Content

Science News from Chinese Media in October 2006
Collected and Compiled by Helmholtz Beijing Office

Helmholtz News Concerning China

October is always the best season in Beijing. We have also many Helmholtz activities this month:

Four FZK colleagues came to Beijing participate the Second IRPA Asia-Pacific Radiation Protection Conference held during the Oct. 09-13. Mr. Luis Valencia, head of the Central Decontamination Department in FZK, has taken the post as one of the executive vice chairman of the conference. As it was accidentally right after the North Korea nuclear test, many topics might become more interesting for participants from this region.

During the 17th-27th , Dr. G. Subklew from FZJ, German coordinator for the Three Gorges Dam Environment Protection Project, came down to China. Under the assistance of and sometimes even accompanied by Helmholtz Beijing Office, he had the opportunity to speak with the Chinese project coordinators in Beijing, Shanghai, Chongqing and Wuhan. We are all very pleased to see that the Three Gorges Construction Commission has not only provided political and financial support, but also helping with the organizing and management of the projects. Partners from both sides are trying to match together and to reach their final research proposals to the ministries in time. It is now for sure, that there are some progresses on the coming Sino-German Steering Committee for Environmental Cooperation and a few sub-projects should be kicked off.

During the 24th -30th, a FZJ delegation led by Dr. W. Jaek and Dr. Ch. Naumann has paid a visit to Beijing. The main issue is to sign a cooperation contract with their Chinese partner INET in the Tsinghua University. INET has further developed the German HT-Reactor technology and would like to build a demonstration reactor with 200 Million Watt. INET would pay 1.2 million euros for the German assistance concerning staff training and simulation of the reactor security. For the national energy security, China has an ambitious goal to build 40 GW nuclear power in the next 20 years.

On the Nov. 27th, a FZK Biomass project, to transform biomass to liquid (BTL-technology), has had its ground-breaking ceremony in Zibo, Shandong Province. The partner, Treichel, a 100% German background company, has vowed to collect 20-30 million euros for this demonstration project. Two provincial ministers and three city vice mayors have participated in the ceremony. Dr. M. Hack, science councilor from the Germany Embassy, Dr. Hong HE from Helmholtz Office and also many representatives from international organizations and companies have turned up and make congratulation words. This BTL technology should be one of the best alternatives for the future energy supply in China.

Helmholtz Beijing Office

1 Science News

1.1 Energy

Laxiwa Project: the biggest hydropower station on the Yellow River
(China News, 2006-10-09)

The Qinghai-Tibet Plateau is the world's highest plateau, averaging over 4,000 meters above sea level, making a very deep gorge in Qinghai, with the name "Laxiwa", which means "longing for sunshine" in the Tibetan language, as the bottom of the gorge is shrouded in palls of mist all the year round.

However, the great drop in elevation in the grand gorge makes Laxiwa a perfect place for hydropower development. As a matter of fact, China Power Investment Corporation started the construction of Laxwai Hydropower Station as early as last April, which will be the biggest of its kind on the Yellow River (even northern China) when completed.

Six mixed-flow hydropower generators with a capacity of 700,000 kW each will be installed, to provide 10.2 billion kwh of electricity every year.

The most advanced technologies in the world will be applied to constructing the project to make it the brightest gem on the crown of the history of hydropower development in China.

Visiting China's nuclear fusion research base
(China News, 2006-10-12)

Because of China's success in the HL-2A experimental thermonuclear fusion device, Chengdu has been chosen as the venue of the 21st World Nuclear Fusion Energy Conference. The conference will be held in Chengdu on October 16, the first to be held in a developing country. Before the conference is held, our reporter recently visited the nuclear fusion research base in Chengdu, which is also the largest nuclear fusion research base in China.

President of the Southwestern Institute of Physics (SWIP) Pan Chuanhong gave a brief introduction to China's nuclear history. He said that in the 1950s, SWIP began to engage in the research of controlled thermonuclear fusion. In 40 years of efforts, it had successfully made the HL-1, HL-1M, and HL-2A experimental thermonuclear fusion devices. In December 2005, the HL-2A nuclear fusion device met the approximate core condition. In February this year, a test was done to the HL-2A device which, under 20,000,000℃, the device was able to steadily release 400kva of power 12 times consecutively, indicating that China was able to conduct nuclear fusion research under approximate core condition.

He said that at present, many researchers in his institute have participated in the International Thermonuclear Experimental Reactor (ITER) program, which is the largest international cooperative program in scientific research field after the international space station. This year, the program has entered into the implementation phase. Under this program, scientists from China, EU, US, Russia, India, Japan and South Korea will work together to build the world's first nuclear fusion experimental base and will jointly push forward the development of nuclear fusion energy. As one of the members in ITER, China will be responsible for the production of 10% of the

devices needed for the program.

According to Pan, about 300 Chinese scientists will participate in the program and make their contributions to the longest and most sophisticated science program in human history.

Bio-energy to account for 4% of China's renewable energy

(China News, 2006-10-15)

Bio-energy will account for one percent of China's renewable energy consumption by 2010, and four percent by 2020, said sources with the Ministry of Agriculture (MOA) on October 13.

Bai Jinming, an official with the science, technology and education department of the MOA, said at the start-up ceremony for the project of strategic development of bio-energy in rural China that bio-energy will help China meet its rising demand for energy.

The project is jointly launched by the Asian Development Bank and the MOA.

Developing bio-energy in rural China will promote the development China's agriculture, along with the rural areas and Chinese farmers, said Bai.

Bio-energy has been developing rapidly in China. According to statistics, by the end of 2005, more than 18.07 million peasant households are using methane gas for fuel.

More than 3550 bio-energy projects are producing nearly seven billion cubic meters of methane each year, according to the statistics.

According to the MOA, China's installed capacity of bio-energy electricity will reach 5.5 million kilowatts by 2010, and 30 million kW by 2020.

The annual use of methane gas will be 19 billion cubic meters in 2010 and 40 billion in 2020.

China's super-efficient nuclear reactor on trial in 2010

(Xinhu Net, 2006-10-16)

China's experimental fast nuclear reactor will be on trial in May 2010, Kang Rixin, General Manager of China National Nuclear Corporation, said in Chengdu on Monday at the 21st International Fusion Energy Conference.

The reactor is expected to burn 60-70 percent of its uranium fuel while a conventional reactor consumes only 0.7 per cent of the uranium it is fed.

China began researching fast nuclear reactor technology in 1995 and invested 1.4 billion yuan in the construction of the experimental reactor.

Vice premier stresses nuclear fusion development

(Xinhua Net, 2006-10-17)

Chinese Vice Premier Zeng Peiyan has called for expanded international cooperation in controlled nuclear fusion development.

Controlled nuclear fusion could be a viable solution for the world's energy supply, said Zeng in a letter to the ongoing 21st International Atomic Energy Agency (IAEA) Fusion Energy Conference.

It is seen as an efficient way for people to generate infinite and clean energy, said Zeng, and China has been actively promoting nuclear fusion development.

Zeng said China expects to join the international community in conducting research in this field and pushing for the sustainable development of the world.

More than 800 scientists from around the world are attending the six-day conference that kicked off on Monday.

Int'l experts: EAST sets a milestone for world fusion power development
(CAS, 2006-10-18)

About two weeks after the production of the first plasma in the Experimental Advanced Superconducting Tokamak (EAST), the International Advisory Committee (IAC) of EAST held its second meeting at the CAS Institute of Plasma Physics (ASIPP) on Oct. 13 and 14 in Hefei, capital of east China's Anhui Province. The experts came away impressed, saying the outstanding achievement is an important milestone in the development of fusion worldwide in the history of international nuclear fusion power studies.

The 29-strong panel, which is composed of leaders and senior scientists from the first-class fusion research institutes in the world, convened at the Hefei institute to make assessments and consultation for EAST, the world's first fully superconducting Tokamak with a non-circle cross-section that was designed and built by CAS researchers and engineers.

At the first-day meeting chaired by LIU Chuan-shen, an expert in plasma physics on Oct. 13, Manager of EAST Project WAN Yuanxi, Chief Engineer WONG Peide, ASIPP Vice Director WAN Baonian and ASIPP Director LI Jiangang made reports on general status of EAST, its project development, results of the first test and plans for future experiments, respectively. All the reports evoked warm echoes from the audience. Then the experts were showed around the EAST facility and labs. The repeated stable plasma discharges of EAST won standing applause from the experts.

On Oct. 14, a conference report was drafted by the panel after a 10-hour in-depth discussion on the construction, system upgrading, and future research and experiment of EAST. In its report, IOA experts made an evaluation on, and offered suggestions for, EAST from the three aspects of engineering, experiments and theoretical research.

The committee spoke highly of the high quality construction of EAST. "Carrying out the design, R&D, construction and commissioning within such a short time constitutes a remarkable feat of fusion engineering worldwide. It bodes extremely well for Chinese contributions to ITER," notes the report.

IAC noted that successful commissioning of the machine and auxiliary systems has been carried out in a remarkably short time and without significant unforeseen events which is indicative of basically sound designs, good quality assurance applied to production processes and high quality assembly procedures.

At its first meeting held on Oct. 2003, IAC experts predicted that EAST will be an advanced science facility with significant impact on world fusion studies. It will be the world's first tokamak featuring both fully superconducting magnets and active cooling structure.... Now their forecast

has proved correct.

First sea wind power station to be built
(China News, 2006-10-26)

The first sea wind power station in China will be built in the coastal area near the Donghai (East Sea) Bridge in Shanghai. The wind power station will have an installed capacity of 100,000 kilowatts. When put into operation, it will be able to supply power to 200,000 households in Shanghai every year.

Shanghai is now considering building a series of wind power stations at sea. The first two will be built near the Donghai Bridge and the Hangzhou Bay respectively, both with an installed capacity of 100,000 kilowatts. The New Energy Department of Shanghai Institute of Investigation, Design and Research has finished related research work and the project will soon enter into the stage of implementation.

The first wind power station is located closely to the Donghai Bridge. When construction starts, twenty big windmills with a diameter between 80-126 meters and a height of 90 meters will be placed in a coastal area one kilometer away from the Donghai Bridge. As long as the wind speed can reach 3 - 25 meters per second at sea, the windmills can work properly. When there is a strong gale at sea, the windmills will stop working automatically. When there is typhoon weather, workers in the power station will take measures to protect the facilities. Through these protective means, the windmills will be able to work for 25 years.

In the coastal area near the Donghai Bridge, the windy time capable of making windmills work effectively totals 8,000 hours a year. When the wind power station is completed three years later, China will become another country in the world that can generate power from sea wind, after Britain, Denmark, and the Netherlands.

China Calls for Barrier-free Transfer of Renewable Energy Technologies
(CRI, 2006-10-26)

The transfer of renewable technology could be done in accordance with commercial principles, but there should not be barriers against it, said a senior Chinese energy official at the opening session of the 2006 Great Wall Renewable Energy Forum & Exhibition that kicked off on October 24 in Beijing.

"Renewable energy technology should be distinguished from military or other cutting-edge technologies. In order to effectively alleviate problems like shortage of resources and deterioration of environment, we must apply the mature technologies of renewable energy in a wider area as soon as possible," said Wu Guihui, deputy director of Energy Bureau, the National Development & Reform Commission.

The three-day event was organized by China Renewable Energy Association, together with the Global Wind Energy Council and the American Council On Renewable Energy (ACORE). The 1,000 some government officials, academics and industry players that gathered in Beijing International Convention Center came from more than 50 countries and regions. The participants engage themselves in thorough and insightful discussions over the healthy and speedy exploitation of renewable energies in China and around the world.

