

Content

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

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Helmholtz News Concerning China

The Olympiad 2008 is approaching. But because the tighten up and the complication for application of a visa for foreign visitors, we haven't had the opportunity to welcome our Helmholtz scientists in this month.

At the beginning of this month, we were informed by CSC that 11 out of the 13 postdoctoral candidates passed the Chinese expert evaluation for the Helmholtz-CSC programme. We could not figure out the real reason for the two failed candidates. But it seems not due to their quality, but more or less because of not being from the favored universities but from institute of the Chinese Academy of Sciences.

Dr. He paid his first visit this year to Germany during 09.06-23.06. He participated first of all in the two days International Affair working group meeting, focused on the outlining of Helmholtz international strategies, in Potsdam and also had the opportunity to participate in the Helmholtz office Berlin excursion on 16.06. He visited then DKFZ, DAAD in Bonn, FZJ and talked about different issues, mainly concerning workshop preparation, student exchange programmes with different colleagues. It seems that there is now the strong willingness for co-organizing a Sino-German Workshop on Cancer Research, and also a workshop on natural products and herbal medicine. These workshops could normally be sponsored by the Sino-German Centre for Research Promotion, a joint venture between DFG and NSFC. Details about the application procedure could be found at: <http://www.sinogermanscience.org.cn/de2.htm>. One can also find the sponsored ongoing or finished projects and workshops on this website.

This edition China Highlights includes some special news, such as: [China builds the 7th fastest Supercomputer in the world](#); [China will launch its spacewalk mission in October](#), with three crews on board. We wish you do find something for your own interest.

Helmholtz Beijing Representative Office

1 Science News

1.1 Energy

1st China-ITER Procurement Arrangement Signed

(MOST, 2008-06-30)

Mr. CHENG Jinpei signed a Procurement Arrangement on toroidal field magnets on behalf of China with ITER Director General Kaname Ikeda in Aomori, north of Japan on the afternoon of June 16th, 2008. Since China took part in the ITER initiative, the agreement is the first of its kind signed between the Chinese government and the ITER organization according to in-kind contributions and the general schedule of ITER.

China Develops Nuclear Power Plant Training Simulator

(CRI, 2008-06-30)

China has developed its own technology for nuclear power plant simulators, the China National Nuclear Corp. (CNNC) said in Beijing on Monday.

Experts believe that 70 percent of nuclear incidents result from human error. The full-scope simulator will improve operators' training.

"China's nuclear power plants were co-built with foreign countries. The previous simulators were built by foreign companies," a source with CNNC said.

"The simulator must be upgraded when power plants are expanded," said the official who preferred to remain anonymous. "However, it would take too long and cost too much to ask foreign experts to come and do that."

The third phase of the Qinshan nuclear power plant added 8 megawatts to each of its two reactors. The simulator, therefore, needed improvement.

"Our research institution developed the core technology as we tried to upgrade the Qinshan simulator," CNNC's deputy general manager Yu Jianfeng said. "After two years' efforts, we are able to build our own simulators."

CNNC also signed framework agreements with the Fangjiashan and Fuqing nuclear power plants to use the simulators when they go into operation in 2014, according to media reports.

1.2 Earth and Environment

Enforcing scientific governance over seismic forecasts

(CAS, 2008-06-03)

Scholars called for the scientific management of seismic hazards at a symposium held recently by the Center for Policy Simulation under the CAS Institute of Policy and Management.

The seismic disaster management falls into four stages: pre-quake emergency plan formulation, emergency management at the outbreak of a seismic hazards, relief and rescue management during

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the disaster and post-quake management, according to CPS Director WANG Zheng.

He noted that the recent earthquake occurred in southwest China's Sichuan Province showed that China's organizational construction to deal with the disaster is primarily in good shape. However, traditional communication facilities such as the telegraph are overlooked because undue emphasis is put on advanced technology, resulting in a failure of rapid acquisition of related information.

At the same time, said Prof. Wang, efforts should be made to implement scientific governance over earthquake forecasts. He emphasized that, facing the outburst and devastating natural disasters such as an earthquake, Chinese seismologists should improve the earthquake forecasting and prediction reliability by making integrated applications of various techniques such as statistics, representation theory, and dynamic analysis. Efforts should also be made to combine special tasks with the mass line in the forecasting.

As to the emergency management at disaster outbreaks, he suggested that emergency scale classifications be made during earthquake forecasts in the same way as to those for hurricanes or typhoons. Governments at different levels will be responsible for releasing seismic warnings of various emergency scales, and for making relevant preventive preparations.

Regarding post-quake management, he proposed to establish a foundation for geological disaster-caused disabled persons so as to address their livelihood issues.

A sound public policy framework should be set up to improve China's work on major disaster forecasting, urged Prof. ZHAO Zuoquan of the Center.

Floral germplasm pool established in Guangdong

(CAS, 2008-06-17)

A research project to develop a germplasm resources pool for the tropical and sub-tropical flora in south China's Guangdong Province has passed the acceptance check under the auspices of S&T administrations of Guangdong Province and Guangzhou city.

With the support from the S&T administrations of Guangdong and Guangzhou, the project was started in early 2005 by a research team led by Prof. REN Hai with the CAS South China Botanical Garden. As a result of the three-year implementation, an advanced ex-situ base for conservation of subtropical plants native to the province has been built up, transplanting more than 1,600 individuals of rare and precious plants in some 800 species. They have also established a technological system for conserving adult plants, seedling, seeds, twig cutting, organic tissues, DNA samples, chemical components etc. In addition, they have also developed technologies for breeding five endangered and rare plants under the first-grade State protection.

China to enhance weather monitoring amid worst-in-century rainstorm

(Xinhua Net, 2008-06-22)

China's weather forecasters were urged to enhance weather monitoring and provide more accurate forecast as southern parts of the country were hit by rainstorm worst in a century.

The current weather prediction was not accurate enough to help disaster control and there were still problems with short-term weather forecast, Zheng Guoguang, director of China Meteorological Administration (CMA) said at a tele-conference on Saturday.

He asked all meteorological departments to intensify weather monitoring against extreme weather, especially in the major disaster-prone regions, and improve the forecast accuracy.

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Continuous downpours have lashed 12 southern provincial-level regions since June 7, including Guangdong, Guangxi, Hunan and Jiangxi. Some of these regions were hit by heaviest rainfall recorded over a century.

Rainstorm-triggered floods have caused heavy losses of life and property. According to the latest statistics, the death toll had risen to 176 as of Wednesday, with 52 still missing.

Cryosphere retreat endangers water security in China, glaciologist warns (CAS, 2008-06-27)

The continuous retreat of the cryosphere in China, induced by global warming over the past decades, poses seriously challenge on water security for an entire 2.7 billion people in Asia, warns a CAS scientist.

Prof. QIN Dahe, glaciologist and a CAS Member, made the remarks during the academic conference of the 14th CAS General Assembly held on the morning of 26 June in Beijing.

The cryosphere is the portion of the Earth's surface where water is in solid form, such as glaciers, snow cover, frozen ground, sea ice, lake ice, river ice, ice caps and ice sheets. As an integral part of the world's climate system, it plays a significant role in climate model response to global change, says Prof. Qin in a report entitled Climate change and advancement in cryosphere science on the fourth day of the Assembly.

According to the Fourth Assessment Report of Intergovernmental Panel on Climate Change (IPCC), from the year 1906 to 2005, global warming led to not only an increase of global average temperature by 0.74°C, but large-scale snowmelts and sea level rise. Frozen ground in the Arctic is melting at twice the speed of average global change, and a maximum of 7% seasonal permafrost has gone away ever since 1900.

When global warming is widely recognized as a major issue for sustainable development in the 21st century, cryosphere science becomes a hot and key research subject.

