

Content

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

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News Concerning Helmholtz and China

From 01.09 to 04.09, a Sino-German Workshop on Streptococcus was organized in Goslar. Prof. Singh Chhatwal from HZI was the coordinator on the German side and Prof. Gorge Fu Gao from the Inst. Of Microbiology, Chinese Academy of Sciences on the Chinese side. The Chinese-German Centre for Research Promotion, the joint-venture between the National Science Foundation China and DFG, sponsored this activity, whereby 14 Chinese flew over and over 20 German scientists participated in the workshop. The Chinese delegation had the opportunity to visit HZI and also had sightseeing in Wolfenbuettel and Wolfsburg. It was praised by both parties as a very successful event; some consequent cooperation projects were developed. Dr. He from Helmholtz Beijing Office and Prof. Zhao from CGCRP showed up also in the workshop and promised for further assistance.

After this workshop, Dr. He had a round tour in Germany. He visited AWI, GKSS, and consulted the scientists for their cooperation with China, and explained the procedure for receiving Chinese students with the Helmholtz-CSC scholarship. He participated also on the Helmholtz Annual Conference on 11.09 in Berlin and the Heidelberg HCI alumni meeting. Generally, the Helmholtz scientists are satisfied with the quality of the Chinese students, although it is also quite disappointing that quite some of the capable candidates later on given up their application to CSC or given up their opportunity after been awarded with the scholarship. We have to accept the fact that many Chinese students appreciated English speaking countries much more than Germany, although English would be sufficient for laboratory work, but it is not as easier as in the US to develop a academic career, at least they don't believe this.

In the third week of September, 9 FZJ colleagues from the Institute of Nuclear Physics, led by their institute director Prof. Stroehler, came to China for an international conference on hadron physics. They spend also one night in the Guest-Apartment in the Institute of High Energy Physics. One postdoctoral student from IHEP was recruited last year through the Helmholtz-CSC joint programme.

The other striking news in this month from China is the successful launch of the Chinese Spaceship Shengzhou VII and the space-walk of Zhai Zhigang, one the 3 Chinese crews on board. For more specific information concerning the Shenzhou VII, please refer to: <http://www.chinaview.cn/08sqfs/>. We have heard from a German news that DLR and the Chinese Manned Space Mission Office have signed agreement, in the upcoming Shengzhou VIII, which is schedule for 2010-2011, there will be also a series of Sino-German cooperation experiments on board.

Besides, China is also very proud of having [delivered facilities for the LHC](#), and China is also [making a new voyage to the Antarctica](#) and we have heard from our AWI colleagues that some of them were even invited by the Chinese side for a free participation.

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1 Science News

1.1 Energy

China to start construction of world's first AP1000 unit in March 2009

(Xinhua Net, 2008-09-09)

China is to begin construction of the world's first nuclear plant using the AP1000 technologies at Sanmen Nuclear Power Project (NPP) in Zhejiang Province in March 2009, said a Chinese nuclear company executive.

"All kinds of preparation work are underway as scheduled," said Wang Binghua, board chairman of the State Nuclear Power Technology Corporation (SNPTC) on Monday.

Sanmen NPP is in southeast Zhejiang Province. It is the world's first nuclear plant using the AP1000 technologies, considered the third-generation nuclear technology, and the first phase of the project will be put into commercial operation in November 2013.

Wang said the AP1000 technologies were suitable for inland nuclear power plants. The SNPTC was assisting relevant parties to select NPP sites in the country's inland regions.

A SNPTC official told Xinhua that challenges remained in the detailed design, engineering and construction of the first AP1000 unit.

By the year 2020, China plans to have 40-million-kilowatt installed capacity of nuclear power, accounting for 4 percent of the country's total. However the current installed capacity of nuclear power is only about eight million kilowatts.

China now has 11 nuclear power reactors in operation. Among them, three use domestic technologies, two are equipped with Russian technology and four with French technologies, and two are Canadian designed. All the 11 reactors employ second-generation nuclear power technologies.

China pioneers in renewable energy

(People's Daily, 2008-09-09)

The facts cited as follows will evidently confirm the report released last month by the Climate Group that China is the world's leading producer of energy from renewable sources and is on the way to overtaking developed countries in creating clean technologies.

In 2007, China led the world in terms of installed renewable capacity at 152 gigawatts.

In 2007, investment in renewable energy in China amounted to \$10.8 billion, up 91 percent over the year before, excluding the investment in its giant hydro power projects.

In 2007, China's investment in renewable energy projects totaled \$ 12 billion, almost level with world leader Germany as a percentage of GDP.

In 2009, China is expected to lead the world in its total investment in renewable energy.

Li Junfeng, vice director of Energy Studies Institute affiliated to State Development and Reform Commission, was quoted recently as saying that in terms of the overall scale of renewable energy development, China has already led the way. Calculated in a more calibrated way, he said, China's total installed renewable capacity has taken the lead in the world, in which installed capacity of mini-sized hydro power projects takes up a half of the world's total.

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Additionally, despite its coal-dependent economy, China has become a world leader in the manufacture of solar photovoltaic technology, with its six biggest solar companies having a combined value of over \$ 15 billion. Around 820 megawatts of solar PV were produced in China in 2007, second only to Japan. In the next year, China will also become the world' leading exporter of wind turbines and it is also highly competitive in solar water heaters, energy efficient home appliances, and rechargeable batteries. It is manifest to all that supportive government policies investing billions of dollars in energy efficiency and renewables are driving huge levels of innovation in China, and the preparatory work for hosing a 'Green Olympics' has provided the governments at different levels with a golden momentum to develop and expand the renewable energy industries, and accordingly the concept of 'Green Olympics' has also greatly enhanced the nationwide awareness of energy preservation and emission reduction, which acts as a strong impetus to resort to energies form renewable sources.

Currently, energy crisis featuring the severe shortage of fossil fuels and inflated prices has endangered the entire world. The development of renewable energy is placed at the top of agendas for almost all the governments when outlining their future energy strategies, to which China is no exception.

The development of renewable energy in China is still facing the limitations in technological input and research abilities, as is often seen in the development of other industries. Therefore, international cooperation plays an important role in China's technological development, as regards developing renewable energy' observed Mr. Li Junfeng.

While China is a pioneer leading the way in renewable energy projects, the relevant authorities remain considerably prudent, 'we are not supposed to be unduely optimistic, despite the positive news,' they claimed. Mr. Li also echoed this saying, 'many of our core technologies applied to the development of renewable energy come from foreign countries, and thereby the development level is still subject to others. Besides, the costs are still high. China's relevant authorities and manufacturers will have to further shore up their input in research and development of renewables.'

On this basis, China is expected to be not only the biggest manufacturer of renewable energy, but also a real giant in researching, developing and consuming energy from renewable sources in the foreseeable future.

Research Team on Magnetic Confinement Plasmas Takes Shape (MOST, 2008-09-11)

The Institute of Plasma Physics, Chinese Academy of Sciences (CAS) stresses team building and has gathered a professional team on magnetic confinement plasma over the past few years. The team features winners of National Outstanding Young Scientists Fund, scientists selected in the "Hundred Talents Program" and foreign young scholars.