In his opening speech, ACORE chairman Michael Eckhart said he was pleased with China's commitment in making the Renewable Energy Law. He said in an upcoming similar event in Washington D.C., he would ask his government if the United States can achieve 25 percent of renewable energy in total energy supply by year 2025 and 50 percent by 2050. Eckhart urged his Chinese audience to ask the same question, because "if the U.S. can not do this, if China can not do this, then the world does not have a sustainable future."

China's Renewable Energy Law came into force on the first day of this year. And according to the State Medium- and Long-Term Program for Renewable Energy Development, the country's renewable energy would account for 16 percent of total energy supply by year 2020.

China to train more talents for nuclear fusion research

(People's Daily, 2006-10-27)

A training center for nuclear fusion research has been established at Zhejiang University in Hangzhou, capital city of east China's Zhejiang Province, to boost expertise in the nuclear fusion field.

Zhejiang University State Fusion Theory and Simulation Center will be China's first research institute specializing in nuclear fusion training.

The center will train outstanding talents for the International Thermonuclear Experimental Reactor, or ITER, which will be commissioned in 2016. China is one of the seven participants in the international cooperation program. The other six are the United States, the European Union, the Republic of Korea, Russia, Japan and India.

The program has been included in China's long-term plan for scientific development. It is hoped that reactor ignition can be achieved in 2020. To achieve the goal, plasma physics talents are desperately needed.

However, there are only two or three universities in China that offer plasma physics studies. The shortage of talent in this field is a brake not only on nuclear fusion research but also on China's other high-tech programs, including deep space exploration and high-energy-density physics.

Hence the new talent training center. Major sponsors of the center include Zhejiang University, the Research Institute of Plasma Physics under the Chinese Academy of Sciences, the Southwestern Research Institute of Physics and State Program 863 for high technologies.

The center will have 15 to 20 full-time researchers and 10 to 15 visiting scholars. They will include Chinese academicians as well as top plasma physics scientists from abroad, according to Sheng Zhengmao, deputy head of the center.

The center will offer 20 masters, 30 PhD and another 20 post-doctoral research positions to young candidates both from home and abroad, Sheng said.

The ITER program will offer scientists an opportunity to achieve their dream of controlling nuclear fusion energy.

Controlled nuclear fusion, which replicates the energy generating process of the sun, is considered to be an efficient source of unlimited, clean energy to offset the dearth of fossil fuels such as oil and coal.

Scientists believe that deuterium can be extracted from the sea and enormous amounts of energy obtained from a deuterium-tritium fusion reaction at a massive temperature of 100 million degrees

Celsius. After nuclear fusion, the deuterium extracted from one liter of sea water would produce energy equivalent to 300 liters of gasoline.

If the nuclear fusion technology is commercialized, it could provide energy for mankind for more than 100 million years, scientists believe.

Nuclear fission has been dogged by as many problems as benefits, whereas nuclear fusion will be a more viable solution for the world's energy supply, said Werner Burkart, Deputy Director General of the International Atomic Energy Agency.

China's self-designed full superconducting experimental Tokamak fusion device, dubbed EAST (experimental advanced superconducting Tokamak) has now been completed and has entered trials. It is the first of its kind in the world.

Since EAST operates in a similar way to ITER devices, it should provide useful research and experimental expertise for ITER, said Xu Guanhua, Minister of Science and Technology.

1.2 Earth and Environment

CAS-EU researchers jointly explore integrated water resources management
(CAS, 2006-10-10)

Under the organization of the CAS Institute of Tibet Plateau Research (ITP), an exploration team composed of researchers from Germany, Austria, Czech, and Nepal carried out studies on the Yarlung Zangbo River Basin from Sept. 12 to 26.

In three groups, the researchers conducted their field work separately on hydrological assessment of the Basin, hydrobiology and geohydrology of wetlands, and human dimension and vulnerability.

Under the leadership of ITP Director YAO Tandong, the team trekked the Basin along the river valleys of Niyang and Lhasa, and around the lakes of Namutso, Yamdrok and Mopuyong. The researchers obtained first-hand information on hydrology, vegetation, wetland, lake environment and human activities in the basin, paving the way for later research work.

The exploration is the first step of an international initiative for water management in river basins. With the support of the European Commission Six Framework Program (FP6), CAS scientists have teamed up with colleagues from EU, India, Bhutan and the International Center for Integrated Mountain Development to carry out studies on integrated water resources management (IWRM).

Entitled "Brahmatwin Brahmputra-Inn: Twinning European and South- East Asian River Basins to Enhance and Implement Adaptive Integrated Water Resources Management (IWRM) Strategies," the overall objective of the 3-million-Euro project is to enhance capacity to carry out a harmonized IWRM approach in headwater river systems of alpine mountain massifs, as addressed by the European Water Initiative.

Initiated in this past July, specific attention of the project is given to likely impacts of climate

change, and to the transfer of professional IWRM expertise, approaches and tools based on case studies carried out in twinning European and Asian rivers: the Upper Danube River Basin in Europe, and the Upper Brahmaputra River, which is called the Yarlung Zangbo (Yarlung Tsangpo) River within the borderlines of Tibet Basin in Southeast Asia.

Two CAS institutions, i.e. ITP and the Center for Agricultural Resources Research under the Institute of Genetics and Developmental Biology, are among the 18 partners of the project consortium. Together with Europe and Asia co-workers over the next three years, they will make efforts to guarantee the generation of the necessary synergism required to represent the complex system component interaction and to carry out the required knowledge transfer between Europe and Asia.

China kicks off early-warning system on marine earthquake
(China News, 2006-10-16)

Construction of China's first early-warning system on marine earthquake was started last Tuesday in Shanghai, in a place 110 kilometers east of Chongming Island. The station will be able to sustain typhoon weather and turn 360 degrees. It will be powered by solar energy and can communicate with satellites. The station is scheduled to be put into trial operation by the end of this month. Construction of the station signifies that China has formally kicked off its early-warning system on marine earthquake.

Located between the Indian Ocean Plate and the Pacific Ocean Plate, China is constantly hit by earthquakes, of which 85% occur at sea. However, due to various reasons, China has designated a few places to monitor ocean earthquakes on a mobile basis. So far, China has not set up any monitoring station to observe ocean earthquakes. In order to monitor ocean earthquake systematically, the China Seismological Bureau kicked off the Shanghai Ocean Earthquake Monitoring Station Project last year.

After careful analysis, experts finally choose the current site to start the construction. The site of the monitoring station was once an epicenter. The station consists of a 250-meter-deep well and a lamppost that measures 50 meters high and weighs 100 tons. When the station is completed, workers will place a seismograph into the bottom of the well and other devices on the lamppost. The antenna placed at the top of the lamppost will send the data gathered from the bottom of the well into the earthquake monitoring center.

During the first half of next year, the Shanghai Municipal Seismological Bureau, the Shanghai Municipal Meteorological Bureau, the Chinese Academy of Social Sciences and the Tongji University plan to jointly build another ocean earthquake monitoring station in a place 160 kilometers north of Chongming Island. It will serve as a small, fixed platform where scientists can monitor ocean earthquakes, ocean climate, ocean hydrological conditions, and tidal waves.

China Drafts National Program to Protect Marine Environment
(CRI, 2006-10-19)

The Chinese government is drafting a National Program of Action (NPA) to protect its marine environment from land-based activities.

"The move is aimed at boosting and channeling China's efforts in marine environment protection,"

Zhu Guangyao, deputy director of the State Environmental Protection Administration (SEPA), said Wednesday at a forum on marine pollution

China's coastal waters face a serious threat of land-based pollution. Statistics from the SEPA said that nearly 31.7 billion tons of polluted water flowed into China's offshore waters in 2005, accounting for 60 percent of the total waste water produced by the country.

Zhu said the major threats to the productivity and biodiversity of the marine environment result from human activities on land in coastal areas and further inland.

"To control such pollution, we must stop it at source," he said.

Zhu said the NPA will target 11 coastal provinces and municipalities and 10 state departments will be asked to contribute, including the State Oceanic Administration, the Ministry of Land and Resources, the Ministry of Construction and the Ministry of Transportation.

China is a member of the Global Program of Action (GPA) for the Protection of the Marine Environment from Land-Based activities. The GPA was launched by the United Nations Environment Programme.

Shanghai to Use Fish to Monitor Water Quality

(CRI, 2006-10-19)

More than 100 mullet will be freed in the Suzhou River next year to monitor the aquatic environment in China's business hub of Shanghai.

It will be the first time that researchers in Shanghai have used fish to monitor the environment, said Tang Wenqiao, a biology professor with Shanghai Fisheries University at the China Fishery Conference on Tuesday.

Mullet, also known as "Asian mermaids", are fish whose biological index changes if the heavy metal or poisonous organic content of water is too high. Mullet is deemed as natural monitor of water quality, said Tang.

Suzhou River, Shanghai's mother river, was badly polluted in the 1970s. Fish and shrimp disappeared from the river for 27 years, according to Liberation Daily, a local newspaper.

Over the past decade, the government has invested 11 billion yuan (1.38 billion U.S. dollars) in improving the water quality.

A simulated experiment in the river proved that the mullet can now live in the current water environment, said Tang.

Glaciers in the Himalayas in no danger of melting

(China News, 2006-10-20)

Glaciers are a special feature in the Himalayas. They are also an indicator of the climate change. After exploring the glaciers in the Himalayas, Chinese scientific exploration team says that the global warming won't threaten the glaciers in the Qinghai-Tibet Plateau.

Study of the glaciers is an important task for the exploration team. In the Qinghai-Tibet Plateau, there are ten mountains that are located at an altitude of over 8,000 meters, therefore many glaciers are formed in the region. The slight changes of these glaciers will somehow affect human life.

Zhang Wenjing, a renowned glaciologist and a researcher at the Chengdu Mountain Disaster and

Environment Research Institute under the Chinese Academy of Social Sciences, has for many years observed the geological feature of glaciers at the southern slope of Yarlungzangbo River.

He says that he has been there many times and the mountains are always capped with snow, even in hot summer. This shows that although glaciers are very sensitive to temperature change, they are also inactive. As long as there is some precipitation, they won't melt away even when the temperature keeps going up.

He adds that in places which are not very high and the glaciers do not cover a wide area, the glaciers and snow will remain stable. Therefore people needn't worry that glaciers in the Qinghai-Tibet Plateau, or even in the whole west region, will melt completely within a certain geological period.

After exploring the two glaciers on the way, the Chinese scientific exploration team has drawn the same conclusion. Experts point out that the glaciers in the Qinghai-Tibet Plateau cover a total area of 44,000 square kilometers. The global warming will not bring about negative effects on the region; on the contrary, it will improve local environment.

Apart from numerous glaciers, the Qinghai-Tibet Plateau also has many lakes, whose total water storage reaches 600 billion cubic meters, accounting for 70% of the total lake resources in China. The glaciers and lakes serve as a special temperature regulator helping to maintain the ecological balance in the Qinghai-Tibet Plateau, in China and in the South Asian region.

A national key project on biodiversity evolvement launched in Nanjing
(CAS, 2006-10-23)

With the support of the National Key Basic Research Program, a project entitled "Evolvement of Marine and Terrestrial Biodiversity in Geological History" was officially launched on Oct. 11 at the CAS Nanjing Institute of Geology and Palaeontology (NIGP).