China's cryosphere holds the source of ten major lakes and rivers running across Asia, including the Yangtze River, the Yellow River, the Tarim River and the Salween River, among others. Prof. Qin's investigation shows the impacts of cryosphere changes upon these water sources: contemporarily, melting glaciers may increase the runoff of these rivers; however, with their gradual retreat, it will finally lead to a reduction and even drain of the water bodies. As a result, people affected across China and the rest of Asia can reach as many as 2.7 billion.

A better understanding and control over cryosphere changes hold the key to much more than that, of course. It helps maintain the ecological stability of cold and arid regions of China's west, boost economic development of oases, and ensure a safe operation of domestic climate mechanism as well as that of our neighboring countries, the professor adds.

The glaciologist also offers general suggestions to combat against global change. He urges the setup of an enhanced system for climate observation and monitoring in the country as soon as possible. He also insists on more research and development on climate system models, to reduce risk and get prepared for disasters, and to improve disaster assessment for policy-makers.

Prof. Qin is known as the first Chinese ever to trek through the Antarctic. During 2004 to 2007, he worked with overseas collaborators at IPCC Work Group 1 and was deeply involved in the compilation of the Panel's climate assessment reports, the fourth of which won last year's Nobel Peace Prize. Prof. Qin also served as head of China Meteorological Administration from 2000 to

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2007. At present, he works with the State Key Laboratory of Cryosphere Science under the Lanzhou-based CAS Institute of Cold and Arid Regions Environmental and Engineering Research.

Also at the academic conference, Prof. YAO Tandong, Prof. Qin's colleague at the State Key Laboratory of Cryosphere Science and director of the CAS Institute of Tibetan Plateau Research, delivered a speech about High Asia warming, glacier retreat, and water security in northwest China based on ice-core analysis.

China, with a wide distribution of cryosphere, is a country most severely affected by disasters like glacier lake outburst flood/debris flow, ice avalanche, snow avalanche and permafrost thaw. For instance, on the Tibetan Plateau, or along the Qinghai-Tibetan Railway and some oil pipelines and fiber optic networks in the region, cryosphere disasters can lead to huge losses of life and property.

China's 3rd Arctic project sets sail on "Snow Dragon" in July

(Xinhua Net, 2008-06-27)

China's third Arctic expedition will set sail from Shanghai in July, with plans to study the polar region's distinctive maritime resources and air quality, Zhang Haisheng, chief scientist for the project, said on Friday.

Scientists will also do comprehensive research on geological and meteorological conditions with the help of a helicopter, a yacht and an underwater robot, Zhang said.

"An important task is to observe the effects of the polar ice surface changes upon the climate of our country," said Zhang, who is also director of the Hangzhou-based No. 2 research institute under the State Oceanic Administration.

The ice-breaker "Xuelong" (Snow Dragon) will leave Shanghai on July 11 and return on Sept. 25. The craft will carry 60 scientists, including 11 from the United States, the European Union, Japan and the Republic of Korea.

China's first North Pole expedition ran from July 1 to Sept. 9, 1999. It collected information on the Arctic maritime ecology and atmospheric, geologic and fishing conditions.

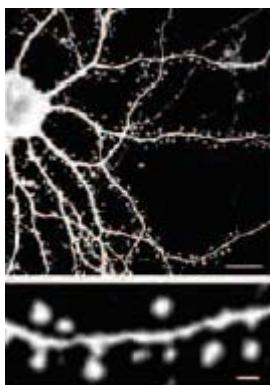
During the second expedition, in 2003, Chinese scientists probed the inter-reactions of the Arctic region and global climate and analyzed Arctic influences on Chinese weather.

They also set up China's northernmost observation station.

1.3 Health

TRPC6 channels critical in excitatory synapses formation

(CAS, 2008-06-13)



The synapse, a connection between two neurons, is critical for the development of neural networks. A recent studies conducted by CAS researchers indicate that the formation of excitatory synapses could be promoted by a gene named TRPC6.

As reported May 30 online by Nature Neuroscience, under the supervision of Dr. WANG Yizheng from the CAS Institute of Neuroscience, ZHOU Jian and DU Wanlu found that TRPC6 was localized to excitatory synapses

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and promoted their formation via a CaMKIV-CREB-dependent pathway.

Experiments show the enhancement of TRPC6 transgenic mice in spine formation and spatial learning and memory in Morris water maze. Experts say that these results reveal a novel role of TRPC6 in synaptic and behavioral plasticity.

TRPC (transient receptor potential canonical) channels are Ca²⁺ permeable nonselective cation channels with different biological functions, but their roles in brain are largely unknown.

Researchers: Carbocisteine Reduces COPD Symptoms

(CRI, 2008-06-16)

A Chinese expert on respiratory diseases said on Monday that his team has achieved great results by using the mucolytic agent carbocisteine to treat patients with chronic obstructive pulmonary disease. Zhong Nanshan of Guangzhou Institute of Respiratory Disease released the latest study results at a press conference in Guangzhou.

Zhong, an academician at the Chinese Academy of Engineering, said less-expensive mucolytics such as carbocisteine could reduce the frequency of self-reported exacerbation by 24.5 percent of COPD patients.

The use of mucolytics to treat COPD may be cheaper than using inhaled corticosteroids, long-acting beta-2 agonists, and anticholinergics. Fees could be reduced by up to 3,670 yuan, about 85 percent less than inhaled corticosteroids.

The researchers on Zhong's team concluded that "mucolytics such as carbocisteine should be recognized as a worthwhile treatment for the long-term management of COPD."

"Less-expensive mucolytics such as carbocisteine might be an important option," researchers said, "especially in low-income countries and regions."

The research results were published on the June 14 issue of *The Lancet*.

Chronic obstructive pulmonary disease (COPD) refers to two lung diseases, chronic bronchitis and emphysema, that are characterized by obstruction of airflow that interferes with normal breathing.

An average of 35 million Chinese people contract chronic obstructive pulmonary disease every year. One million people die of COPD every year, and another five to ten million are handicapped by the disease.

Int'l meeting on IT and its applications in biomedicine held in Shenzhen

(CAS, 2008-06-18)



Co-organized by the Institute of Biomedical and Health Engineering under the CAS Shenzhen Institute of Advanced Technology and CAS Key Laboratory for Biomedical Informatics and Health Engineering, the fifth International Conference on Information Technology and Applications in Biomedicine (ITAB 2008), in conjunction with the 2nd International Symposium & Summer School on Biomedical and Health Engineering (IS3BHE 2008), was held in Shenzhen, China on 30 and 31 May in Shenzhen.

Under the theme of Innovative Technologies for Low-cost Healthcare, the meeting was attended by

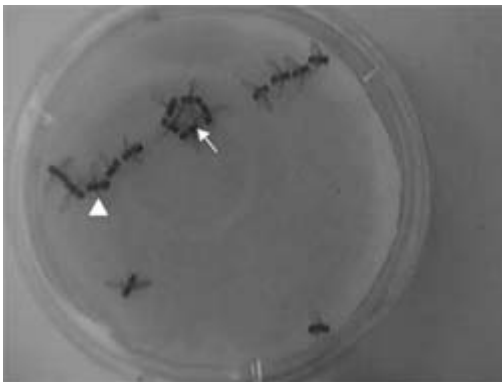
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more than 300 scholars from nearly 20 countries and regions. It also won support from the CAS Shenzhen Academician Consultation Center, bringing together seven CAS Members.

The meeting provided a unique forum to gather researcher, educators and developers to share their research achievements, and exchange ideas on key issues confronting biomedical and health engineering, especially the information technology and its applications in biomedicine. The meeting featured a number of invited lectures by noted leaders and researchers from academia, industries and government agencies.

