In 2003, China held a national AIDS epidemiological survey of six groups, namely drug addicts, unlicensed prostitutes, male homosexuals, venereal disease patients, paid blood donors and tested patients, in 138 regions of 31 provinces, autonomous regions and municipalities directly under the State Council. To date, China has set up 42 behavior monitor units in 19 provinces.

Guangzhou sets up human genome cloning banks**(China News, 2006-04-10)**

The Guangzhou Funeng Gene Co., Ltd. has recently developed on its own cloning bank and a highly efficiently expressed cloning bank, as highly effective medium carriers for the

multi-functional coding protein of human full-length cDNA. The two banks can help study the relation of interactive functions between proteins in viruses such as SARS, bird flu and hepatitis B viruses, and proteins in a human body. Study of the interactions between virus proteins and human proteins is helpful for scientists in their research of producing more effective vaccines against these viruses.

Experts say the establishment of the two banks has a great significance in biomedicine research and its development, in that it forms as a technological platform and lays a material basis for improving China's own biomedicine research capability, especially in Guangdong province. By using the technologies of the two banks, scientists can study the interaction between proteins in viruses such as SARS, bird flu and hepatitis B, and proteins inside human bodies. The study will help scientists to develop vaccines that can prohibit disease causative agents, find methods that can quickly diagnose these diseases and medicines that can treat them.

The highly efficiently expressed cloning bank for human full-length DNA was a research achievement made by Dr. Yang Shuwei, who once studied in the United States and came back to China to set up his own company, the Guangzhou Funeng Gene Co., Ltd., in 2000. The bank provides a technological platform for the study of human genome, currently the world's hottest research discipline in the bio-technology field, as well as the study of proteins.

Scientists working in world-class universities and laboratories will appraise the application of these medium carriers and the cloning system after they are delivered as products into the international market.

Research center for behavioral genetics established at CAS institute (CAS, 2006-04-11)



The Research Center for Behavioral Genetics officially opens at the CAS Institute of Psychology (IP) in Beijing. Its nameplate unveiling ceremony was held on April 5. CAS Vice President CHEN Zhu, Director-General of CAS Bureau of Biological Sciences and Biotechnology KANG Le, and President of Beijing Natural Science Foundation YI Youjing were present at the ceremony.

As a new research arm of IP in the third phase of the knowledge innovation program, the Center was established in light of national demand and academic disciplinary development. Its director is Prof. SUN Zhongsheng, who was an assistant professor and director of Laboratory Critical Care Medicine of the Department of Pediatrics Weill Medical College of Cornell University from 2002 to 2005.

The Center is to carry out in-depth and systematic studies on the genetic basis and environmental factors for the development of complicated human behaviors from various perspectives ranging from behavior, system, molecular and gene starting from the interactions between gene and

environmental factors. It will strive to reveal the causes for the behavioral development, so as to control, prevent and cure mental disorders. In addition, the Center will implement systematic research and development of the early diagnosis and analytic objective system of disease-related behavior, and its clinical prevention and control measures. It will also explore new fields concerning mental and nerve healthcare, health assessment and diagnosis, as well as new drug development.

UN official urges China to impart knowledge on bird flu control

(China News, 2006-04-12)

In his recent visit to China, UN Coordinator for Avian Influenza Dr. David Nabarro expressed his satisfaction with the work that Chinese government had done to prevent the deadly virus. He said China had obtained plenty of experiences and knowledge on bird flu control and should impart this knowledge to other countries.

China's chief veterinarian and director-general of the Veterinary Bureau of the Ministry of Agriculture Jia Youlin said China had made fruitful achievements in the last stage of the prevention work against bird flu. By April 10, the Ministry of Agriculture had not received any report of new bird flu cases for a consecutive 44 days. Currently, vaccines are in good supply at various local sites and medical workers are enough to carry on the prevention work.

Regarding the issue of China providing bird flu virus to the World Health Organization, Jia said China had always committed to share information and bird flu virus strain with the international community, and this country hopes that other countries can also share the virus strain with China as well.

The international community holds a positive view towards China that has taken comprehensive methods in fighting against the diseases by focusing on preventive measures supplemented with vaccine injection, etc. in areas where there are suspected cases. In addition, China has made progress in such aspects as emergency handling, vaccines production, scientific research and legal system improvement. The international community thinks that China has made great progress in bird flu prevention and China's research work in vaccines production is among the best in the world. China has set up a national-level headquarter to control the disease, made emergency handling schemes and issued regulations to handle the disease, which, according to the international community, are all valuable experiences that can be learned by other countries.

Scientists to test gender selection on human

(China News, 2006-04-13)

Chinese scientists indicated that they would commence a gender selection experiment on human in the second half of this year.

The world's first test-tube buffalos were recently born through X-bearing and Y-bearing sperm cell separation headed by Prof. Lu Kehuan, "father of test-tube twin calves," at the Guangxi Buffalo Research Institute affiliated to the Chinese Academy of Agricultural Sciences. A cross-bred mother buffalo gave birth to twin female calves that were produced through gender selection by separating X-bearing and Y-bearing sperm cells, indicating that the gender of buffalos can be artificially selected.

Lu revealed to the media that he plans to commence the experiment of separating human X-bearing and Y-bearing sperm cells in the second half of this year. "Judging from tens of

thousands of creatures born via sperm cell separation around the globe to date, scientists have detected little negative impact, and descendants of these creatures have reported no abnormal signs."

Lu said that the experiment of separating human X-bearing and Y-bearing sperm cells aims to treat diseases. Among currently known diseases, 370-odd are recessive diseases related to X chromosome, such as thalassanemia, hemophilia, muscular dystrophy and achromatopsia.

Lu added that gender selection might be unacceptable to Chinese in a short period and it would probably need ten years for them to take in the concept. Nonetheless, gender selection operations must be performed within legal boundary.

China built largest cell bank of domestic animals

(China News, 2006-04-14)

China has built world's largest somatic cell bank of domestic animal and poultry genetic resources in Beijing. It finely preserves 21,417 somatic cell samples of 43 important endangered domestic animal and poultry species and six wild animal species. At the same time, this bank has also set up two technical platforms for inspections with biological characteristics of cells to develop new channels for collection, processing, preservation and utilization of domestic animal and poultry germplasm resources.

The Institute of Animal Sciences affiliated to the Chinese Academy of Agricultural Sciences revealed that this somatic cell bank is not only systematic and effective, but also offers the most valuable "materials" for research of life sciences by way of vitro cultured cells.

Based on experts' recent appraisal, this cell bank is so far the largest for domestic animal and poultry germplasm resources preservation on a cellular basis at both home and abroad, and has met internationally advanced standards.

In recent years, due to constant deterioration of ecological environment, introduction of foreign animal and poultry species, and intensive culture, many of China's excellent local domestic animal and poultry species have become extinct or endangered. This indicates that fundamental materials for cellular and molecular biological researches will disappear forever. In an era of globalized researches on biological resources and protection of biological diversity, Chinese scientists should construct cell banks of important endangered domestic animal and poultry species and colonies to preserve their genetic resources.

China's first interstitial stem cell bank inaugurated

(Xinhua Net, 2006-04-26)

China's first interstitial stem cell bank was inaugurated on Monday in north China's Tianjin Municipality.

The center, built by China National Engineering Center of Cell Products (NECCP), engages in the development, production and storage of stem cells.

As a kind of stem cells, interstitial stem cells can be dissociated into various kinds of interstitial tissues and are widely used in cell therapy of injured tissues and organs, especially in treating cancer, nervous system disease and burns and scalds, said Wang Fusheng, head of the center.

He said interstitial stem cells are usually taken from marrow. However, NECCP succeeded in isolating them from the navel string, which has a better propagating capability.

Cloned cow with mad cow disease-resistant genes born in Shandong**(Xinhua Net, 2006-04-26)**

A cloned calf with genes resistant to mad cow disease was born in East China's Shandong Province on Tuesday.

Scientists with the Laiyang Agro-Science Institute in Shandong said they used gene-transplant technology to introduce the genes to the calf cloned from cells of an adult cow.

However, experts say that further tests need to be carried out to confirm the cloning has been a success.

The province's key research project was led by professors Dong Yajuan and Bo Xuejin, who succeeded in cloning China's first and second healthy cows in 2001.

The calf, weighing 55 kg, is 85 centimeters wide and 95 centimeters tall.

1.4 Key Technologies

Improved Godson-2 CPU matches Pentium IV**(China News, 2006-04-05)**

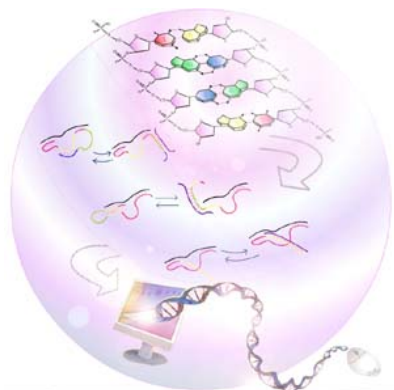
The latest developed strengthened version of Godson-2 CPU can match medium and low-level Pentium IV CPUs in performance, indicated Hu Weiwu, researcher of the Institute of Computing Technology under the Chinese Academy of Sciences and leader of Godson-1 R&D team on the 4th. The successful development of Godson processors marks that China has mastered the technology of high-performance processors.

This general designer and project manager for Godson-2 revealed that in 2002, China developed Godson-1, with the performance equaling Intel 586 (Pentium), and Godson-2 developed in 2003 meets the standard of medium-level Pentium III.

Hu said that large foreign companies earn 10-odd billion US dollars from China every year through trading chip, which has become the most important import of China.

Hudson Institute in Washington submitted to the US Congress a report titled "China's New Great Leap Forward -- High Technology and Military Power in the Next Half-Century", analyzing China's scientific and technological competitiveness. Godson was listed as one of the three Chinese independent innovation examples given by this institute.

CAS scientists develop a new DNA-based logical gate**(CAS, 2006-04-06)**



A cross-disciplinary research team, headed by Prof. FAN Chunhai from the CAS Shanghai Institute of Applied Physics, Prof. HE Lin, a CAS Member, and Prof. ZHANG Zhizhou at the Bio-X Research Center under Shanghai Jiao Tong University (SJTU), succeeded in developing a new type of logical gate by applying the deoxyribozyme (DNAzyme), adding a new brick to the groundwork of a DNA-based computation. The related research results have been reported on the German journal *Angew. Chem. Int. Ed.*, 2006, 45, 1759.

The DNA computation is a newly emerging discipline coming from the interdisciplinary fusion of computer science with molecular biology. Because the molecule of the DNA is noted for its powerful computing capability and super-high storage capacity and therefore, the future DNA computer will be able to solve some extremely difficult problems which are now puzzling the up-to-date mini-electronic computers. In addition, it is expected to make the new gadget applicable to drug shipment in the human body or genetic analysis. In spite of the bright perspective, there are still many knotty problems waiting for their solution. The recent success in developing a DNA-based logic gate by CAS and SJTU scientists is a stride forward at this orientation.

The DNAzyme is a structure of the nucleic acid with a certain enzymatic bio-activity through the ex-situ screening. In Prof. Fan's work, the DNAzyme obtains its bio-activity in hydrolysis. Its hammer-shaped structure may be oxidized in the presence of copper ions as the catalyst and cut itself off from the substrate DNA. Based on this, modular design may be applied to the development of a DNA-based logic gate. Via a certain bio-molecular sensor, the input signal is able to give rise to output signal, hence realizing the logical judgement on "YES" or "NOT". Theoretically, all algorithms owned by a Turing Machine might be realized by their combinatorial arrangements.