Approved by the "International Partnership Program for Creative Teams" on September 2nd of 2008, the team will get support from CAS and the State Administration of Foreign Experts Affairs.

In addition to projects of the National Natural Science Foundation and the 973 Program, the Institute is also engaged in the pre-research on ITER procurement packages.

China Approves Research on Sea-bed Combustible Ice (CRI, 2008-09-17)

A project to research combustible ice from the South China Sea as a form of alternative energy has been authorized by China's National Basic Research Program, or 973 Program, the Nanfang Daily

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reported.

Combustible ice, one type of natural gas hydrate, is a recognized form of alternative energy. The pure hydrate, formed under conditions of high pressure and low temperature, has a white color and can be ignited directly. One cubic meter of the hydrate is equivalent to 164 cubic meters of natural gas.

In 2007, China became the fourth country to successfully excavate combustible ice from the sea bed, after the United States, Japan and India.

The research is being carried out on the floor of the northern South China Sea. This is the first time that 973 Program has provided support to the research, which will fully commence in January 2009.

CAS sets up new center to boost nuclear fusion research

(CAS, 2008-09-26)



On suburban Hefei's "Science Island", one of China's key thermonuclear fusion research and experiment bases, a research center has been officially launched to study the magnetic confinement of plasma and related theories.

Based on the Experimental Advanced Superconducting Tokamak (EAST) successfully developed in 2006 by the CAS Institute of Plasma (IoP), the newly-established center aims at promoting the research and development of nuclear fusion science and technology, improving the

advanced steady-state operation mode of Tokamak, upgrading experimental facilities in this regard, and starting a physical and engineering buildup for the eventual development of a commercialized nuclear reactor.

It will carry out studies in light of China's strategy for the development of magnetic confinement of nuclear fusion by a combination of theoretical and technological studies. It endeavors to boost domestic and international cooperation as well as talent training in relevant fields.

Upon its opening ceremony held on 2 September, the nameplate of the new research hub was jointly unveiled by Prof. LI Ding, director-general of the CAS Bureau of Basic Research and the center's honorary director Prof. LIU Chuan Sheng with the Department of Physics, University of Maryland.

The ceremony was chaired by Prof. LI Jiangang, head of the IoP and vice-director of the Hefei-based CAS Institutes of Physical Science. Also present were scholars from Princeton Plasma Physics Laboratory, General Atomics Fusion Energy Research, Lawrence Livermore National Laboratory and the Max Planck Institute for Plasma Physics.

According to experts, controlled nuclear fusion presents one of the most challenging yet compelling tasks for today's scientists. In the process of fusion, light atomic nuclei (such as hydrogen) join together to form heavier ones (such as helium), and at the same time release enormous energy which is considered infinite, safe, clean, and ideal for the Earth "C a planet about to run out of its fossil fuels. However, the reaction conditions are extremely demanding: a temperature of tens of millions of degrees, sufficient plasma density and energy confinement among others.

As for the confinement of the plasma, in the 1960s, Russian scientists came up with a doughnut-shaped chamber with which they caged the hot gas with magnetic fields. They called the device Tokamak. Since then, countries such as Russia, France, Japan and China have based their nuclear fusion research

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on Tokamak devices and experiments. In September 2006, the first plasma was given off on Science Island by the EAST, which boasts the world's first fully superconducting Tokamak with a noncircular cross section and which was designed and built by CAS scientists.

The new research hub is going to focus on several cutting-edge technologies, Prof. Li notes, which involve the simulation of EAST operation mode with superconducting coil confinement; edge-plasma and diverter behavior; the coupling of ion spiral and lower hybrid waves with H-mode plasma; the heating and current drive of plasma by waves; some new physical phenomena concerning high-energy particles heated by waves and neutral beams; the performance simulations of plasma that is driven by non-inductive current over long duration; and possible mechanisms of the loss of energetic particles in Tokamak, etc.

To carry out studies on the subject, a professional team on magnetic confinement plasma has been developed over the past few years. The team features winners of National Outstanding Young Scientists Fund, scientists selected from the Bairen Program and foreign young scholars.

Approved by the "International Partnership Program for Creative Teams" on 2 September, the team will get support from CAS and the State Administration of Foreign Experts Affairs.

As a noncorporate research body, the center runs on a basis of director responsibility system under the leadership of its Council, which is composed of experts from the CAS Bureau of Basic Research, the CAS-affiliated University of Science and Technology of China, as well as the IoP. The IoP, also situated on the Science Island, will play a leading and major role in the center's development.

The center also has an international advisory committee and an S&T committee, which held their first meetings at the IoP on September 2. The ten members of the international advisory committee are from the General Atomics Fusion Energy Research, the Max Planck Institute for Plasma Physics, the Fusion Division of the Italian National Agency for New Technologies, Energy and the Environment, and the Japanese National Institute for Fusion Science. The advisory committee is going to give directions to the center's mid- and long-term research programs, evaluate the plans, check up project results, and put forward research proposals. The S&T committee, on the other hand, is made up of some 20 senior Chinese researchers and will be make major decisions on the center's routine operation. CAS Member YU Changxuan with the University of Science and Technology of China, Prof. WANG Xiaogang with Peking University and IoP vice-director WAN Baonian are on the S&T committee.

1.2 Earth and Environment

Tallest Meteorological Tower to Be in Use Soon (CRI, 2008-09-03)



China's tallest meteorological tower, located in Jiayuguan city in northwest China's Gansu province with a height of 94.94 meters, will be in use on September 10th, China Foto Press reports.

The tower, named "Bihaimingzhu", or "the Blue Sea and Shining Pearl", is eighteen stories above the ground.

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The tower is surrounded by a steel framework featuring a dolphin propping up a ball. It contains a meteorological radar.

The tower will provide extreme weather forecasts, such as gales, thunderstorms and sleet and play a key role in meteorological monitoring along the Hexi Corridor, the northwestern province's grain producing base.

China to build first inland Antarctica station within 2 years

(Xinhua Net, 2008-09-04)

China will set up a new observatory station in Antarctica at the region's highest peak within two years, official said here.

"The 25th Chinese Antarctic expedition starting in October will mainly focus on building a new station on Dome A and further exploration of the Antarctic plateau," said Wu Jinyou, party secretary with the Polar Research Institute of China.

Wu made the statement during a visit on Wednesday to the northwest China's Xinjiang Uygur Autonomous Region to promote environmental protection.

Dome A is an Antarctic plateau 1200 kilometers inland, and is thought to be one of the coldest naturally occurring places on Earth with temperatures believed to reach -90 degrees Celsius.

Wu did not specify when construction of the new station would be finished.

Earlier reports said the construction were expected to be completed by January next year, but the Chinese Arctic and Antarctic Administration (CAA), affiliated to the State Oceanic Administration, said on its website that the construction might well last through 2010.

The station, once completed, will be China's first inland Antarctic research station.

Six countries, including the United States, Russia, Japan, France, Italy and Germany, have already built inland research stations in the Antarctica.

China has so far built two research stations in Antarctica. The Great-Wall Station, founded in February 1985, is located south of King George Island, and Zhongshan Station, built in February 1989, is located south of Prydz Bay on the Mirror Peninsula, eastern of Larsemann Hills.