Increased dopamine level enhances male-male courtship in *Drosophila*

(CAS, 2008-06-19)



Recently, Journal of Neuroscience published an online paper from the Institute of Neuroscience, the CAS Shanghai Institutes for Biological Sciences, entitled "Increased dopamine level enhances male-male courtship in *Drosophila*." This work was done by Mr. LIU Tong, a doctoral candidates, and colleagues, under the supervision of Dr. GUO Aike, and in collaboration with Dr. Jean-François Ferveur in France.

Courtship behavior is fundamental to the propagation of animal species and their adaptations to changes in the environment. Male courtship in *Drosophila* is complex, consisting of a stereotypic set of behaviors, including orientation towards a female, tapping with its forelegs, following the female, singing courtship song, licking the female's genital, attempting copulation, and final copulation. While male flies generally court female flies, an intense male homosexual courtship behavior can be induced by gene mutation or ectopic gene expression. Dopamine, as an important neuromodulator, is involved in the regulation of many simple and complex behaviors. The role of dopamine in sexual behavior has been extensively studied in mammals. Some studies indicated that the dopaminergic system play a role in regulating the receptivity of female and sexual arouse of the male in fruit fly courtship behavior. This current study showed that elevation of dopamine level induced male-male courtship behavior in fruit flies. In this study, genetic, pharmacological, behavioral and surgical methods were used to show that male flies with increased dopamine level tend to have enhanced propensities to court other males, without affecting overall male heterosexual courtship, their attractiveness to other males, their short-term spontaneous locomotor activity, or their general olfactory/gustatory abilities. Furthermore, visual and chemosensory inputs played a positive role in this enhancement, indicating that the high intensity of male-male interactions shown by males with higher dopamine levels is related to their altered sensory perception of other males. These findings indicate that increased dopamine level is correlated with a more intense male-male courtship towards other mature males. Although, at this moment, it is still unknown that how high-level dopamine can induce male-male courtship behavior in fruit flies and whether these results can be generalized to other species, further dissections of fly male-male courtship may help us understand the fine mechanisms underlying sensory communication regulating inter- individual behaviors.

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Progress in PET probe research for early diagnosis of Alzheimer's (CAS, 2008-06-19)

Alzheimer's disease (or AD), a neurodegenerative disorder that impairs memory, cognition and behavior, has become the most frequent neurodegenerative senile dementia, currently affecting more than 20 million people across the world. Scientists have found that the accumulation of amyloid plaques in the brain features the pathological change of the disease. Unfortunately, they haven't found an effective method to make in-vivo detection of the plaques in brain tissue.

Recent studies on agents of micro-positron emission tomography (micro-PET) technique by Prof. YIN Duanzhi and his colleagues with the CAS Shanghai Institute of Technical Physics may provide novel approaches for this detection.

Micro-PET, a nuclear medicine imaging technique which produces a three-dimensional image or map of functional processes in the body, holds great promise in the in-vivo diagnosis of many diseases. The key to its application in the early diagnosis of AD lies in the development of a specific radiolabelled molecular probe.

Jointly funded by CAS, National Natural Science Foundation of China and Shanghai Science Foundation, the studies by the CAS researchers has made new progress in this aspect by overcoming pitfalls of using an AD transgenic mice for the experiment.

For the first time in the world, they observed the specific binding of a newly-synthesized PET tracer with β -amyloid aggregates in a rat model of AD using micro-PET. The experts believe that the tracer had potential to be developed as a probe for detecting β -amyloid plaques in AD.

CAS researchers find new Androgen-Receptor modulators (CAS, 2008-06-20)



Recently Nature China reported a finding made by WANG Mingwei and his team. In collaboration with Sichuan University West China School of Pharmacy, WANG Mingwei and co-workers from the CAS Shanghai Institute of Materia Medica have discovered a class of androgen-receptor modulators that may result in a better treatment of prostate cancer.

After a high-throughput screening of 16,000 synthetic or natural compounds for their binding to androgen receptors, researchers focused their efforts on a series of non-steroidal compounds derived from 3-(phenylamino) -propan- 1- one. These chemicals interact with androgen receptors with a high affinity, thereby preventing dihydrotestosterone from binding. Binding of androgens to their receptors leads to the activation of target genes and cell proliferation. Researchers tested whether their compounds could affect such cellular processes. They found that some of the derivatives work as 'agonists', having similar biological effects as androgens, whereas other derivatives are 'antagonists', interfering with the hormones' actions.

Started in 2003, the project has been financed by Chinese Ministry of Science and Technology, CAS, National Natural Science Foundation, and Shanghai Municipal S&T Committee. So far a number of findings derived from the project have applied for both domestic and international patents for

invention.

Prof. REN Nanqi observed in 1990 a phenomenon indicating that hydrogen producing bacteria would produce hydrogen in the course of organic waste water treatment. From that time on, REN and coworkers have worked many years to develop a technology that is able to produce hydrogen from organic waste water, while decomposing organic matters and purifying waste water. Researchers completed a limited scale experiment to extract hydrogen from organic waste water using a fermentation process in the period from 1990 to 1996. They furthered their pilot study during the period of 1996-1999, and developed a proprietary biotechnique to produce hydrogen from organic waste water. The project was financed by a National 973 Program in 2000-2005, during which a new class of strains was discovered by researchers. The new strain makes a fine catalyst in producing hydrogen, with an easy demand for environment, which makes massive production of hydrogen possible. REN and coworkers established in 2005 a fermentation based hydrogen producing line with a daily capacity of 1200 cubic meters, the first of its kind in the world, under a demonstration project financed by the National 863 Program.

China Plans National Influenza-monitoring System (CRI, 2008-06-30)

Chinese health authorities plan to create a national influenza-monitoring system to contain the spread of the disease, which kills hundreds of thousands of people worldwide every year, they said at the 2008 International Forum on Prevention and Control Policy of Flu in Beijing over the weekend.

The system would provide detailed information about the flu's spread and economic impacts in the country, Feng Zijian, director of the emergency response department of the China Center of Disease Control and Prevention (CDC), said.

"Once the system becomes operational, the government could make timely and appropriate responses to the health threat," he told China Daily.

He said that due to little awareness among the public, medical professionals and policymakers, only 1.5 percent of the Chinese population receives an annual flu vaccination.

In developed countries, the rate is more than 20 percent among the general population and 60 percent among people older than 60, World Health Organization (WHO) figures show.

Epidemiologists worldwide agree vaccinations are the most effective means of curbing the flu's spread. Also, vaccinations are about 75 percent effective in preventing flu-related hospitalizations and deaths, particularly among the young and elderly, Feng said.

WHO influenza coordinator Zhou Weigong urged wider use of flu vaccines in China, citing a high infection rate and a frequency of viral mutations in the country.

"China's influenza research serves as an important means of discovering the flu virus' latest mutations, sharing updated information with the rest of the world and improving protection globally," Zhou added.

Shu Yuelong, who heads a lab affiliated with China CDC, said the Chinese government has expanded efforts in this area since SARS and bird flu outbreaks hit the country.

"We are trying to raise public awareness about vaccinations and persuade the government to include it among major health priorities, such as HIV/AIDS, Hepatitis B and TB, through expertise based on detailed data," he said.

China CDC has listed on its website recommendations for demographics to be prioritized in

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vaccination work, including the elderly and young, Shu added.

Currently, the country's developed cities, such as Beijing, Suzhou and Xi'an, offer subsidized or free shots to local residents, according to the Ministry of Health.

Shu also called for closer coordination among domestic vaccine makers and health authorities in product planning, research and development, and quality control and supervision. Currently, many Chinese prefer imported flu vaccines, he added.