Organized by NIGP, over 50 members of the research consortium from various institutes and universities, including those from CAS Institute of Vertebrate Paleontology and Paleoanthropology (IVPP) and Peking University, were present at the conference. CAS Members RONG Jiayu, WANG Pinxian, WU Xinzhi, ZHOU Zhiyan and DING Zhongli, as well as ZHOU Shaoping from the Bureau of the CAS S&T for Resources and Environment, were invited to the launch ceremony.

The welcome speech was delivered by YANG Qun, deputy director of NIGP. Then, Zhou and IVPP director ZHU Min spoke to give supports and constructive suggestions to the research project.

SHEN Shuzhong, the project's chief scientist from NIGP Laboratory of Palaeobiology and Stratigraphy, outlined the major research topics and the time schedule of the project. With reference to previous research results and the abundant fossil data all over China, it is going to highlight a comprehensive study across different disciplines and various fields on the evolvement of marine and terrestrial biodiversity along the geological intervals, Shen said.

The CAS Members of the expert team, Rong Jiayu et al, also proposed strategic suggestions to the project and encouraged the scholars to enhance communication and cooperation for more theoretical breakthroughs.

The project will mainly probe into topics like: the origin of early life on the Earth and the

Cambrian explosive radiation; the early evolvement of vertebrates; the grand biotic radiation, stability and prosperity; the major events of mass extinctions and recovery; the biodiversity in Jehol and Cretaceous terrestrial biota; the environment drives in Quaternary period for the evolution of human beings and biodiversity of animals and plants as well as their concerted evolvement. The research shall go into depth and width to understand the evolvement of the biosystem and its complexity.

The five-year project (2006-2011), initiated in September with the backing f the Ministry of Science and Technology, is among the first batch of projects listed in China's on-going National Basic Research Program (or 973 Program). It is going to be a multi-disciplinary consortium of some 70 veteran scientists, young scholars and graduates from 10 research bodies across the country, namely NIGP, VIPP, Guiyang Institute of Geochemistry, China University of Geosciences at Wuhan, Peking University, Nanjing University, Northwest University, Yunnan University, Guizhou University and the Geological Museum of China.

1.3 Health

China reports new bird flu cases

(China News, 2006-10-05)

A new outbreak of bird flu has killed about 1,000 domestic poultry in a village in the country's northwestern Ningxia Hui Autonomous Region, the Ministry of Agriculture said in Beijing Wednesday.

A national laboratory test confirmed on Tuesday that the dead birds had the H5N1 strain of bird flue virus in the Henan New Village in the regional capital of Yinchuan.

After the outbreak, 72,930 domestic poultry were slaughtered to prevent the spread of the virus, according to the ministry's information office.

Currently the outbreak has been effectively controlled, according to the Ministry.

This is the second case of bird flue outbreak for the week, following another found in north China's Inner Mongolia Autonomous Region on September 27, which killed 985 chickens.

New nanometer-sized peptide material shown to stop bleeding in 15 seconds

(People's Daily, 2006-10-13)

A team of Hong Kong and American researchers have found that nanometer-sized peptide material can 'magically' stop bleeding within 15 seconds.

The finding is expected to play a significant role in surgical operations, according to Professor So Kwok Fai, from the Department of Anatomy at Hong Kong University's Medical School.

The professor described the finding as revolutionary. He said that the material may help stop bleeding in surgery within in 10 seconds where existing methods take 70 to 80 seconds.

Research into nanometer-sized peptide materials is being undertaken jointly by Hong Kong University and the Massachusetts Institute of Technology.

US experts said that this new material can be applied very creatively, for example, it may be produced as a spray to stop nose bleeding and stop wounds from bleeding even in water.

The material is safe for consumption, so it may also been made into an oral medication.
Tests on hamsters have been just finished, and careful testing will continue before human trials.

Northeast China pigs cloned from somatic cells
(People's Daily, 2006-10-17)

The Northeast China Agricultural University (NCAU), the Harbin Municipal Science & Technical Bureau and their cooperative unit announced their successful cloning of local pigs with the use of somatic cells last Saturday. Three cloned baby pigs have been doing well and normally since their birth on October 12.

Dr. Liu Zhonghua, leader of the project who comes from the Life Science College of the NCAU, acknowledged that the three cloned baby pigs, unlike pigs cloned in the past, had taken somatic cells from a three-day old piglet as donor cells.

The Northeast China local pigs, noted for being reproductive and adaptable with a good meat quality, are a leading fine breed under the state protection.

Mast cells can protect human hearts
(China News, 2006-10-17)

In human bodies, there exists a kind of cells called mast cells. Mast cells can cause some diseases to humans, such as allergy and asthma. However, a recent study shows that such mast cells can also do good for human health. Doctor Zhang Qingyong from the Shanghai No. 6 People's Hospital has found that if these mast cells are gathered and activated, they can help the formation of new blood vessels in human hearts.

The new discovery created a significant stir among scientists at the 16th World Heart Disease Conference. Thirty-five-year-old Zhang Qingyong was consequently awarded a prize for his special contribution in this field.

In recent years, interventional cardiological surgery and heart bypass surgery are frequently applied for treating heart diseases. However, these surgeries often have complications like thrombus. The complications have a high incidence rate and when thrombus is serious, patients may even die. Experts say that thrombus is caused when the tiny blood vessels in the heart lack protection and easily display functional problems as a result.

How to mend these small blood vessels when they have functional problems? Doctor Zhang Qingyong has always tried to solve the problem by mast cells. Mast cells exist in many organs inside human body, usually measuring 20-40 microns in diameter and invisible to human naked eyes. However, by studying on animal cells, Zhang and his team found that the mast cells, which are usually regarded as harmful to human body, can repair the function of blood vessels when they are clustered and activated.

Chinese scientists to develop technology for quicker diagnosis of disease
(People's Daily, 2006-10-19)

Chinese scientists are researching a new medical technology which can facilitate earlier diagnoses of diseases such as tumors.

The technology, dubbed a molecular probe, can display the condition of molecules inside people's

bodies on a computer, which can then be studied by doctors.

Patient can be treated during the early stages of the disease which may improve the recovery rate, said chief researcher Tian Jie on Wednesday.

The traditional imaging devices such as CT scans, MRIs, ultrasound and X-rays can only show the later stages of tumors, said Tian.

The new technology can illustrate real-time pathological change without the need for operations, according to Tian.

The research has recently been listed in the 973 Program, a key national basic research program, with government funding of 30 million yuan (about 3.75 million U.S dollars).

Number of Chinese with Brittle Bones Triples in 30 Years

(CRI, 2006-10-19)

The number of Chinese with bone-wasting osteoporosis has tripled in the past 30 years, say experts.

The cost of treating osteoporosis and diseases caused by osteoporosis added up to at least 15 billion yuan (1.9 billion U.S. dollars) each year, according to a recent seminar on the disease held in Beijing.

Osteoporosis is a decrease in bone mass and density that increases the risk of fractures and commonly affects women after the menopause.

About 75 percent of menopausal women have received no treatment and more than half only took calcium supplements, experts told the seminar.

"Many patients stop taking their medicine halfway during the treatment or after the symptoms begin to disappear after a year," said Huang Gongyi, director of the orthopedics department of the Beijing Hospital under the Ministry of Health.

It usually took at least 18 months to treat the disease properly.

China Opens 206 New Methadone Clinics in Anti-AIDS Effort

(CRI, 2006-10-20)

China opened 206 methadone clinics between July and September this year bringing the total to 307 in a bid to curb the spread of HIV/AIDS through contaminated needles used by drug addicts, the Ministry of Health said on Thursday.

Forty-four percent of an estimated 650,000 Chinese people living with HIV/AIDS are drug users, according to a report released by the ministry earlier this year.

Methadone is widely used as a substitute for heroin to help addicts kick their habit.

Wu Zunyou, an official at the Chinese Center for Diseases Control and Prevention, said China opened the 307 clinics three months ahead of the schedule.

He said that the swift establishment of the clinic could reduce the intake of heroin by over 1,000 kilograms.

The methadone treatment program, which was initiated in 2003, now covers about two thirds of all China's 31 provinces, autonomous regions and municipalities. At the clinics, a cup of methadone drink usually costs 10 yuan (1.26 U.S. dollars).

Wu said China plans to set up methadone clinics in all its cities and counties which have over 500

registered drug users by the end of 2007.

Health experts said that the initiative can help to rein in drug use and stop HIV infections being transferred from high-risk drug users to the general population.

To curb the rising HIV infection rate nationwide, the Chinese central and local governments more than doubled funds for prevention and treatment to 1.08 billion yuan (136.5 million U.S. dollars) in 2005 from 490 million yuan (61.9 million U.S. dollars) in 2003.

China launches drug safety technology campaign following high-profile accidents
(People's Daily, 2006-10-20)

China launched a campaign on Thursday, to promote the use of technology to guarantee the safety of pharmaceuticals and patients.

"The number of drug-related accidents has risen in recent years and the cases involving the Qiqihar No. 2 Pharmaceutical and the Xinfu drugs has attracted the attention and concern of the central government," said Shao Mingli, head of the State Food and Drug Administration (SFDA).

"It's time for us to take action to prevent such accidents," Shao said.

The campaign, launched by the Ministry of Science and Technology (MOST), the State Administration of Traditional Chinese Medicine (SATCM) and the SFDA, will provide full technological support for every step of a drug's journey from laboratory to patient.

"We will solve up to ten major technological problems concerning drug safety over the next five to ten years and set up three to five authorized and standard drug safety research and review centers," said Wang Hongguang, director of the China Biotech Development Center.

Through the campaign, we also hope to improve innovation in drugs manufacturing and raise the competitiveness of Chinese medicine in the mainstream international market, Wang added.

SFDA, China's national drug regulator, has revoked the license of the maker of the Xinfu drug, an antibiotic blamed for at least six deaths and dozens of illnesses.

Patients who took the antibiotic developed severe adverse reactions, such as chest, kidney or stomach pains, vomiting and anaphylactic shock.

Earlier this year, 11 people were killed after injecting a drug made by the Qiqihar No. 2 Pharmaceutical Co. Ltd. in the northeastern province of Heilongjiang.

Hepatitis B therapeutic vaccines enter clinical trials
(China News, 2006-10-23)

China has made great achievements in developing Hepatitis B Vaccines, with two therapeutic vaccines entering clinical research and trials.

The Chinese newspaper People's Daily reported the good news for Hepatitis B patients, according to a source from the Chinese Ministry of Science and Technology.

Once the new vaccines enter the market, they are expected to have unprecedented effects on Chinese people's health, elevating the cure rate for the disease.

So far, China has 120 million Hepatitis B virus carriers. Meanwhile, 39 million patients suffer from chronic Hepatitis B.

China has popularized the inoculation of Hepatitis B preventive vaccines in recent years; however, these vaccines do nothing to cure patients already infected with the virus.

As of now, there is still no effective way to clear out the Hepatitis B virus from the bodies of patients, worldwide.

However, the two new therapeutic vaccines may do more and further protect people from the disease.

China becoming a strong nation in developing biomedicine

(China News, 2006-10-23)

According to information from the Ministry of Science and Technology, nearly 30 kinds of biomedicines developed by China have been put to clinical use. About 170 kinds of biomedicines are at the stage of clinical research. China can produce eight of the ten major biomedicines in the world. China's SARS and bird flu vaccines are among the best in the world. All this shows that China is becoming a strong nation in developing biomedicines.

Wang Hongguang, director of the China Biotechnology Development Center, says that China has already finished technology accumulation in biotechnological field. At present, China is able to develop and industrialize biotechnology at the same time. This is shown in the following aspects:

First, China is the world's largest producer and user of vaccines. By applying human vaccines, China has eradicated or curbed the spread of major contagious diseases such as malaria, plague and poliomyelitis, making great contributions in increasing people's life expectancy. In China, people's average life expectancy has increased from 37 in 1949 to the present 73, and the use of vaccines has played a very important role in this aspect.

