

Content

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

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Helmholtz News Concerning China

During 31.03-01.04, a **Sino-German Forum on Climate Change and Energy** was held in Beijing. This Forum was sponsored by the NRW government, who has offered 8 return tickets and BMBF, who has sponsored 6 returning tickets for the German participants. Prof. Bolt, member of the Director Board of FZJ has led this German delegation of 20 participants. Together with him we found some other Helmholtz scientists such as Prof. Wahner from FZJ, Prof. Dinjus from FZK and Prof. Schwarze from UFZ. Some colleagues from DLR, who were on the invitation list, didn't show up at the end for various reasons. Dr. He made a presentation about Helmholtz and its relevant activities in China. A reception party was organized on the last evening in the German embassy.

It was a very successful event, as stated in the conclusion remarks on the last day of the forum. Climate change, energy and environment are the most important issues for the future collaboration between China and Europe. Impact on China would turn out an international challenge for all the countries in the world. It was suggested that there should be more dialogs in the future for better coordination and development of cooperation projects. It would be ideal, if both countries could call up a dedicated steering committee for the discussion and evaluation of joint proposals.

During 14.04-18.04, Mrs. Schavan, German minister for Education and Research led a large delegation to visit Beijing and Shanghai, under the invitation of Prof. Dr. Wang Gang, Vice President of the People's Political Consultative Congress and Minister for Science and Technology. It was to celebrate the [30 years' signing of the Governmental Agreement on Scientific and Technological Cooperation](#). The 20th round of Scientific and Technological Cooperation Meeting (WTZ-Sitzung) was also carried out on the afternoon of 14th April. It is agreed upon that the bilateral cooperation has been extremely successful and is now get into a new era: Because of the fast development in China, Win-Win projects would be called for and sponsored jointly, especially in the fields of climate change, energy saving and efficiency improvement and environmental protection.

Prof. Wagner, Helmholtz Vice president and scientific director of DESY, Dr. Schurr from FZJ and Dr. Hong HE from the Helmholtz Beijing Office were all formal member of the German delegation. Prof. Wagner has had the opportunity to take his time to visit the DESY partner in the Beijing University. Over 10 people in the Heavy Ion Accelerator Institute have had experience in DESY. They will be further making effort to participate in the XFEL project, where China government has promised 1% INKIND contribution.

ENTRANCE Project kicked off in Beijing and a workshop was organised during 26-29.04. *Environmental Transition of China's Ecosystems under Predicted Global Changes* has been approved by Helmholtz Association for the period of 01.03 2008.-28.02.2013. A joint laboratory would be established through joint funding from Helmholtz and Chinese Academy of Sciences. The major focus would be on the impact of land using to the regional ecosystem including carbon and nitrogen circulation. The coordinators of this project are Prof. Butterbach-Bahl from IMF-IFU, FZK and Prof. Zheng Xunhua from the Institute of Atmospheric Physics, CAS. 6 German colleagues, including the IMF director Prof. H. Schmid attended the kickoff meeting and given presentations on the workshop.

Helmholtz Beijing Representative Office

1 Science News

1.1 Energy

Invention Can Bank on Power

(CRI, 2008-04-01)

Scientists have invented a new environmentally-friendly "electricity bank" that enables people to collect and store surplus energy at night to curb electricity consumption peaks and power shortages.

The "bank" is a sodium-sulfur battery jointly produced by the Shanghai Institute of Ceramics, the Chinese Academy of Sciences and local electric power supplier.

It is different from ordinary batteries as it has sodium for its negative pole and sulfur at the positive pole.

It has a lower manufacturing cost and a service life of 10 years. Researchers said the strength of the single sodium-sulfur battery was 125 watts.

It could be charged at night, when power demand was small, to save surplus electricity and could discharge that stored power during day time peaks.

Joining 400 such batteries together could make up a 50-kilowatt module, equal to the driving force of eight to nine mopeds, according to Wen Zhaoyin, researcher with the institute's energy material center. He added the battery modules could be joined to become larger power suppliers for enterprises and families.

Biotic solar cells produced in Shanghai

(People's Daily, 2008-04-25)

Shanghai recently produced a new type of cell--biotic solar cells--enhancing the efficiency of the direct transformation of light into electricity a leap towards the highest global level.

According to a report released by the Shanghai Municipal Science and Technology Commission, the research staff of Huadong Normal University has successfully "reproduced chloroplasts" using nano-materials in the lab; and has achieved a substantial amount of optical energy to be used to generate electricity.

The chloroplasts, where photosynthesis, are channels through which solar energy can be converted into chemical energy. In the lab tests, the scientific team did not "copy" a chloroplast outside the body of plants as before. Instead they cultivated a new type of dye-sensitive solar cells, similar in structure with chloroplasts, in an attempt to convert light into electricity. Sponsored by the special Shanghai Municipal nano-materials fund, and after three years of tests and probes, the biotic solar cells were finally turned out. Their light-electricity transformation efficiency exceeds 10 percent, nearing the world's highest level of 11 percent.

1.2 Earth and Environment

Symposium held to mark International Polar Year

(CAS, 2008-04-02)

With an objective of better analyzing the recent developments of polar research, upgrading China research capacity and presenting strategies and priorities for polar research and capacity building in the future, a session of the Xiangshan Science Conferences opened on 2 April in Shanghai.

Under the theme of "Scientific frontiers of International Polar Year (IPY) and future polar research, the three-day meeting will invite scholars from various disciplines to have an in-depth discussion on various topics, ranging from Dome A science, astronomy in the Antarctic, Arctic Ocean Science, and Antarctic geology.

The fourth International Polar Year (IPY 2007/2008), a large scientific program focused on the Arctic and the Antarctic, has been launched jointly by the International Council for Science (ICSU) and the World Meteorological Organization (WMO). It will involve scientists across the global in its plan-making and scientific expedition.

Chinese researchers have actively taken part in the program, and their proposal on the Prydz Bay, Amery Ice Shelf and Dome A Observatories (PANDA) has been listed as a core activity in the IPY Program.

New China network can report earthquakes within 10 minutes

(People's daily, 2008-04-11)

China's earthquake monitoring department managed to detect and report an earthquake within 10 minutes with a new digital network, the China Earthquake Administration (CEA) announced here on Friday.

The network, under construction since June 2004, passed an examination by a 19-member expert panel here on Friday.

Until now, it's taken 30 minutes to report an earthquake, said Chen Xinlian, the CEA's chief engineer for the new network.

The new network can detect a quake as small as 2.5 on the Richter scale, compared with 4.5 now, he said. In six areas of China that have volcanic activity, it can detect an earthquake of just 1.0 on the Richter scale, he added.

As part of the 2.28 billion yuan (330 million U.S. dollars) project, China built state-of-the-art detecting stations in all 31 provincial divisions in the mainland and linked them by computer.

"The new milestone network will take China's earthquake monitoring capacity to a new stage," said Chen Jianmin, the CEA director.

According to an earlier CEA report, China has about 1,200 earthquake monitoring stations and 25 provincial divisions have set up emergency teams for earthquake rescue and relief.

China, sitting between the Indian Ocean and Pacific plates, is one of the areas with the most tectonic activity in the world.

China ends its 24th Antarctic expedition

(Xinhua Net, 2008-04-16)

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China's Antarctic ice breaker, the Snow Dragon, arrived in Shanghai on Tuesday, completing the country's 24th 156-day expedition to the region.

Sun Bo, leader of the Chinese Antarctic icecap expedition team, told Xinhua in Shanghai that the 17-member expedition team was tasked with choosing a site for China's third Antarctic research station and carrying out a major exploration mission, the Panda plan.

The team fulfilled 46 scientific studies and 11 logistic programs and also successfully scaled Dome A, the continent's highest peak at 4,093 meters above sea level, for the second time in history on Jan. 12, Sun said.

The researchers carried out scientific inspections on glaciers, geology, meteorological phenomenon and astronomy at the peak, which was significant to study the formation and evolution of the Antarctic icecap, Sun said.