1.4 Key Technologies

New superconductors present new mysteries

(Xinhua Net, 2008-06-05)

A group of researchers from the United States and China have unlocked some of the secrets of the newly discovered iron-based high-temperature superconductors, which could result in the design of better superconductors for use in industry, medicine, transportation and energy generation.

In an article published Wednesday in the journal *Nature*, the team, led by Chia-Ling Chien from Johns Hopkins University, offers insights into why the characteristics of a new family of iron-based superconductors reveal the need for fresh theoretical models, which could pave the way for the development of superconductors that can operate at room temperature.

"It appears to us that the new iron-based superconductors disclose a new physics, contain new mysteries and may start us along an uncharted pathway to room temperature superconductivity," said Chien, who teamed up with researchers from University of Science and Technology in Anhui, China. Superconductors are materials that can carry electrical current without friction and as a result, do not waste electrical energy generating heat.

This means that an electrical current can flow in a loop of superconducting wire forever without a power source.

Most of the superconductors -- currently often used in hospital MRI machines, as filters in cell phone base stations and in high-speed magnetic levitating trains -- can only function and operate at extremely low temperatures, which means that they must be paired with expensive supercooling equipment.

"If superconductors could exist at room temperatures, the world energy crisis would be solved," Chien said.

Chien explains that though all metals contain mobile electrons which conduct electricity, a metal becomes a superconductor only when two electrons with opposite "spins" are paired.

The superconductor energy "gap," which is the amount of energy that would be needed to break the bond between two electrons forming such a pair to release them from one another, determines the robustness or strength of the superconducting state. This energy gap is highest at low temperatures, but vanishes at temperatures at which superconductivity ceases to exist.

"This gap -- its structure and temperature dependence -- reveal the 'soul' of the superconductor, and this is what was measured in our experiment," explains Chien.

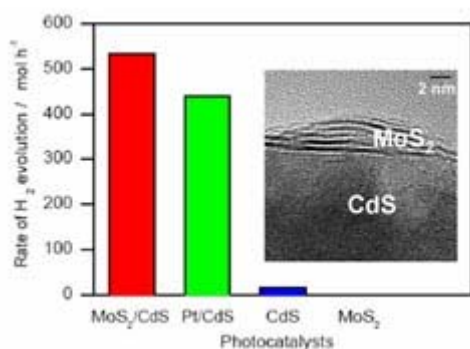
The team measured this gap and its temperature variation, revealing that the pairing mechanism in iron-based superconductors is different from the one in more traditional, copper-based,

high-temperature superconductors. To the researchers' surprise, their results were incompatible with some of the newly proposed theories in this mushrooming field.

"In the face of this discovery, it is clear that we need to reexamine the old and invent some new theoretical models," said one of the authors of the article. "I predict that these new, iron-based superconductors will keep us physicists busy for a long, long while."

CAS researchers discover low-cost photocatalyst for H₂ production

(CAS, 2008-06-13)



Recently, a research group headed by Prof. LI Can with the Dalian Institute of Chemical Physics, CAS made a remarkable progress in the study of photocatalytic H₂ production.

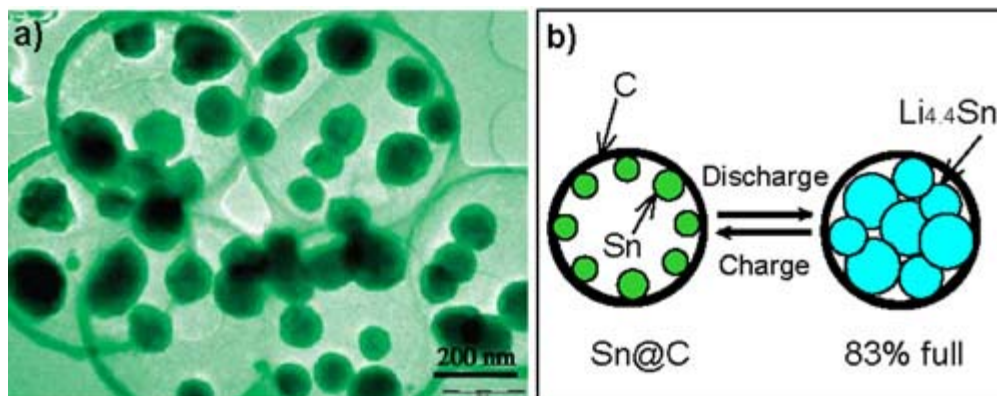
The synthesis of photocatalysts remains a key problem for solar photocatalytic hydrogen production, and to find low-cost photocatalysts especially poses a challenge for the mass-production of this environmentally friendly energy. In the research, Prof.

Li's group has loaded a small amount of MoS₂ as a cocatalyst on CdS and then the activity of photocatalytic H₂ production is found significantly enhanced. The rate of H₂ evolution on CdS is increased by more than 30 times when loaded with only 0.2 wt % of MoS₂. The activity of MoS₂/CdS is even higher than that of the CdS photocatalysts loaded with different noble metals, such as Pt, Ru, Rh, Pd, and Au. The junction formed between MoS₂ and CdS and the excellent H₂ activation property of MoS₂ are supposed to be responsible for the enhanced photocatalytic activity of MoS₂/CdS. This substitute photocatalyst is expected to speed up the development of solar photocatalytic hydrogen production.

Their research was highlighted by the Chemical & Engineering News and the paper was published in a recent issue of Journal of American Chemical Society (2008, DOI: 10.1021/ja8007825).

Upgrading Li-battery performance via nanotechnology

(CAS, 2008-06-24)



A schematic illustration of the structure and the lithiation process of the tin nanoparticles encapsulated with elastic hollow carbon spheres.

Lithium batteries, as a main power source or back-up power source for mobile communication

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devices, portable electronic devices and the like, have attracted much attention from the scientific and industrial fields due to their high electromotive force and high energy density. To meet the demand for batteries having higher energy density and improved cycle characteristics, in recent years, a great deal of attempt has been made to develop new electrode materials or design new structures of electrode materials.

With the support of CAS, Chinese Ministry of Science and Technology, and the National Natural Science Foundation of China, researchers of the CAS Key Laboratory of Molecular Nanostructure and Nanotechnology have made progress in V₂O₅ hollow microspheres for high-performance cathode materials in lithium-ion batteries (Angew. Chem. Int. Ed. 2005, 44, 4391-4395). More recently, they successfully designed and synthesized tin-based nanostructured anode materials for high-performance lithium-ion batteries. The work has been published in a recent issue of Adv. Mater. (2008, 20, 1160-1165).

Metallic tin is considered a very promising anode material for lithium-ion batteries because its theoretical specific capacity (Li_{4.4}Sn, 992 mAh/g) is much higher than that of conventional graphite (LiC₆, 372 mAh/g). However, the biggest challenge for employing metallic tin as applicable active anode materials is that it is suffering from huge volume variation during the lithium insertion/extraction cycle, which leads to pulverization of the electrode and very rapid capacity decay. To solve the problem, a research team led by Prof. WANG Lijun, director of the CAS Institute of Chemistry, has designed a new approach to synthesize tin nanoparticles encapsulated elastic hollow carbon spheres (TNHCs) with uniform size. Via such a approach, multiple tin nanoparticles with a diameter of less than 100 nm were encapsulated in one thin hollow carbon sphere with a thickness of only about 20 nm, thus leading to both the content of Sn up to over 70% by weight and the void volume in carbon shell as high as about 70~80% by volume. This void volume and the elasticity of thin carbon spherical shell can efficiently accommodate the volume change of tin nanoparticles due to the Li-Sn alloying-dealloying reactions, and thus prevent the pulverization of the electrodes. As a result, this type of tin-based nanocomposites have very high specific capacity of >800 mAh/g in the initial 10 cycles, and 550 mAh/g after the 100th cycle, as well as excellent cycling performance, exhibiting a great potential as anode materials in lithium-ion batteries.