Secondly, the use of hepatitis B vaccine has prevented 20 million new-born babies from contracting the disease, and saved 700 billion yuan of medical cost for the country. The research of hepatitis B vaccine, an effectual remedy for the disease, has entered into the second stage for clinical use. Animal tests show that the vaccine can kill the virus inside animal body, and it might help change the virus condition of humans from positive to negative.

Research of the AIDS virus will soon enter the second stage of trial clinical use. Research of the AIDS vaccine which has a curable effect on the disease is also being conducted, and will be put to trial use.

China is also the world's largest antibiotics and vitamins producer. The use of antibiotics such as penicillin has played an important role in preventing infectious diseases, and the use of vitamins in improving the health of its people.

The bird flu vaccine will soon enter the second stage of trial research.

China effectively blocks AIDS transmission with medicine

(China News, 2006-10-24)

A renowned professor on AIDS prevention said last week that China had substantially raised the success rate of blocking the AIDS virus transmission from mother to baby. By applying medicine intervention method, China is able to reduce the mother-to-baby transmission rate from 37.1% to 6.5%. However, China still faces a hard job in detecting the AIDS-infected babies.

The statement was made by Professor Gui Xi'en, a renowned expert on AIDS prevention, when attending the AIDS Prevention Summit held in Yichang, Hubei, last week.

By the end of 2005, the number of people infected by HIV/AIDS virus had reached 38.6 million

worldwide. Among them, 2.3 million were children under the age of 15. The number of children infected by HIV/AIDS virus accounted for 13.1% of the total number of infected women. The Ministry of Health predicts that in China, about 9,000 people are infected by HIV/AIDS virus through mother-to-baby transmission.

The professor said that without medicine intervention, the HIV/AIDS transmission rate from mother to baby is 25-40%. In his investigation, the professor found that among the 238 babies born by 187 mothers with a HIV positive, 88 showed HIV positive, with a transmission rate of 36.9%. However, among the 92 children that took medicine intervention method, only 6 were diagnosed as HIV positive, and the transmission rate was reduced to 6.5%. If related preventive methods are taken during and after the pregnancy, and the babies are bottle-fed instead of breast-fed, the transmission rate can be further reduced to below 2%.

New AIDS virus testing reagent for family use enters Chinese market
(People's Daily, 2006-10-25)

People are able to test whether they are infected with AIDS virus at home by using samples of urine or saliva, thanks to a kind of new AIDS reagent produced by Chinese enterprises.

Wang Youchun, an expert with the National Institute for the Control of Pharmaceutical and Biological Products, said at a recent AIDS forum held in Yichang, in central China's Hubei Province, that four Chinese enterprises have produced this kind of reagent.

"But the new reagent can not replace the traditional testing method using blood samples, as the accuracy of the new reagent is relatively low," Wang said.

Besides blood, AIDS virus can be tested in urine, saliva, tear, semen and vaginal secretion, said Wang.

Compared with traditional reagent, the new method is more safe and convenient, but not as accurate as the traditional one, Wang said.

If the test of the reagent is positive, more traditional tests of blood are also needed to confirm the result, Wang said.

The reagent is aimed at family use, and its price is higher than the traditional one, Wang added.

China had reported a total 144,089 people living with HIV by the end of last year, including 32,886 AIDS patients and 8,404 fatalities, according to China's Ministry of Health.

At least 650,000 people in China are estimated to be infected by HIV, many of whom, however, are still unaware of their situation, partly due to the lack of a testing service, experts say.

Kidney donation between husband and wife has a high chance of success
(China News, 2006-10-25)

An expert on organ transplant recently pointed out that although husband and wife had no blood relationship, kidney donation between them was more likely to succeed. In fact, the chance of success for kidney transplant between husband and wife is only next to that of twins.

The statement was made by Shi Bingyi, director of the Organ Transplant Center from the People's Liberation Army No.2 Affiliated Hospital, at a national seminar on organ transplant.

In spite of this, Shi warned that donors still faced a great risk in such kidney transplant. In cases of patients suffering from kidney failure, their relatives should take a second thought before donating

their kidneys.

Due to a serious lack of organ supply, experts have turned their attention to the patients' relatives to provide kidneys for the patients. Kidney donation from living kidney donors refers to a kidney surgery in which people who have a close blood relationship donate their kidneys to their relatives. The donors are usually the parent, child, sister or brother of the patient.

Since husband and wife have no blood relationship, donation between the two is regarded as a special type of kidney donation from living kidney donors. Through clinical trials, doctors find that although there is no blood relationship between husband and wife, their chance of success in kidney donation is only next to that of twins.

"From medical point of view, we still don't know why this happens. It might be because husband and wife have lived together for a long time, and their immune tolerance in organ transplantation has been raised," said Shi.

Some domestic medical institutions have already started to practice such kidney transplantation.

China, US to jointly build animal AIDS pathological model

(People's Daily, 2006-10-25)

Zoologists from both United States and China will hopefully join efforts to build an animal AIDS pathological model, according to a news report released on October 24.

More than 150 zoologists from both the US National Institutes of Health and the Animal Research Center of prestigious Wuhan University in China are expected to jointly explore into how to build an animal AIDS pathological model.

Sun Lihua, director of the Animal Research Center of Wuhan University, said his center has primarily set up a "macaque infectious model with an immunodeficiency virus" after years of researches. But further practice is still required to be testified whether the model will succeed or not, said Sun.

Chinese scientists call for more attention on animal-born diseases

(People's Daily, 2006-10-26)

Chinese scientists called on to set up a monitoring system on the animal-born diseases in China and strengthen the cooperation between the medical research of animal and human being.

At a recent scientific forum held in East China's Shanghai, Wen Yumei, a member of the Chinese Academy of Engineering, said China lacks the basic research on animal-born diseases for a long time.

Among the 1,145 known infectious diseases of human being, 62 percent come from animals, scientists say.

Researches on some animal diseases have been conducted. But the diseases are new problems for human disease researchers when they are spread to human being, because the separate research of the two fields, said Wen.

Rabies has emerged on the top of public health agenda in China, with 2,254 rabies cases recorded in the first nine months of this year, an increase of 29.69 percent over the same period last year.

But researchers have no clear idea about the epidemic situation among wild dogs.

China suffered a lot from animal diseases in recent years. In 2003, the deadly outbreak of severe

acute respiratory syndrome (SARS) was believed to be linked to civet cats.
China has reported 21 human infections of bird flu since 2003, including 14 deaths.
The Ministry of Agriculture on Tuesday warned of a new outbreak of bird flu as winter is coming
In China's plan of scientific and technological development (2006-2020), the surveillance, quarantine, testing and diagnosis of animal-born diseases were listed as crucial tasks.

Sparrows found to carry flu virus
(China News, 2006-10-27)

Chinese scientists recently reported that they found H5N1 bird flu virus in sparrows two years ago, the first time the virus has been detected in the common, non-migratory bird on the Chinese mainland.
The Wuhan Institute of Virology in central China's Hubei Province tested excrement samples from 38 sparrows after an outbreak of bird flu in a county in Henan Province in 2004. Some of samples tested positive for the H5N1 virus, said Li Tianxian, a researcher with the institute.
"There's no need for the public to panic. The findings are two years old and there is no indication that sparrows pose a risk," said Li, adding that scientists found the bird flu virus in sparrows in the region of Hong Kong in 2002 and also in Turkey and South Africa.
Working with the Beijing Institute of Zoology, both under the Chinese Academy of Sciences, the scientists isolated four H5N1 strains among the 25 positive excrement samples.
Li said tests on the four strains have shown they are a new genotype of H5N1, adding that researchers did not find dead sparrows.
It was thought that bird flu was mainly transmitted by migratory water fowl, but this finding proves that non-migratory birds are also a potential channel for bird flu transmission, Li told the Chutian Metropolitan News of Hubei.
The finding was published in December last year in the US-based Journal of Virology, according to the newspaper.
Recent outbreaks of bird flu have again put the nation on alert for the potentially deadly disease.
In late September and early October, China reported two new outbreaks of bird flu in poultry, which killed at least 2,000 domestic fowl in the Inner Mongolia Autonomous Region and Ningxia Hui Autonomous Region.
The quarantine imposed on Jiuyuan District of Baotou City of Inner Mongolia where the outbreak occurred was lifted on Wednesday.
The Chinese government has prepared 23 million to 25 million doses of flu vaccine this year, 20 percent more than last year.
China has reported 21 human infections of bird flu since 2003, which have caused 14 deaths.

MOST Holds Meeting on TCM Cooperation Program
(MOST, 2006-10-30)

Department of International cooperation and Department of Social Development co-organized a meeting on International Traditional Chinese Medicine Program for Cooperation in Science and Technology (herein referred to as the TCM Program) on October 20, 2006, aiming at encouraging enterprises to participate in the TCM Program and improve international competitiveness of the

industry.

JIN Xiaoming, Director-General of International Cooperation attended the meeting and briefed the audience on the TCM Program. Officials from the Social Development Department introduced the major TCM projects in the 11th Five-Year Plan. The attendants held in-depth discussion on issues like:

-how to break the barriers into the mainstream markets such as EU and US and other markets such as Southeast Asia;

-how to engage enterprises in making international TCM standards with the help of the TCM Program.

They put forward valuable suggestions as regard to how to concord available TCM resources and build a platform for international cooperation.

PICB to hold computational neurobiology spring school in Shanghai
(CAS, 2006-10-31)

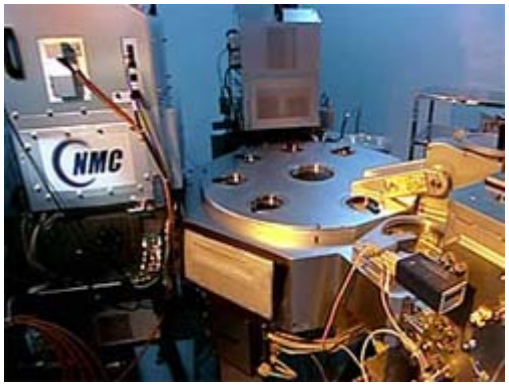
The First International Spring School on Computational Neurobiology in Shanghai will be organized from March 19 to 28, 2007 at the CAS-MPG Partner Institute for Computational Biology (PICB), Shanghai, PR China (http://www.icb.ac.cn). The course is free, and the school's speakers are listed below. The application deadline is 20th Dec, 2006.

The course lasts for ten days. Lectures will be given by distinguished experts on topics across the full breadth of experimental and theoretical neuroscience. The first few days of the course introduces students to essential neurobiological concepts and to the most important techniques in modeling single cells, networks, and neural systems. Each student will be assigned to a tutor. In the afternoon, students are given lectures, practical training in modeling, and time to accomplish their report. At the end of the course, students are expected to submit a report of five pages. The course is designed for advanced graduate students and postdoctoral fellows in related disciplines. Students are expected to have a solid background in either (neuro)biology, mathematics, or computer science and, in addition, some basic knowledge in the other two fields as well as a keen interest in the subject matter. Students of any nationality can apply.

A maximum of 30 students will be accepted. The course is free, every student has to cover costs for lodging and meals which will be rather moderate. Applications including a CV and an outline of the applicant's motivation for participation must be submitted electronically through the web site and should be accompanied by two letters of recommendation (also sent electronically). Applications will be assessed by the scientific committee, with selection being based on the following criteria: the scientific quality of the candidate (CV), the letters, and evidence that the course affords substantial benefit to the candidate's training.