The uniqueness of the new gadget lies in the dismissal of the RNA nucleotide's participation as only DNA molecules are involved in the new gate's composition. This means the instability in the system brought in by the RNA nucleotide may be avoided.

'ID chip' expected to be embedded into pet's body
(China News, 2006-04-07)



(ID chip for pets)

People will not worry any more when they lose their pets, as a tiny chip with the owners' information may be embedded into the bodies of the pets. According to the information provided by the chip, the stray dogs or cats can be sent to their owners promptly.

This new technology will decrease stray animals in cities so as to maintain a better urban environment, and Beijing Pet Association is engaged in the application of this new-tech now.

According to Liu Hui, an expert in charge of the chip research, the chip is also called electronic tag, sustained by Radio Frequency Identification Technology. In other words, the chip can be identified by a machine through electromagnetic induction without touching it.

Dog's name, gender, date of birth, and physical characteristics, as well as owner's name, address, and contact number, for instance, will all be recorded into the chip. The information can be read when an identifier scans the body of the dog.

It is reported that the chips will normally be embedded into the bodies of the animals through injection and will do no harm to their health.

According to related international criterion, each pet should possess an exclusive ID number the same as human's ID cards. Liu said the ID number would be recorded into the chip in the process of production so that it is unique and not revisable.

Fight against drugs gets high-tech aid

(People's Daily, 2006-04-07)

Drug traffickers targeting China will soon face a new deterrent, as a device to detect drugs hidden inside human bodies will be recommended for nationwide use this year.

The X-ray detector, which has been used experimentally in Southwest China's Yunnan and Guizhou provinces since 2003 and passed final appraisal last year, would be used at checkpoints across the country, especially those along the borders, the Ministry of Public Security told a press briefing yesterday.

Liu Shuo, deputy director of the ministry's science and technology bureau, said the wide use of the detector might greatly curb drug trafficking in China, as passenger pathways at border checkpoints have become the main channel for trafficking.

Official figures show that more than half of the 117 kilograms of heroin and drug-related chemicals seized by Chinese border police in the first two months of this year had been found in passengers' clothing or inside their bodies.

"Before the invention of the detector, it was very hard to find drugs hidden inside human bodies, such as in the stomach, intestines or vagina," Liu said. "We relied on experience and manual checks, which easily made mistakes and caused disputes over human rights.

"But the use of the new device in Yunnan has significantly brought down such trafficking cases,

and we hope it can be installed at checkpoints across the country."

A policeman surnamed Li, who works at the Kunming Railway Station, told China Daily that on average, they find four alleged traffickers a day with the help of the detector.

Working similar to a medical fluoroscope, the detector uses domestic innovative technology, said Luo Shanzhong, another bureau official.

He said suspects stand in front of the detector, which can be either fixed or portable, for only one minute before the results are given.

"In accuracy, our products compare to any similar foreign products," he said.

He added that the machine does almost no harm to human bodies, as the X-ray emitted is about one-tenth of that emitted by regular chest X-ray examination machines.

"And only suspects will be required to go through the check, not everyone," he said.

So far, 62 detectors are in use at checkpoints in Yunnan and Guizhou, the Guangxi Zhuang Autonomous Region and Shanghai.

However, "we recommend that checkpoints install the device, but it is not a must," Luo said.

Insufficient financial input is considered as the biggest reason. "Checkpoints get money for new equipment from local governments," he said. "Although a detector costs only 200,000 yuan (US\$24,700), some checkpoints in poor rural areas still cannot afford it."

Trial of Godson 2 chip based computers to start

(CAS, 2006-04-14)

A batch of 3,000 computers based on China-made Godson 2 chips will be launched for commercial use this July in Changshu and its surrounding areas, the reporter with Guangzhou Daily learned from Jiangsu Menglan Dragon Chip Industrialization Base in Jiangsu Province.

The batch of computers is only for trial purpose within a small scope. Their market orientation will not be clear until feedbacks from users are collected, said Dr. Wu Shaogang with the Industrialization Base.

The Godson chip based computers use Linux operating system and sells for 1,200 to 1,600 yuan (excluding monitor). The computer weighing only 500 grams is portable and features low energy consumption. They will be produced in a factory in Shenzhen.

Prior to this, the sample of computers based on Godson chip had been shown to the world. In the CeBIT Expo in Hanover this March, a Macao company displayed a Godson chip based computer without Microsoft system priced at \$149. Users of the computer can view web pages, receive and send emails, communicate with instant messengers, process documents and play audio and visual files.

Refreshing news from China Academy of Science said the latest "Godson 2E" chip has been returned to the Institute of Computing Technology under CAS for final tests, which is expected to be completed in May the soonest. The performance of 1GHz Godson 2E chip is equivalent to 2GHz Intel Pentium IV. The PC based on Godson 2E is now running well.

CAS scientists succeed in developing gold nanowires

(CAS, 2006-04-14)

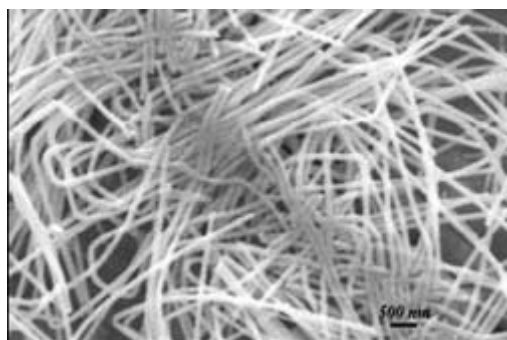
Scientists at the CAS Institute of Modern Physics (IMP) in Lanzhou, capital of northwest China's Gansu Province, recently made an essential advance in production and investigation of single- and polycrystalline gold nanowires by galvanic replication of ion track templates. Their work has been

published by the *Nanotechnology* (Vol. 17, 1922-1926, 2006).

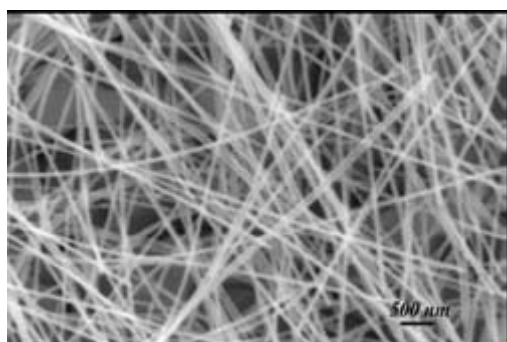
Because of its superb electrical and thermal conductivity, and mechanical properties, the gold nanowire is noted for its promising technological applications in nano-electronics, optoelectronics, and chemical and biological sensors. These functions, however, are strongly dependent on the crystallographic and morphological characteristics. By the method of the electrochemical deposition in etched ion-track membranes, both the shape and the crystallinity of nanowires may be under manipulated control.

Supported by Light in Western China Project, a research team headed by Prof. LIU Jie of the IMP has recently succeeded in production of gold nanowires in etched ion-track templates. The polymer membranes are irradiated with swift heavy ions in accelerator, and then etched to obtain pores with controlled density, different shapes, diameters and aspect ratios. Subsequently, these nano-pores are filled with gold in electrochemical deposition process. In this way, the array of gold nanowires ranging from 20 to 100 nm in diameter, in either poly- or single-crystalline structure, is synthesized in the membrane.

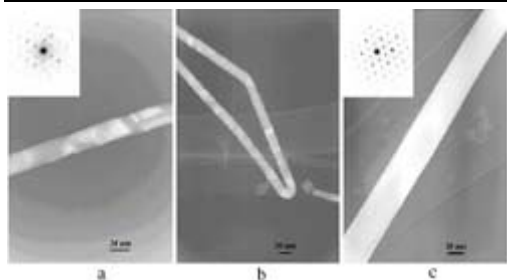
The wires possess cylindrical shape, and smooth and homogeneous contour (Fig.1). By varying the deposition conditions, both poly-crystalline (Fig. 2a and 2b) and single-crystalline structure (Fig. 2c) are synthesized. The latter has a [110] preferred orientation while the former features a remarkable ductility (Fig. 2b). By using scanning tunneling microscopy, the research team made an analysis, in which, the grain size of the poly-crystalline wire is about 10 nm (Fig. 3).



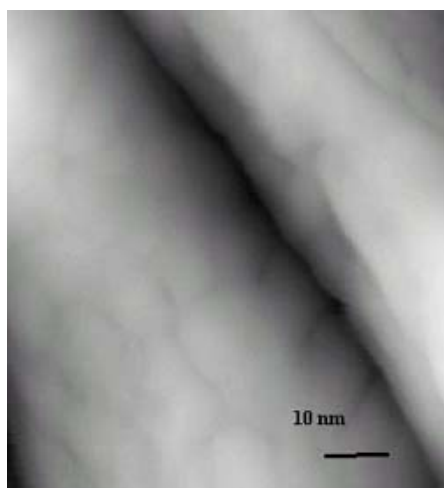
(The scanning electron microscopy (SEM) images of the single-crystalline gold nanowires.)



(The scanning electron microscopy (SEM) images of the poly-crystalline gold nanowires.)



(Fig. 2 The images of high-resolution transmission electron microscopy (HRTEM) of poly- and single-crystalline wires. The inset shows selected area electron diffraction (SAED) patterns.)



(Fig.3 The poly-crystalline image of the gold nanowires under scanning tunneling microscopy (STM).)

China launches third-generation search engine

(Xinhua Net, 2006-04-20)

Inquiry about the weather, search for the route you want, read news and get information, all these are available as China launched the third generation (3G) search engine.

At the press release on April 18, chinasearch.com introduced "IG 1.0" (Internet Gateway) software, a brand-new concept.

Chen Pei, CEO of chinasearch.com said that as a comprehensive combination of web 2.0 applications, IG 1.0 is based on the 3G search engine technique and mainly targets at individual users. It facilitates the retrieval of real-time information and customized interactive services. Chen noted that IG caters to demands of individual users, making the search service a portal.

The first generation of search engine, like Yahoo.com, provides directories of websites of various categories. The second generation, like Google, is based on key words. Insiders believe the third generation of search engines should be more customized, smart, interactive, and compatible.

IG has many different versions specifically for students and for business purposes. Meanwhile, users can also recommend what they are interested in to their desktops and will receive personal online guide.

All the IG users will have their own accounts and password, which ensure a safer online search.

World's smallest generator developed in China**(People's Daily, 2006-04-25)**

The world's smallest generator, Nano-generator was recently developed at China's National Center for Nanoscience and Technology.

The research is done by Professor Wang Zhonglin, dean of the Department of Advanced Materials and Nanotechnology at College of Engineering, Peking University and Dr. Song Jinhui. The research work was published on the Science magazine on April 14.

Experts predict that there is a broad prospect for the application of Nano-generator in fields of biomedicine, military purposes, telecommunication and wireless sensing.

1.5 Structure of Matter

1.6 Transport and Space

China completes radio telescope for moon-probe project**(Xinhua Net, 2006-04-04)**

Chinese scientists on Monday completed the main part of a high-tech radio telescope which will serve China's ambitious moon-probe project scheduled for launch in 2007.

The 45-meter tall telescope weighs 400 tons and measures 40 meters in diameter of the antenna. It's located in southwest China's Yunnan Province and is the country's second largest radio telescope. The largest is being built in Beijing.

According to Li Yan, director of Yunnan Observatory of Chinese Academy of Sciences, together with two radio telescopes already set up in Shanghai and northwest China's Xinjiang Uygur Autonomous Region, China now has four large radio telescopes which are 2,000 to 3,000 kilometers apart from each other.