The researchers say their results successfully demonstrate the power of the strategy of using elastic hollow carbon spheres as buffer and container and could be extended to other anode and cathode materials.

China Builds World's 7th Fastest Supercomputer (CRI, 2008-06-25)

Although missing the world's most extensive rankings for the best supercomputers, a Chinese-made high performance server rivals the 7th fastest for computing speed.

Dawning 5000A, with a capability of 160 trillions of computing operations per second, is signed to be installed in the Shanghai Supercomputer Center (SSC) which specializes in super computing outsourcing services for daunting jobs such as genome mapping, quake appraisal, precise weather forecast, mining survey and huge stock exchange data.

Nie Hua, vice president of Dawning Information Industry Co., said Wednesday in an interview with Xinhua, "The delay in the delivery of AMD Barcelona quad-cores chips made us miss the latest rankings."

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The International Supercomputing Conference released last week in Dresden, Germany, the latest competition results of the world's most powerful supercomputers, or TOP500.

The world's No. 1 system, "Roadrunner" which was built by IBM for the U.S. Department of Energy's Los Alamos National Laboratory (LANL), was so revolutionary that it exceeded the milestone of running one quadrillion computing operations a second, 5.4 times faster than that of Dawning 5000A.

While IBM "Roadrunner" was built for unspecified military applications, the Chinese fastest super system, covering a floor space of 75 square meters, focuses on commercial use. The vendor Dawning showcased its eye-catching performance of processing 36-hour weather forecast information on Beijing and vicinity within three minutes.

IBM occupied five slots of the top ten supercomputers. When comparing performance, Dawning 5000A followed the No. 6 IBM BlueGene/P system which has been installed in Germany at the Forschungszentrum Juelich (FZJ).

The scheduled completion of Dawning 5000A installation in the SSC in November might enable the system to compete the next world rankings in November.

Whether Dawning 5000A is able to remain among the top ten is questionable because of the swift development of the supercomputing industry. The FZJ IBM BlueGene/P, which computes 167.3 trillion times one second, was ranked the second in last November.

With an innovative energy-saving design, Dawning 5000A consumes 700 kilowatts per hour, beating most in TOP500 in average power efficiency except the well-known energy-efficient IBM BlueGene series.

The TOP500 list showed that 75 percent of the central processing units (CPUs) equipped in all the systems were from Intel while Dawning 5000A employed 6,600 AMD Barcelona quad-cores processors.

Previous industry analysis predicted Dawning might for the first time use the home-grown Godson chips in super servers, which breaks the hold of Intel and AMD in the high-end server CPU market. Godson chips were developed by a research team at the Chinese Academy of Sciences (CAS) Institute of Computing Technology (ICT), which also holds the Dawning Company.

Nie explained why Godson chips were not used: "Our client (the SSC) required the major functions of the system should be accomplished in Microsoft Windows operating system whereas Godson chips primarily run the competing Linux operating system."

"We do develop the Godson-driven prototype servers, but we have to satisfy our clients first," said Nie, who also hinted that manufacturing capability and actual roll-outs of Godson chips were not what he expected.

Nie, nevertheless, did not rule out the possibility of using Godson chips in the Dawning 5000 series in the future, saying its next supercomputer, currently coded as Dawning 5000L which will be installed by 2010 and have a similar computing performance to IBM "Roadrunner," is likely to be equipped with Godson CPUs.

As with many Chinese manufacturing products, Dawning supercomputers enjoy big cost advantages. Even with expensive imported AMD chips, Dawning 5000A costs only 200 million yuan (29 million U.S. dollars), significantly lower than what the U.S. Department of Energy spent on IBM "Roadrunner," 100 million U.S. dollars.

Use of Chinese-made chips will further cut the cost for supercomputers, said Dr. Sun Ninghui, chief

architect of the Dawning series.

Dawning is not a stranger to TOP500. A Dawning 4000A was ranked the tenth fastest in the world in June 2004.

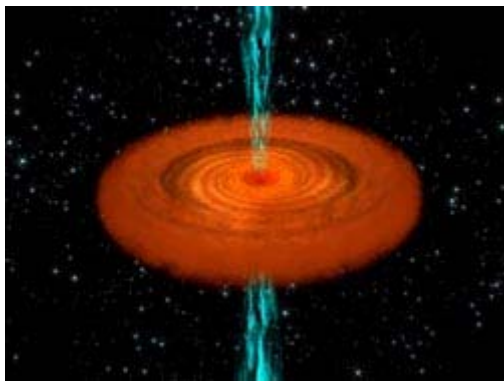
Chinese computing scientists built in 1995 the country's first supercomputer, which only reached the major technical standards of what U.S. companies produced eight years before. China is now getting closer to the U.S. and is second in Asia, as Japan is losing ground.

The only system installed in Asia to secure a berth in the latest top ten is funded by India's TATA group in a lab in Pune, India. But the vendor of the eighth-ranked EKA system, Hewlett-Packard, is from the U.S.

1.5 Structure of Matter

BAL Quasars without intrinsic X-ray absorption

(CAS, 2008-06-06)



While observing a sample of quasars with broad absorption line (BAL) in their spectra, Prof. WANG Junxian together with his colleagues Prof. WANG Tinggui and Dr. ZHOU Hongyan with the Center for Astrophysics at the University of Science and Technology of China (USTC) recently discovered that unlike most of BAL quasars, two of the observed do not show intrinsic X-ray absorption, indicating a different composition of matter in their outflows. This might help us better understand how black holes

devour and project gases, according to the astronomers.

The sampled quasars keep throwing gases into the space along their polar axes, instead of equatorial direction as most of their counterparts do, as revealed by previous observations conducted by the same group of astronomers. Once again the new data obtained from the same objects surprised the astronomers, because strong X-ray absorption is widely believed to be among the most prominent characteristics of most BAL quasars.

Quasars have been intriguing objects of research for astronomers since the late 1950s, when the first of them were detected with radio telescopes. Short for "QUASi-stellar radio source," a quasar gives strong emissions of electromagnetic energy, including radio waves and visible light. Judged from the high redshift in their spectra, this kind of celestial bodies is estimated to be extremely far away from the Earth. Most quasars are farther than three billion light-years, and the farthest known to date is around 28 trillion light-years away. This unimaginable distance means that they could work as emissaries from the early evolution of our cosmos, bringing us precious clues about the aftermath of the Big Bang, which is hypothesized as the origin of our universe.

A fascinating property of quasars is the enormous amount of matter they draw from and throw back into the universe, which gives them the nickname of "cosmic engines." Scientists have come to a consensus that quasars are active galaxies, or young galaxies still in their formative era, each with a

supermassive black hole at the center. The central black hole feeds on a large amount of dust and stars, which release enormous gravitational energy in the form of strong electromagnetic radiation when collapsing into the bottomless black hole.

Interestingly, while voraciously devouring matter, some quasars also discharge gases into the space at certain directions. The wide absorption lines appearing in their spectra are actually the imprints of these gases, which absorb some light of certain wavelengths and hence leaving shadows on the otherwise continuous spectra. It was previously believed that BAL quasars eject the gases along the equatorial direction, parallel to their accretion discs, which are formed by the matter continuously dropping into the nucleus of the growing galaxy, the supermassive black hole. The USTC group, however, identified a special kind of quasars two years ago, which propel gases along their polar axes, a direction perpendicular to their accretion disk. Using XMM-Newton, a satellite administered by the European Space Agency, this group made further observations on these quasars during 2006 and 2007, trying to make clear whether these eccentric celestial bodies absorb X-rays, as most BAL quasars do.