1.4 Key Technologies

A breakthrough in core IC equipment R&D and industrialization
(CAS, 2006-10-11)



A major special project of integrated circuit (IC) manufacturing equipment of the National High-tech Research and Development Program, dubbed "863" Program, passed the acceptance check organized by the Ministry of Science and Technology and Beijing Municipality on 28 September in Beijing.

This marks an important breakthrough in the research and development of the core equipment for IC manufacturing "100nm high density plasma etching tool and large-angle ion implantation apparatus" and an encouraging step forward in the independent innovation and industrialization of this field. As a major partner of the project, the CAS Institute of Microelectronics took part in the entire R&D process, making key contributions to the successful development of the equipment.

On the same day, Beijing North Microelectronics and Beijing Zhongkexin Electronics Equipment Co. Ltd, respectively signed contracts on lot purchase of etching tools and ion implantation apparatuses with Semiconductor Manufacturing International Corp. (SMIC), the largest IC manufacturer in China today.

This is the first transaction of the domestic mainstream core IC equipment product, marking an advance in the industrialization of IC core equipment for manufacturing.

National key project on lubricative and antiwear materials officially started
(CAS, 2006-10-20)

The commencement of a national key basic research project on lubricative and antiwear materials (LAM) research was officially announced by the Ministry of Science and Technology on Oct. 10 in Beijing.

Headed by CAS Lanzhou Institute of Chemical Physics (LICP), the project, under the title of Basic Researches on Lubricative and Antiwear Materials Under Harsh Environment, was co-initiated by nine research bodies including CAS-LICP, Tsinghua University, Harbin Institute of Technology, Wuhan Research Institute of Materials Protection and so on.

LIU Weimin, researcher and vice director of the State Key Laboratory of Solid Lubrication at LICP, was appointed the chief scientist of the project.

The studies will mainly involve the composition, structure and performance variation of LAM, its novel principles and technologies as well as the function design and performance control of high-performance LAM. The results are expected to provide fundamental theories and techniques for LAM application under harsh environments such as super-microvacuum, radiation, alternating temperature and high-current, high-field, high-speed or heavy-burden circumstances.

Altogether 65 projects were officially started during the project implementation conference for the first batch of projects (2006-2007) listed in 973 Program ¨C China's on-going national keystone basic research program.

CAS scientists make progress in developing smart micro-capsules
(CAS, 2006-10-30)

A group of CAS scientists have succeeded in developing a novel system for preparing smart micro-capsules, a new gadget specializing in clinical use. Their work has been recently appraised by a seven-member panel of experts organized by the CAS Bureau for Comprehensive Planning on Sept, 19 in Dalian.

Under the title of "An Intellectual System for Micro-capsule Preparation under A Forced Electric Field," the project was conducted by scientists from the CAS Dalian Institute of Chemical Physics. The experts are headed by Prof. Lei Zhenlin, chairman of the Board for the Shanyang Scientific Instrumentation D&R Center and Prof. Yang Xuefeng from Dalian University of Technology. After hearing and examination of the project's reports on its implementation, testing and debugging of the gadget, the experts came to make an on-the-spot inspection at the lab. Finally, they came to a conclusion in unanimity, maintaining that the performance of the newly developed system has its main characteristic norms on a par with the advanced level so far achieved by the international community. Among the prescribed norms, the product's preparatory expertise, scope and grain evenness are next to none in the international arena as the three parameters have their scholarship up to the leading status in the world today. At the same time, the experts suggested that governmental departments concerned should spare no efforts in putting in more of their financial support so that the system's industrialization might be sped up.

According the panelists, the system is capable of realizing the design and optimization of the adaptor's elements and parts in the system on the basis of the computerized simulation of the electrode shapes. This can result in the optimal utilization of the electric field produced by the electrodes which are located at ideal geometric positions. Accordingly, the working potential can be lowered from 13kV to 6kV so a technical assurance is given for the operation safety, praticability in scaling up the preparation system, activity of its bio-products. By adopting sophisticated sensors in controlling the operational pressure in the feeding tank, the working pressure can be regulated to be less than 0.60Mpa. in a stable performance, thus rendering a continuous process of stable production of the micro-capsules. The working parameters of the pulse generator of a forced electric field have an output pulse width up to 1-6ms, its pulse frequency somewhere between 1 and 350Hz and its high-pressure pulse amplitude up to 1-12kV, all being both stable and adjustable, enabling the diameter deviation of the micro-capsules to be less than 20% and their homogeneity and sphericity are ensured.

In the wake of the ceaseless, booming and integrated development between medical sciences and chemistry, chemical industry, materials and biology, the R&D of medical micro-capsules for treatment of disorders in human systems of neurology or endocrinology and diseases caused by gene defects recently saw substantial and amazing advances. In order to make its way into the clinical practice, the new gadget must be proved that it may be manufactured in a continuous and multi-batch mode of mass production with stable product quality. The enforcement of the project by the CAS scientists in Dalian may be producing smart micro-capsules with top and controllable quality. Undoubtedly the research work provides a more powerful technical guarantee for their clinical success and full play of their promising potential in coming years.

1.5 Structure of Matter

China to build world's most sophisticated neutrino lab
(China News, 2006-10-08)

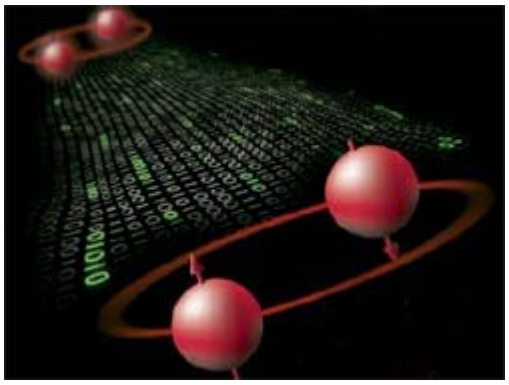
China plans to build a neutrino lab in the Dayawan Nuclear Power Station in Guangdong for conducting neutrino experiments, which will be the most advanced project of its kind in the world.

The Chinese Academy of Social Sciences and the Guandong Nuclear Power Group recently signed a cooperative project in Beijing on jointly building a neutrino lab in Dayawan Nuclear Power Station. Construction work will begin next year and the neutrino lab will be put into operation in 2010. The project will involve a total investment of over 200 million yuan.

The project immediately has aroused great concern among scientists around the world, even before it is started. Scientists generally agree that the best way to distill neutrino is from nuclear reaction. The Dayawan Nuclear Power Station has met the two important requirements needed for a neutrino experiment: the total power generation from its nuclear reaction is among the top in the world; and the location of the nuclear station is near the mountainous area, where scientists can build an underground laboratory for neutrino experiment to shy off the radiation from cosmic rays.

At present, only France and South Korea have similar laboratories. American scientists also regard Dayawan Nuclear Power Station as the best location for building a neutrino lab in China, so they have decided to finance half of the total funds for the probing equipment in the lab. Scientists from Russia and Czech have also indicated their wishes to participate in the project. If so, it will possibly become China's largest international cooperative project in the field of basic science.

CAS researchers make remarkable progress in quantum communication
(CAS, 2006-10-13)



CAS researchers have been successful in achieving the quantum teleportation of a two-qubit composite system, marking an important stride towards teleportation-based quantum computation with photons. The feat was reported as the cover story in the Oct. issue of *Nature Physics*.

Quantum teleportation, a way to transfer the state of a quantum system from one location to another, is central to quantum communication and plays an important role in a number of quantum computation protocols. Although significant experimental advances have been made in teleportation of single qubits (photons and ions), large scale applications require the transfer of composite systems containing two or more qubits, which has remained a real experimental challenge.

Teaming up with German colleagues, a research team led by PAN Jianwei from the Hefei National Laboratory for Physical Sciences at the Microscale, the CAS-affiliated University of Science and Technology of China, has realized the teleportation of combined polarization states - including entanglement - of two photons in an experiment. The work is considered a step towards creating

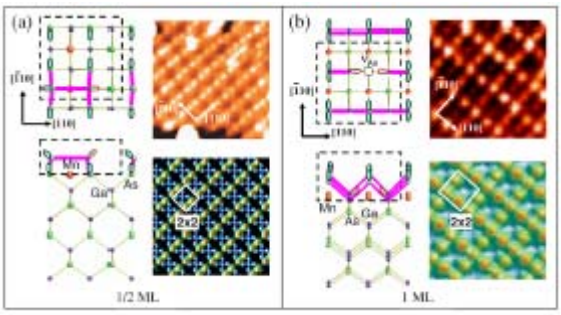
the quantum-teleportation technology that might one day power quantum computers.

To make their experiment successful, the researchers have developed a unique six-photon interferometer to transfer the combined polarization state of two photons, with the remaining four photons serving as the "teleporter" polarized.

The successful teleportation of a two-qubit composite system...is remarkable, says Philip Walther from the Harvard University. "Quantum teleportation in itself is intriguing. But new the combined states of two photons have been teleported, while preserving their entanglement -- and this could bring large-scale quantum communication and computation a step closer."

A generalized model for determining metal-induced reconstruction of compound semiconductor surfaces

(CAS, 2006-10-20)



CAS physicists have proposed a generalized electron-counting model to serve as the guiding principle in understanding metal-induced surface reconstruction of compound semiconductors. The work was reported in Sept. 22 issue of *Phys. Rev. Lett*.

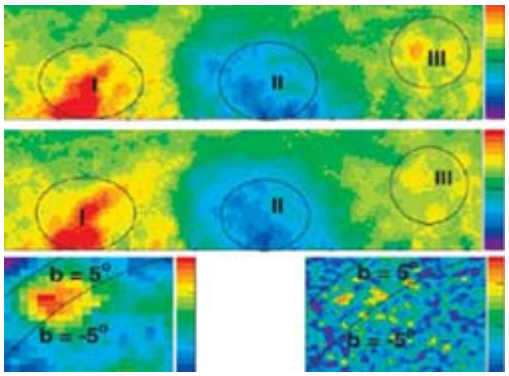
On a typical semiconductor surface, atoms in the top layers often rearrange themselves to form a reconstructed surface. For compound semiconductors such as GaAs and ZnSe, a simple electron-counting (EC) model has proven to be exceptionally instrumental in identifying the various forms of surface reconstruction. Since its proposal, the EC model has been applied successfully to many homogeneous semiconductor systems. It has also been extensively invoked in determining the structures of surface defects, such as vacancies, steps, and islands formed during homoepitaxial growth.

Metal growth on semiconductors is indispensable for many important technological applications. At the earliest stages of growth, adsorption of a submonolayer of metal often leads to the appearance of much richer surface reconstruction patterns than that in the corresponding homogeneous case. Because the reconstruction influences many important properties of the metal/semiconductor contacts such as the Schottky-barrier heights, it is vital to understand the precise form of reconstruction for a given system. More recently, such reconstructions have also been shown to play an important role in influencing the growth of diluted magnetic semiconductors at the growth front. To date, determination of metal-induced reconstruction of compound semiconductor surfaces has been primarily relying on a trial-and-error approach, typically with structural characterization using scanning tunneling microscopy (STM) or other techniques and results from extensive first-principles calculations as inputs on a case-by-case basis.

Based on theoretical analysis, first-principles calculations, and experimental observations, ZHANG Lixin, a doctoral student at the CAS Institute of Physics (IOP), establish a generic guiding principle, embodied in generalized electron counting (GEC) that governs the surface reconstruction of compound semiconductors induced by different metal adsorbates. The work has

been completed under the guidance of Zhang's tutor ANG En'ge and in cooperation with physicists in and outside IOP. Within the GEC model, the adsorbates serve as an electron bath, donating or accepting the right number of electrons as the host surface chooses a specific reconstruction that obeys the classic electron-counting model. The predictive power of the GEC model is illustrated for a wide range of metal adsorbates.