The telescopes will form a comprehensive earth-based research and survey network that will be able to detect, track and retrieve data sent back from China's first moon-orbiting satellite, Li said.

Located on top of the 2000-meter-tall Mountain Phoenix in an eastern suburb of Kunming, capital city of Yunnan Province, the newest radio telescope is "superbly well positioned", the scientist said.

The construction of the telescope started in August last year and will be completely installed and tested by June.

China's unmanned space shuttle to approach moon in 07**(China News, 2006-04-05)**

Vice Director-General of China's National Space Administration Luo Ge said recently that China would send an unmanned space shuttle to the moon for scientific exploration next year.

During his visit to the United States, Luo Ge said China is now preparing to do several exploration projects to the moon by launching unmanned space shuttle. China intends to launch an unmanned

space shuttle to the moon next year, which will orbit around the moon at close distance. It is expected that the unmanned space shuttle will land on the moon in 2012 and take some samples back in 2017.

Luo also revealed that before 2011, China plans to produce a low-cost carrier with a loading capacity of 25 tons. The carrier will cause little pollution to the environment.

In his meeting with NASA Administrator Michael Griffin, Luo Ge said China has carried out some cooperation in space projects with countries in Europe, Russia, Brazil, Nigeria and Venezuela. He expressed his regret that the United States had not carried out any cooperation with China in space and said this showed that the United States was not open-minded in this field as it was twenty years ago.

China,US may team up in manned spaceflight

(China News, 2006-04-07)

Chinese and US spaceflight officials lately revealed that the two nations will hopefully start cooperation in manned spaceflight, and China's "Shenzhou" spacecrafts can send American astronauts to the International Space Station.

An official of the US Center for Strategic and International Studies disclosed that manned spaceflight is probably the first project of Sino-US spaceflight cooperation. "The US is now using Russia's Soyuz spaceship to replace its own out-of-use spacecraft, while China's 'Shenzhou' spacecrafts could serve as the backup of Soyuz to carry US astronauts to the International Space Station," indicated the official.

During a visit to China this January, US representative Mark Kirk expressed the hope that the Chinese government study technological feasibility of "Shenzhou" spacecrafts' docking with the International Space Station for rescue purpose in case of emergency.

During his visit to Washington on April 3, China National Space Administration Deputy Director General Luo Ge stated that China and the US have possibility to cooperate in three fields, namely space science, space application and personnel exchange and training. Both a top three country competent of practicing manned spaceflight, China and the US will achieve "win-win" through their teamwork.

According to spaceflight experts, besides joining hands in manned spaceflight programs, China and the US are expected to build partnership in such fields as commercial satellite trade and space debris monitoring.

China to launch Shenzhou-7 in 2008

(Xinhua Net, 2006-04-10)

China has begun production of the rocket carrier for the launch of Shenzhou-7 spaceship in 2008, a senior project official has announced.

Jing Muchun, chief designer of the launch vehicle system of China's Manned Space Program, told China Central Television that procurement and production of the parts for the rocket carrier had commenced.

Jing said better quality parts would be used for the rocket carrier and scientists would upgrade sections to improve its reliability.

They are also considering adding more cameras, he told a news program.

Under the manned space program, Chinese astronauts will conduct space walks and rendezvous in

space during the second stage of the program starting with Shenzhou-7.

The targets for the second stage will be reached during the country's 11th Five-Year Program period (2006-2011).

Two Chinese astronauts made a five-day space journey last October.

China's first astronaut, Yang Liwei, made a 21-hour orbital tour aboard Shenzhou-5 in October 2003, making China the third country after the United States and former Soviet Union to travel into space.

China making criteria for female astronaut selection

(China News, 2006-04-10)

China is drawing up criteria for female astronaut selection, said Yang Liwei, the first spaceman in China, when attending the opening ceremony for the China manned spaceflight exhibition in Chongqing.

"Recruiting female astronauts is a trend of the development of space exploration and China has the capability of cultivating female astronauts," said Yang Liwei, "At present, China is making criteria for female astronaut selection."

When asked whether he would take part in another spaceflight, Yang said, "I am in good physical condition and ready for another mission at any time. In order to help more astronauts go into the space, I have engaged myself in selecting and training new astronauts."

"I am ready to accept whatever missions assigned by our people." Yang Liwei said confidently.

Carrier rocket for Shenzhou VII under development

(China News, 2006-04-11)

China Academy of Launch Vehicle Technology (CALT) recently revealed that the carrier rocket which will shoulder the responsibility for the launch of the Shenzhou VII spaceship has begun research and development. According to schedule, the rocket will be launched in 2008.

A Long March 2F carrier rocket will continue to be used to launch the Shenzhou VII spacecraft. Previously, this type of rockets has already sent six Shenzhou spaceships to the space and has a solid technological foundation. Currently, purchase and production for the components and parts of the new carrier rocket has started. Jing Muchun, chief designer of the rocket system for China's manned spaceflight program, said that components and parts of higher quality would be used for the new rocket. Taking into account experience of the previous launches, scientists will improve the rocket partially in order to further enhance the reliability. In addition, they are considering installing some cameras on the rocket.

With the Shenzhou VII spaceship as a mark, China has started the second-phase manned spaceflight program. During this phase, China will strive to successively realize goals such as spacewalk and space rendezvous and docking. All launchers for missions required by the second-phase program will be Long March 2F carrier rockets.

Jing said that China will launch five to six carrier rockets during the 11th Five-Year Plan period when it will basically complete the second-phase manned spaceflight program and finish manned rendezvous and docking finally.

China has mastered core maglev technology

(China News, 2006-04-13)

Chen Liangyu, Secretary of the CPC Shanghai Municipal Committee, said in Shanghai on Tuesday that China has mastered the core maglev technology.

In recent years, Shanghai's economic and social construction has achieved steady development, and Chinese scientists have captured and mastered more and more top global technologies.

Shanghai Maglev Demonstration Line, the world's first high-speed maglev transportation system for commercial operation, was completed and opened to traffic a few years ago.

Chen indicated that during over three years of continuous operation, Chinese scientists have solved many difficult problems with unceasing efforts and have fully mastered the operation and maintenance technologies of high-speed automatic maglev transportation systems, signifying that China has become one of the few countries capable of developing and manufacturing maglev trains and opening a new page for China in world maglev development history.

Making arrangements for the 36th COSPAR Scientific Assembly (CAS, 2006-04-21)



To make preparations for the forthcoming 36th Scientific Assembly of COSPAR (the Committee on Space Research under International Council for Science), the Local Organizing Committee (LOC) convened on April 13 in Shanghai. The meeting was presided over by CAS Vice President JIANG Mianheng, who is also LOC chairman of the Assembly.

According to sources, the Assembly, to be held from July 16 and 23 in Beijing, has received more than 2,600 abstracts with an anticipated about 1500 participants from more 55 countries across the world. All major space research institutions in the world, including NASA, ESA, JPL and CNES, will have participants in the conference.

Established by the International Council for Science in 1958, COSPAR serves as a forum for the presentation of the latest scientific results, for the exchange of knowledge and also for the discussion of space research problems. The topics of this assembly covered major achievements in such fields as space-earth sciences, studies of planets and the solar system, space physics, space astronomy, micro-gravity science, space life sciences, and fundamental physics in space.

The Assembly will provide an opportunity to meet scientists from different countries in order to discuss and exchange ideas about space research, says Prof. Jiang.

China to make breakthroughs in space technology (People's Daily, 2006-04-21)

China Aerospace Science and Technology Corporation (CASTC), one of China's backbones in national defense science, will make breakthroughs in key technology development in the field of

moon probe, manned space flight and high-resolution Earth observation system in the 11th Five-year Plan Period (2006-2010), according to Rui Xiaowu, vice president of the CASTC.

According to Rui, CASTC will improve its innovation ability to promote the modernization process of the national defense and sustainable development in space technologies by building innovation-incentive system, developing core technologies and cultivating more talents.

During the 11th Five-Year Plan, CASTC will focus on the construction of research centers in important fields and transform parts of its key technologies into China's first-class, world renowned ones.

CASTC will also put more efforts on development of core software, materials, component, advanced propellers and the standard system.

In the past five years, CASTC achieved 129 landmark results in 61 key technologies. It also made a big stride in manned space flight and new generation carrier rocket technology, said Rui Xiaowu.

So far, China has independently developed its own strategic and tactical missiles. About 70 homemade and 28 foreign satellites have been launched by the Long March rockets. Some satellites have been exported to Nigeria and Venezuela.

Shanghai maglev train completes successful trial

(People's Daily, 2006-04-26)

After nearly two years of commercial trial operation, Shanghai maglev train has been checked and accepted by the government on April 26, and will be put into official operation soon.

The appraisal committee members from the National Development and Reform Commission, Ministry of Science and Technology as well as Shanghai municipal government held that the project tallies with national regulations and demands, and the trial run is successful.

"The project has given us a thorough understanding of the maglev structure, techniques and localization. Meanwhile, we have also mastered rail technology, which is one of the four core technologies, and made breakthroughs in homemade equipment. Now we can operate and maintain the system by ourselves. Apart from that, we have accumulated rich and valuable experiences in terms of R&D, design, construction and operation," said Zhang Xiaoqiang, Vice Minister of National Development and Reform Commission.

Zhang further pointed out that the development of maglev traffic can help form a high-tech industry group so as to push forward the advancement of other industries such as manufacturing, metallurgy, mechanical and electrical equipment, information, trains as well as construction.

Shanghai maglev is the world's first commercial maglev traffic railway, with a total length of 29.873 km and a designed highest speed of 430 km/h. It was put into commercial test run in May 2004.

The accumulated mileage for safe operation has exceeded 2.5 million km by the end of April 2006, carrying some 6.5 million visits and going through bad weather like snow and hard wind.

Shanghai-Hangzhou Maglev begins feasibility study

(China News, 2006-04-27)

National Development and Reform Commission Deputy Director Zhang Xiaoqiang revealed in an interview after the Shanghai Maglev demonstration line completion and acceptance check ceremony on April 26 that the Shanghai-Hangzhou Maglev project is now in the stage of comprehensive, in-depth feasibility study. With the acceleration of China's industrialization and

the elevation of independent innovation abilities, the cost for the Shanghai-Hangzhou Maglev will be greatly reduced.

The State Council approved the proposal to construct the Shanghai-Hangzhou Maglev this February. Zhang Xiaoqiang indicated that to begin the construction of this maglev line, many crucial problems, including the overall investment, the composition of investing entities and operation and management modes, had to undergo in-depth studies.

After more than ten years of argumentation, the Beijing-Shanghai high-speed railway program was finally determined. The proposal to build high-speed wheel rails got the upper hand, while the maglev plan was pulled down.

China to map the moon for lunar probe

(China News, 2006-04-27)



(China's mapping technology targets the moon during the 11th five-year plan period.)

During the period of the 11th five-year plan, the development of China's surveying and mapping technologies will focus on solving key technological problems of major mapping projects, and the research on the lunar mapping technology is an important part.

The abundant resources on the moon will be an energy and resource treasury for man in the future. At present, no country has mapped an all-sided 3D image of the moon. Some Chinese experts said that the surveying and mapping will meet the needs of lunar probe, and the research on the lunar surveying and mapping technology will be based on the development of earth observation technologies to provide technological support for lunar probe.

The research on the lunar surveying and mapping technology emphasizes the space positioning technology and the remote sensing mapping technology. During the 11th five-year plan period, China plans to survey the 3D topographical features, land forms and geological structure of the surface of the moon and also get all-sided 3D images and high-precision stereograms in order to have a better knowledge of the moon.