To their surprise, the latest data suggest that these polar BAL quasars are almost "transparent" to X-rays, as they do not appear strong absorption of X-rays. This implies that these polar BAL quasars might eject gases in a way more complicated than expected, as reported by the astronomers in their paper published in the April issue of *The Astrophysical Journal Letters of USA*.

When analyzing the snapshot observations of four polar BAL quasars, the group found that two of the radiation sources could be detected in X-ray. The spectral model fittings indicated that these objects were X-ray normal, suggesting that X-ray shielding gas, like neutral gases, might be absent in their outflows. According to the authors, this could also imply that the nature of polar outflows is possibly different from that of equatorial outflows, and polar BAL quasars might occur at larger distances than their equatorial peers. The data obtained so far, however, are not sufficient to rule out alternative reasons, including an absorption mode more complex than conceived, for example a partial covering of X-ray absorbing gases, and an extra contribution of X-ray to the spectra due to possible emission of this kind of radiation.

The outflows from the black hole interest astrophysicists because they might create disturbance in the host galaxy, and moreover, might prevent new stars from forming. This new discovery could help researchers improve their computer simulation of the dynamic activity of quasars, hence better understanding how these mysterious celestial bodies devour and eject gases, and through which influence the evolution of the host galaxies.

1.6 Transport and Space

Chang'e I Image Data to Be Published

(CRI, 2008-06-04)

China will soon publish image data from its first lunar satellite, Chang'e 1, which took large-scale photographs of the moon's surface, the leading scientist of the lunar project was quoted as saying.

Ye Peijian, general director of the Moon Exploration Project, said that a committee on China's moon exploration project will consider a timetable for publishing the images for researchers, possibly in

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June.

Ye, chief commander and designer of China's first moon probe satellite system, made the remarks during an interview with the Changjiang Times newspaper on Tuesday in Wuhan, Hubei Province.

The professor said Chang'e I will experience its second lunar eclipse in August. The first lunar eclipse occurred in February.

China will send its second satellite to the moon in 2010, after Chinese researchers revise some of the satellite's criteria. Earlier reports said China would launch its duplicate satellite in 2009.

The country will use the launching base scheduled to be built in Hainan Province in its third phase of moon exploration around 2017, when China launches a satellite to bring back soil samples from the moon.

Chang'e 1 blasted off from the Xichang Satellite Launch Center in Sichuan Province on a Long March 3A carrier rocket on October 24, and transmitted its first moon photo in November.

China's ambitious lunar exploration plan includes three steps: A satellite orbiting the moon, a satellite with a rover to land on the moon around 2012, and a rover to land on the moon and return to the earth with soil and stone samples around 2017.

China launches French-built satellite

(Xinhua Net, 2008-06-09)

China launched a new communications satellite, Zhongxing-9, from the Xichang Satellite Launch Center in the southwestern Sichuan Province at 8:15 p.m. (Beijing Time) Monday.

The satellite was shot into space aboard the Long March-3B rocket carrier. It was the 107th launch mission for the Long March series of carrier rockets.

Zhongxing-9, a satellite ordered by China Satcom from the France-based Thales Alenia Space, would be used for live television broadcast and put into use before the Beijing Olympic Games in August.

Audiences would be able to watch live broadcasts of Olympic events via the satellite. The quality and coverage of the country's television and broadcasting services were to be increased, and people in remote regions of China would receive clear television programs.

The China Great Wall Industrial Corporation (CGWIC), the contractor of the satellite launch, signed the launch service contract with China Satcom in November 2005.

As the only company engaged in international commercial satellite launching services, CGWIC has launched 34 foreign satellites for 28 services.

China's first spacewalk mission to launch in October

(Xinhua Net, 2008-06-12)

China's Shenzhou VII manned space mission, which will include the first spacewalk by a Chinese "taikonaut", is to launch in October, said a spokesman of the China manned space engineering office here on Thursday.

He would not give the exact date of the launch, but said a day would be selected in October as the time to start the mission.

A crew of six astronauts had been chosen for the mission, with three manning the spacecraft and three substitutes, said the spokesman.

The Shenzhou VII spaceship will be launched from the Jiuquan Satellite Launch Center in the northwestern province of Gansu and the astronauts will leave their spacecraft for the first time.

Shanghai Scientists Making Waves in Space**(CRI, 2008-06-18)**

The Shanghai Astronomical Observatory on Tuesday joined an international network of radio signal telescopes in a unique experiment using Very Long Baseline Interferometry (VLBI) which enables scientists to observe moving objects in space.

Local scientists joined researchers in Japan and Australia for Tuesday's experiment which involved six telescopes from China, Japan and Australia and three computer centers from each country.

The VLBI technique can streamline research on space exploration, astrometry, spacecraft tracking and even earthquakes.

"Today's demonstration was a part of an international VLBI workshop held by the Shanghai Astronomical Observatory," said Shen Zhiqiang, a scientist with the Shanghai Astronomical Observatory and director of the local VLBI system. "The real-time VLBI is the world's most advanced technology and allows scientists to have immediate access to correlation results. Previously, scientists had to wait for days to get the results," Shen said.

The Shanghai VLBI system which was used to track Chang'e 1 orbiter last October and November, worked at a processing speed of 512 Mbps, a requirement for the international VLBI network.

This was the first time a domestic facility reached such a speed, experts said.

As well as imaging distant cosmic radio sources, spacecraft tracking, and for applications in astrometry, VLBI can also be used to study the earth's rotation, map movements of tectonic plates within millimeters, and perform other types of geodesy.

"Chinese scientists have introduced the system for the study of earthquake prediction but this is a long-term and complicated process," Shen said.

Rocket for Shenzhou VII Is Ready**(CRI, 2008-06-26)**

Chinese scientists have finished assembling the rocket that will carry China's Shenzhou VII spaceship into space.

The people.com.cn website reported that researchers at China Academy of Launch Vehicle Technology (CALT) recently completed all testing works on Long March II-F.

The rocket is ready to leave for Jiuquan Satellite Launch Center in August, where the Shenzhou VII spaceship will take off in October.

2 News from Universities

Universities in China keen to lure top students

(People's Daily, 2008-06-03)

Universities are competing aggressively for top students as the annual national college entrance examination approaches.

Some are offering special scholarships for students who do well in the exam to be held from Saturday to Monday.

Tsinghua University said last month it will increase the number of awards this year.

Students with high scores, such as champions of each province and winners of international student academic competitions, will be entitled to scholarships of up to 40,000 yuan (5,700 U.S. dollars), more than double that of last year.

Zhang Chunsheng, a teacher in charge of student finance management at the university, said it will also offer more opportunities to go abroad for students.

Top students will be sent to foreign universities for one or two months during the summer. The university will cover the expenses of each student, about 30,000 yuan.

"The improved incentives will help boost the university's competitiveness," Zhang said.

"To build a world-class university, we need to establish an award system comparable to other top universities."

Some universities in Hong Kong are also trying to lure outstanding high school graduates from the mainland.

The Hong Kong University of Science and Technology, the City University of Hong Kong, the Hong Kong Polytechnic University, and the Chinese University of Hong Kong, have all held enrollment exercises in major mainland cities.

In 2005, the Chinese University of Hong Kong and the City University of Hong Kong were the first to show interest in mainland students.

The Chinese University of Hong Kong announced earlier this year it will accept 250 mainland high school graduates this year.

About 40 percent of the students will be awarded scholarships to cover tuition and living expenses.

Many overseas universities have also expanded their intake of Chinese students.

The China Education Expo late last year in Beijing saw a record-breaking number of representatives from more than 600 overseas colleges and universities.