"We have found an ice layer as thick as 3,132 meters at Dome A, which may help to extract the sample of the oldest ice core."

Sun said many countries, including the United States, Britain, Germany and France, have showed great interest in Dome A after China made it to the peak for the first time three years ago.

"Foreign expeditions may be able to scale the highest icecap in three to five years. But China enjoys advantages since we have obtained much experience and an abundance of scientific research achievements," Sun added.

China launched its first expedition to the Antarctic in 1984.

Lab for "red tide" research opens in Shanghai

(Xinhua Net, 2008-04-16)

A key lab that will monitor China's eastern coast for "red tides" -- outbreaks of algae in organic matter -- was dedicated here on Wednesday.

China has a coastline of 18,000 kilometers, and red tide outbreaks have become more frequent amid larger build-ups of organic matter in coastal waters. A common cause of such build-ups is improper disposal of untreated waste products.

The East China Sea was worst hit, with 400 outbreaks from 2001 to 2007 that affected 93,000 sq km. The new facility, housed at the East Sea Branch of the State Oceanic Administration (SOA), will be very significant in improving protection of the marine ecology and environment, according to Chen Lianzeng, deputy chief of the administration.

The lab is literally known as the "SOA key lab for three-dimensional monitoring technology and application of offshore red tide hazards". It will do research in several areas, such as stereo monitoring technology, forecasts, warnings and emergency administrative networking technology.

Monitoring, testing, remote sensing, forecasting and alarm procedures will all be part of this process.

CAS to render support to Beijing's environmental protection

(CAS, 2008-04-18)

CAS will offer fresh S&T support to ensure clean air for the forthcoming Olympic Games and improve the overall ecological setting of Beijing.

A framework agreement on the environmental protection was inked between Beijing Government and CAS on 16 April. On behalf of the two sides, Vice Mayor NIU Youcheng and Vice President of CAS YIN Hejun signed the protocol at the ceremony.

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The move is a result of the long-term and fruitful S&T partnership between the two sides. In particular, during the "Good Luck Beijing Sports Events" in last August, a batch of CAS institutes contributed to the monitoring of the air quality over the city by introducing up-to-date instruments and taking advantages of cutting-edge research advances.

To address the problem of regional pollution, CAS summoned scores of experts from a spectrum of specialties, ranging from atmospheric environment, ecology to monitoring technologies, to set up a new research platform for curbing the air pollution over big cities such as Shanghai and Beijing in an effective and all-round way.

China to build its first inland Antarctic research station next year

(People's Daily, 2008-04-20)

China will complete the construction of its first inland Antarctic research station at the highest peak in the region next year, said leader of the Chinese Antarctic expedition team Saturday.

"The preparatory work for the new station is underway," Sun Bo, leader of the Chinese Antarctic icecap expedition team, told Xinhua.

"The 25th Antarctic expedition that will start in November is tasked with building the main structure of the station on Dome A, which is expected to complete next January."

The new research station will be China's third station in Antarctica after the Changcheng Station and Zhongshan Station.

"Chinese researchers made the first trip to Dome A in history in Jan. 2005. China will continue the scientific research into Dome A," Sun said.

The 17-member team had just came back from their 24th expedition on Wednesday. They fulfilled 46 scientific studies and 11 logistic programs and also successfully scaled Dome A, the continent's highest peak at 4,093 meters above sea level, for the second time in history on Jan. 12.

The researchers carried out scientific inspections on glaciers, geology, meteorological phenomenon and astronomy at the peak, which was significant to study the formation and evolution of the Antarctic icecap, Sun said.

"Scientists will also search for the ice core dating from 1.2 million years ago on Dome A, and study the geological evolution under the icecap, the global climate changes and astronomy there."

China launched its first expedition to the Antarctic in 1984.

Atmospheric survey starts in east China

(CAS, 2008-04-28)

With support from the Ministry of Science and Technology, scientists from the CAS Hefei Institutes of Physical Science (HIPS) have kicked off a research project to obtain a high-resolution vertical profile of key atmospheric parameters in east China, a region known for its developed industry, a dense population and heavy particle pollution.

The launching ceremony of the 15 million yuan (or \$2.14 million) project was held at the Anhui Institute of Optics and Fine Mechanics under HIPS on 18 April. It was attended by HIPS researchers of the project and their co-workers from the CAS Institute of Atmospheric Physics, the Chinese Research Academy of Environmental Sciences, the Beijing Climate Center under the China Meteorological Administration, and the University of Science and Technology of China.

Over the next five years, these researchers will make systematic observation on levels of aerosols,

temperatures, water vapor contents, Ozone and Co₂ as well as their temporal and spatial changes at various layers of the atmosphere.

They will also to set up relevant data bases, so as to provide the most recent information about changes of the ozone layers, dynamics of stratosphere and mesosphere, exchanges at various atmospheric layers and radiation forcing. It is believed that the survey is of significance for the studies of climate change, environmental evaluation and atmospheric sciences.

Forum on Climate Change and Science & Technology Innovation COMMUNIQUE (MOST, 2008-04-30)

The Forum on Climate Change and Science & Technology Innovation was jointly hosted by the Ministry of Science and Technology (MOST), the Ministry of Foreign Affairs (MFA), the National Development and Reform Commission (NDRC), the Ministry of Environmental Protection (MEP), the China Meteorological Administration (CMA), Chinese Academy of Sciences (CAS), the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), and World Meteorological Organization (WMO) on April 24-25, 2008, in Beijing. The theme of the Forum is to address climate change through science and technology innovation.

More than 600 participants from about 30 countries and 10 international organizations attended the Forum, including senior state officials, prestigious experts, and representatives of enterprises and non-governmental organizations. Extensive discussions were held in sessions on science of climate change, strategy and policies of mitigating climate change, impacts of and adaptation to climate change, key technologies and international scientific and technological cooperation, and finance and market mechanism.

The Forum, based on the presentation and discussion,

1. Agreed that climate change presents one of the greatest challenges to global sustainable development, and that it demands an urgent global response;
2. Emphasized that science and technology plays an essential role in both assessing and addressing the risk of climate change. Addressing climate change through S&T advancement and innovation is the inevitable choice. In the future, science and technology innovation shall play a central role in addressing climate change. The significance of issues concerning technology development and transfer in the processes of the UNFCCC, was also recognized for the essential progress on the Convention and Bali Action Plan.
3. Recognized that great importance shall, inter alia, be attached to the following aspects that are critical to address climate change:
 - (a) Enhanced observational studies and modeling research on the prediction of climate change, and better understanding of the causes, trends and impacts of climate change; and improved global and regional projections of future climate change;
 - (b) Strengthened low carbon technologies innovation in terms of energy efficiency and conservation, clean energy, renewable energy, advanced nuclear energy, clean vehicles, carbon capture and storage (CCS), and enhanced action on mitigation of climate change through science and technology innovation;
 - (c) Enhanced development and deployment of technology on adaptation in the fields of agriculture, water resources, forestry, coastal zone management, infrastructure, and public health, and enhanced

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action on adaptation to climate change through science and technology innovation;

(d) Enhanced diffusion and deployment of scientific and technological achievements, enhanced public awareness of responses to climate change, and enhanced global response through science and technology innovation;

(e) Strengthened capacity-building of institutions and individuals, strengthened research on climate friendly policies and the future climate change regime, and enhanced the capability of climate change policy decision-making by governments.

4. Recognized that it is critical to explore the full functions of governments in technology transfer, to establish an effective international regime for technology transfer, and to transfer environmentally sound technologies to developing countries at favorable terms. Some valuable proposals and options were presented to the Forum for discussion, among them is China's proposal 'an Initiative on Technology Development and Transfer';

5. Called on international community to further strengthen international cooperation to promote the sharing and diffusion of scientific and technological achievements in response to climate change;

6. Welcomed the efforts of China to address climate change as part of its sustainable development strategy.

7. Welcome the measures and achievements in 'Green Olympics, High-tech Olympics and Cultural Olympics' of the Beijing 2008 Olympic Games, and the action plan concerning the Olympics and carbon offset.