More Tremors Have Hit This Year

(CRI, 2008-09-04)

More magnitude-5 or stronger earthquakes have rocked China this year than in any other year, a senior seismologist said on Wednesday.

An average of 18 such quakes strike China each year. But 21 quakes, including the one that devastated Sichuan province on May 12, have struck in just eight months of this year, Yin Chaomin, deputy director of China Earthquake Administration (CEA), said.

Speaking at a joint briefing of the CEA and the State Bureau of Surveying and Mapping (SBSM), he said the tremors that rocked Xinjiang, Tibet and the Sichuan-Yunnan border region were caused partly by the May 12 quake. Part of the cause, of course, is their geographical locations on seismic belts.

The Wenchuan quake, however, had nothing to do with the tremor that jolted Panzhihua in southern Sichuan on Saturday, said Liu Jie, China National Seismological Network director in charge of earthquake forecasting.

Addressing another briefing, Liu said the epicenters of the two quakes, which occurred in different fault zones, were 550 km apart.

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The Wenchuan quake caused a horizontal displacement of 238 cm and ground shifts of up to 70 cm, Li Weisen, SBSM deputy director, said.

The displacements were observed in southern Shaanxi and Longnan region of Gansu province during a CEA-SBSM joint field study between late May and mid-July, Li said.

Two- to 3-cm horizontal and vertical displacements were also observed on the southwestern foot of Mt Qomolangma in Nepal, he said.

"Results showed the May 12 quake had a considerable impact on the terrain of the quake zones, but not much in the areas beyond. Surveying and mapping infrastructure in the quake zones was severely impaired, whereas those outside the area suffered only minor damage."

Li rubbished some reports that said the Qinghai-Tibet Plateau had shifted several meters. "Media reports that claim the plateau shifted several meters because of the Wenchuan earthquake lack scientific evidence," he said.

The CEA is positioning more than 50 GPS monitoring stations in the quake zones where earlier surveying and mapping results are being re-examined.

China has suffered eight magnitude-6 or above aftershocks since the May 12 quake, Yin said. The number of magnitude-5 or stronger tremors is more than 30.

Survey reveals floral emission of methane

(CAS, 2008-09-08)

A long-term field observation by CAS scientists indicates that meadows on the Qinghai-Tibet Plateau



emit methane, a powerful greenhouse gas, adding weight to the argument that the living plant is a producer of methane under aerobic conditions.

A heated debate about the role of plants in contributing to the global methane budget started in 2006 when a German team led by Frank Keppler from the Max Planck Institute for Nuclear Physics in Heidelberg suggested that plants produce the greenhouse gas methane. Based on his laboratory experiments, Keppler estimated that globally, plants could emit up to 236 million tons per year, roughly 30% of total methane emissions. Regarding this theory, several research teams reported their studies with contradictory findings. However, little is known about the emissions under field conditions.

Jointly headed by Prof. CAO Guangmin with the CAS Northwest Institute of Plateau Biology (NIPB) and Dr. XU Xingliang with the CAS Institute Geographic Sciences and Natural Resources Research, a research team made a three-year field survey on methane emissions by plant communities in alpine ecosystems on the Qinghai-Tibet Plateau. Using a closed chamber technique, this study was conducted in two major alpine ecosystems on the Plateau, namely, *Kobresia humilis* and *Potentilla fruticosa* meadows. The results, which were recently reported in *Biology Letters*, show that methane emissions by alpine plants are important for a regional methane budget. While confirming the claim of Keppler, the study shows that the emissions by various plant communities are significantly different, indicating that species-level difference should be considered when assessing methane emissions by plants.

"Our findings suggest that the question of the role of methane in plant metabolism is an extremely complex one," ZHAO Xinquan, director of NIPB and a member of the research team was quoted by

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Nature as saying. "There seems to be great variations in plants' ability to emit methane, which are affected by a multitude of variations under natural conditions." This may explain the mixed results from different laboratories, he adds.

Zhao also stresses that further research is needed to understand the basic biology of methane emission and consumption by plants. "Until then, it might be a bit premature to speculate on their role in global climate change," he says.

China's environment monitoring satellites start operation

(Xinhua Net, 2008-09-09)

China's newly launched environment monitoring satellites have started operation and are sending back concrete data, Chinese authorities have announced.

The two satellites successfully sent back data obtained by the charge coupled devices (CCD) cameras at 5 p.m. on Monday and the images converted from the data were clear, the State Administration of Science, Technology and Industry for National Defense said in a brief release.

The two small environment and disaster monitoring satellites were launched from the Taiyuan Satellite Launch Center in Shanxi Province on Saturday.

Equipped with state-of-the-art imaging systems and infrared cameras, the satellites can provide a global scan every two days, closely track natural disasters and provide quick assessments of damage to guide rescue and reconstruction work.

The two satellites, with an estimated lifespan of more than three years, are part of China's effort to create a satellite constellation with four optical satellites and four radar satellites.

The constellation would enable China to have a stable and efficient forecasting and service network for environmental and natural disaster monitoring.

New survey vessel launched

(CAS, 2008-09-18)



The launching ceremony for Shiyang-1, a research vessel of CAS, was held on 12 September at a shipyard of Huludao, northeast China's Liaoning Province.

High-level officials from CAS, and Bohai Shipbuilding Heavy Industry Co. Ltd., the builder of Shiyang-1, were present to witness the birth of China's most advanced marine surveyor. CAS Vice President YIN Hejun cut the launching rope.

According to Prof. TIAN Jing, director-general of the CAS Bureau for Hi-tech Research and Development, the new vessel is China's first large-scale SWATH (small waterplane area twin hull) with more than 2,000-ton displacement. The 60m-long and 26m-wide vessel is equipped with an AC frequency-conversion drive system and a dynamic positioning system. It is noted for global vibration and noise reduction and automation for the vessel.

Because of its outstanding properties such as seaworthiness and quietness, according to experts, Shiyang-1 could be used to carry out a comprehensive and multi-disciplinary marine investigations in such fields as hydro-acoustics, marine physics, geo-biology, marine and geological environment.

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With three CAS institutes (namely Institute of Acoustics, the South China Sea Institute of Oceanology, and Institute of Automation) as its overseers, the ship was designed by the No. 702 Institute under the China Heavy-duty Ship-building Incorporation. It will be delivered to CAS by the end of this year after trial trips.

Arctic ARV on China's third Arctic expedition (CAS, 2008-09-19)



After a series of experiments and subglacial observations, a CAS underwater vehicle Arctic ARV (Autonomous and Remotely Underwater Vehicle) has completed its mission in China's third Arctic scientific expedition. Now it is onboard the icebreaker Xuelong (or Snow Dragon) for return trip.