The universities are offering good scholarships and visa policies to attract more outstanding students from China.

"Universities today offer international teachers, students and funding," Hong Chengwen, a management professor with Beijing Normal University, said.

"Excellent universities attract more funds, and their scholarships better students," he said.

3 Innovation Management

Generation transfer of human resources at CAS

(CAS, 2008-06-23)

At present, more than half of the research professionals at CAS are younger than 45 years of age, signifying the completion of the transition of CAS scientists from the elder generation to younger ones, says CAS Executive Vice President BAI Chunli.

Prof. Bai Chunli made the remarks at a prize-giving ceremony held recently in Beijing. At the meeting, 70 young S&T workers were honored by the K. C. Wong Prize for Outstanding Achievements of Scholars in China's West and the LU Jiaxi Prize for Young Scientists.

Thanks to the sustained and steady enforcement of the CAS policies on the optimization of the personnel composition and related measures, the CAS has achieved the generation-to-generation transfer of its R&D staff, realizing its objectives of having young scientists to take the lion's share of its R&D workforce.

By now, S&T personnel at the CAS are 40 years old in average age and the scientists younger than 45 in age account for about 55% of its research staff. The research professionals newly recruited via contract-by-position are 38 years of age in average, including some 4,300 newcomers with an age between 31 and 40. Among the CAS community of senior researchers, 11% younger than 35 in age.

S&T think tank development by pooling collective wisdoms

(CAS, 2008-06-27)

At the first plenary session of the 14th CAS General Assembly held on June 23 in Beijing, CAS President LU Yongxiang urged CAS Members to promote the development of a national think pool in science and technology by tapping their wisdoms.

Concurrently serving as vice chairman of the standing committee of the country's top legislature NPC, Prof. Lu calls on CAS Members to offer systematic, forward-looking and scientific knowledge and consultant service in line with the country's overall development and strategic demands so as to contribute to the country's drive of science-guided, sustainable and harmonious development.

Since the outbreak of the Sichuan earthquake, CAS Members have worked out nine consultant reports on monitoring the aftershock, prevention of secondary disasters, post-quake reconstruction and other research topics. The suggestions have been submitted to the State authorities. Some CAS Members have been working at the frontline of disaster reduction and relief.

Prof. Lu pointed out that the issues of population, shortage in natural resources and the environment are domestic restraints on China's sound development. In the global context, China faces new challenges posed by global warming. In view of China's S&T backing to national development, he noted, insufficient capacity of indigenous innovation, and underdeveloped national innovation system are snags for upgrading China's international competitiveness.

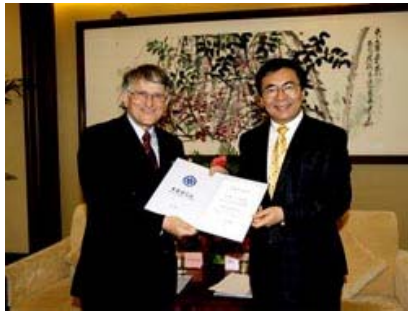
Efforts should be made to build the CAS Academic Divisions (CASAD) into the most prestigious consultative body of the country, offering S&T advices to national macroscopic decision-makings, says Prof. Lu. In addition, it should become the top organ for academic appraisals in natural sciences and a component of national S&T thinking tank.

Top priority should be the upgrading of consulting capability of CASAD. Endeavors should be made to develop new methods and means for giving full play to its national S&T think tank.

4 China's International Science Cooperation

BAI confers certificate on a CAS Foreign Member from Germany

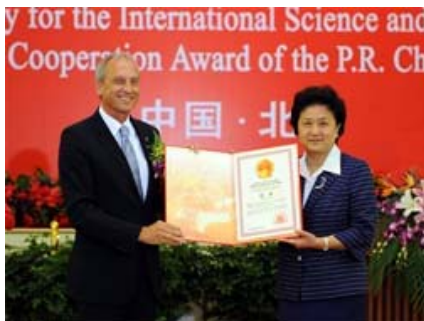
(CAS, 2008-06-10)



CAS Executive Vice President BAI Chunli met with Prof. Klaus von Klitzing, 1985 Nobel Prize winner in physics from the Max-Planck Institute for Solid State Research, on 3 June in Beijing. He presented a CAS Foreign Member Certificate to Prof. Klitzing, who was elected into CAS in 2006.

Prof. Peter Gruss honored with China's national prize for Int'l cooperation

(CAS, 2008-06-11)



The award ceremony for China's National Award for International S&T Cooperation in 2007 was held on 5 June in Beijing. On behalf of the Chinese Government, State Councilor LIU Yandong presented the prize to its four laureates: British geophysicist LI Xiangyang, U.S. materials scientist LIU Jinchuan, Russian geographer N. L. Dobretsov and German biologist Peter Gruss.

Prof. Peter Gruss, president of the Max Planck Society (MPS), has long been committed to promoting the scientific cooperation between China and Germany. As early as in the 1980s, he went to Shanghai to teach advanced experimental techniques at the Guest Laboratory cosponsored by CAS and MPS. Since 2002 when he assumed the MPS Presidency, Prof. Gruss has further strengthened the partnership between the two institutions. Under his leadership, more CAS-MPS Partner Groups and Junior Research Groups were established. In 2005, the CAS-MPS Partner Institute for Computational Biology, a joint venture run in accordance with the MPS model of academic management, made her debut in Shanghai, marking a new phase of the strategic partnership. In May 2006, a bilateral agreement was signed for joint training of doctoral students, further opening a new field of collaboration.

Sino-German symposium on intellectual property rights held in Beijing

(CAS, 2008-06-26)

Under the joint auspices of CAS and Fraunhofer Society (FhG), a symposium on the management of intellectual properties was held on 23 June in Beijing.

Two senior officials in charge of R&D contract and patents and licenses in FhG attended the conference, giving a detailed exposition on the management of intellectual properties, application for patented rights and licenses, technology transfer and ways to forge R&D partnerships with enterprises. Officials from the CAS held talks with the German experts.

The German experts will also hold similar workshops with CAS administrators in Shanghai and Guangzhou.

5 Miscellaneous

A new bread improver to replace traditional gluten fortifier

(CAS, 2008-06-05)



Scientists with the CAS Changchun Institute for Applied Chemistry recently developed a new plant derivative of polysaccharide to replace the traditional agent of gluten fortifier in the bread baking industry.

The new bread improver is a kind of high-purity sugar extracted from a plant endemic to China. With a new molecular structure, it cannot be digested by human body, producing no toxicant side-effects.

In order to bake mellow, soft and tasty bread, the flour dough must contain a certain content of water, a proper specific volume and an evenly distributed porosity. The conventional practice widely accepted both at home and abroad is to put in a certain amount of potassium bromate to promote the dough's toughness. However, recent studies show that the bromate is a carcinogen.

The new additive developed by CAS scientists is able to replace the bromate in the bread and satisfy various requirements.

According to experts, the new ingredient is featured with a new special microstructure and when it is mixed with flour, the polysaccharide will wrap the flour particles in the dough, including the air drops contained in them. So the baked product is mellow, porous and tasty.

University Students Launch Self-made Rocket

(CRI, 2008-06-13)

A rocket designed by Beijing university students lifted off from the Jiuquan Launch Center in northwestern China's Gansu Province on Thursday evening, June 12, 2008.

A rocket designed by Beijing university students lifted off on Thursday evening from the Jiuquan Launch Center in northwestern China's Gansu Province.

The "Beihang 1B" successfully collected data from the middle atmosphere from a height of about 10,000 meters, the Beijing Daily newspaper reported on Thursday.

Six minutes after the launch, rocket debris was collected by researchers.