1.3 Health

Catalogue of life launched in Beijing

(CAS, 2008-04-03)

Global and China 2008 Annual Checklists of the Catalogue of Life were released on 1 April in the CAS Institute of Zoology (IOZ) in Beijing.

Presided over by Prof. ZHANG Zhibin, director-general of the CAS Bureau of Life Sciences and Biotechnology, the event was attended by officials and scholars, including Prof. CHEN Yiyu, chairman of the Chinese National Committee for Biodiversity (CNCB) and president of the National Natural Science Foundation of China, Prof. Frank Bisby, Director of Species 2000, Prof. MA Keping, secretary-general of CNCB, and Prof. MENG Anming, executive vice director-general of IOZ.

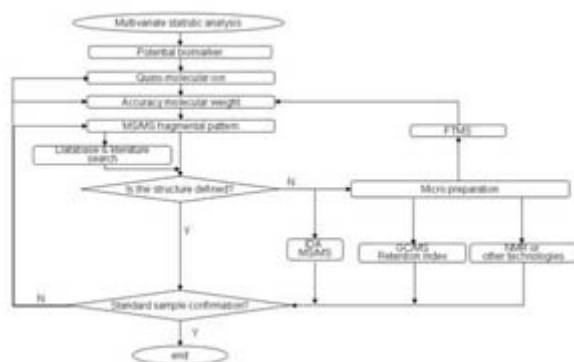
The eighth edition of Global Annual Checklist contains 1,105,589 species of animals, plants, fungi, micro-organisms and viruses while the first edition of China Annual Checklist comprises of 44,141 species of lichen, fern, seed plant, amphibian, reptile, fish, bird, mammal and spider distributed in China.

Species 2000 Program is a "federation" of database organizations working closely with users, taxonomists and sponsoring agencies. The goal of the project is to create a validated checklist of all the world's species (plants, animals, fungi and microbes). This is being achieved by bringing together an array of global species databases covering each of the major groups of organisms.

The Species 2000 China Node, a regional hub of the Species 2000 program, is launched on 20, October 2006. The goal of the Node is to provide a validated checklist of all species (plants, animals

and microorganisms) distributed in China to all users in the world. This will be achieved by bringing a series of databases together, each of them covering a group or groups of organisms in China. The checklist will be freely provided for users by a website supporting the online query to the dynamic checklist and annual checklist, and a CD providing the annual checklist.

Identify me is to know me (CAS, 2008-04-09)



The scheme proposed by Prof. XU and Dr. Lehmann succeeded for the first time in qualitative identifying metabolic markers through the correlating of the segmenting behavior of mass spectrometry with the retention behavior of chromatography.

The idea of finding a single metabolite biomarker that can unambiguously diagnose a disease is a beguiling one, but unfortunately not currently supported by reality. Although researchers have reported the discovery of a whole range of potential biomarkers for numerous diseases, they often don't stand up to closer scrutiny. But now, by combining together a whole range of different analytical and statistical techniques, a team of Chinese and German chemists may just have improved the chances of detecting a proper biomarker. The problem is not identifying metabolites that differ between healthy subjects and disease sufferers, which can easily be revealed using high performance liquid chromatography (HPLC), mass spectrometry

(MS) and multivariate statistical techniques such as principal components analysis. But in determining which of these many metabolites are best able to act as a clinical biomarker. Some researchers have got around this problem by monitoring changes in the abundance of a whole suite of different biomarkers, rather than trying to pick out a single one.

The team of Chinese and German chemists led by XU Guowang from the CAS Dalian Institute of Chemical Physics, chose a different tack. They decided to develop a novel strategy for working out the identity of differently-expressed metabolites, as identifying a metabolite can help to reveal its origins and function. And this information can indicate whether the metabolite will make a good biomarker, by revealing whether it has a central role in the disease process.

Their work was published recently in *Analytical Chemistry* under the title of 'Practical approach for the identification and isomer elucidation of biomarkers detected in a metabolomic study for the discovery of individuals at risk for diabetes by integrating the chromatographic and mass spectrometric information.'

The standard way of identifying metabolites is to compare their spectral data with that in metabolite databases such as the Human Metabolome database, but this often fails to produce a firm match and also cannot identify specific isomers. So Xu and his team set about designing a completely novel identification strategy, based on applying successive analytical and statistical techniques to metabolite spectra.

After choosing an interesting looking metabolite from the spectra - one which is able to distinguish

between healthy controls and disease suffers - the chemists analyze it with tandem MS. This technique fragments the metabolite into its product ions and therefore provides information on its molecular structure, such as indicating whether it contains carboxyl or amide groups. Next, Xu and his team analyze the metabolite using Fourier transform ion cyclotron resonance mass spectrometry (FTICR-MS), which can provide an accurate measurement of the metabolite's mass and also reveal its elemental composition.

Only after gathering this detailed information on mass and elemental composition do the chemists interrogate metabolite databases, thereby ensuring that they only come up with a fairly short list of good matches. They then whittle these matches down still further by removing those that don't fit with the structural information provided by the tandem MS analysis. Hopefully, this process should reveal a single candidate for the identity of the metabolite, although it won't be able to distinguish between different isomers. To do this, the researchers compare the retention times of the candidate isomers with the retention time of their metabolite on both HPLC and gas chromatograph columns.

The researchers tested this strategy on a metabolite in urine that they discovered could distinguish 28 healthy controls from 23 individuals found to be insulin resistant, which is a condition that presages full-blown diabetes. After conducting an FTICR-MS analysis of the metabolite, the researchers were able to obtain 18 possible matches from metabolite databases. They then removed those molecules that didn't contain the phenoxy and carboxyl groups that the tandem MS analysis had indicated formed part of the metabolite.

This revealed that the metabolite was one of three isomers of hydroxyhippuric acid. Finally, by comparing the retention times of these isomers, the researchers were able to pinpoint the metabolite as 3-hydroxyhippuric acid.

Proving the advantage of this technique, the successful identification allowed the chemists to speculate about the exact link between this metabolite and insulin resistance. For 3-hydroxyhippuric acid is known to form part of the pathway for metabolising dietary flavonoids (plant pigments). This pathway involves the action of gut bacteria and recent research has shown that the precise composition of the bacteria in the gut is associated with insulin resistance.

China Experts Develop Shells to Preserve Cells (CRI, 2008-04-10)

Scientists in China have developed "shells" that can wrap around living cells and preserve them, and hope to use the technique in cell transplants to repair damaged human tissues and to battle cancer.

In the journal *Angewandte Chemie*, the researchers described how they grew these artificial shells around yeast cells. The mineral coating kept more than 80 percent of the yeast cells alive after a month at room temperature.

Unclothed yeast cells die way before a month is up.

"This coating is made of calcium phosphate, (the material in) bone and tooth in mammals. It is biologically compatible and living cells would still be alive after getting the coating," said Tang Ruikang at the Zhejiang University in eastern China.

"The function of the shell is very close to clothes that we wear. The clothes can't change the nature of the human, but they can protect us," he said in a telephone interview.

Tang's team was inspired by the simplicity of eggshells; how a thin mineral layer protected a single cell.

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Using synthetic molecules, which acted as scaffolding, they managed to grow calcium phosphate around yeast cells.

Looking ahead, Tang wants to grow these shells around living human cells, before implanting them into damaged bones or other human tissues to repair them.

"When we implant cells into bones, the cells must be kept at very low temperatures, but with this technique we can wrap the cells and keep them alive for a long time in room temperature and then implant them into the living system," Tang said.

Tang hopes the technique may one day be used to kill cancer cells.

"We can also wrap viruses and deliver them into cancer cells. Cancer cells love to eat calcium phosphate and once the shells are broken down, the viruses are released and they can eat up cancer cells," Tang said.

Zhejiang to build world's largest bioactive peptide base

(People's Daily, 2008-04-11)

The patented "Enzymatic Peptides" project has formally established in Xiaoshan District of Hangzhou, Zhejiang Province. It is currently one of the top ten structural readjustment projects in Zhejiang; and will become the world's largest bioactive peptides raw materials and products base with a total investment of 450 million yuan.