Lunar satellite expected to be launched next April

(People's Daily, 2006-04-27)

China's first lunar satellite is expected to be launched in April, 2007, said Luan Enjie, chief commander of China's lunar exploration project at a symposium on China's moon exploration program in Hong Kong on Wednesday.

The lunar orbiter program, dubbed Chang'e project, will be carried out in three stages, which will lay foundations for China's follow-up manned lunar missions, said Luan.

According to Luan, planning for the lunar exploration project has been underway since January, 2004. In 2005, China conducted a range of researches and experiments on sample products, which

have been completed by yearend.

Chinese scientists have overcome many difficulties after one-year exploration and research. But anyway, China plans to use one year to finish the lunar satellite manufacturing. If there were no major problems, China's Chang'e satellite will be launched in April, 2007, said Luan.

After China successfully launched Shenzhou V and Shenzhou VI, the country started the moon probe project afterwards, China's achievements will surely enhance its technological strength and influence in the international community, said Luan.

According to Luan, the lunar probe program will be accomplished in three stages, namely lunar orbiting, landing and returning.

In the first phase, an orbiting satellite will be sent in around 2007. Following the fly-by project, China will proceed to soft-land an unmanned vehicle on the moon to explore the lunar surface in around 2012. In the last phase, scientists plan to scoop up and analyze lunar samples returned to Earth in 2017.

Remote sensing satellite successfully launched

(Xinhua Net, 2006-04-28)



(Carrier rocket Long March 4-B, carrying Remote Sensing Satellite No. 1, blasts off at Taiyuan Satellite Launch Center in north China's Shanxi Province, April 27, 2006.)

China successfully launched a remote sensing satellite and put it into preset orbit Thursday morning, the first of a series of space launches planned by China this year.

The Remote Sensing Satellite No. 1 blast off a top a Long March 4-B carrier rocket from the Taiyuan Satellite Launch Center in North China's Shanxi Province at 6:48 a.m. Thursday.

An official with the Shanghai Academy of Spaceflight Technology, a major developer of both the satellite and the rocket, said the 2.7-ton satellite will be mainly used for scientific experiment, survey of land resources, appraisal of crops and disaster prevention and alleviation.

"China has made a good start in space launch this year. That's a nice gift for the 50th anniversary of the founding of China's spaceflight program," he said.

He revealed China will launch several communication satellites and scientific experiment satellites this year.

Thursday's launch marks China's 47th successful space launch in a row since October 1996 and the 89th mission of Long March series of carrier rockets.

2 News from Universities

Interview, new trial for Chinese universities' enrollment

(People's Daily, 2006-04-05)

At its 101st founding anniversary, Chinese prestigious Fudan University tried a new method to enroll 300 freshmen by interviewing.

More than 1,200 senior high school graduates, out of nearly 6,000 applicants, have got the precious interview opportunities. A 75-minute interview by a five-member group for each student will lead to the conclusion: Is the student wanted by Fudan?

Backed by the State Ministry of Education, two universities in China's economic powerhouse Shanghai have become "trailblazers" for national university entrance exam this year, and the other university is Shanghai Jiaotong University.

Educational experts wish interviewing, the new form of college entrance exam, will release the pressure of once-a-year national college entrance examination which falls on June 5 to June 7, and is attended by approximately 8 million high school students.

Scores of the single exam has been the only resort for all Chinese universities to select their freshmen.

Zheng Fangxian, director of the enrollment office of Fudan University, told Xinhua: "Even the perfectly designed test paper could hardly detect the comprehensive quality of an examinee which includes learning potential, moral ethics, social communications and practical ability."

China has kept on promoting "quality education" around the country in the past few years, aiming to liberate students from "exam oriented education" prevailed in the past decades.

The so-called quality education encompass ample contents including healthy bodies and steady psychological character, besides profound knowledge learned in classrooms.

The exam-oriented education has equipped Chinese kids with techniques of dealing with various exams, but people have found that the young generation learned far from enough concerning their future life and career as well.

"It's hard to implement quality education in middle and primary schools because the 'national college entrance exam baton' has not changed its direction," said Yang Xiaowei, an expert with the East China Normal University.

Yang believes that the reform launched by Fudan will efficiently promote quality education in middle and primary schools, as well as setting an example for other university on student enrollment reform.

Fudan University plans to enroll 300 students by interviewing this year, all of whom are from Shanghai, accounting for 10 percent of the freshmen it will enroll this year.

In 2005, more than 8 million Chinese students participated in the national college entrance exam. Many other universities have showed great interests to the new form of enrolling students by interviewing instead of scores on paper-based tests. However, Zheng noted that in the future period, national entrance exam remains the main form for Chinese universities to select freshmen.

SW China University leads campaign to teach Chinese abroad**(People's Daily, 2006-04-10)**

Yunnan Normal University in Southwest China is leading country's campaign to train and dispatch volunteers to teach Chinese abroad, a dean with the university said Sunday.

The university in Yunnan Province has sent 119 volunteers to teach in Thailand since 2001, said Wu Yinghui, dean with the university's Institute of Chinese and International Studies.

It was appointed by the China National Office of Teaching Chinese as a Foreign Language in 2004 as one of the eight universities to train volunteers to teach Chinese overseas and has dispatched more volunteers than any other university.

Wu said most of the 119 volunteers were graduates from the journalism and Chinese faculties.

Due to the increasing international demand for Chinese teachers, Yunnan Normal University plans to dispatch more volunteers to the Republic of Korea, Vietnam and Malaysia, Wu added.

China began in 2004 to recruit volunteers to teach Chinese overseas in an attempt to meet the global demand to learn the language.

Volunteers need to pass an examination before a short training course, signing an agreement with the government and teaching overseas. They are subsidized 400 U.S. dollars every month and enjoy medical and accident insurance when they work overseas.

Their contracts run from six months to two years.

Tongji inks deal with Italy for hybrid motorcycle**(Xinhua Net, 2006-04-21)**

Tongji University will team up with several Italian auto manufacturers to research hybrid motorcycles that are expected to significantly reduce emissions and save energy, Tongji officials revealed yesterday.

Tongji signed an agreement with the Italian Ministry for Environment and Territory yesterday to set up a Sino-Italian Sustainable Urban Mobility Research Center in the city.

Tongji researchers have already done some theoretical work on the hybrid motorcycle, but have yet to build a prototype. The motor will be designed to use multiple fuels - mainly electricity plus gasoline or natural gas.

It will be able to switch between the two power systems depending on the situations. If the motorcycle is waiting at a red light or running at a very low speed, the motor will shut off the gasoline engine and rely simply on electrical power.

That is expected to ease environmental pollution by reducing emissions by about 30 percent, Tongji officials said.

During the acceleration process, the electric engine is also able to help the gasoline engine reach a high speed within a short period. That is expected to reduce power consumption and improve engine efficiency by 30 percent, researchers said.

The Italian government will put up 1 million euros (US\$1.23 million) to build 10 prototypes over the next 18 months.

3 Innovation Management

CAS basic research carves a niche in world science

(CAS, 2006-04-04)



The year 2005 witnessed a number of valuable results achieved by CAS scientists in basic research, including the discovery of X1835, a possible new particle scientists had cast about for over the past several decades in their high-energy physics experiments, a research breakthrough in macroscopic quantum manipulation at the critical temperature of superconductors, and remarkable progress in studies on such new materials as metallic plastic and metallic glass.

For the first time in the world, CAS researchers succeeded in controlling the spin state of a single molecule, provided the most convincing evidence yet to prove the existence of a super-large massive Black Hole at the center of our galaxy, precisely measured the distance between the earth and a large-mass molecular cloud core about 6,370 light years away, and revealed a butterfly-shaped structure in a celestial body's polarization image.

Besides, several significant advances have been scored in self-assembly of nano-structures and their materials and properties, super-high density information storage, the eigenvalue inequalities in the biharmonic operator's Buckling Problem, the adaptive finite element method for solution to non-linear partial differential equations, and micro-scale mechanics and its trans-scale correlation.

In addition, they brought to light the key role played by the activity of the GSK protein in determining a neuronal polarity, a new principle in regulating opioid analgesia, a nuclear function of beta-Arrestin1 in regulation of histone acetylation and gene transcription, the regulating mechanism in governing the methylation of the H3K79, a chromosomal histone in the body of a leukemia patient and its pathological role in the murderous disease as well as reinforcement of memory and learning in *Drosophila* by stimuli combining smell and signals.

As a result of participating in the International Human Genome Project, CAS scientists as main participants completed 10% of the first-staged work of the international HapMap project, succeeded in cloning rice's anti-salinity gene, the model of a climatic system and their simulation and research on the predictability of weather forecast have been adopted and spoken highly by the international community of mathematicians and atmospheric physicists.

CAS scientists also consolidated their leading position in the evolutionary research of primitive mammals, the originating time of land-based eco-systems, the reasons responsible for the biological mega-extinction at the end of the Permian period. The geological cross-section on the southern bank of Penglitan in Laibin County, Guangxi Zhuang Autonomous Region and the baseline of the D-section of the Permian-Changxing formation in Mt. Meishan in Changxing

County, Zhejiang Province were named to be 'two golden spikes' in the capacity of world-recognized a global chrono-stratigraphic representatives as a pair of Darrwillian Global Stratotype Sections & Points (GSSPs) by the International Union of Geological Sciences, becoming another honor conferred to Chinese geology.

**China continues Third World science research support
(People's Daily, 2006-04-06)**

The Chinese Academy of Sciences (CAS) has pledged to continue its joint scholarship program with the Third World Academy of Sciences (TWAS) to encourage scientific research in developing countries.

At a meeting of TWAS Chinese members Thursday morning, Lu Yongxiang, TWAS vice-president and CAS president, said the developing world valued the experience of China's reform and development in the last two decades.

"Their scientific communities are eager to conduct research with Chinese scientists," Lu said.

The CAS-TWAS scholarship program aimed to provide research opportunities for about 50 fellows annually in the next five years.

The first group of 44 recipients in 2005 were from 17 developing countries including Pakistan, India, Nigeria and the Democratic People's Republic of Korea.

In the past two decades, the Chinese scientific community has worked closely with the TWAS, which listed 14 Chinese research institutions as centers of excellence.

The TWAS now has 811 academicians, including 15 Nobel laureates, who mainly come from the developing countries.

**Reform ensures CAS to be backbone in China's innovation initiative
(CAS, 2006-04-10)**



China's ambition to become an innovation-oriented society has received close worldwide attention, and people are interested to know in what way that drive's aim would be achieved.

The trajectory set by CAS efforts to reinvent itself through the "Knowledge Innovation Program" (KIP) helps ensure a central role for CAS in China's emergence as a major player in international research and innovation, observes a group of US researchers recently.

Partially supported by US National Science Foundation, Prof. Richard P. Suttmeier, an expert in political science from the University of Oregon, and his two co-workers from State University of New York carried out studies on KIP at CAS in 2004 and 2005. Based on their interviews with senior officials at CAS headquarters and visits to CAS institutes across China, they wrote an article entitled "Knowledge Innovation" and CAS in the April 7 issue of *Science*.

Since the initiation of KIP in 1998, the article notes, CAS has managed to reduce its organizational duplication and redefine its orientations and missions. Revitalization of the human resources in the Academy has been approached by recruitment of talented people and laboratory leaders from scientists working abroad and from young researchers in China. New evaluation system has been introduced. There are also a major investment in upgrading facilities and equipment. As a result, CAS research outputs have increased by more than an order of magnitude.