The "Beihang 1B" is an upgraded version of "Beihang 1," which was launched in 2006.

"Beihang 1" is the first undergraduate-made rocket in China; "Beihang 1B" was made by the same research team.

Satellite to Help Tourists

(CRI, 2008-06-19)

A satellite navigation radio system to guide tourists is now available for people visiting 30 historical sites in Xuhui District of Shanghai.

The General Packet Radio Service (GPRS) used satellite tracking technology to pinpoint the carrier's position and provide them with e-maps of the sight-seeing route to the buildings on a screen.

The district government allocated 400,000 yuan (US\$57,971) to tailor the system for heritage

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buildings open to the public for free.

The GPRS modules are equipped with touch-screen facilities and tourists can choose either Chinese or English explanations about each building.

The system can automatically display pictures and broadcast details about the architecture. Under the government's plan, a new sight-seeing route will also be developed along Wukang Road by the Xuhui District government before 2010.

The Tianping and Hunan neighborhood communities in northeast Xuhui District are rich in heritage buildings, according to Zhu Zhirong, head of the district Housing, Land and Resource Administration.

Int'l Organization Names Chinese Climate Group "Center of Excellence" (XRI, 2008-06-24)

An international academic organization said here on Tuesday it had chosen a Chinese research body with a focus on climate and environmental change as one of its centers of excellence.

The International Center for Climate and Environment Sciences (ICES), which is a division of the Chinese Academy of Sciences (CAS) Institute of Atmospheric Physics (IAP), was elected by the Commission on Science and Technology for Sustainable Development in the South (COMSATS) as a result of Chinese scientists' contribution to climate research and international collaboration.

IAP director Wang Huijun told a COMSATS coordinating council meeting that opened here on Tuesday: "In cooperating with the rest of the world in climate and environmental research, the ICES encourages research collaboration between developed and developing countries."

The meeting runs through June 26.

COMSATS executive director Hameed Ahmed Khan said: "COMSATS research partnerships address problems of big social and economic impact, and the establishment of centers of excellence will push forward sustainable development in the South."

The council members are expected to discuss how to coordinate research plans among participants in the next fiscal year.

Lin Zhaohui, ICES executive director, said the priority of research would be on climate change and related issues, with an emphasis on cooperation among developing countries.

Beijing-based ICES is a leading research body that deals with climate change, earth systems, climate and hydrological predictions, weather disaster forecasts and ecological mechanisms.

At the urging of Pakistani Nobel laureate Abdus Salam, the COMSATS was established in 1994 in Islamabad.

China was a founding member of the multilateral body, which includes 23 sponsor nations including Brazil, Egypt, Nigeria, Turkey and the Philippines.

In the past 14 years, the commission has organized and coordinated research on the environment, energy, public health, population and education.

Cai Jianing, an official from the Ministry of Science and Technology, said: "Research cooperation will be a stimulus to wider cooperation among developing countries and enhance our competitiveness and risk resistance."

World's first "Museum of Sound" to settle in Hefei (People's Daily, 008-06-25)

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The Global Music Valley Cultural Industry Park project had officially been contracted to enter the Shushan Economic Development Zone in Hefei, in China's Anhui Province.

According to the plan, the sound collection centre, covering 12 acres of land, is expected to start construction at the end of this year and be completed in 2010.

Global Music Valley is going to be the storage of hundreds of thousands of primitive sounds – even millions of non-musical categories – from nature. A Music Valley Park and "exchange of sounds" will be set up on the basis of the storage, according to a spokesperson of the project.

Included in the project will be a sound collection center and an auditory experience center to be built in the Hefei Shushan Economic Development Zone. The entire center, with a total area exceeding 40,000 square meters will be world's first "Sound Museum" after its completion.

"Wireless Beijing" Starts Trial Operation

(CRI, 2008-06-26)

The first phase of Beijing's wireless network program started trial operation this Wednesday, enabling people in the city to access the Internet using the wireless network.

The trial network covers 100 square kilometers of five city's urban areas, including the CBD area, the Financial Street, Zhongguancun, the Wangjing zone and Yizhuang region, the website 163.com said.

CECT-Chinacomm Communications, the program's service provider, said the program adopted the WIMAX+MESH_WIFI technology, which is an important supplement to the third-generation (3G) network. Through the wireless access points, people with laptops, PDAs, or Wi-Fi enabled mobile phones can go online outdoors.

The network, which will be free of charge during the August Olympics, will cost users 0.12 yuan per minute after the Games. People can also choose another three prepayment methods, 20 yuan for one day, 60 yuan for five days and 80 yuan for one month. None of these has limit on traffic.

In Nanjing, the price is much cheaper than in Beijing, at 0.05 yuan per minute during the promotion period.

The wireless network currently provided by China Mobile offers three payment methods - 30 yuan for 15 hours, 50 yuan for 40 hours, 100 yuan for 200 hours, and 0.05 yuan for each extra minute. These prepaid service hours are effective in all cities in China and must be used within one month.

The president of the CECT-Chinacomm Communications Guo Hongtao said that the speed of the wireless network in Beijing will be no less than 512kpbs.

The second phase of the program will complete by the end of 2009, when the wireless network will cover urban Beijing within the fifth-ring road.

By the end of 2010, people in all areas in Beijing, including the suburban areas, will enjoy the service.

6 Information for upcoming Workshops in October

Power Electronics and Intelligent Transportation System

Date: August 03 **City:** Guangzhou, Guangdong Province

<http://www.csconference.cn/peits/>

ISECS International Colloquium on Computing, Communication, Control, and Management

Date: August 03 – 04 **City:** Guangzhou, Guangdong Province

<http://www.iita-conference.org/cccm/index.htm>

International Symposiums on Electronic Commerce and Security 2008 (ISECS|08)

Date: August 03 – 05 **City:** Guangzhou, Guangdong Province

<http://www.iita-conference.org/isecs/WIHW2008.htm>

2008 International Conference on Advances in Product Development and Reliability (PDR08)

Date: August 04 – 06 **City:** Chengdu, Sichuan Province

<http://pdr08.swjtu.edu.cn/>

The Sixth International Conference on Traffic and Transportation Studies (ICTTS)

Date: August 05 – 07 **City:** Lanzhou, Gansu Province

<http://www.ictts.net/ictts.htm>

2008 Interntional Workshop on Biomechanics and Sports Performance

Date: August 05 – 07 **City:** Nanjing, Jiangsu Province

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

The IEEE International Conference on Intelligent Information Hiding and Multimedia Signal Processing

Date: August 15 – 17 **City:** Harbin, Heilongjiang Province

<http://ihmsp2008.hit.edu.cn/>

The 7th International Conference on Web-based Learning (ICWL)

Date: August 20 – 22 **City:** Hangzhou, Zhejiang Province

<http://icwl2008.zjnu.cn/>

The 4th International Conference on Intelligent Logistics System (ILS2008)

Date: August 20 – 23 **City:** Shanghai

<http://www.shmtu.edu.cn/ils2008/>

The 4th International Conference on Natural Computation (ICNC'08) and the 5th International Conference on Fuzzy Systems and Knowledge Discovery (FSKD'08)

Date: August 25 - 27

City: Jinan, Shandong Province

China Highlights June 2008

<http://www.icnc-fskd2008.sdu.edu.cn/>

The 4th International Symposium on Precision Mechanical Measurements (The 4th ISPMM'2008)

Date: August 25 – 29 **City:** Hefei, Anhui Province

<http://www1.hfut.edu.cn/brief/ISPMM/>

9th International Conference on Signal Processing (ICSP'08)

Date: August 26 – 29 **City:** Beijing

<http://icsp08.bjtu.edu.cn/>

Abbreviations

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