Active compounds found in bitter melon have potential to treat diabetes

(CAS, 2008-04-16)



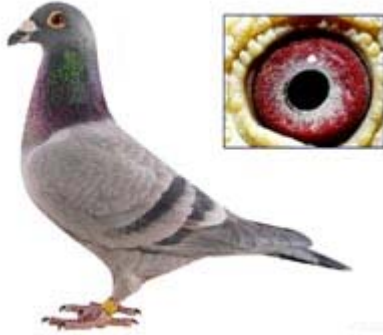
It seems like your mum was right. A study led by YANG Ye at the Chinese Academy of Sciences in Shanghai, China, and David Ernest James at the University of New South Wales in Sydney, Australia¹, has shown that eating bitter melon really is good for you.

Bitter melon is an ingredient often used in Chinese cooking, and this unique bitter-tasting fruit is slowly being introduced in the West. For thousands of years, traditional Chinese medicine has been using the 'neutral

and extremely cooling' bitter melon as a medicinal herb to treat different types of 'heat fatigue'. Several clinical studies have shown that bitter melon exerts hypoglycaemic effects on humans, which can serve as a treatment for type 2 diabetes, but until now the precise active compounds responsible for these effects have not been clearly identified.

Ye, James and co-workers have extracted a number of compounds from bitter melon and determined these compounds' structures and absolute configurations. They tested these compounds in vitro on muscle and fat cells, and found four compounds that could stimulate an increase in glucose entry into cells by a factor of three to four ;^a comparable to the optimum response achieved by insulin. Further study revealed that these compounds activate AMPK, the protein responsible for regulating fuel metabolism and enabling glucose uptake processes that are impaired in diabetics.

Of these four compounds, the researchers tested two in vivo on mice fed on a high-fat-content diet. They found a significant improvement in the glucose tolerance in these animals.

CAS scientists discover neural circuits for saccadic modulation of visual perception
(CAS, 2008-04-17)

In daily life, we move our eyes frequently to search for or fixate a target of interest with the retinal fovea. Usually, they would dart from one position to another in the visual field at velocities higher than 500 degrees per second. This rapid eye movement is called a saccade.

From a physical point of view, when our eyes make a rapid and jerky movement, the image of an object moves swiftly across the retina, resulting in blurred and

unstable visual perception. In fact, we can still perceive a stable and clear-cut world. Obviously, our brain makes a clever treatment of the contradiction between biology and physics of visual perception. However, little is known about the neural mechanisms behind the natural ingenuity.

A research team headed by Prof. WANG Shurong at the State Key Laboratory for Brain and Cognitive Sciences under the CAS Institute of Biophysics in Beijing recently discovered the neural circuits that modulate visual responses of brain neurons around the saccades in the pigeon, which might be critical for interpreting the mysteries of visual perception.

As the visual pathways in the pigeon are similar basically to those of mammals including human beings, with a comparable ability for visual cognition, experts believe that this discovery is of significance for explaining how our brain process visual information and modulate visual responses of cortical neurons during saccades.

As reported online in the April 6 issue of the prestigious journal *Nature -Neuroscience*, the researchers examined saccadic responses in more than 300 neurons in five brain areas of pigeons. After analyzing the change in discharge frequencies and its time courses of these neurons in response to saccades, the authors discovered the neural circuits for transmitting corollary discharge signals from the brainstem raphe complex through the optokinetic nuclei to the visual thalamus as a relay station and finally to telencephalic neurons.

Experts say that this finding is of significance for revealing the mystery of how visual information is processed in the brain and how we can perceive a stable and clear visual world during saccades. In addition, it might inspire how to design visual robots with eye movements.

China develops ways to prevent drug residue in eel
(Xinhua Net, 2008-04-20)

Chinese experts said they had developed technology to quickly detect illness of eel, facilitating timely treatment and thus reducing or exempting the use of drug.

The technology, featuring molecular biology technology, has passed evaluation by a team of experts with China's General Administration of Quality Supervision, Inspection and Quarantine.

Sources with the expert team said that eel raisers can detect three kinds of eel diseases in one day by using the reagent test on eel, winning time for preventing an outburst of disease.

The research program of the new molecular biology technology was sponsored by the provincial government of Fujian, which is China's biggest eel exporter.

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A notice issued by the Fujian Entry-Exit Inspection and Quarantine Bureau called for eel raisers to embrace the technology, which it says would help them avoid export barriers.

According to the bureau, the research team has also proposed a tentative program to develop bacterin and treat antibody of eel using modern molecular biology technology.

Fujian exported about 24,300 tons of grilled eel last year, valued at 288 million U.S. dollars, accounting for more than half percent of the national total.

Forum on Industrial Biotechnology Development convenes in Tianjin (CAS, 2008-04-22)

Under the theme of "Towards a Sustainable Bioeconomy," the 2008 China Summit Forum on Industrial Biotechnology Development was held from 17 to 19 April in Tianjin. It was attended by more than 400 scholars from some 30 business enterprises and 60 or so research institutes and universities. CAS Vice President LI Jiayang, Chair of the Forum, delivered a talk at the meeting.

Under the auspices of CAS Bureau for Life Sciences and Biotechnology, the China National Center of Biotechnology Development, the Municipal S&T Administration of Tianjin and the Chinese Society of Biotechnology, the meeting was organized by the CAS Institute of Microbiology, the CAS Tianjin Center for Industrial Biotechnology Research and Development and the Tianjin Center for high-tech technology transfer.

The participants held wide-range and in-depth discussions on issues like the lack of resources and energy sources, and deteriorating environment pollution. They believed that industrial biotechnology, the third wave for biotechnology development, carries out matter conversion using microorganisms or enzymes as catalysts. By taking advantage of state-of-the-art engineering technology, industrial biotechnology can produce a huge amount of pharmaceuticals, chemicals, energy sources and materials for human society, offering solutions to the problems concerning resources, energy sources and environment. It is the most promising technology for sustainable industrial development.

CAS, local governments to jointly set up a biomedical institute in Suzhou (CAS, 2008-04-23)

An agreement was recently inked between CAS and the governments of Jiangsu Province and Suzhou City to co-establish the CAS Institute for Biomedical Technology and Engineering in Suzhou, an economic powerhouse in China's Yangtze delta.

This is the second joint venture of the three parties. The first one is the CAS Suzhou Institute of Nano-tech and Nano-bionics, of which the construction is underway.

According the agreement, the 300 million yuan (about \$43 million) investment for the establishment of the new Suzhou institute will be shared by the three sides with 50 million yuan from CAS and the rest from the local governments.

Focusing on the innovation and integrative research of applied materials, medical equipment and related technology transfer, the institute strives to be an important R&T platform for China's biomedical engineering, an innovation center and a base for technology transfer and talent training.

Mass Intestinal Virus Infection up to 1,520, Kills 20 (CRI, 2008-04-29)

A lethal outbreak of intestinal virus in Fuyang City in east China's Anhui Province has killed 20

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children and befallen 1,500 others, the provincial health department said on Tuesday.

Du Changzhi, Anhui Provincial Health Department deputy chief, said the virus, known as enterovirus 71, or EV71, had altogether sickened 1,520 children, claiming 20 lives by Tuesday morning.

Of the sick, 585 had recovered thus far. At present, 412 sick children have remained in hospital for further medical observation. Of the total, 26 are seriously ill.

"Plenty of medical workers from other areas have been mobilized to Fuyang," the health official said. "They are joined by many experts sent by the Ministry of Health in an all-out effort to treat and save lives of the sick children."

Hospitals in Fuyang in northwest Anhui started to take in children with fever, blisters, mouth ulcers and rashes on the hands and feet in early March. Some were diagnosed with brain, heart and lung damage.

All were aged below six, of whom the majority being under two.

Enterovirus 71 can cause hand, foot and mouth disease that usually starts with a slight fever followed by blisters or ulcers in the mouth and rashes on hands and feet.