A monumental cosmic ray-spotting success reported from Tibet
(CAS, 2006-10-30)



On the basis of a systematic analysis of nearly 40 billion cosmic ray events in a nine-year observation, a Sino-Japanese consortium of Tibet Air Shower Arrays Collaboration) released their work in the Oct. 20 issueγ(known as the Tibet ASγ of *Science*. The feat is hailed as a milestone achievement in the studies of cosmic studies.

The Tibet Air Shower Array experiment (known as experiment) has been conducted by researchers from the CASγthe Tibet ASγ Institute of High Energy Physics and foreign colleagues at Yangbajing (4300 m above sea level) in Tibet, China, since1990. The array was expended and upgraded in the following years.

The researchers present two-dimensional high-precision anisotropy measurement for energies from a few to several hundred teraelectronvolts (TeV), using the large data sample of the Tibet Air Shower Arrays. Besides revealing finer details of the known anisotropies, a new component of Galactic cosmic ray anisotropy in sidereal time is uncovered around the Cygnus region direction. For cosmic-ray energies up to a few hundred TeV, all components of anisotropies fade away, showing a corotation of Galactic cosmic rays with the local Galactic magnetic environment. These results have broad implications for a comprehensive understanding of cosmic rays, supernovae, magnetic fields, and heliospheric and Galactic dynamic environments.

1.6 Transport and Space

Civil delta-wing aircraft makes first flight
(People's Daily, 2006-10-19)

The dynamic delta-wing aircraft FY550 made its first flight successfully on October 18 in Harbin, the capital city of northeast Heilongjiang Province. It is China's first locally researched and developed civil delta wing aircraft. It was made by Harbin Aviation Industry (Group) Co., Ltd.

The dynamic delta-wing aircraft needs only a short runway to take off and land. It can also fly very low. The operation of the aircraft is easy; it can be assembled quickly and is convenient for vehicle-mounted transportation.

This particular type of aircraft can be used widely in aerial photography and tourism because it has an open-ended aircraft cabin that makes it easy to photograph or film as well as carry equipment.

The Harbin Aviation Industry (Group) Co., Ltd can currently produce two delta-wing planes - the FY450, which as two seats and the FY550 which has three seats. They weigh a maximum of 450 and 550 kilograms. Both models of the delta-wing aircraft are considered safe and can perform well in different environmental conditions.

China to launch new meteorological satellite
(Xinhua Net, 2006-10-22)

China is to launch its second geosynchronous meteorological satellite on the "Long March 3" launch vehicle, from Xichang Satellite Launch Centre at the end of this year.

The new geosynchronous meteorological satellite, Fengyun-2E (FY-2E), has passed through the examination and approval of Chinese experts after its assembly, according to a report by the People's Daily.

The satellite is advanced in remote sensing and observation of Earth's atmosphere, and will play an important role in preventing and reducing weather-related disasters and monitoring the environment on Earth.

China's current geosynchronous meteorological satellite in orbit is the Fengyun-2C (FY-2C), launched in October, 2004. The new satellite will alternate as a backup for the FY-2C.

If necessary, both satellites will carry out simultaneous observations to inspect possible disaster-causing weather.

It is said that Chinese researchers have made great improvements to the new satellite, though it has the same key functions as the FY-2C.

China launches two satellites with one rocket
(Xinhua Net, 2006-10-24)

China successfully launched two satellites for space environment exploration into space with a Long March-4B carrier rocket Tuesday morning.

They were launched from the Taiyuan Satellite Launch Center in north China's Shanxi province at 7:34 a.m.

Satellite A was detached from the rocket after 11 minutes of take-off, followed by the detachment of Satellite B about one minute later. Both have successfully entered preset orbits.

The two satellites, which form Group-02 of Shijian (practice)-6 satellites, were manufactured by the Shanghai Academy of Spaceflight Technology (SAST) and DFH (Dongfanghong, or The East is Red) Satellite Co., Ltd. respectively. Both have a designed life of more than two years.

They will mainly replace the two Shijian-6 satellites launched on Sept. 9, 2004, to conduct exploration of space environment, radiation in space and their influence, parameters of physical environment of the space, and carry out other related space experiments.

The carrier rocket used in Tuesday's launch was developed and manufactured by the SAST. The launch marked the 92nd flight of Long March series of carrier rockets and the 50th consecutive successful launch of such rockets since October 1996.

China has no definite timetable for big plane manufacture: official
(People's Daily, 2006-10-26)

China still has no definite timetable for making big planes, but is on the way of feeder plane manufacture, said a senior official on Wednesday.

"Unlike satellites, planes carry people. Safety and reliability is our foremost concern in plane manufacture," said Sun Laiyan, head of China National Space Administration, in an interview on military technology for civilian use at www.gov.cn, a Chinese central government website.

"We are still in the primary stage of choosing the right technological program and deliberating relevant issues," said Sun, who is also deputy head of the Commission of Science Technology and Industry for National Defense.

However, he said the country's first feeder planes are scheduled for delivery for 2009.

"We have received orders for 41 feeder planes," said Sun.

According to Sun, China plans to start with feeder planes, then proceed to narrow-body trunk line passenger planes and finally wide-body trunk line passenger planes.

"Technologically, China is capable of making feeder planes and general-purpose planes, and is grounded in developing large-scale passenger planes and civilian helicopters," said Sun.

He said China has established a complete system of plane design, experiment, test flight and manufacture facilities.

China launches high-power communications, broadcast satellite

(Xinhua Net, 2006-10-29)

China successfully launched a homemade high-power communications and broadcast satellite into space aboard a Long March-3B carrier rocket at 0:20 on Sunday.

The new-generation SinoSat-2 satellite, launched from the Xichang Satellite Launch Center in southwest China's Sichuan Province, is designed to serve broadcast TV, digital TV, live broadcast TV and digital broadband multimedia systems on the Chinese mainland, Hong Kong, Macao and Taiwan.

The satellite split off from the rocket about 25 minutes after lift-off and then successfully entered the geosynchronous transfer orbit. Its orbit will be adjusted several times by commanders on the ground until it is positioned above the equator at 92.2 East Longitude.

SinoSat-2, developed and manufactured mainly by the China Academy of Space Technology, weighs about 5.1 tones and has 22 transponders. It has a designed life of 15 years, including 12 years of in-orbit service life.

The carrier rocket used in the launch was developed and manufactured by the China Academy of Launch Vehicle Technology. The launch marked the 93rd flight of Long March series of carrier rockets and China's 51th consecutive successful space launch since October 1996.

A SINO Satellite Communications Co. Ltd. (SINOSAT) official said SinoSat-2 will greatly help China to tap the international space flight market, improve the capacity, safety and reliability of China's information broadcast and conduct live TV broadcast.

Earlier this month, Sun Laiyan, chief of the China National Space Administration, said that the

satellite would enable every farming household to receive TV signals using a small dish, thereby bringing educational programs and even remote medical services to farmers.

Industrial sources said the launch was a milestone for the communication sector and would most probably speed up the reform of China's satellite TV service by prompting the abolishment of a 13-year-old regulation banning individuals from setting up dish antennas.

Industry analysts predict that once individuals are allowed to install satellite dishes, up to 100 million households will do so between 2006 and 2010.

China currently has about 400 million television sets, a huge potential market for satellite TV.

SinoSat-1, launched in July 1998, was bought from abroad mainly to undertake China's radio and TV broadcast and communications services in the Asia-Pacific Region.

SinoSat-3, especially for radio and TV services, is now in the stage of research and development. It will be put into operation in 2007.

Official sets goals for aerospace industry

(China News, 2006-10-31)

Vice Director of the Commission of Science, Technology and Industry for National Defense Jin Zhuanglong recently outlined eight goals set for Chinese aerospace industry over the next 5 years, ranging from aircraft making to launching of the moon probe satellite.

He disclosed the information at the 2006 Eighth China International Aerospace Summit.

Firstly, China would finish the research and manufacturing of the ARJ21-700 airplane. The airplane will be produced in batches and enter the market for sale.

Secondly, the 6-ton-class civil helicopter will make its debut flight.

Thirdly, China will develop technologies for the design and production of large-size aircrafts.

Fourthly, China will design a new generation of rocket carriers that are made with non-poisonous materials, equipped with multiple functions, low costs, and a large propulsive force. The carrying capacity of the rocket at near-earth orbit will reach 25 tons and 14 tons at geosynchronous transfer orbit (GTO).

Fifthly, China will kick off the high resolution monitoring project on the earth.

Sixthly, China will produce and launch some new-type satellites into space to monitor the climate, ocean and earth resources on the earth, small satellites that monitor and pre-warn disasters on the earth, telecommunication and TV and radio broadcasting satellites, new technology experimental satellites, new technology recovery satellites, satellites for breeding seeds; and kick off the program for the North Star satellite navigation system.

Seventhly, China will send astronauts to conduct space walk and conjoin spacecraft in the space.

Lastly, China will send the country’s first moon probe satellite, Chang’e No.1, into space to explore the moon.

Jin said that Chinese government encouraged people from all walks of life to participate in the aerospace program and set up a multifactor, multichannel investing system for the aerospace industry, in order to safeguard its steady development.

2 News from Universities

Official: Students overseas to double by 2010
(People's Daily, 2006-10-17)

The number of Chinese studying abroad is expected to reach 200,000 in 2010, almost double last year's 118,500, a senior official said on Sunday.

Among them, about 10,000 will be State-sponsored students in key areas such as telecommunications, IT, technology and environment. This number would be a 40 per cent increase over the 2005 figure.

Zhang Xinsheng, vice-minister of education, also estimated that in the year 2020 the number of Chinese students overseas would reach 300,000. This would include 20,000 on the State-sponsored Study Abroad Programme.

Figures from the Ministry of Education show that since 1978 about 930,000 Chinese students have left the country to study, and 230,000 of them have returned.

Zhang described this particular group of students as "the country's great treasure," as they have brought back advanced technology and management skills, as well as a global outlook.

Zhang also said that China would further promote the learning of the Chinese language around the world.

"We hope that in 2020 the number of foreigners studying Chinese can be twice the existing 30 million," he said on Sunday at the 25th anniversary celebration of China Education Association for International Exchange (CEAIE) in Beijing.

Instead of going abroad for graduate studies, more Chinese students are opting to go to foreign universities for undergraduate studies, experts said.

"It can be foreseen that the number of students taking undergraduate courses overseas will steadily increase, "said Zong Wa, director of China Centre for International Educational Exchange under the CEAIE.

More research papers by Chinese universities published
(China News, 2006-10-31)

According to a report by Institution of Scientific & Technical Information of China, there were more research papers by Chinese universities published last year, but not many of them have been included in SCI (Science Citation Index), which is considered as a very important benchmark to judge a country's scholarly scientific development, or been quoted by researchers from other countries.

The frequency of Chinese papers in SCI being quoted is only placed 13th in the world, quite low compared with its large number of papers published.

However, researchers should never be anxious to achieve quick success and get instant benefits. Sometimes it takes the hard work of generations to make great discoveries. Thus the number of papers published should not be over-emphasized. Though it is important, honest work and just reward mean much more.

3 Innovation Management

China's scientific researchers get a major budget boost
(Xinhua Net, 2006-10-12)

The Chinese government is raising the budget for scientific and technological research by 20 percent this year, said a senior official with the National Development and Reform Commission (NDRC) on Thursday.