This vehicle, aimed to fulfill the underwater exploration of the marine environment in the North Pole, is an achievement scored by a research group from the Shenyang Institute of Automation (SIA), CAS, with the

support of the National High-tech Research and Development Program (dubbed the "863" Program). The concept of ARV was firstly brought out by SIA scientists in China in 2002. It is an innovative attempt to integrate the functions of an Autonomous Underwater Vehicle (AUV) with a Remotely Operated Vehicle (ROV). Arctic ARV features with an open modular reconfigurable architecture and a diverse operation mode (autonomous, semi-autonomous, and remote control). It's equipped with power supplies and a micro fiber cable. AUV mode enables the vehicle to make underwater exploration on a large scale, while ROV mode is designed to investigate in a small sea area with accuracy. Rather than using the old two-dimensional fashion, Arctic ARV made sea ice investigation in a three-dimensional way, initiating a brand new observation measure for marine scientific research. When Xuelong dropped its anchor in the destination, the vehicle was launched to acquire the physical properties and thickness of the sea ice and other data of the ocean elements.

Strengthen Tibetan Plateau studies to serve local development (CAS, 2008-09-23)



CAS will redouble its support to the sustainable socio-economic development of the Tibetan Autonomous Region via its Institute of Tibetan Plateau Research (ITP), says CAS Vice President DING Zhongli.

Prof. Ding made the remark during a study trip to the Region from 7 to 13 September, during which he visited several CAS experimental and monitoring stations on the Tibetan Plateau and held talks with local government officials.

CAS attaches importance to the principle of "innovation for the people and S&T research for social development," stressed Prof. Ding.

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At present, S&T studies at CAS are not confined to "ivory tower" studies. Some of them have been diverted to rendering support to local development. ITP has served as a good platform in this regard, said Prof. Ding.

China publishes altitude of lowest inland point

(Xinhua Net, 2008-09-28)

China's lowest inland point is 154.31 meters below the sea level, the State Bureau of Surveying and Mapping and the government of Xinjiang Uygur Autonomous Region jointly announced here on Sunday.

The figure means the lowest point at Aiding Lake in the northwestern Xinjiang has gotten "higher" by 0.22 meter over the past 29 years. The same point was measured at 154.536 meters below the sea level in 1979.

Experts attributed the 0.22-meter gap to the use of modern surveying technologies and possible geomorphological changes over the years.

The new figure will go in to the books Sunday, said officials from the bureau and the regional government.

Liu Geqing, an official of the Xinjiang Bureau of Surveying and Mapping, said the new figure would help boost local tourism.

Aiding, Uygur for "Moonlight", lies 30 km southeast of the Turpan city, and has a water surface of seven square kilometers. It is the world's second-lowest lake after the Dead Sea in the Middle East.

1.3 Health

A new approach for early cancer diagnosis

(CAS, 2008-09-02)

A research project entitled "A real-time analysis of the early diagnosis of cancer markers", undertaken by the CAS Changchun Institute of Applied Chemistry (CIAC), recently passed the acceptance check by an expert team under the auspices of the National Natural Science Foundation of China (NSFC).

The research was of great value for the fast ascertain of cancer markers and the early warning and diagnosis of the fatal disease, according to the experts.

Starting from January, 2004, the group, under the leadership of Wang Erkang from CIAC and KONG Jilie from Fudan University, has put their utmost to the research and attained encouraging results.

By means of capillary electrophoresis (CE) with electro-chemiluminescence (ECL) detection, surface plasma resonance (SPR), laser induced fluorescence (LIF), spectrum technology, protein chips, gene chip sensors, etc., a real-time, sensitive and specific online detection of some cancer markers was established.

After their successful commercialization of the CE electrochemical analyzer as an independent intellectual property, the group further developed new ECL technologies and ECL probes, working out a new method for simple, sensitive detection of the activity of prolidase (PLD) in plasma and serum, marker of some cancers such as liver cancer and mammary cancer.

With regard to the protein chip or gene chip sensor, the researchers also developed immunochips in

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crossing finger shape and silicon chips of integrated three-electrode to detect serum markers of liver fibrosis. Based on the study of selective reversible assembly of antibody protein characteristics of electrochemical surface switch, the microfluidic chip with switching functions was developed for controlled protein separation. The research progress gained so far was of great importance to clinical applications such as the fast analysis of body/tissue fluids of patients, the construction of databases to analyzes parameters for clinical substances, and the fast detection of cancer markers for early warning and diagnosis.

First test-tube monkeys given birth in China

(Xinhua Net, 2008-09-11)

Chinese scientists have bred the country's first test-tube monkeys, in the first step to breed genetically-engineered monkeys for scientific research.

Dr. Sun Qiang of the East China Normal University led the primate research group to create the seven macaques, a type of monkeys that are fond of eating crabs.

Their experiments were published by the latest edition of the Proceedings of the National Academy of Sciences (PNAS).

Closest among animals to physique, genetic nature and behavior of human beings, primate models are usually used for studying medical treatment for human diseases.

Under the state-financed program that focuses on the primate reproductive research and bio-engineering, Dr. Sun said, "Our next step is to bring about more test-tube monkeys and eventually make gene-modified monkeys benefiting for medical research."

Chinese scientists are now trying to catch up with leading scientists in developed countries in engineering transgenic monkeys. American researchers produced the world's first gene-modified monkey, Andi, in 2000. The scientific community has tried to use such monkeys to find new ways to treat diabetes, the Alzheimer's, AIDS and breast cancer.

Test-tube technology is the best available way to breed transgenic monkeys, experts said.

Sun's team capitalized on a few new technologies on stimulating more eggs from female monkeys and collecting semen and mammalian oocyte, as well as new ways of in vitro fertilization and embryo transplantation.

The new technologies "can significantly improve the pregnancy rate and live birth of healthy baby monkeys," the scientist said.

Their technique was regarded as an efficient method in constructing various transgenic primate disease models.

All the seven new born monkeys are healthy, Sun said, with the oldest Lele, or Happiness, being aged at one and half years.

Chinese researchers successfully clone pigs with swine fever-resistant gene

(Xinhua Net, 2008-09-11)

Three cloned piglets with a generesistant to swine fever virus , a fatal disease for the livestock, have been born in northeast China's Jilin Province, Chinese researchers said.

The piglets, weighing 1,050 grams, 1,100 grams and 550 grams, were born Wednesday afternoon in a pig farm of the Agriculture Department, Jilin University.

Experts said the piglets were the first with the gene against swine fever in the world.

A new institution to be formed by teaming up biological institutes in Beijing
(CAS, 2008-09-16)

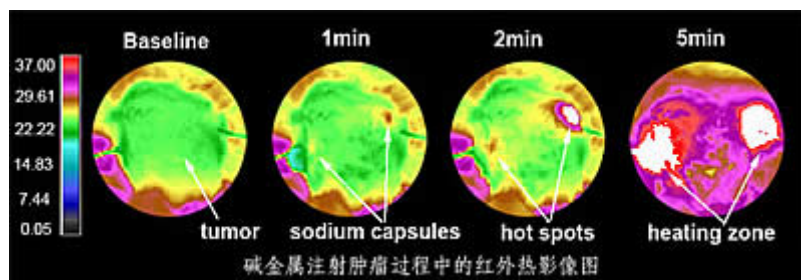
A new CAS institution is to be set up by collaborating seven biological institutes in Beijing, says Prof. KANG Le, head of the preparatory group for the new establishment.

It will be a research consortium with novel mechanism, according to Prof. Kang, a zoologist and former director-general of the CAS Bureau of Life Sciences and Biotechnology.