However, the article is quick to pinpoint some of the challenges CAS might face in the future. For instance, imposition of excessive top-down requirements on the research community could discourage creativity and bottom-up innovation, the article warns. It also worries that multiple functions that CAS assumes can threaten maintenance of clear organizational focus. According to the paper, other questions that CAS might have to deal with in its third phase of KIP include: How to encourage the development of a culture of creativity where risk-taking, initiative, and new ideas are supported and rewarded? How should CAS set priorities related to its stakeholders and develop an organizational structure that fits diverse needs?

CAS scores remarkable hi-tech feats in 2005

(CAS, 2006-04-12)



CAS has satisfactorily fulfilled a group of major tasks in strategic hi-tech field last year, announced CAS Executive Vice President Bai Chunli in his work report at a recent CAS annual conference. Some of the examples of the achievements are listed below.

In the manned space flight of Shenzhou-6, CAS was commissioned to a wide range of key research tasks, including the overall design scheme for its application system, the development of its payloads, general equipment and large-scale experiments, in-orbit operation management and space environment prediction, making an important contribution to the sound performance of China's manned space flight. CAS has successfully accomplished the management of the business operation for the two satellites in the Double Star Program, TC-1 and TC-2, and their payload's long-term in-orbit operation. It undertook the trans-regional or trans-national reception, process and analysis of the satellite-issued data, obtaining cutting-edge and original research results in this aspect. The design of the Godson-2E and Godson-2D microprocessors has been completed and put into tape-out stage. CAS scientists succeeded in developing some core technology and prototype products with its own patent rights in the field of special-use computers and related algorithms for bioinformatics applications. The Academy is at the cutting-edge in the field of some aspects, CAS

researchers now are at the frontline of the international community in the sequence reconstruction algorithms, repetitive sequence discovery, protein-protein interaction networks. China's first commercial unit for the production of isopropanol via direct hydration of propylene under medium pressure was successfully at its first trial operation. The capacity of the newly built unit is 30,000 tons isopropanol/year and the product isopropanol attained excellent grade, marking a research breakthrough in the industrial application of the new technology and its catalysts in this regard. And the development of a prototype for the 10.5kV/1.5kA three-phased high-temperature superconductor current limitation device, which has been in trial operation at a 10.5kV grid in the Gaoxi converting station in Hunan Province's Loudi City. Its key components and technical parameters are found to reach the world advanced level.

Senior scientists warned against exploiting juniors

(People's Daily, 2006-04-16)

A senior professor has warned scientists against undermining the principles and purpose of China's highest research institution by harvesting grants rather than conducting genuine research.

Scientists at the Chinese Academy of Sciences (CAS) would face stiff penalties in they were found to be seriously violating scientific ethics or even laws and regulations, said Lu Yongxiang, CAS president.

Some departments had too much power in approving projects leading to a lack of transparency, said Lu at the China Sciences and Humanities Forum.

Researchers' salaries were connected to their projects, encouraging some of them to become interested only in winning grants.

"Our academy has always opposed such conduct," said Lu, acknowledging its existence in some fields. "There's no room for it in our academy.

"We support leading scientists who make concrete and crucial contributions to the innovation of science and technology," Lu said.

He said the academy should cultivate a spirit of inquiry, an ethical culture and an ethos of precision, truth and real work.

Senior scientists should advise, help and support young scientists, instead of using their junior colleagues to do research for their own reputation and benefit.

Lu said CAS management must be democratic and transparent, and that scrutiny and criticism within the academy and media were important.

He said a lack of transparency and scientific method in the evaluation system, resource shortages, unreasonable allocation and exorbitant competition had contributed to bad practice.

Students had fewer opportunities to participate in research projects at universities and graduate schools, and could be exploited as cheap labor in laboratories.

Higher education should address personality development, cultivate a spirit of inquiry and involve students in more research projects at school, Lu said.

The China Sciences and Humanities Forum were initiated three years ago by Lu and Zheng Bijian, China's leading science strategist. The forum hosts Chinese and foreign leaders, as well as scholars and experts.

HK opens five research and development centers

(People's Daily, 2006-04-21)

Five research and development centers officially opened in Hong Kong Thursday to promote innovation and technology development for key industries and facilitate collaboration between the government, industry and the research.

The centers will undertake industry-oriented research in technologies demanded increasingly in the Pearl River Delta region, including automotive parts, information and communications technologies and logistics management.

Acting Chief Executive Rafael Hui said at the opening ceremony, "In the 21st century, innovation is vital to the economic development of the knowledge-based economy. To maintain Hong Kong's competitive edge, we must continue to strive for improved productivity and competitiveness."

Operating independently, the centers will provide support and solutions tailored for specific industry requirements. A board of directors and a technology committee have been appointed in each center, offering relevant industry and market expertise.

Chinese minister slaps repetitive purchases of expensive lab equipments

(People's Daily, 2006-04-28)

Chinese Minister of Science and Technology Xu Guanhua said in Beijing Friday that lack of coordination between research institutions have led to repetitive purchases of expensive laboratory equipments and caused great waste in a country shy of research fund.

As a result, large research equipments are running only 2 hours in a work day in China, while the same equipments are operating to the capacity of 13.6 hours on average in developed countries, Xu said in a report to the national legislature.

He highlighted the shocking waste of resources to lawmakers in an example of the procurement of MODIS, or moderate-resolution imaging spectroradiometer receiver, used for receiving data from remote sensing satellites, which is an expensive gadget coveted by scientists across the globe.

Even at today's price, each receiver costs 150,000 to 300,000 U.S. dollars, depending on whether it was produced in China or imported. The United States boasts of 16 MODIS receivers under its possession, which have satisfied all the needs of its scientists, while most European countries have only one for each.

But in China, 30 have already been installed and additional 50 would have been ordered according to initial plans by research institutions, the minister said.

Such practices are "hindering the country's drive to innovation and development," Xu said, noting that China's annual investment in research was just 25 billion U.S. dollars in 2004, just 8 percent of the United States expenditures.

"The current research mechanism, complicated by various government departments at different levels, is encouraging squander of valuable resources in the form of repetitive purchases of expensive laboratory equipments," Xu said.

According to Dr. Liu Chuang, director of the Global Change Information and Research Center of the Chinese Academy of Sciences, in Beijing alone, 10 MODIS receivers have been installed, and every province in China once had plans to buy at least one.

Thanks to a watchdog overseeing the purchases of expensive lab equipments set up by the Ministry of Science and Technology in 2003, the original orders for 50 MODIS receivers were slashed, and the total number of the equipments in China will be brought under 40, Dr. Liu said.

To Minister Xu, more worrisome is the lack of coordination between government departments and research institutions, which will "make the mission impossible to build China into one of the

worlds science powers," Xu said.

China has set an ambitious plan earlier this year to invigorate its scientific research, aiming to increase its total research and development expenditures to 2.5 percent of the gross domestic product (GDP) by 2020 from 1.23 percent in 2004, up to the level of developed economies and top scientific powers.

To ensure cost-effectiveness of such investments, China will break down research barriers, including those that separate military research and civil development, Xu said.

"China will also make businesses the locomotive of innovation and technological progress through policy incentives," Xu said.

4 China's International Science Cooperation

Asia-Europe meeting on ocean protection adopts cooperative plan

(People's Daily, 2006-04-02)

The technical working group meeting of Asia-Europe Meeting (ASEM) Oceans Initiative held last week in Manila has forged a stronger cooperation between Asia and Europe on marine environmental protection and scientific research, said the Philippine Department of Foreign Affairs Saturday.

The Philippines played host to the three-day meeting until Friday to draw up an action plan for the ASEM Oceans Initiative, which is aimed at increasing the protection and preservation of ocean and marine resources in the face of rapid degradation.

Participants discussed the possibility of linking up with other existing regional programs, including United Nations Environment Program, to develop programs and projects on integrated coastal and ocean management.

"They also agreed to continue discussions on ocean governance in future meetings with a view to identifying common experiences and best practices that could serve as a basis for future Asia-Europe cooperation," the foreign department said.

The meeting also acknowledged current initiatives to save the marine environment such as the adoption and implementation of the Sustainable Development Strategy for the Seas of East Asia.

"The participants likewise agreed that marine environmental protection is a much needed response to the global challenge of deteriorating conditions of the world oceans that impact on the socio-economic well-being of Asia and Europe, and that Asia and Europe have a large stake in the conservation and sustainable management of the marine environment and its resources to ensure sustainable use and socio-economic benefits for present and future generations," said the foreign department.

In addition, the participants agreed the need to employ science and technology "to better understand the ocean and its processes", while scientific research is expected to yield "best scientific information" for ocean governance, sustainable environment and use of ocean resources.

CAS to further cooperation with NSF

(CAS, 2006-04-05)



CAS Executive Vice President BAI Chunli met with Dr. Arden Bement, president of the US National Science Foundation (NSF) recently in Washington DC. On behalf of the Chinese side, he signed a memorandum of understanding for extending the protocol of cooperation in basic research between CAS, Ministry of Education, Chinese Academy of Social Sciences, and National Natural Science of China with NSF in US. The two sides also exchanged ideas about promoting cooperation in the fields of common interest.

Scientists to be more active in global research

(Xinhua Net, 2006-04-07)

Chinese scientists will take part in a series of international programmes aimed at improving health conditions in developing countries, a top scientist announced at the second global meeting of the InterAcademy Medical Panel (IAMP) in Beijing yesterday.

"With China's growing scientific strength, Chinese scientists will play a more active role in promoting global health research, especially for the developing world," said Liu Depei, president of the Chinese Academy of Medical Sciences and vice-president of the Chinese Academy of Engineering.

IAMP is an international network of medical academies of science and engineering.

The first of IAMP's health study programmes is a Perinatal Mortality Project, which will gather statistics from six different geographic regions of the world to serve as the basis for a comparative analysis. The study aims to find out causes of and solutions to high perinatal mortality rates in the developing world.

IAMP will also launch a Rheumatic Fever Project, which will organize experts in Africa to conduct research into better diagnostic techniques and advocate for the elimination of rheumatic fever in Africa through preventive treatments.

IAMP members unanimously endorsed the goals of the Disease Control Priorities Project (DCPP), a collaborative effort aimed at helping developing countries maximize their health investments.

In a statement issued at the conclusion of its General Assembly, IAMP member academies agreed to help disseminate and communicate their findings and encourage government officials to fund activities that will help achieve the DCPP goals.

The DCPP roadmap for improved global health covers issues including HIV/AIDS and avian influenza.

LU Yongxiang meets with Helmholtz Association president

(CAS, 2006-04-12)



On April 10, CAS President LU Yongxiang, who is also vice chairman of the Standing Committee of China's top legislature NPC, received a delegation of the Helmholtz Association of National Research Centers in Germany (HGF) led by Prof. Dr. rer. nat. Jürgen Mlynek, newly elected HGF president, in Beijing.

Lu briefed the German visitors on the CAS drive to carry out scientific research in light of national strategic needs and at the international scientific frontiers. He expressed hope that CAS and HGF strengthen bilateral cooperation in "an innovative way," suggesting that the two sides implement collaborative research on mega-science facilities and in the fields of earth science, the environment and space technology.

Chinese, Russian experts discuss cooperation in aviation

(Xinhua Net, 2006-04-16)

Aeronautics experts from Russia and China gathered Sunday for a two-day forum on cooperation in aviation and aeronautics in Xi'an, capital of northwest China's Shaanxi Province.

The forum attracted experts from the Moscow Aviation Institute (MAI), Kazan State Technical University and Samara State Aerospace University, and Chinese universities and institutions in aeronautics.

The forum, with its focus on aviation and aeronautic technologies, aims to promote exchanges in these areas between China and Russia.