It may also cause high fever, meningitis, encephalitis, pulmonary edema and paralysis in a small number of children.

Paralysis is more common in children under two years and meningitis is more common in children between two and five. Infection could lead to high mortalities rates in serious cases and neither a vaccine nor therapeutic treatment is available.

CAS researchers decode genome of a mosquito-killing bacterium (CAS, 2008-04-30)

Researchers with the CAS Wuhan Institute of Virology (WHIOV) recently completed the genome sequencing of a mosquitocidal bacterium *Bacillus sphaericus* C3-41. The feat, first of its kind in China, is expected to further promote studies of the bio-control of mosquitoes.

The mosquito transmits some of the world's most serious vector-borne diseases, such as malaria, encephalitis, filariasis, yellow fever, and dengue. Vector control is recognized as an effective approach to controlling the diseases. Due to the increasing resistance of the insect to chemical pesticides, as well as their risks to both humankind and the environment, mosquito control using the insect-attacking bacteria *Bacillus sphaericus* and *Bacillus thuringiensis* subsp *israelensis* has been accepted across the world.

Bacillus sphaericus strain C3-41, selected by WHIOV researchers, is an aerobic, mesophilic, spore-forming microorganism that has been used with great success in mosquito control programs over the past two decades.

Teaming up with their co-workers from the CAS Beijing Genomics Center and the Cardiff University in UK, WHIOV researchers mapped out the complete genome of *Bacillus sphaericus* strain C3-41, and compared the data with that of other published sequences of entomopathogenic bacteria.

Experts say that their knowledge will increase people's understanding of the bacilli and may offer prospects for future genetic improvement of this important biological control agent.

1.4 Key Technologies

CAS researchers develop China's first PTR-MS

(CAS, 2008-04-07)

The proton transfer reaction mass spectrometry (PTR-MS), a new online monitoring technique for detecting trace volatile organic compounds, has been successfully developed at the CAS Anhui Institute of Optics and Fine Mechanics.

The device, the first of its kind in China, has detection sensitivity up to ppt order of magnitude in the response time of seconds. It could find wide applications in various fields such as environmental pollution monitoring, medical diagnosis and food quality inspection.

A breakthrough made in the field of optical tweezers

(CAS, 2008-04-08)



Observation and capturing of 100-nanometer particles of polystyrene using optical tweezers

Funded by the National Natural Science Foundation of China (NSFC) and CAS Knowledge Innovation Program, Prof. LI Yinmei from the University of Science and Technology of China (USTC) recently scored achievement in the capturing 100-nanometer particles of polystyrene using optical tweezers (OT). At the same time, the particles can be viewed in the whole microscopic field.

OT was one of the important inventions in the field of laser technology at the end of the 20th Century. It manipulates micro particles efficiently applying the mechanics effect of light, and is used for studying the reciprocity of matter under nano-dimension, probing into the microcosmic mechanism and understanding the life rule. Although OT can capture the transparent particles less than 100-nanometer, it is hard to observe for the resolution limit of optical microscope. Hence, the research bottle-neck is how to observe the nano-particles while capturing them.

Prof. Li has conquered the key technique that makes the trap of OT and the imaging face of microscopy with irradiation face of laser to overlap together accurately. Slice laser beams coupling from lateral face exposure the sample at the special incident position, and the images then can be gained while the laser light scattering the particles in the sample pass the microscopy. The OT technology realized the control of the Brownian Motion of a single particle in liquid state and provided a new method studying the light scattering properties of a single particle.

Studies shed new light on organic semiconductors

(CAS, 2008-04-11)

Researchers at the Key Laboratory of Organic Solids, the CAS Institute of Chemistry (ICCAS), have

made progress in designing and synthesis of n- and p-type organic semiconductors. The research findings were published recently on the Journal of American Chemical Society (JACS).

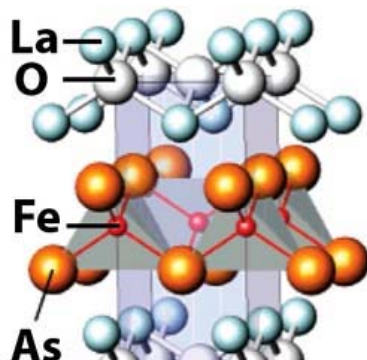
Organic semiconductor materials as the heart element of preparing photo-conducting devices are critical. Considering the study and application of molecular devices, it is significant and useful to design and synthesis organic semiconductor materials with high mobility, stability and malleability. Perylene-3,4:9,10-tetracarboxylic diimide (perylene bisimide, PBI) is a potential material for electron transporting and has been applied in a wide range of applications including organic light-emitting diode (LED), solar battery and organic field-effect transistors (OFETs). Therefore, the high performance n-type semiconductors with novel structures and special characters can be prepared using PBI unit. Starting from tetrachloro-PBI, ICCAS researchers synthesized a variety of PBI derivatives doped with dithiophene by Stille Reaction. The self-assembly behaviour of these derivatives in solid state can be modulated by guest molecules (see the cover paper: Chem. Comm., 2006, 4587-4589). Stimulated by this result, the researchers discovered a kind of transition metal system with highly active tetrachloro-PBI. The system might conduct homocoupling of 2 mole PBIs through short molecular axis to construct full extended conjugated di-PBI compounds as the potential electron transporting materials, which possess the broad absorption in the region of visible light and the strong electron-accepting ability characterized by electro-chemistry methods (see J. Am. Chem. Soc., 2007, 129, 10664-10665). A Chinese patent on the research is also been applying.

Co-funded by the National Natural Science Foundation of China, Chinese Ministry of Science and Technology and CAS, the researchers designed and synthesized a series of functional organic small molecules based on S-heterocyclic PBIs by the reaction of fused-ring aromatic compounds with thiophene. The thin-films of S-heterocyclic PBIs are expected to serve as the p-type organic semiconductors. Introducing thiophene unit into the functional molecules, its single-crystal micrometer wires have unique double-channel superstructure. The cooperative effects between the multi-layer molecular self-assembly result a mobility of the single-crystal micrometer wires up to 0.8 cm² V⁻¹ s⁻¹ (see J. Am. Chem. Soc., 2007, 129, 1882-1883).

1.5 Structure of Matter

Second family of high-temperature superconductors discovered

(CAS, 2008-04-22)



Between the sheets. In new superconductors, electrons flow through layers of iron and arsenic interspersed among layers of other atoms.

Researchers in Japan and China have discovered a new family of high-temperature superconductors -- materials that conduct electricity without any resistance at inexplicably high temperatures. Physicists around the world are hailing the discovery of the new iron-and-arsenic compounds as a major advance, as the only other high-temperature superconductors are the copper-and-oxygen compounds, or cuprates, that were discovered in 1986. Those older materials netted a Nobel and ignited a firestorm of research, but physicists still don't agree about how they work, leaving high-temperature superconductivity the biggest mystery in

condensed matter physics. Some researchers hope the new materials will help solve it.

"It's possible that these materials will provide a cleaner system to work with, and suddenly [the physics of] the cuprates will become clearer," says Hai-Hu Wen, a physicist at the Institute of Physics (IoP) at the Chinese Academy of Sciences in Beijing. But Philip Anderson, a theorist at Princeton University and a Nobel Laureate, says that the new superconductors will be more important if they don't work like the old one. "If it's really a new mechanism, God knows where it will go," he says.

Superconductivity is nature's best parlor trick. Ordinarily, electrons flowing in a metal lose energy as they ricochet off defects in crystalline material. In superconductors, the electrons experience no such drag and just keep going. That's because below a certain temperature, they form pairs. Deflecting an electron then requires breaking the pair, and at low temperatures there isn't enough energy around to do that. So the duo waltzes along unimpeded.

In an ordinary superconductor, the pairs are held together by vibrations rippling through the material's framework of positively charged ions. Most physicists, however, think that mechanism cannot explain the cuprates, which work at temperatures as high as 138 kelvin. In them, each compound contains planes of oxygen and copper ions arranged in a square pattern. Electrons hop from copper ion to copper ion and somehow pair, although physicists do not agree about how that happens.