While maintaining the independence of its member institutes, the new institution will establish several research centers to carry out pan-institute and interdisciplinary studies in various fields, such as bio-informatics, chemical biology, integrative biology, systems biology and stem cell research.

By taking advantage of the academic buildup in mathematics, physics, chemistry, astronomy, geology and biology housed in various institutes in Beijing, the new institution will make efforts to combine biological studies with those in non-biological realms.

Efforts will be made to step up technology transfer by introducing seed funds and forming partnership with business enterprise, notes Prof. Kang.

Ablating tumors with alkali metals
(CAS, 2008-09-17)


An infrared thermography image of tumor thermal ablation therapy using alkali metals

As an alternative to radiotherapy or chemotherapy for tumor treatment, which often cause serious side effects to patients, thermal ablation therapy has increasingly received attention. However, the traditional methods of thermal ablation that is based on such heating principles as ultrasound, radiofrequency, microwave and laser heating, are challenged by the difficulty of avoiding thermal damage to the healthy tissues along the path where heat is transferred from the outside to the target tumor inside the human body.

To address the problem, Prof. LIU Jing and his doctoral student RAO Wei with the CAS Technical Institute of Physics and Chemistry have invented a new approach for such a treatment by using alkali metals as the heat generation seeds. Experiments show that this method can efficiently ablate tumor tissues without causing thermal damage to the surrounding healthy tissues. Their work was reported online by the International Journal of Hyperthermia.

Alkali metals are famous for their vigorous reactions with water and usually considered as a hazard medium in daily life. The property is clearly used by CAS researchers to heal tumors. Its working principle is to make full employment of intrinsically existing wet environment in the biological body. After an injection or transplantation of only an extremely small amount of such metals into the target tissues, a significant temperature increase or even combustion at the target site can be obtained, which immediately results in a powerful thermal ablation effect on the tumor.

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Because the metal will neither produce heat at the room temperature, nor keep contact with the tissue before an injection, unnecessary burning injury to the healthy tissues can be avoided. To make the metals easily transferred to targeted tissues via a common syringe, the researchers developed a new package preparation, which can keep the metal in liquid state at the temperature as low as -10°C .

Experts say that since such treatment is safe, easy for both operation and post-care management, and rather economic, it allows a potentially wide adoption in the near future for the clinical treatment of tumors. In addition, the heating reaction's products such as ions of Na and K are the typical metabolites of the human body in its normal state, can be absorbed by the tissue itself without causing any damage. However, the researchers note that the new therapy is still at its incubation and proof-of-concept stage. More efforts are needed on animal and clinical tests to justify the new therapy before it can be used in a real tumor treatment on humans in the near future. The present research is expected to serve as a valuable guidance for such an endeavor.

Sexual Activity Becomes Main Route of HIV Transmission in China (CRI, 2008-09-26)

Sexual activity has replaced intravenous drug use as the major cause of the spread of AIDS in China, a report from the Ministry of Health said.

The shift became evident in October 2007, the disease prevention and control bureau of the ministry said in a report on Thursday. The change was a marked departure from the pre-2003 situation, when intravenous drug use was the dominant means of HIV transmission.

According to the report, during the first half of this year, 22,299 new HIV/AIDS cases were reported in the mainland, of whom 4,007 had died.

Cumulative infections as of June 30 topped 252,748, including 30,883 deaths.

The report found the ratio of sexually transmitted infections had risen steadily, with heterosexual and male homosexual transmission climbing to 37.9 percent and 3.3 percent in 2007, respectively, from 10.7 percent and 0.4 percent in 2005, respectively.

The relatively low rate of condom use was to blame, the report said.

1.4 Key Technologies

New version of Loongson III ready to make debut (CAS, 2008-09-04)



The home-grown CPU chip Loongson III will make the debut of its 4-core version at the end of the year, and an 8-core version in 2009, announced XU Zhiwei, Deputy Director-general of the CAS Institute of Computing Technology, at Hot Chips held recently in California.

The core configuration of Loongson III was displayed at the show. According to XU, the chip consumes little power, with 10w for the 4-core version, and 20w for the 8-core version. Using MIPS64 as the inner core,

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Loongson III has been added with more than 200 commands for binary conversion and multimedia acceleration. XU also said China would make Loongson III a supercomputer in 2010, enjoying 1,000 trillion floating-point operations per second. Loongson III will eventually be applied to the desktop at the Teraflops level.

China's first 100 teraflop supercomputer (CAS, 2008-09-04)



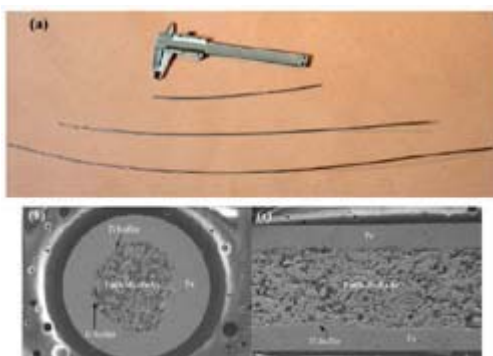
Recently, the Dawning 5000, a supercomputer with a processing capacity over 100 teraflops per second, was developed jointly by the CAS Institute of Computing Technology (ICT) and Dawning Information Industry Co., Ltd.

The success achieves a peak computing power of 230 TFlop/s. Based on the LINPACK method, the capacity of the novel computer reaches 160 TFlop/s. It's also high-lighted by its low cost and low power consumption.

This new breakthrough enables China to catch up with the world most advanced technologies to build and maintain high-performance computers, and makes China the second country after the US to be able to create commercial supercomputers with performance over 100 teraflops.

Dawning company was founded in 1995 as a high-tech enterprise, relying on the technology support from the ICT, the National Research Center for Intelligent Computing System and the National Center for High-performance Computing. In 2006, the company established its industrial base in Tianjin, raising new expectations in China's high-performance computer industry.

Fabrication of iron-based superconducting wires (CAS, 2008-09-05)



Photograph of the $\text{SmO}_{1-x}\text{F}_x\text{FeAs}$ wires. SEM images for a typical transverse (a) and a longitudinal (b) cross-section of the wire after heat treatment.

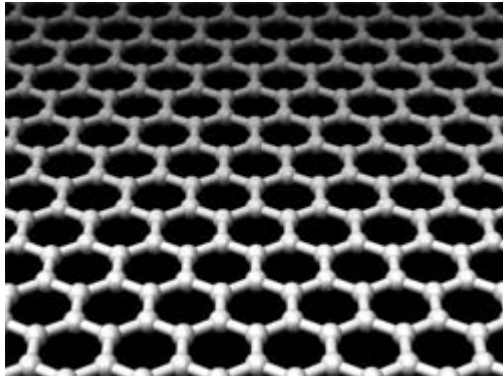
Via the conventional powder-in-tube method, a research team led by MA Yanwei with the CAS Institute of Electrical Engineering has been successful in fabricating $\text{LaO}_{0.9}\text{F}_{0.1}\text{FeAs}$ wires with the superconducting critical transition temperature (T_c) of about 25K. The wire, first of its kind in the world, is of importance for possible practical applications, according to experts. The work was published in a recent issue of Superconductor Science and Technology after having filed for a patent right.