Zhang Xiaoqiang, Vice Minister with the National Development and Reform Commission, made the remarks at a forum of China's Eighth International Trade Fair for High-Tech Achievements held in henzhen City of South China's Guangdong Province.

The central government has increased its financial support for scientific research especially in basic disciplines, said Zhang.

According to NDRC statistics, China's spending on basic research has risen from 5.22 billion yuan (652.5 million U.S. dollars) in 2001 to 13.12 billion yuan in 2005.

To ensure its goals of scientific and technological research are reached, China will continue to increase spending on scientific and technological research from 2006 to 2010, he said.

More efforts will be made to encourage enterprises to increase their spending on technological innovation and to become the main body of technological innovation, Zhang added.

Data of the NDRC shows that enterprises contributed 60.44 percent of total spending to technology research in 2001 with the percentage rising to 68.32 percent in 2005.

Yet the input of Chinese enterprises in scientific research only makes up 0.8 percent of their sales income, much lower than the average level of three percent in the developed countries.

Big science facilities are indispensable tools for China's basic research
(CAS, 2006-10-19)

The national innovation system, which is made up of many different components, is a complete innovation chain connecting the both ends of laboratorial researches and commercial productions, while research institutes mainly focus on cutting-edge explorations in different fields including health, ecology and environmental protection, so as to provide strong scientific and technological supports for the sustainable development of the country and its millions of enterprises, observes CAS President LU Yongxiang.

Lu, who is also vice chairman of the Standing Committee of the China's top legislature NPC, made the remarks in a recent interview about CAS innovation program and mega-science project with China's State television station CCTV.

With the support of the central government and through the Knowledge Innovation Program (KIP), CAS has confined its objectives, restructured its organization and renovated its system. The past eight years have witnessed an exciting research harvest, including the world-leading studies on

quantum control and quantum communication; the discovery of new particle X1835 by Beijing Spectrometer III (BESIII) Collaboration Group; the key technology for cooling down the roadbed of Qinghai-Tibetan Railway which comes after years of permafrost researches; the mass production of MTO (methanol-to-olefin conversion) which helps reduce petroleum consumption and enhance the exploration of new energies.

Lu pointed out there are still three essentials for the development of independent innovation capacity, namely a sharp rise of research investment, a better disposition of scientific resources and a more square competition environment for domestic universities and research institutes. The perfection of a market competition environment supported by a legal system is also very important to translate new knowledge and inventions into productivity.

Mega-science facilities (MSF) are indispensable for the basic research with an objective of observing the natural world, understanding life process and exploring universe movement, says the CAS president. Thee facilities, such as large-capacity accelerators and big-caliber space telescopes, have enormously boosted our fundamental research abilities in natural science to an extent unreachable by old tools. Meanwhile, cutting-edge scientific researches cannot go without MSF: the jet engine and space shuttle technologies were developed by American mega-science engineers, and their studies on fusion reaction and clean energy exploration are also based on MSF construction. Also, researches on sustainable development, e.g. the forecast of natural disasters, the general distribution of urban lands, are in need of MSF. Last but not least, MSF may unexpectedly bring along new technologies, for example the Internet originated from CERN in Europe.

During the on-going 11th Five-Year Plan (2006-2010) a number of MSF will be constructed for upgrading China's S&T capacities and the overall national strength, Lu announced.

4 China's International Science Cooperation

Third joint IGDB-TLL symposium held in Singapore
(CAS, 2006-10-17)

With an objective of strengthening cooperation and exchanges, a 15-strong delegation led by XUE Yongbiao, director of the CAS Institute of Genetics and Developmental Biology (IGDB), at the invitation of the Temasek Life Science Laboratory (TLL) in Singapre, attended the third IGDB-TLL Joint Symposium held from Oct. 5 to 8 in Singapore. CAS Vice President LI Jiayang and Vice Director-General of the CAS Bureau of Life Sciences and Biotechnology ZHU Zhen were among the members of the delegation.

Ever since the two sides inked an agreement on overall cooperation in August 30, 2004, they have made significant progress in such aspects as establishing joint labs and holding symposia.

At opening of the symposium on Oct. 5, Xue and TLL Director William Chia updated the development in their respective institutions. Dr. Li Jiayang, an expert in plant molecular genetics, gave a talk on "recent progress in studying on rice tiller angle." A total of 20 principal investigators from both sides made presentations on various topics.

Project on "artificial sun" to be launched next month
(Xinhua Net, 2006-10-17)

Seven parties will sign an agreement on the joint implementation of the International Thermonuclear Experimental Reactor (ITER) project next month, said a senior official with the ITER International Fusion Energy Research Project on Tuesday.

Kaname Ikeda, Director General Nominee with the ITER International Fusion Energy Research Project, told Xinhua at the ongoing 21st Fusion Energy Conference in Chengdu, that the agreement between the United States, the European Union, China, the Republic of Korea, Russia, Japan and India marked the formal launch of the project.

The project aims to recreate the conditions of the sun under which a nuclear fusion reaction can take place. The process has been given the nickname of "artificial sun" by scientists.

As a member of the joint partnership, China will promote its development, said Xu Guanhua, Minister of Science and Technology.

The formal implementation of the project offers people an opportunity to realize their dream of bringing nuclear fusion energy under control, said Werner Burkart, Deputy Director General of the International Atomic Energy Agency.

According to Kaname Ikeda, the construction of the reactor will take nearly 10 years and cost 10 billion euros. It will be located in France.

Controlled nuclear fusion is seen as an efficient way for people to generate infinite, clean energy to offset the dearth of fossil fuels such as oil and coal.

Scientists believe the fuel, deuterium, can be extracted from the sea and an enormous amount of energy can be obtained from a deuterium-tritium fusion reaction under a huge temperature of 100 million degrees Celsius. After nuclear fusion, the deuterium extracted from one liter of sea water will produce energy equivalent to 300 liters of gasoline.

Different from nuclear fission which has brought as many problems as benefits, nuclear fusion is a more viable solution for the world's energy supply, said Burkart.

China has seen its self-designed full super conducting experimental Tokamak fusion device, dubbed EAST (experimental advanced super conducting Tokamak), completed and enter the trial phase. It is the first one of its kind in the world.

Similar to the operation mode of the devices of ITER, EAST could offer research and experimental expertise for ITER, said Xu Guanhua.

According to Zhou Caipin, deputy director of the Center for Fusion Science of Southwestern Institute of Physics, China will send about 30 scientists to France to participate in the ITER research.

As the first international joint project concerning a nuclear fusion reactor, ITER is a good example of how the world can cooperate in the peaceful use of nuclear energy, said Burkart.

USA, UK Invite China to Join Anti-cancer Program

(CRI, 2006-10-25)

The United States and the United Kingdom have invited China to join an international anti-cancer program, called the Cancer Genome Atlas (TCGA), Francis Collins, director of the U.S. National Human Genome Research Institute, announced Tuesday.

Speaking at the ongoing 2006 International Conference on Genomics being held in Hangzhou, capital of east China's Zhejiang Province, Mr Collins said, "We want China to join us just like it did when we cooperated on the international human genome project in 1999."

The TCGA was launched two months ago in the United States.

The program will focus on DNA variations in human cancers and try to find the causes of the disease.

The program will help decipher the real pathogenic mechanisms of cancers at the genetic level, said Collins, one of the TCGA's chief scientists.

Collins said the program will draw on funds of 100 million U.S. dollars and will generate an enormous workload.

"Studies of every sort of cancer need a minimum of several hundred samples so that the causes can be found through analysis," said the expert, adding that they are very keen for China and India to join the project.

Collins and his colleagues have outlined a short-term program, prioritizing work on cerebral cancer, lung cancer and ovarian cancer.

Chinese scientists have reacted positively to the invitation from their western colleagues.

Coincidentally, a week ago China published a blueprint of its cancer genome studies on the Ministry of Science and Technology website, said Yang Huanming, director of the Huada Genetic Research Center, affiliated to the Beijing Institute of Genomics, Chinese Academy of Sciences.

Yang, who was China's chief scientist on the 1999 international human genome project, said,

"China is keen to make the TCGA, launched by the USA and the UK, an international cooperation program," adding that "China's blueprint has been de facto accepted as part of the world cancer genome research."

According to China's blueprint, Yang and his partners will pursue certain research programs initiated by the United States that have proved helpful to Chinese cancer sufferers.

Yang said they will concentrate on studying tumors that have a high incidence in China and which have not so far been dealt with by the United States scientists.

Although the blueprint did not specify which sort of tumors China has decided to focus on, Yang stressed the targets will be serious, fast-growing, high-incidence tumors.

The TCGA has not yet worked out a clear-cut distribution of tasks for the participants. But Collins said they are confident the project will be highly influential -- like its 1999 forerunner.

"China will be one of the main participants," Collins said.

Belgian nuke research body seeks cooperation with China
(People's Daily, 2006-10-25)

The Belgian Nuclear Research Center is exploring ways of cooperation with China, said a top official of the research body, on Tuesday.

Eric van Walle, general manager of the center, travels to China next week to look at cooperation opportunities with the country.

The research center, known as the SCK-CEN, aims to set foot in China for contractual work and invite Chinese researchers to its facilities, van Walle told a group of Chinese journalists.

"The opportunities for China and SCK-CEN can be found in the areas of consulting, participation in research programs, education and training," he said.

The two sides can cooperate, among other things, in radiation protection, nuclear safeguards, nuclear safety, management of radioactive waste, nuclear medicine, nuclear education and training, he said.

Da Ruan, coordinator for Belgium-China nuclear cooperation at the SCK, said the SCK's expertise in dismantling of nuclear installations might be of particular interest to China.

Prospects in nuclear education and training are also good as China needs a large number of nuclear engineers.

The SCK offers a master's course in nuclear engineering in collaboration with six Belgian universities. It also offers a training course sponsored by the International Atomic Energy Agency.

But the total training capacity is limited at the SCK. Ruan said SCK researchers can open courses in China.

The SCK, established in 1952, carries out a variety of nuclear- related research, including nuclear materials, advanced nuclear systems, nuclear waste management, nuclear medicine and nuclear safety.

China and Belgium signed an accord on nuclear cooperation on Sept. 21 in Brussels during a visit of Chinese Vice Premier Zeng Peiyan.

China-EU Science and Technology Year Kicks off in Brussels
(MOST, 2006-10-26)

On 11 October, the initiation ceremony for China-EU Science & Technology Year (CESTY) jointly sponsored by MOST and EU Research Department and the High-level Seminar was staged in Brussels, headquarters of the European Union and Capital of Belgium. The Chinese government delegation led by WU Zongze, Vice Minister of Science and Technology attended the ceremony and participated in the high-level seminar on China-EU S&T cooperation as part of the ceremony. Over 40 Chinese S&T administrators and researchers as well as officials, scholars and diplomats from European Commission and EU member countries attended the conference and the initiation ceremony.

Mr. Potocnick, Directorate-General for Research, European Commission attended the ceremony. He and WU Zongze respectively delivered keynote speeches. Both sides had a high opinion of the progress achieved in China-EU S&T cooperation in recent years and hoped to deepen understanding and communication among the research personnel of China and EU through this CESTY and exhibition of the China-EU S&T cooperation results. The Chinese side briefed the seminar on the Eleventh Five-year Plan (the S&T part) that China has already started and the EU side briefed the seminar on the Seventh Framework Program to be started in 2007. The two sides also discussed how to boost cooperation in relevant fields.