The new materials resemble the cuprates in some striking ways. They are also layered materials, but instead of copper and oxygen, they contain planes of iron and arsenic along which the electrons presumably glide. Between the planes lie elements such as lanthanum, cerium, or samarium mixed with oxygen and fluorine. On 23 February, Hideo Hosono of the Tokyo Institute of Technology and colleagues reported in the *Journal of the American Chemical Society* that lanthanum oxygen fluorine iron arsenide ($\text{LaO}_{1-x}\text{F}_x\text{FeAs}$) becomes a superconductor at 26 kelvin.

Then Chinese researchers took over. On 25 March, X.H. Chen of the University of Science and Technology of China in Hefei reported that samarium oxygen fluorine iron arsenide ($\text{SmO}_{1-x}\text{F}_x\text{FeAs}$) goes superconducting at 43 kelvin. Three days later, Zhong-Xian Zhao of the IoP reported that praseodymium oxygen fluorine iron arsenide ($\text{PrO}_{1-x}\text{F}_x\text{FeAs}$) has a "critical temperature" of 52 kelvin. On 13 April, Zhao and his team showed that the samarium compound becomes a superconductor at 55 kelvin if it is grown under pressure. All the materials have the same crystal structure, and calculations suggest that vibrations simply do not provide enough pull to account for such high critical temperatures.

At least four different groups in China, including three at IoP, have synthesized new compounds and posted results on the arXiv.org preprint server (www.arxiv.org).

The first question on everyone's mind is whether the new high-temperature superconductors work the same way as the old ones. Anderson says they cannot because the older materials evolve from a state with one electron per copper ion, whereas new materials evolve from a state with two electrons per iron ion. But Steven Kivelson, a theorist at Stanford University in Palo Alto, California, notes that the old and new materials both have planar structures, start off as bad conductors, and exhibit a type of magnetism known as antiferromagnetism. "That's enough similarities that it's a good working hypothesis that they're parts of the same thing," he says.

All agree that the new materials will generate intense interest and that the next step is to synthesize higher quality samples consisting of a single pristine crystal.

1.6 Transport and Space

Second China civil aerospace industrial base breaks ground

(Xinhua Net, 2008-04-08)

China's second national civil aerospace industrial base broke ground in Xi'an, capital of northwestern Shaanxi Province, on Tuesday.

The National Civil Aerospace Industrial Base of Xi'an signed an agreement with the Xi'an branch of the China Academy of Space Technology, a major developer of the country's spacecraft and satellite application, to launch the research center.

Zhang Xiaoqiang, the National Development and Reform Commission deputy director, said Xi'an was one of the country's aerospace hubs with more than 200 aerospace research centers and enterprises in the city.

Zhao Hongzhuan, the base director, said the new facility would attract more renowned aerospace companies and research institutes to develop there in the near future. "We will build it into a world-class aerospace base."

The base, set to cover 1.7 square kilometers in the first phase and expand to 6 sq km in future, will focus on developing satellites, new materials, energies, IT and other technologies for the benefit of civil application.

It is expected to realize an output of 20 billion yuan (2.7 billion U.S.S. dollars) in 2012 with a number of competitive enterprises and a burgeoning technological innovation system.

The initiative was approved by the National Development and Reform Commission on December 26 following the launch of the Shanghai National Civil Aerospace Industrial Base four days earlier.

The Shanghai center, now under construction, includes a research and development center, an industrialization base and a scientific park. It will jointly promote the growth of the civil aerospace business, technological innovation and the application of such technologies.

China launches new space tracking ship to serve Shenzhou VII

(Xinhua Net, 2008-04-12)

China launched a new space tracking ship on Saturday, expected to serve the Shenzhou VII spacewalk mission scheduled for autumn, said a spokesman of the maritime space surveying and controlling operation.

The new space tracking ship was the sister ship of the Yuanwang-5, which was put into use in September, said the spokesman, adding the two vessels would play a key role in the Shenzhou VII mission.

The new ship, with a full load displacement tonnage of 25,000, started construction in April 2006 with adopted advanced technologies in the fields of space, maritime, meteorology, electronic, mechanics, optics, telecom and computer sciences.

The ship can resist wind above level 12 and cruise in any sea areas in the latitude belt between 60 degrees north and 60 degrees south.

It had an information superhighway platform built via optical fibers, on which various systems could expand their functions and share information so as to promptly root out malfunction, the spokesman said.

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He said the ship was "sailor-friendly" as a crew would feel more comfortable during their long stays at sea. Sailors could benefit from the technologies in reduced vibration and noise and amore advanced air-conditioning system.

China says significant progress in lunar rover research

(Xinhua Net, 2008-04-24)

Chinese scientists and engineers have built prototypes of the country's planned lunar rover module, the Science and Technology Commission of Shanghai Municipality said on Wednesday.

The city's lunar rover research team had completed models of different types of lunar rover and conducted feasibility and technological trials.

The Shanghai Academy of Spaceflight Technology had made significant progress in key technologies for the locomotion system, it said.

China successfully launched its first lunar probe, Chang'e-1, in October. The launch was the first step in China's three-stage moon mission, which includes the launch of a lunar rover for a soft landing and a second rover that is to collect lunar soil and stone samples for research.

China plans to land its first lunar rover on the moon in 2013.

China blasts off first data relay satellite

(Xinhua Net, 2008-04-26)

China launched the country's first data relay satellite "Tianlian I" Friday night.

The satellite was launched on a Long March-3C carrier rocket from the Xichang Satellite Launch Center in southwest China's Sichuan Province at 11:35 p.m. (Beijing Time).

The satellite will not go into function though until the Shenzhou VII mission scheduled for the second half of 2008.

Developed by China Aerospace Science and Technology Corporation, the satellite is the country's first ever data relay satellite.

It will increase the time Shenzhou VII spaceship in communication with the ground, and improve the amount of data that can be transferred, according to Zhang Jianqi, top official with China's space programs.

"The Yuanwang space tracking ships along with China's over ten ground observation stations can only cover 12 percent of Shenzhou VII spaceship's orbit in the space," Zhang said.

The "Tianlian I" satellite alone, according to Zhang, can cover 50 percent of the orbit of Shenzhou VII, or any other China's spacecrafts.

With the help of the satellite, scientists can get more scientific data collected by our satellites without delay, and can know earlier when a malfunction is taking place in China's spacecrafts, said Zhang.

The launch is the 105th mission of China's Long March series of rockets, and the first mission of the Long March-3C carrier rocket.

The 55-meter carrier rocket with two boosters is capable of launching satellites weighed between 2,600 kilograms to 3,800 kilograms into the space.

A total of seven Long March-3C carrier rockets are now in production, and will carry "several domestic and foreign satellites" to the space, said Chen Minkang, chief designer of the rocket, without further details.

China had planned 10 space launches this year including the Shenzhou VII spaceship.

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

China began its manned space program in 1999. It successfully sent Yang Liwei into orbit on the Shenzhou V spacecraft in 2003.

Two years later, Fei Junlong and Nie Haisheng completed a Chinese record of five-day flight on the Shenzhou VI. All returned safely.

2 News from Universities

44,000 overseas college students return to China in 2007

(People's Daily, 2008-04-06)

Some 44,000 Chinese who studied abroad returned home last year, 4.79 percent more than in 2006, the Ministry of Education said on its website.

Meanwhile, 144,000 Chinese nationals went abroad for study, up 7.94 percent from 2006.

Among last year's returnees, 8,513 studied at government or company expense or on scholarships, while 36,000 paid their own way.

Those departing for studies abroad last year included 15,810 people who were funded by the government, a company or by scholarships. The rest were self-financed.

About 1.21 million Chinese studied abroad from 1978 to 2007, and 319,700 returned during that period, statistics show.

At present, 657,200 Chinese students are enrolled by foreign colleges and universities.