The forum is being hosted by Northwestern Polytechnic University (NPU), a leading Chinese engineering university.

"With the good relationships between the NPU and Russian aviation universities, we can strengthen exchanges and cooperation," said Gennady A. Sokolovskiy, a professor with the MAI.

The forum, co-sponsored by the three Russian institutions and the NPU, is a listed event in the "Year of Russia in China".

China, U.S. sign agreements to promote science, technology cooperation

(People's Daily, 2006-04-19)

China and the United States on Tuesday signed several agreements on expanding bilateral cooperation in science and technology.

Xu Guanhua, China's Minister of Science and Technology, and John Marburger, Science Adviser to President George W. Bush, signed in Washington a protocol on extending an inter-governmental agreement on cooperation in science and technology, and a memorandum of understanding.

The two officials also exchanged information on newly announced strategies and plans in their

respective countries, aimed at boosting scientific and technological development.

Also on Tuesday, Xu signed with U.S. Secretary of Health and Human Services Michael Leavitt a memorandum of understanding on health and medical sciences cooperation.

The agreement is designed to expand cooperation between the two countries in research of AIDS, infectious diseases, traditional medicine, vaccine-preventable diseases and other medical sciences.

The agreements were signed as Chinese President Hu Jintao arrived in the U.S. west coast city of Seattle on Tuesday at the beginning of his first state visit to the United States. Seattle is the first stop of Hu's U.S. trip.

China and the United States signed the inter-governmental agreement on cooperation in science and technology in January 1979.

Since then, scientific and technological cooperation between the two countries has increased in scope and depth.

Members of CAS and CAE visit US for joint research project (CAS, 2006-04-20)



At the invitation of the US National Academy of Sciences and the US National Academy of Engineering, a delegation of members of CAS and CAE (the Chinese Academy of Engineering), headed by Prof. ZHAO Zhongxian, chairman of the Committee for Consultation and Evaluation of the CAS Academic Divisions, visited Pittsburgh and Los Angeles from March 26 to April 7.

With an objective of conducting the second-phase research of a Sino-US joint project on urbanization-energy-clean air, the delegation, which included seven CAS or CAE Members, will make a comparative study between the two US cities with Dalian and Huainan in northeast China's Liaoning and east China's Anhui provinces, respectively. Based on the studies, a set of scientific management measures will be explored for policy makers regarding sustainable development.

China, UNDP agree on rural technology transfer project (People's Daily, 2006-04-20)

The Chinese government and the United Nations Development Program (UNDP) have agreed on a project to provide innovative technologies and expertise to poverty-ridden rural areas in China.

With three million U.S. dollars from the Ministry of Science and Technology (MOST) and one million U.S. dollars from UNDP, the four-year project, titled "Alleviating Rural Poverty through Innovative Technologies Transfer," will set up technical task forces to introduce to farmers both

better technologies and innovative organizational methods for farmers to receive tailor-made technological services to increase their income.

MOST Vice-Minister Liu Yanhua said, "The UNDP is the first international organization that helps China to develop and enhance technical task forces to extend technologies to rural China."

Nanping City, southeast China's Fujian Province, piloted a scheme in 2002 to send technical experts to help rural people raise their earnings with appropriate technologies. Since then, 598 counties in 24 provinces nationwide have followed suit.

Khalid Malik, UNDP resident representative in China, said, "We hope that the project will help generate new job opportunities in local communities and allow agriculture technology experts from government agencies, academies, research institutes, and other organizations to participate more effectively in lifting farmers out of poverty."

19th China-Germany Joint Committee Meeting for S&T Cooperation held in Berlin (MOST, 2006-04-29)

The 19th China-Germany Joint Committee Meeting for S&T cooperation was held in Berlin, Germany, on April 5, 2006. SHANG Yong, Vice Minister of Science and Technology of China, and Frieder Meyer-Krahmer, State Secretary in the German Federal Ministry of Education and Research, led their respective delegations.

Vice Minister SHANG gave his German counterparts a detailed account of the "Outline of China's National Medium and Long Term S&T Development Plan (2006-2020)", explaining China's S&T development strategy of building China into an innovative country and the content of the Outline and its influence upon Sino-German S&T cooperation. At the conference, reports on progress of bilateral cooperation were delivered to the Joint Committee by the project steering committees in professional areas like laser technology, communications and information technology, geological study, marine research, eco-research and environmental technology, bio-technology, cultural relics protection, etc. Both the Chinese and the German sides have agreed to enter into cooperation in key areas in accordance with the S&T development plans of the two countries, and extend bilateral S&T cooperation to areas such as clean energy, renewable energy and the life sciences.

Besides, Vice Minister SHANG Yong held talks with Dr. Annette Schavan, Federal Minister of the German Ministry of Education and Research, where both sides stressed the importance of variety in the types of long term cooperation and reached an agreement to expand into new areas of cooperation within the framework of governmental S&T cooperation, particularly cooperation in clean energy, renewable energy and the life sciences. Vice Minister SHANG Yong gave Minister Annette Schavan a brief account of the "Outline of China's National Medium and Long Term S&T Development Plan (2006-2020)" and China's S&T development strategy of building China into an innovative country. China would further strengthen S&T cooperation with Germany in the fields of energy, environmental protection and high-tech; China would continue to improve the protection of intellectual property rights (IPR) and hope to achieve win-win cooperation between both sides.

Vice Minister SHANG Yong also met with Jörg Hennerkes, State Secretary of the German Federal Ministry of Transport, Building and Urban Development, and Matthias Machnig, State Secretary of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. The two sides exchanged ideas of cooperation in fields such as the Galileo Project, magnetic levitation, utilization of renewable resources in the area of transportation and the research and

development of renewable resources and clean development mechanism (CDM).

China and Germany established diplomatic relations in 1972 and S&T cooperation relations in November 1978 by signing the China-Germany S&T cooperation agreement. For nearly 30 years since then, the S&T cooperation between the two countries has been steady in progress, extending to ever broadening scopes and depth, with the following distinguishing features:

1. On the basis of the agreement of inter-governmental cooperation, a series of cooperation agreements and protocols have been signed between corresponding sectors, national S&T organizations, and science foundations of both countries, whereby a situation of multi-level, multi-channel, and multi-mode S&T cooperation centered, with inter-governmental S&T cooperation as the main channel;
2. The content of cooperation is becoming richer and richer, with the expanding areas of cooperation. To date, bilateral cooperation covers almost all key areas of science and technology, from basic research to applied research, from traditional areas of energy, environment, agriculture and health to high-tech areas of aerospace, information technology, bio-technology, new materials, advanced manufacturing and automation;
3. Modes of cooperation are getting more varied. In addition to sending visiting scholars to each other and jointly holding symposiums and workshops, new modes of cooperation have emerged such as setting up “groups of young scientists”, “joint laboratories” and “joint research institutes”;
4. Besides cooperation between research institutes and universities, both countries have paid great attention to absorbing industrial enterprises into cooperation, which has brought out obvious results in the fields of laser, advanced manufacturing technology and renewable energy.

5 Miscellaneous

Great Wall not visible from space

(Xinhua Net, 2006-04-04)

You can't see the Great Wall of China from space, Chinese astronaut Fei Junlong told students in Shanghai Monday, perhaps finally killing a myth that has existed for decades.

Fei and his companion Nie Haisheng, who were aboard Shenzhou VI during China's second manned space mission last October, attended the opening ceremony of a space exhibition at the Shanghai Science and Technology Museum Monday.

They didn't talk to the press, but did meet with primary and middle school students to answer some of their questions.

"We couldn't see the Great Wall from space," Fei said, noting that from space there is little difference between the Great Wall and its surroundings.

The Great Wall has long been noted as the only man-made object to be visible from space, despite several American astronauts denying the claim.

More than 100 artifacts related to Shenzhou VI went on exhibition at the museum Monday. The show will run through April 16.

Students again make beeline to US colleges

(People's Daily, 2006-04-05)

More than four years since the September 11 attacks on its soil, the United States is relaxing its strict visa requirements and many Chinese students see this year the best time to apply to US universities.

At the same time, growth in the number of Chinese students in the United Kingdom is slowing for the first time, according to some experts. The London-based Financial Times reports a drop in the number of Chinese students and predicts the decline will be permanent.

British educational officials reject suggestions that numbers are falling, although students did tell China Daily that there was room for improvement in the recruitment strategies of British universities in China.

British universities should, the students said, publicize themselves better in China, and rethink perceptions of Chinese graduates in China, if they wish to expand their market share of Chinese students.

"They have to do so quickly. Otherwise, a number of those who feel that the expected returns from some degrees have not kept up with the huge increase in fees will choose to stay home or turn to the US, which is being more active than ever in reaching Chinese students," said Pang Shaohong, who is applying to study in the United Kingdom.

The United States has been more proactive about promoting its educational programmes in China, and will soon bring in changes to its visa regulations for Chinese students, according to Frank Mok, US-China Education Resource Coordinator of the US Embassy in Beijing.

They can start applying for a US visa 120 days before their programmes begin, instead of the 90 days allowed now. They can also arrive in the US 45 days ahead of that date, 15 days more than now, he said.

The tightening of visa requirements since September 11 is frequently cited by Chinese students as a deterring factor.

"We have seen too many rumours on the street and too many eligible students who gave up the chance to study in the US, choosing to go to other countries," said Mok.

The number of Chinese studying in the United States has been around 60,000 a year since 2001. During the same period, British universities enjoyed a so-called "Chinese bubble." Chinese enrolments have skyrocketed in the United Kingdom, from 10,000 in 2001-02 to around 53,000 in 2004-05, according to Jazreel Goh, education marketing director of the British Council in Beijing. But London's Financial Times points to a "steep fall in the number of Chinese students studying in Britain, which represents a permanent reverse to decade-long growth."

A survey released in February by Universities UK, an umbrella organization for 121 universities and colleges, found that while international recruitment by some universities has held up well this year, others have received far fewer students than they budgeted for, according to the Financial Times report.

Statistics from the website of Britain's Universities and Colleges Admissions Service (UCAS) show a 13.6 per cent fall to 2,766 applications from Chinese students received by the January 15 closing date for admission to undergraduate degree courses in the United Kingdom beginning in autumn 2006.

But Goh from the British Council disagreed with reports of a drop in numbers, saying the UCAS figures can be inaccurate. "The UCAS didn't count the more and more Chinese undergraduate programme applicants who get into direct contact with admission offices of British universities and in this way bypass the UCAS," she said.

"With their high-quality degrees and long histories, British universities are still a priority choice for Chinese students," Goh said.

Chinese student Pang Shaohong disagrees. The Nanjing college student believes many Chinese students and their parents are disillusioned with the UK higher education system. Pang said that five years ago, many people in China "assumed that all British universities were of equal standing and quality, similar to Oxford and Cambridge."

But he said attitudes to UK universities are changing and that Chinese students now "realize that the universities are actually very diverse." Pang is applying for a UK graduate programme when he graduates from a college in Nanjing, capital of East China's Jiangsu Province, in 2007.

"It will be too difficult for me to find a job with my undergraduate degree, and a foreign higher degree may help," he said. "A good British degree sounds better than an Australian one, and the UK looks more accessible than the US to Chinese students."

But Pang had trouble choosing a university in the United Kingdom. "My parents and I had never heard of any good British universities except Oxford and Cambridge when we began the application procedure," he said.

Nicolas Zhang had the same problem. The 24-year-old has an MSC in Management from the University of Bath in England and is looking for work. "Every educated urbanite in China seems able to name a list of the 10 best universities in the US, but in terms of British universities they know only the top two," he said.

"I always have to explain that my university is one of the top five in the UK when my potential bosses nod and say that its name is funny."