Furthermore, by teaming up with a research group led by WEN Haihu from the CAS Institute of Physics, Ma and his co-workers have made progress in preparing $\text{SmO}_{1-x}\text{F}_x\text{FeAs}$ wires with T_c as high as 52K. As its upper critical fields could reach about 120T, the new materials promise an encouraging application

perspective, note the researchers.

Interest in superconductors has been renewed since the February, 2008 when Japanese scientists discovered $\text{La}(\text{O}_{1-x}\text{F}_x)\text{FeAs}$ with T_c of 26 K. Before their discovery, the only known high- T_c superconducting materials were cuprates.

Calculation of graphene's ideal strength confirmed by tests (CAS, 2008-09-12)



Graphene is an atomic-scale chicken wire made of carbon atoms
(Source: en.wikipedia)

In 2007, Prof. MING Pingbing from the CAS Academy of Mathematics and Systems Science and his colleagues made a calculation on the ideal strength of graphene, a promising carbon material. One year later, their work is verified by an experiment that was reported recently in Science.

Graphene, discovered in 2004 by a research team from Manchester University in UK, is a relatively large-scale one-atom thick layer of graphite with remarkable electric characteristics. Experts believe that the nano-transistor made from such a material might greatly raise the operating speed of computers.

The ideal strength refers to the highest achievable strength of a defect-free crystal at 0K. It is a crucial

theoretical parameter because it plays a critical role in characterizing the nature of chemical bonding of the crystal. The study of ideal strength can tell us a lot about why some materials are intrinsically brittle, while others are intrinsically ductile.

Via the method of first-principle calculation and teaming up with LIU Fang from the Central University of Finance and Economics in Beijing and LI Ju from the Ohio State University, Ming carried out a careful ab initio study of the ideal tensile strength of flat graphene, as structural motif for carbon nanotubes, nanofibers and other graphene-based materials. The results show that that the value of the monolayer graphene's intrinsic strength is between 110-121GPa, indicating that graphene is the strongest material ever discovered so far.

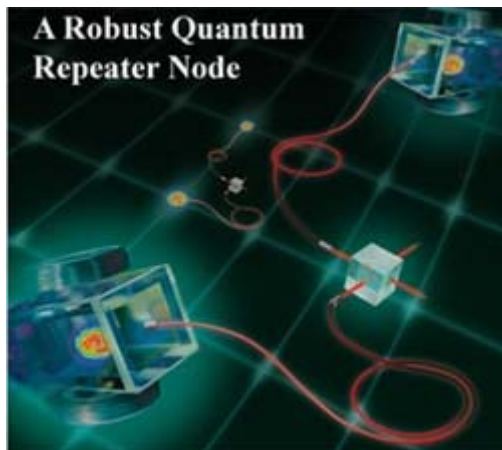
The results are confirmed by the observation of a research group with the Columbia University in US in the first ever successful experiment to measure the ideal strength of graphene in laboratory. Published by the 18 July issue of Science, the work showed the value was 130 ± 10 GPa. These experiments establish graphene as the strongest material ever measured, and show that atomically perfect nanoscale materials can be mechanically tested to deformations well beyond the linear regime.

Experts say that this show that scientific computation can play a critical role in scientific exploration, including the development of new materials.

1.5 Structure of Matter

Study of repeater brings quantum communication closer to reality

(CAS, 2008-09-16)



To realize the long-distance quantum communication beyond 100 km, a concept of BACZ quantum repeaters to combine technologies such as quantum memory, entanglement exchange and purification was put forward at the end of the 1990s.

Recently the theory was successfully demonstrated in an experiment by a research team headed by Prof. PAN Jianwei from the University of Science and Technology of China, CAS. Experts say that the feat, which was reported by 28 August issue of Nature, overcomes

another obstacle toward the long-distance quantum communication.

Although scientists have made progress in setting up a quantum communication network for efficient and secure exchange of information, attempts have failed to establish such a network over the distance of 100 km, mainly due to inevitable photon loss in the transmission channel.

To address this problem, Austrian scientists (Briegel, Dur, Cirac and Zoller) introduced the concept of BDCZ quantum repeaters in 1998. Although entanglement swapping has been experimentally demonstrated, the implementation of BDCZ quantum repeaters has proved challenging owing to the difficulty of integrating a quantum memory.

Now following a scheme that incorporates the strategy of BDCZ with atomic quantum memories, Pan and his colleagues realized entanglement swapping with storage and retrieval of light, a building block of the BDCZ quantum repeater.

In their experiments, two atomic ensembles, each originally entangled with a single emitted photon, were projected into an entangled state by performing a joint Bell state measurement on the two single photons after they have passed through a 300-m fibre-based communication channel. The results showed that the entanglement is stored in the atomic ensembles and later verified by converting the atomic excitations into photons. The method is intrinsically phase insensitive and establishes the essential element needed to realize quantum repeaters with stationary atomic qubits as quantum memories and flying photonic qubits as quantum messengers.

CAS scientists contribute to biggest atom smasher

(CAS, 2008-09-25)



CAS researchers have made contributions to the Large Hadron Collider (LHC), the world's largest atom smasher that was put into official operation on 10 September.

As early as in 1999, a memorandum of understanding

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was jointly inked by the Chinese government and the European Organization for Nuclear Research (CERN) to assign a Chinese Cluster to develop some important components for the biggest scientific experiment ever built.

As a key player of the team, the CAS Institute of High Energy Physics (IHEP) has participated in the construction of CMS (the compact muon solenoid) and ATLAS (a toroidal LHC apparatus), two large general-purpose particle physics detectors at LHC.

For the ATLAS experiment, IHEP researchers were involved in its detector construction and computing software development. And for CMS, they completed the assembly and testing of the cathode strip chamber (CSC) for its endcap moun system. They also finished the barrel MDT HV boards, and the mechanical parts of CMS endcap magnet support, and Barrle Muon Support IB1+IB4 and hall floor. Their valuable contributions to the facility are spoken highly by LHC experts.

CAS has joined hands with the National Natural Science Foundation of China and the Chinese Ministry of Science and Technology in financing the project with an amount of 18 million yuan, or 1% of the total costs of CMS.

In addition, researchers from the CAS Shanghai Institute of Ceramics have fabricated more than 5,000 PWO crystal rods for CMS. The crystal tunnel made with these rods is able to measure the magnitude of energy produced by different particles when passing through the tunnel in a coup d'oeil, identifying and detecting the new particles on the brink of disappearance.

1.6 Transport and Space

China to launch 1st natural disaster monitoring satellite (Xinhua Net, 2008-09-03)

China will launch the first of eight satellites to monitor environment and natural disasters from the country's north Taiyuan Satellite Launch Center this week, according to the China Aerospace Science and Technology Corporation (CASC).

The satellite "Environment 1", an optical satellite, will be sent into orbit by a Long March 2C carrier. It will monitor most of the country and send back data daily, making up for the country's earth observation data shortage, said Wu Xiaoqing, vice minister of Environmental Protection, Wednesday's "China Business News" reports.