Over 300,000 people studying abroad return to China

(People's Daily, 2008-04-07)

The number of students studying abroad increased by more than 10,000 in 2007 compared with 2006; among which the number of students studying at their own expense was up by 6.58 percent, according to statistics released by China's Ministry of Education on April 5.

Statistics show that the total number of students studying abroad is 144,000, among which 129,000 are studying at their own expense.

The population of returned overseas personnel was 44,000 in 2007. Compared with 2006, the number of people studying abroad further increased in 2007; and the number of returned overseas personnel increased steadily.

The number of people studying abroad totaled 1.2117 million from 1978 to 2007, among which 319,700 have already returned.

China sends the most students abroad

(People's Daily, 2008-04-14)

By the end of 2007, the number of Chinese students studying abroad had reached 1,211,700 people. China had become the country sending the most students abroad. And more and more Chinese scholars have returned as business pioneers. So far, 319,700 overseas students have returned to China to start a business. Chinese students overseas who have returned to China to start a business proves effective in combining knowledge, capital and other production factors; promotes the accelerated

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upgrade of China's industries; and forms a significant demonstrative effect of the integration of advanced technology and the market economy, said Shao Wei, deputy director of the Chinese Service Center for the Scholarly Exchange of the Ministry of Education. He spoke at the second Returned Chinese Students Pioneering Park Development Forum held on April 12 in Nanning, Guangxi province.

By the end of 2006, 115 overseas student pioneer parks had been set up in China, according to statistics from the "Returned Chinese Scholars Pioneer Yearbook."

China's Tsinghua Univ. to cooperate with Siemens in technology (Xinhua Net, 2008-04-15)

Tsinghua University signed a five-year contract here on Tuesday with the German multinational Siemens to establish a technology exchange center.

The center will conduct research in rail transportation, waste water treatment, energy conservation, emission reduction, intelligent transportation systems and other fields.

"Cooperation between universities and multinational companies will accelerate the speed of putting new technology into practice. The two sides can learn from each other and achieve a win-win situation," said Zhang Yaoxue, chief director of the higher learning department of Ministry of Education.

3 Innovation Management

CAS pilots an R&D program on research facilities (CAS, 2008-04-01)

China's capacity for the indigenous S&T innovation is hampered by its lack of home-grown research facilities. To address the problem, a pilot program on major S&T facilities has been launched at CAS. The kick-off meeting was held on 28 March in the CAS Technical Institute of Physics and Chemistry in Beijing.

With an objective of implementing the Outline of the National Planning for Long- and Mid-term S&T Development and upgrading China's R&D capacity for laboratory equipment development, the Ministry of Finance and CAS have joined forces in launching a pilot research program on indigenous innovation of major research facilities. CAS Executive Vice President BAI Chunli and Vice Minister of Finance ZHANG Shaochun were present at the kick-off meeting.

With the support of the Ministry of Finance, CAS scientists will conduct studies on the development of research facilities in the following eight areas: cutting-edge equipment for all-solid-state deep ultraviolet laser sources, hypersonic pulsed wind tunnels, experimental systems integrating extreme conditions, portable seismic observation arrays at ocean bottom, superconducting imaging spectrographs, a digital base-band converter for very long baseline interferometry, synchrotron radiation nano-imaging equipment, and medium-energy heavy-ion micro beam radiation facility.

New leader of the Institute of Zoology (CAS, 2008-04-03)

Prof. MENG Anming, a geneticist from Tsinghua University, has been named the executive vice

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director-general of the CAS Institute of Zoology (IOZ) in Beijing. He is to succeed Prof. ZHANG Zhibin, who is leaving to head the CAS Bureau of Life Science and Biotechnology, to take the helm of the institute with a history that could be traced back to the 1920s.

Graduated from Southwestern Agricultural University in 1983, Prof. Meng received his PhD from University of Nottingham, UK, in 1990. As a visiting scholar, he conducted research at Medical College of Georgia from 1996 to 1998. He became a professor of Tsinghua University in 1998.

Prof. Meng is a Cheung Kong Scholar and winner of the National Science Foundation for Outstanding Young Scientists of China. He was elected a CAS Member in 2007.

CAS sets up a research center to address environmental problems in east China

(CAS, 2008-04-15)

The nameplate-unveiling ceremony for the CAS Research Center for Environmental Pollution at the Zhujiang Delta was held on 10 April at the CAS Guangzhou Institute of Geochemistry (GIG) in Guangzhou, capital of the east China's Guangdong Province. CAS Vice President DING Zhongli and Vice Secretary-general of the Guangdong Government LI Handong were present to witness the event. The establishment of the Center is a key strategic arrangement of the CAS headquarters to meet the urgent needs of the region for dealing with environmental pollution, says Prof. Ding.

4 China's International Science Cooperation

LU meets with Rector of RWTH Aachen University

(CAS, 2008-04-09)



On the afternoon of 7 April, CAS President LU Yongxiang, who is also vice chairman of the Standing Committee of the National People's Congress, held talks with the visiting Rector of RWTH Aachen University Prof. Burkhard Rauhut in Beijing.

Prof. Lu congratulated RWTH on winning of the support from the German Excellence Initiative, and briefed the German visitors on the recent advancements of CAS.

Prof. Rauhut conferred Prof. Lu on the diploma for an RWTH representative, saying his university has been proud of having Prof. Lu as its alumnus. He stressed that RWTH would like to carry out cooperative research with CAS institutes on frontier fields.

They exchanged views on further cooperation between the two sides.



New pact will focus on science, technology

(People's Daily, 2008-04-16)

Science and technology for sustainable development will be the focus of a new agreement between Chinese and German scientists.

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China's Science and Technology Minister Wan Gang and Germany's Education and Research Minister Annette Schavan signed the agreement yesterday to mark the 30th anniversary of the Agreement on Scientific and Technological Cooperation between the countries.

The 1978 pact was signed in Bonn, Germany and "opened a new chapter in Sino-German science and technology cooperation and communication," Wan said.

"Climate change, energy and the environment have become hot issues for cooperation."

Schavan said energy technology and climate change "are the priorities of research today because no country can deal with the problems by themselves".

Chinese and German businesses, governments and scientists have launched joint programs to build a clean development mechanism (CDM).

Following talks in November between China's Ministry of Science and Technology and Germany's Industry and Commerce, German technology companies have been given entry to the Chinese market for CDM construction and provided with all necessary information.

In preparation for the Beijing Olympics, the two countries have been developing a transport information system to deal with traffic jams in the Chinese capital, a public information system to smooth the flow of information during the Games and a water recycling system for venues.

IPM, Fraunhofer ISI forge partnership for S&T cooperation (CAS, 2008-04-22)



As a component of the 30th anniversary commemoration of the cooperative ties forged between China and Germany, MU Rongping, director-general of the CAS Institute of Policy and Management (IPM), and Dr. Harald Hiessl, deputy director-general of the Fraunhofer Institute for Systems and Innovation Research (ISI), formally signed a memorandum for cooperation between the two institutes on 15 April in Beijing.

The signing ceremony was presided over by Vice Minister of Science and Technology SHANG Yong. Minister of Science and Technology WAN Gang and German Federal Minister of Education and Research Annette Schavan were present at the ceremony.

To mark the event, IPM and ISI jointly held a symposium on 15 and 16 April in Beijing. At the meeting, scholars from the two sides made discussions on a series of topics in common interest, including research priorities and hot issues concerning innovation policies, intellectual properties, new technologies, sustainable development, technological foresight, and energy source. The two institutes also planned the collaborative activities between them in 2008.

Round table on CAS-MPG partnership convenes in Shanghai (CAS, 2008-4-28)



A round table meeting under the theme of "CAS-MPG Strategic Partnership: Tools, Developments and Future" was held at the CAS Shanghai Institute for Advanced

Studies (SIAS) on 14 April.

It was attended by a 30-member-strong German delegation. Headed by German Federal Minister of Education and Research Ms. Annette Schavan, the delegation comprised high-level officials and prestigious scholars, including President of Max Planck Society (MPG) Prof. Peter Gruss, MPG Vice President Prof. Herbert Jaeckle, as well as some German federal parliamentarians and presidents of German universities. They were accompanied by German ambassador in China and German consul general in Shanghai.