Chinese students can research British university rankings on the Internet and in the British Council offices in Beijing, Shanghai, Guangzhou and Chengdu, said British educational official Goh.

But Zhang says it is still imperative that lesser-known British universities publicize themselves in

China.

"They can not only recruit more Chinese students but also help their Chinese graduates find jobs by doing so," he said.

Zhang added that he is relying on the reputation of his university to distinguish himself and get away from prevailing attitudes in China about overseas study.

"A number of people here believe those students who go to Britain have little else but rich parents. They go there because they cannot enter good Chinese universities," he said.

According to Goh from the British Council, the reality is that Chinese students in the United Kingdom are mostly hard working and talented. She says those who don't do as well on British campuses only account for a very small percentage of Chinese students.

Goh also said the expansion and rise in quality of Chinese higher education is the primary reason for any possible slowdown of growth in the number of Chinese students studying in the United Kingdom in the future.

Chinese Ministry of Education statistics show that Chinese universities and colleges admitted 4.75 million students in 2005, 19 per cent more than in 2004 and 24 per cent more than in 2003.

But according to Cai Junjie, consultant at the Gold-Road Overseas Studies Consulting Co Ltd, one of the largest firms of its kind in China, a number of Chinese students who were originally planning to study in the United Kingdom will now go to the United States instead.

"Among those students who are applying for US universities with our help, more than one fourth originally planned to go to Britain, Australia, Canada or New Zealand, but they turned to the US after hearing that it is much easier than before to get its visa," he said.

Since the United States adapted its visa regulations for Chinese students in September 2005, Cai's company has received more and more queries from students wanting to study there, surpassing the number enquiring about the United Kingdom for the first time in the last three years, according to company figures for December 2005.

"Since this January we have been offering our expertise about studying in the US to between 30 and 40 students every day," said Cai. "The spring of studying in the US has finally arrived after a long winter."

Zhang Zhe, a consultant with the Beijing Chivast Overseas Studies Consulting Co Ltd, one of the largest overseas education agencies in Beijing, said the number of students his company is helping to apply for programs in the United States is more than twice what it was at the same time last year.

Both consultants agreed that while the majority of Chinese students wanting to go to the United States apply for graduate programs, the number applying for undergraduate programs is on the rise.

"This growth results mainly from US universities applying a more and more favourable policy on the admission of Chinese undergraduate students who are able to pay their full tuition fees," said Zhang.

Mok, from the US Embassy in Beijing, says 2005 saw a slight increase in the number of Chinese students studying in the United States. He predicts the number will rise again in 2006. "I believe we will meet a record-breaking year," Mok said.

**Traditional Chinese Medicine booming in Germany
(People's Daily, 2006-04-06)**

Traditional Chinese Medicine (TCM) is now booming in Germany with the number of patients increasing drastically in the clinic in Essen, west Germany, partly due to the stationing of Chinese physicians.

"I didn't expect such an enormous demand of our traditional medicine in Germany before coming here", said Jiang Feizhou, one of the two Chinese doctors who support research projects in the Chair of Complementary and Integrative Medicine of the Duisburg- Essen University.

The clinic and the chair were founded in 2004 thanks to the sponsorship of the Alfried Krupp von Bohlen und Halbach-Foundation, whose Chairman and Professor Berthold Beitz has been a lover of Chinese culture.

The goal of establishing the Chair with its focus on TCM is to maintain and promote contact with China, said Prof. Beitz.

"It has always been my wish to support the integration of Western and Traditional Chinese Medicine," he added.

The Chair, the only one of its kind in German universities so far, mainly involves German patients, though there have been patients from other part of Europe such as England, Italy and the Scandinavian region.

Dr. Jiang and his colleague Wang Enping, who come respectively from two well-known TCM Universities in Wuhan and Hangzhou, treat nearly a hundred patients weekly.

Their working schedule and those of the three German physicians are quite tight.

The German physicians are not only good at Western Medicine but have also mastered techniques of Chinese therapies, such as acupuncture, guasha, massage and so on.

The medical team in the clinic includes a Sinologist and four interpreters, who help the Chinese doctors to communicate with their German colleagues and patients.

Through the cooperation with the Chair of Complementary and Integrative Medicine of the University Duisburg-Essen, the work of the Chinese physicians will be examined with scientific methods in accordance with European standard.

Good results can help TCM be recognized and certified in Europe.

Doctors here face patients with diverse diseases ranging from allergies, pains, gynecological problems and different burn-out syndromes such as insomnia, tinnitus and depression.

The cold humid weather in Germany gives rise to pains, headaches and depression in winter, but when pollen are flying in spring, more patients come to treat their allergies.

Jiang, an experienced physician, cured many patient during his two-year stay here, but what impressed him most are that a patient having suffered from retina detachment for many years could recognize faces again after receiving 20 times of acupuncture.

Apart from the TCM out-patient clinic, an in-patient section with 21 rooms and 54 beds is the other part of the Chair.

The beds are always fully occupied as more and more patients come here to treat diseases that Western Medicine can not cure.

TCM has been so popular in Germany that an opinion poll, done by the Institute for Demoscopy in Allensbach recently, show more than 50 percent of German patients are in favor of a combined treatment of Western Medicine and Chinese Medicine. Among patients who have once received TCM treatment, the rate is as high as 89 percent.

"This result shows the majority of patients who have been treated with TCM is satisfied," said Prof. Gustav J. Dobos, the holder of the Chair of Complementary Medicine. He is also heading the

Essen clinic and in-patient section.

Prof. Dobos, an expert of Internal and Complementary Medicine who studied TCM in China as well, expressed his belief that in a few years TCM would be added to the German medical system. Currently, both TCM and Complementary Medicine have become compulsory classes in the Medicine curriculum of the Duisburg- Essen University.

Prof. Dobos is determined to invite more qualified Chinese physicians to Germany.

In cooperation with Shanghai University of TCM, students from the Duisburg-Essen University will travel there to study TCM for a month.

Chinese students from Shanghai in return can participate in different research and PhD programs in Essen.

Single sperm donation limited to 5 pregnancies

(China News, 2006-04-08)

China will restrict the use of a single sperm donation to impregnate no more than five women in a bid to control the commercial use of assisted reproductive technology (ART).

In a statement released by the Ministry of Health, sperm banks are required to record detailed information of how they use the donated sperm and prohibits them from providing sperm to unauthorized ART institutions or for commercial purpose.

As of March 31, 64 institutions were authorized to offer ART related services and seven institutions have established sperm banks.

Institutions that have started such business are required to stop operation until they obtain government approval.

Health technicians in the institutions are required to attend training programs to obtain qualification certificates.

China reinforces supervision on test-tube technology

(China News, 2006-04-10)

The Ministry of Health (MOH) released a circular on Friday, saying that it has notified local sanitary administrative authorities to frame a layout of assisted reproductive technology (ART) practicing institutions and semen banks under their jurisdiction and not to blindly set up more such institutions. The MOH also prohibits commercialization and industrialization of ART and calls for strict rectification and punishment for ART practices without approval.

According to the MOH's detailed implementation rules for assisted reproductive technology and semen bank verification, any organization that practices ART or runs a semen bank should submit a verification application to the MOH via respective provincial sanitary administrative authorities three months before completing two years of formal operation. Those that fail to submit a verification application before the deadline will find their original certificates cancelled.

The MOH said that it would set up special training bases to strengthen training of ART and semen bank practitioners in terms of basic knowledge, theories and techniques of reproductive medicine and elevate their overall level of ART.

Up through March 31 this year, MOH has verified and approved 64 organizations to practice ART and 7 to set up semen banks.

Blast in Heilongjiang leaves no major environmental problem**(China News, 2006-04-11)**

Environmental protection officials have declared the land and waterways surround a northeast China chemical plant that blew up last week to be safe from major pollution damage.

The blast on April 6 in Harbin, capital of Heilongjiang Province, had left no major environmental problem, said provincial government officials on Monday after four days of close monitoring.

The Xinguang Chemical Plant, which had produced 20 tons of diluting agents each year, is only 4 km from the Songhua River, which joins the Heilongjiang River and flows into the Amur River in Russia.

The blast destroyed four tons of chemical stock, mainly dimethylbenzene and cinnamene.

The district government of Songbei, where the plant is located, told Xinhua Monday that the fire brigade used 170 tons of water, some of which was drawn directly from a contingency water pool in the plant, to distinguish the fire after the explosion.

"Pollution control was a top priority of the emergency response to the accident," said Liu Jixiang, a spokesman for the district government

He said the used water was contained in the plant area. An immediate sample test showed that phenol and cresylic chemical substances were in the water, and methanol in the air 1,000 meters downwind.

Environmental monitoring on the second day suggested benzene, alkane and alkene pollutants in the water, but no chemical pollutants in the air.

Contaminated water and earth in the plant were collected and sent for treatment at the Waste Treatment Center with the Municipal Bureau of Environmental Protection on April 8.

The blast caused no major environmental damage, said the bureau, adding that there were no drainage pipeline network beneath the plant, indicating no discharge of polluted water directly into the Songhua River.

The municipal government investigation into the accident found worker misconduct produced static electricity, which ignited a combustible chemical liquid in the storage tanks.

Investigators said the plant was ordered to suspend production three days before the accident, in which two workers were injured, due to the lack of permits from the environmental authorities.

The Songhua River suffered serious pollution last year when about 100 tons of pollutants containing benzene spilled into the waterway after a chemical plant explosion on Nov. 13 in Jilin Province. It was one of the worst river pollution incidents since the founding of new China in 1949.

Premier Wen Jiabao has ordered the launch of a series of projects to tackle industrial sources of pollution and to treat urban sewage, and for major pollution hazards to be effectively controlled and monitored.

Nokia expands research and development in China**(People's Daily, 2006-04-19)**

Nokia announced Tuesday that it will further strengthen its research efforts in China by expanding its Chengdu R&D Center to carry out part of Nokia's mobile network infrastructure products development for global and local markets.

Nokia Chengdu R&D Center, established in August 2005, started as a focused R&D unit for IP Multimedia Subsystem (IMS) based communications applications.

In order to have more direct responsiveness to emerging customer needs in this market, Nokia has decided to further expand the Chengdu R&D Center scope, engaging in development of systems such as carrier grade platform middleware, WAP gateways for mobile browsing, intelligent packet core subsystems and increasing multimedia applications development effort.

The expansion of Nokia Chengdu R&D Center will capitalize on the favorable competence base in China, and develop a better alignment with the Chinese mobile communications market, a key global growth driver, the company said.

"The Chinese mobile market is seeing tremendous growth and digital convergence is coming to the mobile mass market in China. The expansion of our Chengdu R&D Center will significantly strengthen our product creation responsiveness to evolving customer requirements in China," says Jouni Pirhonen, head of Nokia Chengdu R&D Center.

"We aim to develop Nokia Chengdu R&D Center into one of the major R&D centers for Nokia core networks, developing products for mobile and convergence communications for the global markets," he said.

CAS astronomer receives a medal from RAS

(CAS, 2006-04-20)

The Russian Academy of Sciences (RAS) bestows a golden medal to Prof. YE Shuhua, a CAS member from the Shanghai Astronomical Observatory in recognition of her meritorious service to the Sino-Russian S&T cooperation in the field of spatial geodesy.

The medal-conferring ceremony was held on March 13 at the Institute of Applied Astronomy, a research arm under the RAS in St. Petersburg. At the ceremony, Prof. Ye gave a lecture under the title of "the VLBI's applications to astronomic research and its new advances in China." She also received an interview from a local TV station in St. Petersburg.