In order to carry out activities of CESTY, MOST and EU Research Department signed the enforcement agreement for CESTY. After the initiation ceremony, various CESTY activities will be started in provinces of China and member countries of EU.

Dragon Programme: Training Course in Atmospheric Remote Sensing held in Beijing (MOST, 2006-10-27)

China-EU Dragon Programme: Advanced Training Course in atmospheric remote sensing cosponsored by National Remote Sensing Centre of China (NRSCC) under MOST, Peking University (PKU) and European Space Agency (ESA) witnessed its opening ceremony in PKU on October 16, 2006. As part of MOST-ESA cooperation programme in earth observation, the training course is devoted to atmosphere application and air pollution monitoring, such as in components of air pollution and their intensity, and sandstorms.

Opening of China-EU Science and Technology Year and Policy Forum in Brussels (MOST, 2006-10-30)

October 11, 2006 marked the opening of the China-EU Science and Technology Year (CESTY) and the Policy Forum in the EU headquarter Brussels. Co-sponsored by MOST and the EU Research DG, CESTY was officially launched with the theme “cooperation for sustainable mutual benefit”. Vice Minister WU Zongze of MOST and Commissioner Janez Potodnik of the EU attended and addressed the opening ceremony.

Over 100 participants attended the Policy Forum, coming from the S&T circle and business sector of both sides. 13 delegates delivered keynote speeches on mobility, health, energy, environment, agriculture and transport. The EU side also introduced the CO-REACH program.

5 Miscellaneous

I.B.M. Division Moves to China

(CRI. 2006-10-13)

I.B.M. has moved its global procurement headquarters to southern China from the suburbs of New York City to "capitalize on emerging market opportunities."

I.B.M., based in Armonk, N.Y., spends 30 percent of its $40 billion annual procurement in Asia, the company said in a statement Thursday, confirming the move to Shenzhen that was first announced to suppliers in May. This is the first time that I.B.M., the world's biggest computer services company, has moved the headquarters of one of its largest divisions to China.

Companies like I.B.M. and Microsoft are expanding in China to take advantage of lower costs and to gain market share in the world's most populous nation.

The chief procurement officer for I.B.M., John Paterson, relocated from Somers, N.Y., and started work in Shenzhen Thursday, said Amanda Garland, an I.B.M. spokeswoman.

Demand for software and services across Asia are growing, and the company wants to develop new markets and suppliers to meet the demand, I.B.M. said.

19th International Conference on Bioceramics Opens Grandly in Chengdu

(MOST, 2006-10-17)

On 11 October, the opening ceremony for the 19th International Conference on Bioceramics was grandly staged in Chengdu.

Over 400 representatives participated in the opening ceremony, including over 200 overseas representatives from more than 20 countries and regions. Also present at the opening ceremony were SHI Changxu, academician of both the Chinese Academy of Sciences and the Chinese Academy of Engineering and Chairman of Chinese Committee for Biomaterials, Professor ZHANG Xingdong, Chairman of 2006 International Society for Bioceramics, Professor N. Nakamura of Japan Kyoto University, ZHU Zhihong, executive member of Chengdu Party Committee and Vice Mayor of Chengdu City, HAN Zhongcheng, Deputy Director-General of Science and Technology, Sichuan Province and LI Guangxian, Vice President of Sichuan University.

This conference is an important prelude to the 9th World Convention on Biomaterials to be held in China in 2012. This conference will help promote research and industrialized development of biomaterial science and engineering in China and Chengdu.

Three Gorges Turbogenerators Operating at Full Capacity

(CRI, 2006-10-18)

All 14 gigantic turbo-generators of the Three Gorges Project began operating at full capacity at 8:44 a.m. on Wednesday.

Each generator is now able to churn out daily revenue of 4.2 million yuan (about 525,000 U.S.dollars), according to Ma Zhenbo, chief of the Three Gorges Hydropower Plant.

The units had been generating 550,000 kw/hour of electricity since being commissioned in July 2003. But the figure has now been bumped up to 700,000 kw/hour, enough for a city with a

population of one million.

The water level in the Three Gorges Reservoir began to rise on Sept. 20. It nudged 153.79 meters on Wednesday and is expected to reach the 156 meter mark on Saturday.

According to the original design, a water level of 148 meters is required for full generation capacity.

Ma said Wednesday marked a milestone in the history of hydropower development in China.

About 1.16 million people have been relocated since construction of the project began in 1993. The dam is 2,309 meters wide and 185 meters high. Twenty-six 700,000 kw power generators line the two banks of the river, and there is a five-tier, dual-track ship lock.

When completed in 2009, the reservoir of the 203.9 billion yuan project (25.5 billion U.S. dollars) will have a capacity of 39.3 billion cubic meters and 84.7 billion kw/h of electricity will be produced annually.

Workers have completed the dam, the 14 generating units on the northern bank and most of the ship lock system, which is in service.

Construction of the 12 generating units on the southern bank of the Yangtze is underway.

Traffic in the dam area has been restricted to one direction, alternating every 24 hours, since Sept. 15 when work began on a year-long project to raise the beds of the two topmost tiers of the ship lock from 131 to 139 meters. This will ensure safe navigation when the dam water level rises to 156 and finally to 175 meters.

By Wednesday, the plant had produced 135.6 billion kw/hour of electricity, earning more than 25 billion yuan (3.13 billion U.S. dollars) in revenue.

Nobel Prize winner hopes China to contribute more to biotech

(Xinhua Net, 2006-10-19)

Nobel Prize winner James Watson said he hopes China to continue to contribute more to the development of biotechnology and genomics here on Thursday.

When meeting with Chinese State Councilor Chen Zhili, Watson spoke highly of the efforts made by the Chinese scientists and laboratories in the human gene project, and hoped the research on human gene can go on in the future with more contribution from China.

Over 300 Chinese scientists participated in the human gene project, and has at least completed one percent of the whole, according to an official from the Chinese Academy of Sciences.

The Chinese scientists and laboratories in Beijing have done very important work, and he was "impressed" with the achievements China has made in biotechnology, Watson said.

He also wooed the Chinese government to give more support to the country's scientific and technological research, and hopes the two countries can carry out more exchanges between scholars.

Chen said the Chinese government always attaches importance on science and technology development, and will continue to make hard efforts in this regard.

"I hope China can keep in tough with the world's tendency in biotechnology and genomics, and make contribution in this field," she said.

Watson, who won the Nobel Prize in Physiology or Medicine in 1962 for the discovery of DNA double helix model, is also an expert in genetics, genomics and molecular biology.

He will attend the International Conference of Genomics held in Hangzhou of East China's Zhejiang Province from October 23 to 25.

Water in Three Gorges reservoir up to 156meters
(China News, 2006-10-28)

The water level in the Three Gorges reservoir reached the 156-meter mark at 9:50 a.m. on Friday, a rise of 20 meters since Sept. 20, when this phase of the water storage plan went into operation.

"The Three Gorges project has achieved the second phase of the water storage plan," announced Li Yong'an, general manager of China Yangtze River Three Gorges Project Development Corporation (CTGC).

At 156 meters, the Three Gorges Project is now fully functional in terms of flood-control, power generation and navigation control, said Li.

Figures from the CTGC Cascaded Dispatch Center suggest that Yangtze River water is entering the reservoir at 15,000 cubic meters per second. All 14 of the 700,000-kw generator units powered by water discharge are operating at full capacity.

The reservoir has stored some 10.5 billion cubic meters of water. Data retrieved from 7,000 monitoring devices planted in the Three Gorges Dam indicate the gigantic concrete dam is stable under the current water pressure.

Launched in 1993, construction of the gigantic concrete structure of the Three Gorges dam was completed and began to hold water in May this year. Prior to that, the reservoir's temporary cofferdams held water at a depth of around 135 to 139 meters.

The water level in the reservoir will eventually reach 175 meters in 2009, when the Three Gorges project is finally completed.

"The water storage plan was fulfilled a year earlier than previously planned, which means the project generates 7.85 billion kw/hour more electricity to 15 provinces and municipalities along the river than planned," said the manager.

The generator units generated power at a rate of 550,000 kw per hour since they were commissioned in July 2003. With the generators running at full capacity, each generator's power generation is enough for a city with a population of one million.

The Three Gorges Hydropower Plant will generate 53.1 billion kw/hour of electricity this year.

By lifting the water level to 156 meters, a 570 km-long navigation route to the upper-stream of the Three Gorges has been optimized, allowing ships with a loading capacity of over 10,000 tons to travel from the river mouth in Shanghai on China's eastern coast to landlocked Chongqing Municipality in west China.

Meanwhile, the reservoir's 11 billion cubic meters of flood-control capacity will protect people living on the middle and lower reaches of the Yangtze River from major flood disasters previously experienced once every 100 years.

WANTED: Strong Chinese for winter in South Pole

(People's Daily, 2006-10-31)

Chinese who are healthy, strong and interested in experiencing the blistering cold winter in the South Pole, can now apply for a position on China's 24th Antarctic expedition team.

This is the first time that China will recruit Antarctic expedition team members from the public, according to the Polar Research Office of the State Oceanic Administration.

"We are recruiting from a wider range of possible team members to meet the needs of polar research," the office said.

Available positions for the Great Wall Station and Zhongshan Station in South Pole include two executives, two doctors, two chefs, six electricians, two machinery technicians, two water and heating specialists and two telecommunications engineers.

Post period lasts from November 2007 till December 2008 for the Great Wall Station and March 2009 for the Zhongshan Station.

Interested individuals must be Chinese citizens, in good health, have a good record and be psychologically strong.

Applicants need the consent of their employer.

Applicants can submit written applications to the office before Nov. 30. The application form can be downloaded at www.chinare.cn.

Posts will be decided after physical examinations, psychological testing, winter training and Antarctic-related knowledge tests.

More than 700 Chinese have spent winters in the Antarctic over the past 20 years. The shortest day at the Great Wall Station in winter is only an hour and a half. The research team at the Zhongshan Station spends about two months in a perpetual polar night.

6 Information for upcoming Workshops in December

The 2006 international conference on Information&Control Technology
Date: December 7 – December 8
City: Shenzhen, Guangdong Province
http://ict2006.theiet.org.hk/

The Third International Academic Conference on Traditional Chinese Medicine Engineering (TCME)
Date: December 8 – December 10
City: Shanghai
http://www.shutcm.com:82/tcme2006/index_e.htm

3rd International Conference on Energy and Environment Materials (ICEEM2006)
Date: December 8 – December 10
City: Guangzhou, Guangdong Province
http://www.matinfo.com.cn/mat2005/poptemp/huanjing/index1.htm

International Workshop on Image Compression and Image Processing
Date: December 17 – December 19
City: Fuzhou, Fujian Province
http://cmcs.fzu.edu.cn/wicap/

2006 International Conference on Robotics and Biomimetics (ROBIO 2006)
Date: December 17 – December 20
City: Kunming, Yunnan Province
http://www.cs.ualberta.ca/~zhang/robio2006/index.shtml

The IEEE International Conference on Data Mining (ICDM)
Date: December 18 – December 22
City: Hongkong
http://www.comp.hkbu.edu.hk/iwi06/icdm/

The 2006 IEEE/WIC/ACM International Conference on Intelligent Agent Technology
Date: December 18 – December 22
City: Hongkong
http://www.comp.hkbu.edu.hk/iwi06/iat/

The 2006 IEEE/WIC/ACM International Conference on Web Intelligence
Date: December 18 – December 22
City: Hongkong
http://www.comp.hkbu.edu.hk/iwi06/wi/

Abbreviations

CAS - Chinese Academy of Sciences

MOST - Ministry of Science and Technology

CRI - China Radio International