Chinese participants of the meeting included CAS Vice President Prof. LI Jiayang, Vice President of the CAS Shanghai Branch Prof. ZHU Zhiyuan, Executive Vice President of the CAS Shanghai Institutes for Biological Sciences (SIBS) Prof. CHEN Xiaoya, several directors from member institutes of SIBS as well as some heads of Independent Junior Research Group and Partner Group.

5 Miscellaneous



Homegrown 3G Standard TD-SCDMA Tested in 8 Cities (CRI, 2008-04-02)

China Mobile, the country's top wireless operator, began trial services of the third generation (3G) mobile phone service on April 1 in eight cities, including Beijing, Shanghai, Guangzhou, and Tianjin. The third generation mobile phone service features a wireless Internet connection to Internet and videophoning capabilities. Two Shanghai locals try out the 3G handsets at an exhibition hall for China Mobile on Tuesday, April 1, 2008.

Nobel-Winning Scientist Enlightens Chinese Students (CRI, 2008-04-09)



Students at Beihang University in Beijing get close to Nobel Laureate Sheldon Lee Glashow (R) during the American physicist's visit to the university on Wednesday, April 9, 2008. Glashow won the Nobel Prize in Physics in 1979, along with two other scientists. His Beihang visit was part of the Honeywell - Nobel Initiative, a global science education project that aims to connect university students with Nobel recipients.

Scale production of corn-based plastics (CAS, 2008-04-11)



China annually consumes more than 20 million tons of plastic products, which are mainly produced from petroleum. The oil-based undegradable plastics increasingly put

pressures on the country's environment and natural resources. To address the problem, people turn to the technologies that could manufacture plastics with plant fiber and starch.

With seven-year joint efforts of researchers and engineers from the CAS Changchun Institute for Applied Chemistry and Hisun Group, a demonstration project to manufacture polylactic acid (PLA), a biodegradable corn-based plastic, has recently been put in operation in Taizhou, a coastal city of southeast China's Zhejiang Province.

With an annual capacity of 5,000 tons, the production facility boasts the largest of its kind in China and second in the world. As their qualities are on a par with that of Cargill Dow, a US giant in the field, the products are welcome on overseas markets.

PLA is produced from corn through fermentation and polymerization. The outstanding feature of such plastics is environment-friendly as they can be easily degraded into water and carbon dioxide.

Experts say that the success is of special socio-economic significance because it not only breaks down the green trade barriers imposed by developed countries, but also promotes China's efforts in the in-depth processing of the country's massive farming yields, reduction the national tension caused by the over-reliance on petroleum imports and providing a final resolution to the chronic white pollution plaguing the country for so long a time.

Project on a new multi-beam bathymetric system starts at CAS (CAS, 2008-04-14)



With the support of the National High-tech Development Program (dubbed "863" Program), a research project for the development of a new probing system for making deepwater bathymetric investigations has recently kicked off. The launching meeting was convened on 28 March at the CAS Institute of Acoustics (IOA) in Beijing.

As a key component of the marine technology sector of the "863" Program in 2007, the project is aimed at developing a prototype of the seabed multi-beam

bathymetric system. Coordinated by IOA, it will be jointly conducted by researchers from IOA, the No. 715 Research Institute of China Shipbuilding Industry Corporation, and the Second Institute of Oceanography under the State Administration of Oceanography.

According to the blueprint of the project, the system is expected to carry out vertical profiling operations on land forms and geomorphologic surveys in the depth ranging from 20 to 11,000 meters. The enforcement of the project, the scientists believe, is of special significance in speeding up the disciplinary development of China's marine acoustics, bathymetry and related technologies, leading to an all-round upgrade of China's oceanographic R&D level and its hi-tech equipment.

11th China Beijing International High-tech Expo to be held in May (People's Daily, 2008-04-25)

The 11th China Beijing International High-tech Expo will be held in Beijing from May 20 to 25. The theme will be "Hi-tech Olympics and technological innovation;" and the Expo will highlight the great effort and accomplishments that the Chinese government and the society have made in order to attain

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a "Green Olympics, Hi-tech Olympics and People's Olympics," employing three major elements: Hi-tech Olympics, independent innovation and ecological civilization.

At present, over 30 governments and scientific, technological, economic and trade institutions, from more than 10 countries and regions, have confirmed participation, including the United States, Canada and the United Kingdom. Foreign enterprises including Samsung Electronics, LG Electronics and Panasonic Electric Industrial Co. Ltd will exhibit a full range of products which are newly-developed and being presented in China first. More than 100 domestic enterprises including Haier and Changhong will also introduce their latest scientific and technological innovations with their own independent intellectual property rights.

6 Information for upcoming Workshops in June

The 2nd International Conference on Heterogeneous Materials Mechanics (ICHMM-2008)

Date: June 03 – 08 **City:** Huangshan, Anhui Province

<http://ichmm-2008.ustc.edu.cn/ichmm2008/>

The 1st International Conference on Plant Secondary Metabolism

Date: June 08 – 10 **City:** Kunming, Yunnan Province

<http://www.cspp.cn/ICPSM/index.asp>

International Symposium on Polymer Physics

Date: June 08 – 12 **City:** Xiamen, Fujian Province

<http://polymer.iccas.ac.cn/PP'2008/invitation.htm>

IMS-China International Conference on Statistics and Probability 2008

Date: June 11 – 13 **City:** Hangzhou, Zhejiang Province

<http://www.stat.umn.edu/~statconf/imschina/index.html>

The Sixth International Conference on Matrix-Analytic Methods in Stochastic Models

Date: June 11 – 14 **City:** Beijing

<http://www.orsc.org.cn/MAM6/index.html>

Tiantan International Stroke Conference3 2008

Date: June 13 – 15 **City:** Beijing

<http://www.t-isc.com/swmc/index.asp>

2nd IEEE Symposium on Theoretical Aspects of Software Engineering

Date: June 17 – 19 **City:** Nanjing, Jiangsu Province

<http://www.ijcic.org/icicic2008.htm>

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The 8th International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences

Date: June 25 – 27 **City:** Shanghai

<http://2008.spatial-accuracy.org/>

IVEVA 2008: The International Conference on Intelligent Virtual Environments and Virtual Agents

Date: June 26 – 27 **City:** Chongqing

<http://iveva2008.eegame.cn/>

2008 International Workshop on Frontiers of Theoretical and Computational Physics and Chemistry

Date: June 26 – 28 **City:** Hohhot, Inner Mongolia

http://ndnews.imu.edu.cn/zh/200803/Article_20080329163936.html

The 14th Annual International Computing and Combinatorics Conference

Date: June 27 – 29 **City:** Dalian, Liaoning Province

<http://www.amt.ac.cn/cocoon08/>

THE THIRD ISN SPECIAL NEUROCHEMISTRY CONFERENCE 8th International Meeting for Brain Energy Metabolism

Date: June 27 – July 1 **City:** Beijing

<http://www.isnbeijing2008.org/>

The 16th International Conference on Geoinformatics and the Joint conference on GIS and Built Environment

Date: June 28 – 29 **City:** Guangzhou, Guangdong Province

<http://www.geoinformatics2008.cn/>

The 16th International Conference on Geoinformatics

Date: June 28 – 29 **City:** Guangzhou, Guangdong Province

http://218.241.72.18/webpage/zgdlxh/menu_61/data/web_1091.html

International Conference on Modeling, Identification and Control

Date: June 29 – July 2 **City:** Shanghai

<http://icmic.sjtu.edu.cn/>

First International Symposium on Biopharmaceutical Statistics

Date: June 30 – July 2 **City:** Shanghai

<http://www.isbiostat.org/sp1/>

10th International Symposium on Landslides and Engineered Slopes

Date: June 30 – July 4 **City:** Xi'an, Shaanxi Province

<http://www.landslide.iwhr.com/>

Abbreviations

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