30 new science parks to be built

(Xinhua Net, 2006-04-21)

China plans to increase the amount of academic research that gets developed into commercial products by building 30 new science and technology parks by 2010.

The move, announced last week by the Ministry of Science and Technology, will bring the total number of such facilities to 80.

The parks act as "incubators" for small and medium-sized high-tech companies, many of which are set up by universities or students.

Xu Luping, a senior official at the Ministry of Science and Technology, says that about 5,000 businesses have been set up in the 50 existing parks.

China started building science parks at universities in the late 1980s, with local governments and the universities usually covering the construction costs.

Thanks to policies China announced in February, the parks will enjoy a range of tax breaks starting this year. Xu told reporters that the amount each company is taxed would fall by 17.5 percent.

He says that China considers science parks to be central to its efforts to build capacity for innovation, because university-based researchers are among the most productive in China.

Universities won more than half of the national science and technology prizes awarded between 2000 and 2005.

This year, 17 universities have submitted applications for science parks, with only nine reaching the second round of competition.

Xu says that a panel of experienced park managers will soon complete its final assessments of the applications. Eight will be chosen for this year's program.

Clean campaign for Mt. Qomolangma to start

(Xinhua Net, 2006-04-23)

Mountaineers of various countries are to take part in a campaign to clean the world's highest peak Mt. Qomolangma, Nepali National News Agency RSS reported on Sunday.

According to the report, a total of 18 mountaineers from South Korea, Austria, France and 15 from Nepal are to be a part of the campaign that will be held up to 8,000 meters of the 8848-meter mountain.

The 30-day campaign will be led by South Korean mountaineer Hangwang Yong, who has scaled all the 14 mountains above 8,000 meters in the world.

Speaking at a press conference here Saturday, Hangwang said the team targets to collect at least 5000 kg of solid waste from Mt. Qomolangma and added that the oxygen cylinders left in the peak by South Korean mountaineers will be returned back to South Korea.

Prior to the cleanliness campaign, a 10-member South Korean Medical Team is to run a health camp at Namche bazaar of Solukhumbu district in eastern Nepal, some 400 km north-east of Kathmandu.

Periodic comet to return above earth in mid-May

(Xinhua Net, 2006-04-24)



A periodic comet, 73P/Schwassmann-Wachmann, will make another close approach to earth in mid-May, and people are likely to be able to see it with their naked eye, a Chinese scientist said.

The major part of Comet 73P, whose appearance resembles a dandelion, is expected to be 10 million kilometers from the earth, on May 12, said Wang Sichao, a researcher with the Purple Mountain Observatory under the Chinese Academy of Sciences.

The comet, discovered by A. Schwassmann and A. A. Wachmann of Germany's Hamburg Observatory on May 2, 1930, had split into three fragments on its last return in 1995.

Latest observations show that the comet has split into 40 fragments, which will pass above the earth in the form of a pearl necklace in mid-May, Wang said.

China's 1st face transplant recipient smiles

(China News, 2006-04-26)

The nerves of the donated tissue received by China's first face transplant recipient, Li Guoxing,

are alive and active, reports the Xijing Hospital in northwest China's Shaanxi Province.

A hospital source described both the physical and mental condition of Li as "pretty good."

The hospital showed on Tuesday afternoon a video of the patient. The video, which had been recorded earlier in the day, shows that the sutures on Li's face have been removed and the swelling of his face has gone down.

A nurse brought him eggs and steamed bread, and the patient ate while listening to people chatting. He looked pleased.

Li's smile remains lopsided as the nerves on the right side of his face aren't functioning properly, but the left side of his face appeared to show his happiness.

Guo Shuzhong, one of Li's doctors, said the transplants are one hundred percent normal, adding that his speed of recovery is beyond the hospital's expectations.

The patient will not leave his special ward for 30 days to prevent possible infections, said Guo.

Li's face was injured when he was mauled by a bear in 2004.

He was given a new cheek, upper lip, nose, and an eyebrow from a single donor.

Microsoft to invest heavily in China

(People's Daily, 2006-04-27)

Microsoft Corp disclosed the details of a deal signed with China's top economic planning body, the National Development and Reform Commission (NDRC) on Wednesday.

Microsoft's vice president and chief technology officer Craig Mundie arrived in Beijing to disclose the details of the MOU signed on Apr 18, according to which, Microsoft Corp will invest \$100 million in setting up cooperation with China-based software enterprises and their subsidiaries, joint ventures outside China.

It will place orders worth \$100 million to software enterprises in China. Microsoft will place a 700-million-U.S.-dollar hardware export order with Chinese companies in each of the next five years. In addition, it has a plan to train 10,000 software professionals in China within five years.

The MOU is the second of its kind the software giant has signed with the Chinese Government. The first such MOU was in 2002 with the then State Planning Commission, under which the software firm committed itself to investing 6.2 billion yuan (775 million US dollars) in a package of procurement, investment, talent training, technology development.

Bill Gates, chairman and chief software architect of Microsoft said in a written statement that he is delighted to see China's efforts made in IPR protection, and the signing of the MOU shows Microsoft's long-term commitment to China software industry.

In the past month, major PC makers in China including Lenovo, Tsinghua Tongfang and Founder signed orders for Windows operating system worth over \$1 billion with Microsoft. Microsoft's commitment to invest in China is regarded as a "return" for the deal.

Scientists honoured by elite US academy

(People's Daily, 2006-04-28)

Bai Chunli appeared surprised when a reporter asked him for his reaction to being elected a foreign associate of the National Academy of Sciences in the United States. "I didn't tell my colleagues" at the Chinese Academy of Sciences (CAS), of which he is the vice-president, Bai said yesterday, trying to downplay the honour.

The announcement that Bai and Yuan Longping, director-general of the China National Hybrid

Rice Research and Development Centre in Central China's Hunan Province, would join the elite US academy was made on Tuesday night (local time) in Washington.

Bai and Yuan are among the newly-elected 72 members and 18 foreign associates from 16 countries to be named for "one of the highest honours in American science and engineering."

"I think the fast development of Chinese science has drawn increased attention from the US academy," said Bai, 51, who is considered to be at the forefront of China's molecular nanostructure and nanotechnology study.

Yuan, 76 dubbed the "father of hybrid rice" for his extraordinary contribution in developing high-yield rice is a household name in China.

With more than half the country's paddy fields growing his hybrid rice, Yuan, indeed, has plenty to be proud of; but to him, honours are secondary.

"I do believe this is a grand honour, not only for me but also for my colleagues who also devoted themselves to hybrid-rice technology," Yuan told China Daily.

"Of course, we have to be level-headed, not be proud, and try to maintain China's leading position in the field."

A global meeting of the US academy members and foreign associates is slated for next spring, Yuan said.

Yuan, who used to drive a motorcycle to go to office or the fields, said that he has now "raised his standard" to a small sedan with low emissions because of health and safety concerns.

The mahjong lover said he had stopped playing as it is very "time consuming."

"I now like playing Chinese chess with my grandson and occasionally try my hand at volleyball," he said.

In 1996, Yuan set up an agricultural science and technology fund to recognize and support those who have made achievements in agriculture, with an initial amount of US\$15,000. Today, there is more than 10 million yuan (US\$1.25 million) in the fund with company and individual donations.

"Water Pollution Control Technology and Engineering" passed acceptance check (MOST, 2006-04-30)

"Water Pollution Control Technology and Engineering", a major special S&T program of the Tenth Five-year Plan, passed the expert acceptance check organized by the Ministry of Science and Technology in Beijing.

"Water Pollution Control Technology and Engineering" is one of 12 major special S&T programs established by the state during the Tenth Five-year Plan period.

In terms of lake pollution control, the special program has carried out comprehensive technical demonstration of engineering scale in Taihu Lake and has tentatively developed the packaged technology and control program suitable for controlling pollution of shallow fresh water lakes.

In terms of urban water environment quality improvement, the special program implemented study and integrated demonstration of the technology of urban water environment quality improvement and the technology and management scheme suited to the characteristics of different cities for the improvement of urban water environment quality has taken shape.

In terms of drinking water safety control, the special program has carried out research into the technology of drinking water safety control and has made breakthrough in the key technologies of improvement of raw water quality, intensification of conventional treatment technology and safe disinfection and tentatively developed the technical system of urban drinking water safety control

in our country.

In terms of research into the new technology of physical-chemical and biological water treatment, the special program has developed a batch of functional materials for water pollution control with independent intellectual property rights such as high-performance biological strains and bacterium and a number of new water treatment reactors such as anaerobic reactor.

6 Information for upcoming Workshops in June

Fourth International Poplar Symposium

Date: June 05 – June 09

City: Nanjing, Jiangsu Province

<http://ips2006.njfu.edu.cn/>

GeoShanghai International Conference

Date: June 06 – June 08

City: Shanghai

<http://www.geoshanghai.org/>

2006 International Conference on Applied Mathematics and Interdisciplinary Research

Date: June 12 – June 15

City: Tianjin

<http://www.isam.nankai.edu.cn/>

PROLAMAT 2006 (IFIP TC 5 International Conference)

Date: June 15 – June 17

City: Shanghai

<http://prolamat.shu.edu.cn/>

The Second International Palaeontological Congress

Date: June 17 – June 21

City: Beijing

<http://www.ipc2006.ac.cn/>

The 6th International Conference on ITS Telecommunications (ITST2006)

Date: June 21 – June 23

City: Chengdu, Sichuan Province

<http://www.itst2006.uestc.edu.cn/index.htm>

International Conference on Rare Earth Research and Application (ICRERA-2006)

Date: June 25 – June 30

City: Beijing

E-mail: xiaofang@grinm.com

Tel: +86-(0)10-62055408, 82241897

Fax: +86-(0)10-62015019, 62355405

International Conference on Superconducting Materials (ICSM 2006)**Date:** June 25 – June 30**City:** Beijing**E-mail:** 2006BIMW@vip.sohu.com**Tel:** +86-(0)10-68722031**Fax:** +86-(0)10-68722033**International Conference on Energy Materials (ICEM-2006)****Date:** June 25 – June 30**City:** Beijing**E-mail:** weixy@grim.com**Tel:** +86-(0)10-62055408, 82241897**Fax:** +86-(0)10-62015019, 62355405**International Conference on Aerospace Materials (ICAM)****Date:** June 25 – June 28**City:** Beijing**E-mail:** xinqing@buaa.edu.cn**Tel:** +86-(0)10-82315989**Fax:** +86-(0)10-82338200**2006 IEEE International Conference on Mechatronics and Automation****Date:** June 25 – June 28**City:** Luoyang, Henan Province<http://icma2006.haust.edu.cn/>**International Conference on Magnesium (ICM 2006)****Date:** June 25 – June 30**City:** Beijing**E-mail:** conference@chinamg.org**Tel:** +86-(0)10-63973978**Fax:** +86-(0)10-63979392**International Conference on Communications Circuits and Systems 2006****Date:** June 25 – June 28**City:** Chengdu, Sichuan Province<http://icccas05.uestc.edu.cn/06/index.php>**The 24th Computer Graphics International Conference(CGI'2006)****Date:** June 26 – June 28**City:** Hangzhou, Zhejiang Province<http://www.cad.zju.edu.cn/CGI06/index.htm>

5th International Congress of Pathophysiology

Date: June 28 – July 01

City: Beijing

<http://www.isp2006.org.cn/>

5th International Congress of Pathophysiology

Date: June 28 – June 30

City: Beijing

<http://www.civil.edu.cn/cibw99conf/index.htm>

Abbreviations

- CAS** - Chinese Academy of Sciences
MOST - Ministry of Science and Technology