"Launch of the satellite will largely enhance our environment monitoring ability," said Wu, explaining that the present environment monitoring and researching method was not good enough to cope with the dynamic environment and the occurrence of natural disasters.

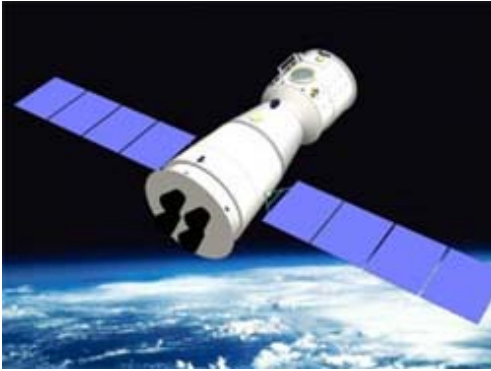
The satellite will work as a constellation with seven other satellites yet to be launched. Its observational footprint is 720 km.

It is expected to forecast and monitor natural disasters such as flooding, drought, typhoon, landslide and earthquake, said Wu.

CAS leads development of application system for spaceship (CAS, 2008-09-26)

The spacecraft Shenzhou-7 blasted off on 25 September, carrying three astronauts to attempt the

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China's first-ever space walk. It is the seventh space mission successfully launched by this country. As usual, its space application system, one of the seven major systems of space engineering, is developed under the leadership of CAS.

The system will perform three main tasks during the mission, according to Prof. GU Yidong, chief engineer of the space application system of the Shenzhou-7 and a researcher from the Academy of Opto-electronics under

CAS.

First, in cooperation with local partners in Shanghai, CAS has built a small monitoring satellite for the mission. It will be released after a taikonaut make the nation's first step in outer space. It is China's first attempt to launch a tributary satellite using a spacecraft.

Second, an experiment will be conducted on the outer-space-exposure of a solid lubricant. The test is designed to understand the performance decay and failure mechanism of materials in outer space, so as to improve properties of solid lubricants for mechanical parts of a spaceship.

Third, long and mid- and short-term forecasts on space environment are made in various stages of the mission. Abnormal events in this regard will be alerted. In addition, the operation of the effective payloads onboard the spaceship will be monitored and controlled by CAS researchers.

Over the past six space missions, nearly 30 tasks were undertaken by CAS researchers and their co-workers for the application system in such fields as spaceborne remote sensing, space astronomical observation, Earth environment observation, space life sciences, space materials sciences, space environment monitoring and forecasts. Over 200 payloads for spacecrafts were developed.

2 News from Universities

Enrollment rate of Beijing's higher education reached 75.9%

(People's Daily, 2008-09-26)

The enrollment rate of Beijing's higher education reached 75.9% in 2008, two percentage points higher than the previous year, according to Beijing Times.

A total of 103,789 students attended this year's exam, and 78,817 of them were admitted.

Most excellent students chose to study at Beijing University, Tsinghua University, Renmin University, Beijing Normal University, Chinese University of Hong Kong, City University of Hong Kong, Fudan University, Zhejiang University, Shanghai Jiao Tong University and more.

3 Innovation Management

CAS plans for resource and environment research

(CAS, 2008-09-09)

With an objective of making an all-round arrangement for scientific research in the fields of resources and environment over the next three years, an Academy-wide conference was convened from 21 August 31 to 2 September in Beijing.

Presided over by FU Bojie, director-general of the CAS Bureau for Science and Technology for Resources and Environment, the meeting was attended by some 130 S&T administrators and researchers from 33 CAS research institutes in these fields. CAS Vice President DING Zhongli was present at the meeting and gave a report on the work's institutional system and management.

In his speech, Prof. Ding stressed that the next-stage implementation of the CAS Knowledge Innovation Program has to be concentrated on S&T innovations and solution to key disciplinary problems. He said that the CAS studies in the fields will focus on the following 12 R&D realms: global climate change, ecology, the environment, natural disasters, solid mineral resources, hydrocarbon resources, water resources, marine bio-resources, deep earth processes, influence of lithosphere processes on surface spheres of the earth, land surface processes and air-sea-land interactions.

4 Miscellaneous

CIS Solar Cells Introduced to Olympic Venues

(MOST, 2008-09-02)

The 20kW grid-connected power system running on low-cost CIS solar cells, jointly developed by Advanced Technology and Materials Co., Ltd (AT&M) and Germany under the 863 Program, has been put into use in the central area of the Olympic Park.

Mass production of CIS solar cells has already begun. However, their photoelectric conversion efficiency falls short of what is theoretically desired, and the cell performance can be further boosted and costs lowered through industrialization.

Twin Pandas Born in SW. China

(CRI, 2008-09-03)

Another pair of twin cubs was born in the panda breeding base in Chengdu, the capital of Sichuan Province, early on Tuesday morning.

The second cub only weighs 40 grams, the lightest recorded birth weight for a captive-bred panda. Experts are making every effort to keep the cub alive, Chengdu Evening News reports.

The cubs were born to a five-year-old "Fuwa", the archetype for "Jingjing the panda," one of the five Beijing Olympic mascots.

The breeding base has welcomed 17 newborn cubs so far this year, a record number which will further increase when several other expectant pandas deliver later this year.

Yangtze Marker Lights to Go Solar

(CRI, 2008-09-05)

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The Yangtze River waterway administration has announced that it will use solar power for the more than 5,700 marker lights along China's busiest waterway.

All 5,700 of the battery-powered navigation mark lights along the world's third longest river will gradually be replaced with domestically produced solar-powered lights over a two-year period, Wang Qufa, an official with the Wuhan-based Yangtze waterway bureau, said Thursday.

"Solar powered lights will cut costs because there is no need to maintain them until five years after they have been installed. They also avoid the use of pollutant lead-acid batteries," he said.

The present navigation mark lights have a service life of two years, and their batteries need replacing every three months, he said.

"It would cost at least 4,000 yuan (US\$585.18) to keep the battery-powered lights working over a five-year period, but only 1,200 yuan to use solar-powered lights," he said.

Domestic research staffs have designed seven types of light to suit the climate along various sections of the river, he said.

"One model generates continuous light for a month, even when the weather is overcast two weeks," he said.

High-grade waterways of the future will all be equipped with solar-powered navigation mark lights, Zheng Qingxiu, an official in charge of waterway management with the Ministry of Transport, told China Daily.

The ministry is also applying remote monitoring and measuring technologies to inland waterways that raise the alarm when a navigation mark light moves out of position.

LIU Chuang receives the 2008 CODATA Prize (CAS, 2008-09-11)



To acknowledge her outstanding achievements in the world of scientific and technical data, Prof. LIU Chuang with the CAS Institute of Geographical Sciences and Natural Resources Research has been recently elected by the Committee on Data for Science and Technology (CODATA) to win the 2008 CODATA Prize.

The CODATA Prize, established in 2000, is a biennial prize awarded by CODATA under the International Council for Science. Prof. Liu is the first woman scientist as well as the first scientist from a developing country to receive this honor. She has scored a batch of achievements in the areas of S&T data management, policy making, education and international cooperation.

The Prize will be presented at the 21st International CODATA Conference in October in Kyiv, Ukraine. Prof. Liu will give a winner presentation at the conference.

World Largest Science and Technology Museum to Open in Guangzhou (CRI, 2008-09-19)

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The Guangdong Science Center will become the world's largest science and technology museum with a structural area of 137,500 square meters.

Occupying 450,000 square meters of Guangzhou city, it cost 1.9 billion yuan to build over a period of five years.

The center will hold a lighting ceremony on Friday, an opening ceremony next Friday, and will start accepting visitors next Saturday.

From a bird's eye view the building resembles a *Bombax Ceiba* Linn, the provincial flower of Guangdong.

Vice President Calls for Public Science Awareness

(CRI, 2008-09-22)

Chinese Vice President Xi Jinping has called for greater public science awareness and encouraged Chinese scientists to get more involved in science education.

"Promoting science awareness is an important task in implementing the Scientific Outlook on Development," Xi said in Beijing on Sunday, which was National Science and Technology Popularization Day.

Xi, also a member of the Standing Committee of the Political Bureau of the Communist Party of China Central Committee, joined children to conduct science experiments, and encouraged them to learn about resource saving.

Xi also visited exhibitions on energy saving technology, including the use of solar energy and the production of diesel from waste cooking oil.

"This year is crucial for the energy saving target set for the 11th five-year plan period," said Xi, adding that such green technology should be further promoted and energy-saving efforts should be enforced.

The government has set a goal to reduce energy consumption per unit of gross domestic product (GDP) by 20 percent and major pollutants discharges by 10 percent from 2006 to 2010.

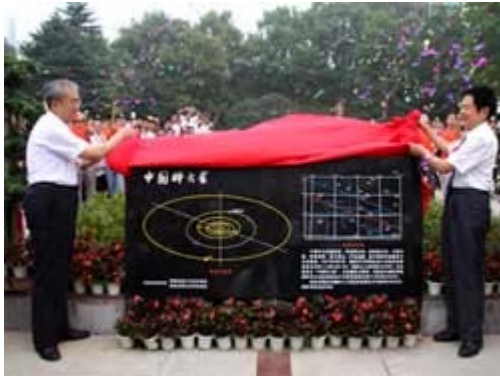
Xi also called on the public to improve awareness of disaster prevention and relief so as to minimize damage caused by natural disasters.

Events to mark National Science and Technology Popularization Day will be held from Sept. 20 to 26.

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Asteroid named after USTC

(CAS, 2008-09-22)



An asteroid has been named after the University of Science and Technology of China (USTC) with the approval of the International Minor Planet Nomenclature Committee.

The unveiling ceremony for a monument to mark the main-belt asteroid was held at the USTC campus on 20 September during the 50th anniversary celebration of the university.

Twelve years ago, on 20 September 1996, the Asteroid No.19298 was discovered by the Beijing Schmidt CCD

Asteroid Program at the Xinglong Station of the National Astronomical Observatories at CAS, and was later named as Zhongkeda, meaning USTC.

Editor of "Science" urges China to cultivate research, talent

(CRI, 2008-09-24)

A leading American scientist said China should encourage projects that "continually generate innovative ideas and technologies" in its scientific endeavors.

China has made very good scientific progress over the past 30 years, said Bruce Alberts, editor-in-chief of the American journal Science, noting China has become a leader in fields such as material science.

Alberts, who became editor of the magazine in March, was here to deliver two speeches and meet with prominent scientists. The magazine featured the latest Chinese research into genetically modified cotton as its cover story in the Sept. 19 issue.

China needs to support more small independent projects and more young scientists to generate innovation, he said, adding that achievement should be measured not by the quantity but the quality of scientists' papers.

Alberts said a nation's "scientific temper" was important to its sustainable development.

"We need good scientific education with an emphasis on active enquiry for all nations," he said in a speech on "Science and the World's Future" at Tsinghua University on Tuesday.

"For each of our nations to benefit from science, we must keep science healthy," Alberts said. "Good science must continually generate innovative ideas and technologies."

He was the president of the United States National Academy of Sciences from 1993 to 2005. During that time, he visited China almost every year.

Alberts, also a renowned molecular biologist at the University of California, San Francisco, said that scientists need to "have a much larger presence in world affairs".

He is one of the co-chairs of the Inter Academy Council, representing 15 academies of science and equivalent organizations in China, Brazil, India, the United States, the United Kingdom and other countries.

"I found his talk quite useful and China's scientific policies could benefit from referring to his opinions," said Fan Chunliang, a researcher at the Institute of Policy and Management of the Chinese Academy of Sciences.

"I was quite inspired by the words 'science knows no country, knowledge belongs to humanity', which

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he quoted from Louis Pasteur," said Wu Wei, a doctoral candidate at Tsinghua University. "I think we should all make a strong effort to help science become 'the torch that illuminates the world'."

Science, with 1 million subscribers worldwide, is sponsored by the American Association for the Advancement of Science.

Alberts said that he hoped the magazine would become a powerful platform for setting scientific standards and bringing outstanding science all over the world into public view.

Alberts said that with the opening of the Asia-Pacific news bureau in Beijing last October, the magazine's coverage of China had increased. He hoped that the level of reporting about China could be sustained, while India, Brazil and other developing countries could also get more coverage.

Chinese remote sensing scientists work for Olympics (Xinhua Net, 2008-09-27)

Chinese scientists have worked for Beijing Olympic organizers through monitoring Olympic venues' landscape and surrounding environment to help ensure a smooth Olympic Games.

"Based on remote sensing data from a U.S. satellite, we have monitored and analyzed the aerosol status in Beijing and surrounding areas, obtaining real-time information on pollution and its distribution mechanism," Lead scientist of the remote sensing project Guo Huadong said here Saturday in an interview with Xinhua.

Guo's team retrieved the scientific data collected by ground receivers from the moderate-resolution imaging spectroradiometer (MODIS) which was mounted on the U.S. satellite EOS-TERRA.

A few members of America's prestigious Institute of Electrical and Electronics Engineers (IEEE) also joined the collaboration.

"Utilizing the huge MODIS data, we can analyze reasons of pollution and suggest ways of dealing with the pollution for creating a nice Olympic environment," said Guo, who is also director of the Center for Earth Observation and Digital Earth of the Chinese Academy of Sciences (CAS).

In order to effectively assess landscape changes, the scientists compared the real-time data with the high-resolution airborne images in year 2002 and 2003 in the Olympic central area as well as the Landsat, another Earth-monitoring satellite, and images from 1983 until now, said Shao Yun, another key scientist for the project.

Financed by the Chinese Ministry of Science and Technology funds, the environmental remote sensing monitoring system for the 2008 Olympic Games was initiated for the dynamic inspection and continuous observation on the Olympic venues, construction sites and surrounding areas.

Gathering data from 1998 to 2008, the system consists of stereo observation from spaceborne, airborne and ground remote sensing means. It comprehensively surveyed ecological environment, engineering construction, environmental pollution and traffic flows.

Besides the service for the Beijing Olympics, the research team also provided airborne images of Sichuan after it was devastated by a disastrous earthquake on May 12. The images were used, together with other satellite images presented by the United States, for post-disaster damage assessment.

[End of this edition]